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**URBAN EXPANSION, ENVIRONMENTAL CHANGE,  
LIVING CONDITIONS AND  
DEVELOPMENT PLANNING IN THE PACIFIC**

**A CASE STUDY OF THE  
SUVA-LAMI-NASINU-NAUSORI CONURBATION, FIJI**

A thesis presented in partial fulfilment of the requirements for the degree of Master of Arts in Development Studies and Geography at the University of the South Pacific.

I declare that this thesis is my own work, except for those sections explicitly acknowledged, and that the main content of the thesis has not been previously submitted for a degree at any other university.

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## ABSTRACT

Urbanisation is becoming one of the most significant demographic and development issues for many states of the Pacific Island region, as in other developing countries. Pacific urban populations are continuing to grow through both natural increase and immigration, and are typically concentrated (along with economic activity) in one major city or town, usually the national or provincial capital. This spatial concentration of people and economic activity has had serious social and environmental consequences, especially in coastal areas. Major problems affecting urban centres in the region include relatively rapid growth, unemployment and underemployment, poverty and inequality, shortages of land (complicated by the tenure system), increasing numbers of squatter settlements and informal housing, falling standards of infrastructure and basic services, and environmental degradation. Hence, improved management of and planning for urban growth is of major importance for most of Pacific island nations, including Fiji. 1

With a relatively long history of urbanisation and diverse economy, Fiji has the most complex urban functions of the Pacific island nations. By 1996, Fiji's population was 46.4% urbanised. It is in Fiji's peri-urban areas that population growth and physical expansion are now most rapid, and in urban and peri-urban informal settlements where poverty and poor living conditions are particularly evident. Fiji, like most Third World countries and former colonies, is characterised by a skewed urban hierarchy, with Greater Suva-Nausori (comprised of the urban corridor formed by Suva City, Lami Town, Nasinu Town and Nausori Town, and their respective fringe areas) dominating. Greater Suva-Nausori's population has increased dramatically in the past half century, growing from 29,418 people in 1946 to 208,520 people in 1996, when it represented 26.9% of Fiji's total population and 58.0% of Fiji's urban population. The Suva-Lami-Nasinu-Nausori urban corridor is therefore experiencing rapid population growth and considerable development pressure. Thus, there is a need for enhanced urban planning on a regional scale, serving to coordinate development and conservation schemes for the urban and peri-urban areas of all four municipalities.

Although there has been a marked improvement in many indicators of development in Fiji over the past few decades, the benefits of these developments have not been dispersed uniformly, thereby deepening pockets of disadvantage and poverty, and impinging on people's livelihood strategy options. The local variation in

infrastructure, services, facilities and amenities may be decried as inequitable. Fiji, however, does not have a clearly defined rich or poor sector, with poverty pervading all communities and being fairly evenly spread between urban and rural populations as well as across ethnic groups. Nevertheless, people with few skills or little education generally fare worst in the urban areas, earning low wages or being intermittently unemployed. Residents' poverty is often reflected in poor living conditions with insecure tenure, substandard housing and a lack of basic infrastructure and urban services.) Thus, there are considerable implications of degraded living environments for a fairly significant proportion of the area's urban and peri-urban dwellers, although problems take different forms in different places. Change in urban centres remains uneven, with living and environmental conditions varying widely, and the scattering of low-income communities necessitates the incorporation of combinations of place-based and people-based policies. Similarly, urban development efforts need to focus on participatory, demand-driven social improvements as well as on economic ones.

[ In Fiji, as elsewhere in the island Pacific, it is in/near the cities and towns that the environment has suffered the greatest degradation because of the concentration of urban waste, the increasing level of urban demands on natural resources, and the primarily coastal setting of most urban centres. Yet, urban centres, as the embodiment of intricate social, economic and cultural networks, are constantly in a state of flux and can consequently be subject to planning control and direction; urban complexity is therefore subject to human intervention and cities are receptive to governance. Economic, environmental and sociopolitical aspects of the urban system need to be integrated in such a way as to ensure cities' sustainability. This depends upon a long-term genuine commitment to a multisectoral and coordinated planning process. Sustainable urban development involves not only improving the environment but also requires that the needs of all inhabitants be met. Today's urban centres require enhanced management and planning by the public, private, civil and community sectors in order to fulfil their function as pleasant places to live and work in. This is crucial if the quality of life in the urban and peri-urban areas of developing countries are to improve.



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### **List of Abbreviations**

ADB	Asian Development Bank
AGE	Advisory Group on the Environment
ALTA	Agricultural Landlord and Tenants Act
BOD	Biochemical Oxygen Demand
CBO	Community-Based Organisation
DFID	Department for International Development
DOE	Department of Environment
DTCP	Director of Town and Country Planning
ESCAP	Economic and Social Council for Asia and the Pacific
FAS	Family Assistance Scheme
FEA	Fiji Electricity Authority
FNPF	Fiji National Provident Fund
FSC	Fiji Sugar Corporation
FSP	Foundation for the Peoples of the South Pacific
GWh	Gigawatt hour
Ha	Hectare
HART	Housing Assistance and Relief Trust Fund
HHIF	Habitat for Humanity International-Fiji
ICSU	International Council for Science
IDS	Institute of Development Studies
IHDP	International Human Dimensions Project
IPP	Independent Power Producers
ISSC	International Social Science Council
IUCN	International Union for Conservation of Nature
JICA	Japan International Cooperation Agency
KFBA	Keep Fiji Beautiful Association
Km	Kilometre
LPG	Liquified Petroleum Gas
M	Metre
ml	Millilitre
MLMR	Ministry of Lands and Mineral Resources



MM	Millimetre
Mt	Metric tonne
NGO	Non-Governmental Organisation
NLTB	Native Land Trust Board
PAC	Poverty Alleviation Committee
PACENSUD	Pacific Centre for Environment and Sustainable Development
PAF	Poverty Alleviation Fund
PAU	Poverty Alleviation Unit
PCB	Polychlorinated biphenyl
PCRC	Pacific Concerns Resource Centre
PDI	Pacific Development Institute
PWD	Public Works Department
SPACHEE	South Pacific Action Committee for Human Ecology & Environment
SPREP	South Pacific Regional Environment Programme
TIT	Tokyo Institute of Technology
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCHS	United Nations Commission on Human Settlements
UNDAT	United Nations Development Advisory Team
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNIDO	United Nations Industrial Development Organisation
USAID	United States Agency for International Development
USGS	United States Geological Survey
USP	University of the South Pacific
VAT	Value Added Tax
VLIS	Viti Levu Interconnected System
WCED	World Commission on Environment and Development
WHO	World Health Organisation
WRI	World Resources Institute
WWF	World Wide Fund for Nature
Y	Year

# CHAPTER 1: URBANISATION, ENVIRONMENTAL CHANGE AND LIVING CONDITIONS

## 1.0 Introduction

The processes of urban growth, both demographic and spatial, attendant environmental change and their impact on residents' living conditions are important issues in the rapidly urbanising nations of the Third World, the Pacific Island region, and in Fiji. What is germane, however, is not only an urban centre's population and settlement pattern, but its policies, management and governance, and the commitment and capabilities of municipal governments to implement programmes that improve resident welfare. To address these issues and manage these processes in an inclusive and participatory manner which is compatibly integrated into broader national objectives may well be the most pressing development issue of the day. In essence, the challenge is for the public (central and local governments), private (formal and informal sectors) and civil (non-governmental and community-based organisations) sectors to collectively work towards more sustainable urban and peri-urban environments with improved and equitable living conditions for all residents, and to meet the current needs of the poor as well as sufficiently plan for the needs of future residents.

The question now being increasingly asked is whether it is possible for governments to bring about changes in the ways in which urbanisation is taking place; changes of a kind that will make cities more efficient and satisfactory places in which to live (Watts 1992:62).

What is called for is a regard for the needs of urban inhabitants and the efforts of public, private and civil agencies to work with these people in meeting their needs, as well as an appreciation of the complex problems of sustainability and equity in a rapidly urbanising Third World. In essence, it is necessary to know who requires support and what institutional arrangements should provide it. The plight of the very large and growing urban population in the Third World whose basic needs are not being met necessitates an enhanced urban focus to development with improved urban management and planning (Cairncross et al. 1990b:11; Drakakis-Smith 1997:804; Forbes and Lindfield 1997:31). Greater urban planning and investment are needed to accommodate the growth in the Third World's urban areas, giving due consideration to "the ways that cities are regarded, how they work, the contribution they make to the economy of nations, and how they are managed" (Harris 1992b:xxi).

Urban management as a concept has its roots in local government reform. Urban management covers the full range of government interventions in the development and day-to-day operations of the city, and thus “encompasses decisions about the allocation of scarce resources in the provision of services, housing and infrastructure. It also involves making choices about planning objectives, land use and the targeting of socioeconomic groups” (Storey 1998a:32). Urban management and planning can therefore play a critical role in directing policymaking that is aimed ultimately at achieving sustainable and equitable development. Urban planning is being challenged to redirect itself towards the enabling of empowerment and capacity-building in the name of social justice (partnership in planning), as well as reducing poverty and raising productivity, and, hence, to become ‘urban development planning’. Enhancing urban planning and management therefore implies a maximisation of the economic efficiency of urban centres, an improvement in the quality of life for urban dwellers, and an achievement of more sustainable forms of urban development, including a maintenance of natural resources as well as social equity in the distribution of urban development benefits and costs, with particular emphasis on the needs of low-income and vulnerable groups (Bollens 1998:745; Cheema 1996:3; Duddy 1993:6; Forbes and Lindfield 1997:32; Jenkins 2000:137; Post 1997:349; Schrader 1998:6). The adoption of such an approach has become increasingly imperative for the Third World, including Pacific island nations such as Fiji, for three basic reasons: (a) the absolute and relative increases in their urban populations, (b) the growing contribution that urban areas make to their economic development, and (c) the escalating environmental degradation which occur in cities and their fringe areas.

Pacific Island towns and cities will continue to grow, they will continue to encroach on larger areas of their often fragile hinterlands, they will continue to face the problem of poverty at both the micro (household) and macro (local government) level, and they will continue to cast a larger environmental shadow on their surroundings, through demands for inputs, land and waste disposal (Overton and Storey 1999:252).

Clearly there needs to be more emphasis placed on the relationships between economic development, urban growth and environmental sustainability in the development plans of Pacific countries. The pressures of development are currently bringing great stress to urban environments, particularly to low-income earners. Although a number of environmental planning and management strategies are in place, their success varies and depends to a large extent on traditional structures and on the complexity of the land tenure system (Bryant 1993b:29).

### 1.0.0 Urban Focus to Development

The heightened significance of appropriate and effective urban management and land use planning is apparent in today's rapidly urbanising world. It is in urban centres that two of the most pressing problems of the international agenda – poverty and environmental decline – come together (UNCHS 1993:29).

Most of the world's economic and population growth is taking place in cities and, increasingly, many of the world's major challenges and problems have their loci in cities. Poverty, environmental degradation, lack of urban services, transport, local government management, and inadequate shelter and access to land are among the main areas of concern (Flood 1997:1635).

Hence, in the current era, "sustainable development is unthinkable without sustainable urbanization" (Smit and Nasr 1992:152). In fact, since the majority of the world's population will soon be located in urban centres (many of them living in substandard, overcrowded conditions and in extreme poverty in informal settlements on public or private land), cities and towns are central to attempts at meeting the goals of sustainable development. The concept of sustainable development, as applied to cities, highlights the various needs of urban and peri-urban residents and of the environment on which their livelihoods depend. Furthermore, immediate and upcoming needs must be reconciled. Sustainable urban development implies meeting the economic (access to sufficient livelihood or productive assets), social (adequate shelter and services) and political (freedom to participate in politics and in decisions regarding management of one's home and community) needs of the present inhabitants without compromising the ability of future generations to meet their own needs. This, in turn, implies minimising the use of natural resources and keeping urban wastes within the absorptive capacity of local and global sinks (Elliott 1999:161-162; Schrader 1998:11).

Within the next few decades, "the mainly rural character of developing countries will be gone forever. No development policies...can afford to ignore the fact" (Salas 1986:6). This may be true even in countries which have traditionally been regarded as rural, such as those of the Pacific Island region. It is therefore through urban policies that the greatest number of lives can be affected. An urban focus for development efforts targets a considerable proportion of citizens in developing countries in the geographic areas that are typically experiencing the greatest increases in population growth, economic expansion and poverty (Duddy 1993:7; Thomas et al.1993b:2). To attempt to

accomplish this goal requires that the focus of urban management and planning be on “policy, politics and participation” (Harris 1992b:xx).

As population growth will be virtually synonymous with urban growth in the coming decades, the focus of efforts at sustainable human settlements development must be on urban areas, as that is where most of the world’s population will live and work, where most economic activity will take place – and where most pollution will be generated and most natural resources consumed – with impacts, environmental and otherwise, which will be felt far beyond the city limits (Wichmann 1995:3).

Innovative urban management practices can play a critical role in directing policymaking that is ultimately aimed at achieving sustainable and equitable development that puts environmental and social goals to the fore. “Policies which affect urban development are inextricably bound up with overall strategies of economic development and thus by extension to societal and political goals in general”, including “the overarching concepts of social justice and equity” (Potter 1989b:13). The pursuit of sustainable urbanisation must not focus on the self-containedness of sustainable cities nor on the contribution of cities to sustained growth, but on the processes involved rather than the entities (urbanisation rather than cities), and also must be structured around the populace who constitute the crux of the urbanisation process rather than the economic functions or the built environment (Atkinson and Vorratnchaiphan 1996:247; Cheema 1996:3; Drakakis-Smith 1997:817).

#### 1.0.1 Urban Planning

Planning – literally foreseeing and guiding change in all spheres of economic and social life – holds great promise for making urban centres more liveable. Critical emphases of urban planning include ‘how cities and regions work’, the relationship between planners and those for whom the plans are produced, and the wider role of planning in shaping a city. The aim is to identify effective urban practices that are economically viable, socially equitable, culturally acceptable and ecologically sustainable. Management of urban centres comprises numerous types of overlapping and interrelated management issues, especially the planning and management of the various land uses relating to the physical concentrations of economic activity and housing and their associated infrastructure, as well as of the environmental resources which act as inputs for economic activity and waste sinks for pollution. Important issues which urban

development planning has the potential to address include improving the populace's quality of life through the provision of basic services and infrastructure, promotion of sustainable economic development and increased income-generating opportunities, and protection of the natural resource base. To tackle these issues holistically is to recognise the need to improve urban environments overall (Abbott 1997:427; McLoughlin 1994:1111). Indeed, the quality of the urban environment greatly determines the quality of life in cities (Badshah 1996:15-16), and "sustainable urban development is based upon the growing recognition that it is in cities where many environmental problems are both sourced and experienced" (Roseland 1995:2040).

#### 1.0.2 Sustainable Urban Livelihoods

Sustainable livelihoods is a systemic and adaptive approach linking issues of poverty reduction and sustainability with empowerment processes. The sustainable livelihoods approach provides an explicit focus on livelihood issues which are priorities for poor people; people's livelihood concerns and strategies are therefore at the core of the approach. The livelihood concept is closely connected to the notion of vulnerability – a dynamic process rather than a state of being – to external factors and the internal means for response. Thus, the three central components of the livelihood concept are capital assets (natural, physical, sociopolitical, human and financial resources), coping efforts (short-term and long-term actions) and external conditions (institutions, organisations, policies, legislations and the environment). Livelihood security implies an absence of vulnerability through low sensitivity and high resilience to adverse circumstances. The objective is to mobilise individuals, households and communities to increase their well-being by building on their existing assets. The assumption is that if people have better access to assets, they will have more ability to influence structures and processes so that these become more responsive to their needs. The sustainable livelihoods approach is therefore concerned with empowering local individuals, households and communities to contribute to the decisions that affect their lives, or, rather, with participatory development. Various actors are brought together, including local government, municipal authorities and local communities, in a participatory process of decision-making, policy formulation and implementation. The main dimensions of the sustainable livelihoods approach are productivity, equity, poverty and sustainability, while the concepts of good governance and sound environmental management are also drawn on to create a holistic

approach for development (Ashley 2000:7-8; Carney et al. 1999:5,9; Chambers 1989; Farrington et al. 1999:9; Hoon et al. 1997:4; IDS 2000; Moser 1992:23-24; UNDP 1999; van Dillen, forthcoming 2001).

Preconditions for equitable development are that the basic needs of all people are met, that people are empowered rather than marginalised, and that they can participate fully in the society (UNDP 1997:7).

A livelihood comprises the capabilities or means, assets, entitlements and activities required for a means of living. People pursue a range of livelihood outcomes by drawing on their opportunities and assets so as to engage in a variety of activities which transform these initial assets into basic necessities, driven by personal preferences and perturbations. Sustainable livelihoods are those that are economically effective, able to cope with and recover from stresses and shocks, able to maintain or enhance capabilities and assets, and provide opportunities and net benefits to other livelihoods locally and more widely, both now and in the future (i.e. socially equitable), while not undermining the natural resource base (i.e. ecologically sound). Survival strategies which may enable the urban poor to cope with their circumstances include diversifying, specialising or intensifying activities, labour market involvement, labour and asset pooling, social networking, changes in consumption patterns, adaption of different technologies for production, migration, and even reverting to criminal activities. Thus, informal housing, for instance, may be regarded as the outcome of people's necessity to live with limited resources, but also as people's success in coping with their adverse circumstances. There are inter-linkages between these livelihood systems at the micro-level and the macro-level policies which affect them. Policies can be reoriented to better serve the interests, needs and capacities of vulnerable groups through meso-level linkages, which can be achieved by, for example, working up from village or community councils through provincial to national government (Carney et al. 1999:4,8,14; Chambers 1989; Farrington et al. 1999:3; Hoon et al. 1997:5; Hussein and Nelso 1998:2; IDS 2000; Moser 1996:24; UNDP 1999; UNDP 2000).

The sustainable livelihoods approach utilises holistic perspectives to understand the complexity and diversity of livelihood strategies of the poor. Poverty-focused development activity should be: human-centred, multi-level, conducted in partnership with both the public and private sectors, participatory, responsive, long-term, flexible, dynamic and sustainable. The concept of sustainability considers the relationship among economic processes, power and ecological transformations. A balance must be struck

between the four key dimensions of sustainability – economic (e.g. markets, credit supply), social (e.g. networks, gender equity), institutional (e.g. capacity building, services, technology, political freedom) and ecological (e.g. availability and quality of environmental resources) (Carney et al. 1999:8,11; Farrington et al. 1999:9; Forbes and Lindfield 1997:28; Sneddon 2000:521).

## **1.1 Urbanisation and the Urban System**

### **1.1.0 Urbanisation**

The four fundamental components of urbanisation include: the definition of urban areas; the growth of population in these urban areas; the increase in the number of people engaged in non-agricultural activities; and the distinctive environment and organisation of urban areas which enable an urban way of life. The formal definition of urban areas describes them as concentrations of non-agricultural workers and non-agricultural production sectors, while a city has a certain legal status (granted by the national or provincial government) that is generally associated with specific administrative or local government structures (World Bank 2000:127; Zhu 1998:276).

There are three general ways in which urban populations grow: through natural increase, through migration from rural and other urban areas, and through expansion of boundaries to take account of the change in character of areas previously on the outskirts of towns and cities. The nature of the urbanisation process is dynamic both in terms of the pace of growth and in terms of the form it may take. The process of urbanisation is therefore a unique phenomenon in each country, with roots in the specific social, economic and political life of the country concerned. Urbanisation involves issues relating to the processes of rural-urban migration, population distribution and land settlement, the development of city systems, the growth and problems of cities, national urban strategies and the development of the urban hierarchy, decentralisation, and within cities, policies for coping with rapid urban growth (Drakakis-Smith 1997:817; Forbes 1993:55; Jones 1993:3; Watts 1992:63).

### **1.1.1 Urban System**

The primary components of the urban system are its population, defined in terms of its size, density, growth rate, and relative heterogeneity; its natural environment or



ecosystems; its built environment, particularly its infrastructure and overall land use pattern; its economy, most notably its underlying economic activity, and the resource flows which support it; and its institutions, including governmental structure and policy-making processes. The understanding and management of the interaction between these components is essential. Calls have been made for the adoption of more intersectoral and integrative approaches which emphasise ecology, social economy and sustainable development, and which take into account different stages of development and human cultural diversity, and the wide range of government systems which deal with them (Celecia 1994:1; USAID 1990:47).

#### 1.1.2 Link Between Urbanisation, Environmental Change and Living Conditions

The condition of the urban environment is a vital dimension of the quality of life in cities and towns. To achieve sustainable development, environmental concerns and development planning must be integrated. Reasons for environmental degradation include the increased harvesting of natural resources at nonsustainable rates, rapid industrialisation, and rising population pressure, especially within urban areas. Human settlements represent sets of resources or environments, and the quality of the environment in any given place influences the quality of life for its residents and workers. Fundamental to the quality of the environment in any settlement are the quality of location, community and structures, along with access and amenity variables. The major environmental and social problems of the future will likely be city problems, and sustainable urban development will likely be the most pressing challenge facing humanity in the 21<sup>st</sup> century<sup>1</sup>. Hence, there exists a need to better “understand urban problems and policies which might improve our cities and the lives of their people” (McLoughlin 1994:1111). Not only do the poor typically face the worst environmental problems but also an institutional framework ill adapted to their needs. In sum, in order to improve the lives and well-being of urban and peri-urban dwellers, their vulnerability must be reduced while their coping ability increased, and this, in turn, is connected to environmental conditions (Hardoy and Satterthwaite 1989:162; Konvitz 1997:44; Leaf 1996:189; McGranahan 1993:107; Spencer and Goodall 1992:292).

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<sup>1</sup> In fact, city-based production currently accounts for the majority of resource consumption and waste generation world-wide (Elliott 1999:137-138).

### 1.1.3 Urban Problems

Both the percentage of people in urban areas, and the size and number of urban settlements have been increasing rapidly. The speed of urbanisation in many of the developing countries, including those of the Pacific Island region, has led to a breakdown in the capacity of authorities to manage growth and change. Hence, urban planners, managers and residents are faced with problems associated with poverty, insufficient housing, inadequate infrastructure and services, and a deteriorating natural environment. Often the result of limited formal access to land in periods of rapid urban demographic growth, widespread informal occupation of land with no overall planning or registry has become common. "Most new housing and new neighbourhoods in Third World cities are organized, planned and built outside the law" (Hardoy and Satterthwaite 1989:12).

In addition to their natural increase, heavy migration from rural areas and country towns to urban centres, especially to peripheral settlements located in and around the national capitals and regional industrial centres, has contributed greatly to Third World urbanisation, with urban areas spreading beyond traditional boundaries. Consequently, suburban areas are growing faster than the city cores, and informal settlements are growing more rapidly than the cities as a whole. Most Third World growth is thus concentrated in peripheral shantytowns, which account for a substantial share of urban populations throughout the Third World, despite their being ill supplied, if at all, with basic amenities. Squatter settlements typically lack water supply, sewage facilities, removal of solid waste, storm drainage, electricity, paved streets and public transport, and often develop on land ill-suited to housing. Yet such informal settlements are home to the vast number of urban poor (Appendix 1A) because the question of location often takes precedence over the question of shelter quality. Because of their poverty, many urban and peri-urban residents in developing countries live in informal settlements which are hazardous to their own well-being. Poor environmental conditions thus affects the poor more severely because many of them live near to where manufacturing, processing and distilling plants are situated. Moreover, as poverty retreats into certain locations, often those of high ecological vulnerability, the poor may degrade these environments further in the course of securing their basic needs (Brennan 1999:15; Elliott 1999:146).

Urban population growth has typically not increased the population density of already high-density areas, but rather has promoted densification of less developed areas and expansion at the urban fringe. Urban centres' inhabitants are thus spreading out over

large metropolitan regions with relatively high population densities, absorbing smaller cities and towns (Brennan 1999:10; Harris 1992b:ix-x), in a process of unplanned and unsupervised growth, which creates a “moving urban frontier”, particularly evident on the outskirts of capital cities (Gaye 1992:102). The trend of the expansion of cities into surrounding areas and the constantly increasing consumption of land has been marked by suburbanisation and a deconcentration of housing, workplaces and services. Uncontrolled physical growth of the built-up city area typically expands towards the immediate (no longer rural but not yet urban) hinterland in an ad hoc way without reference to any city-wide plan, producing an incoherent urban sprawl (Hardoy and Satterthwaite 1989:207; Urban 21 2000:20). Fringe growth not only reduces rural land, but often weakens the fiscal strength of central cities, thus reducing their capacity to undertake environmental initiatives and having serious implications for infrastructure and service provision. Hence, accompanying this trend has been a “general acceptance of the inevitability of increasing urbanisation with ever larger cities, growing environmental problems and threats to sustainable development” (Thomas et al. 1993a:53).

The rapid growth in the urban populations of Third World countries has not been accompanied by a rapid expansion in provision of housing, infrastructure, services and facilities, especially in the poorer areas. Urban expansion has not only been relatively rapid but also relatively uncontrolled, creating a discontinuous settlement pattern and resulting in a fragmented city where physical environment, infrastructure, services, institutional systems and opportunities can vary markedly from neighbourhood to neighbourhood. Although not necessarily inevitable, the proportions of people living in areas with inadequate infrastructure and services is high, with the inadequacies typically stemming from weak local governments, low incomes and often illegal status. Some of the underlying causes of the general failure of government provision of basic urban services and infrastructure in developing countries include the physical expansion of the city and its demographic growth outstripping the needed expansion of the powers, capacities and revenue base of municipal government, and the institutions changing far slower than the growth in the scale of their responsibilities. Furthermore, a lack of will for provision is partly due to an ambivalent attitude toward urban growth and budget problems, which are often exacerbated by poor pricing policies and cost inefficiencies (Cairncross et al. 1990b:1,3; Coolidge et al. 1993:1; Hardoy and Satterthwaite 1989:169; Schrader 1998:12).

Urban development is frequently associated with destructive effects on the physical environment and the resource base needed for sustainable development. In sum,

the upsurge in urban populations has overwhelmed resources. In addition, cities are not only changing in terms of their population and physical size but also in respect of the activities they host and the functions they play, and consequently in their degree of environmental impact. Moreover, rapid urbanisation coupled with inadequate land management has resulted in degradation of environmentally fragile land and other sensitive natural resources, occupation of hazard-prone areas, loss of cultural resources, open space and prime agricultural land, and excessive urban sprawl. The rapidly growing urban centres pose increasingly serious environmental problems for their residents (Atkinson and Vorratnchaiphan 1996:235; Bernstein 1994:47; Coolidge et al. 1993:2; Elliott 1999:159-160; Haldenwang 1998:46).

The condition of the urban environment represents the legacy of past practices, investments and decisions combined with the choices people make today (Konvitz 1997:44).

## **1.2 Pacific Island Context**

### **1.2.0 Pacific Urbanisation and Urban Management**

Throughout the region, urban centres have become an undeniable fact of life, and one which influences most Pacific Islanders. Moreover, urban population growth rates are generally high. Yet, Pacific island governments typically continue to focus development efforts on rural areas rather than on improvements in urban management and far-sighted planning. As a consequence, the built and natural environments for Pacific island urban dwellers are deteriorating rapidly. In addition, social and health problems are increasing, as is the number of people seeking employment opportunities (Bryant 1993b:84; Bryant-Tokalau 1993:152; UNDP 1996:10).

The more visible indicators of change in human settlements in the Pacific are the rise in squatter housing and poverty, in particular urban poverty, and the decline in the quality of the urban environment, especially standards of shelter, infrastructure and environmental management. These issues all point to a growing crisis which neither the community nor government have been able to reverse (UNDP 1996:2).

In sum, urban management is limited in much of the Pacific Island region and, where urban planning has taken place it has focused on physical planning with little attention to social service provision, equity or environmental concerns; thus the task

ahead is one of achieving more integrated urban development. This may be especially important in the larger urban centres where the problems of municipal management are the greatest. Urban authorities typically face obstacles of insufficient funds, poverty of municipal populations, high population growth rates, changing consumption patterns, and the propensity of people to act in disregard of poorly-enforced environmental laws (Connell and Lea 1993b:80,87; Overton and Storey 1999:243,245).

With other priorities competing for their share of resources in an era of constrained budgets, urban management has to date been viewed as relatively unimportant. There appears to be little consensus in the Pacific on how to proceed and what is required to achieve 'planned' urbanisation and management of human settlements (UNDP 1996:10).

#### 1.2.1 Pacific Urban Problems

The relatively rapid and permanent nature of many Pacific island nations' rural-urban transformations is taxing the capacity of their governments and incipient private sectors to cope in terms of the provision of shelter, services, infrastructure, employment and the management of environmental impacts. The process of urbanisation in the Pacific has generally both taxed municipal services and has complicated the capacity of urban authorities to act, as land uses extend into surrounding areas (Overton and Storey 1999:243; Storey 1998a:32). Furthermore, the provision of urban services and infrastructure in the Pacific has failed to meet the needs of the poor, with adequate housing, water and sanitation, drainage, solid waste collection, electricity and transportation frequently overused or unavailable, and in need of updating and expansion.

Good planning and recognition of the relationships among the human inhabitants, their well-being and the physical environment are what should be causing reassessment of the nature of Pacific urban areas (Bryant-Tokalau 1993:152).

#### 1.2.2 Pacific Land Tenure, Housing, Services and the Environment in Urban and Peri-Urban Areas

Land tenure systems in the Pacific are often a source of conflict, particularly for poorer members of society, as there is a near universal acute shortage of urban land for any form of development (especially low-cost housing), making infrastructure and service provision, and land use planning in general, problematic (Bryant 1993b:85-86; Connell and Lea 1993b:91; Connell and Lea 1998a:209; UNDP 1996:13).

One of the most fundamental issues in urban service provision is housing. In the Pacific, there are inequalities in access to land, access to housing, and the availability of services and infrastructure. Throughout the region, "urbanisation is placing a great deal of pressure on traditional land arrangements, which has led to the creation of an artificially scarce urban land market" as well as to an increase in the cost of land, and consequently, an increase in the growth of informal settlements (Storey 1999:165). In particular, the expansion of urbanisation has disadvantaged poor urban migrants with little or no rights to settle on urban land. Consequently, migrants, especially those from outer islands, are often clustered in particular areas within an urban centre, and unplanned settlements are frequently based on ethnic groupings. Furthermore, many migrants live in squatter settlements where they occupy land without formal tenure or where temporary tenure may be rescinded (Connell and Lea 1993b:53; Storey 1998b:65; Vini 1987:105).

Throughout the Pacific a significant proportion of the urban poor have opted, or been forced to live either in squatter or informal settlements, or to sublet rooms in existing private, public or informal housing....The current dwellings of many of the urban poor, apart from having insecure tenure and being illegal or overcrowded and lacking facilities, are also frequently located in marginal, dangerous or unhealthy areas, such as in industrial areas and swamps (Bryant 1993b:57)<sup>2</sup>.

Reinforcing this situation is the fact that, where they exist in the Pacific, national housing policies have been unable to cater adequately to the needs of the urban poor, operating on a relatively small scale and catering for middle-income households, while government policies towards informal settlements have typically been characterised by benign neglect.

Under Pacific custom ownership laws, land is not readily available for development of housing estates, often resulting in the development of informal settlements, which in turn may contribute to the loss of valuable agricultural resources and the degradation of forests, lagoons and reefs. Frequently developing on marginal lands and often lacking basic amenities, such informal, unplanned urban and peri-urban housing development has become one of the most conspicuously visible and pressing environmental issues in the Pacific Island region. Many of the squatter settlements that develop suffer from overcrowding, substandard housing, unsanitary conditions, water pollution and low incomes,

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<sup>2</sup> Indeed, a significant proportion of the urban poor are renters of inferior quality dwellings, single rooms in downtown areas of the larger Pacific cities such as Suva and Noumea, and a greater proportion are subtenants in dwellings occupied by other families (Bryant 1993b:58).

with urban poverty and vulnerability having become quite severe in some of the urban fringe areas (Bryant 1993a:19; Levine and Levine 1979:19; UNDP 1996:15).

There is a trend of growing demand for freehold land and de facto ownership of customary land by increasingly smaller, more nuclear families. The rising demand for urban housing will, in turn, place a strain on urban infrastructure and services. In many instances throughout the Pacific, the quality of urban service provision "has been far below demands and is deteriorating and/or non-existent" (Connell and Lea 1993b:12). Consequently, many urban centres throughout the region are suffering from a 'services squeeze' in which a larger and larger proportion of the population is receiving a smaller and smaller share of services, and in which there has been a general run-down in the capacity of urban infrastructure to cope with the needs of a growing population and economy. Indeed, urban services and infrastructure have come under increasing pressure from a growing number of stakeholders due to urbanisation and population growth as well as proliferating needs. And although economies of scale have enabled better service provision in some of the larger urban centres in the region, residents of many areas (particularly in informal settlements, urban villages or peri-urban areas) within each centre are not receiving adequate provision (Connell and Lea 1993b:6,10,152; Whitehead et al. 1994:7).

The realities of land tenure have complicated land use planning and environmental management throughout the Pacific Island region. In Port Vila, for example, there is "no legal provision to protect the town's fresh water supply from the encroachment of informal settlements, and politicians are unwilling to clear illegal settlements and/or confront kastom landowners from the bore sites" (Storey 1998a:33). Similarly, in Apia, the problem of high bacterial counts and sewerage contamination in the main sources of spring and river water is compounded by the incapacity of government to regulate land use outside of urban boundaries; for example, one of Apia's most important water catchment areas, which is under village control, has been cleared and cultivated for communal and commercial use (Storey 1999:163-164). Furthermore, residents in some of the urban villages of Apia have made holes in the concrete which encases the recently widened local waterways (so as to reduce flooding in the town area) to allow their sewerage pipes to discharge raw sewage directly into the waterways (which are also a potential breeding ground for fish), posing a serious health hazard; village mayors in the areas most affected are to be called in for talks but if that does not produce favourable results, public health laws will have to be enforced (PACNEWS 1999).

### 1.3 Research Methods of Study

#### 1.3.0 Objectives of Study

The objectives of the study are fivefold: (a) to detail the trends and patterns of urban expansion in the Pacific Island region and in Fiji, as exemplified by the characteristics of the demographic and spatial growth of the Suva-Lami-Nasinu-Nausori conurbation; (b) to identify the basic urban problems which have emerged as a consequence of rapid urban expansion in the Pacific Island region, as exemplified by the Greater Suva-Nausori area; (c) to examine the nature and extent of the subsequent environmental changes which have taken place in the Pacific Island region, as exemplified by the Greater Suva-Nausori area, particularly over the past quarter century; (d) to evaluate the potential of the participatory urban management approach to direct policymaking towards achieving sustainable and equitable (as well as human-centred) development, and to evaluate the degree of integration of urban policies into national development planning in Fiji; and (e) to recommend possible remedial policy measures for managing urban affairs within the Suva, Lami, Nasinu and Nausori municipalities.

#### 1.3.1 Methodology of Study

In attempting to examine the related issues of urban expansion, environmental change and living conditions in the Pacific Island region, Fiji, and the Greater Suva-Nausori area, quantitative and qualitative data were collected from various sources between 1999 and 2000. These included secondary data collected from published material such as government documents, consultants' reports and journal articles<sup>3</sup>, as well as primary data gathered through questionnaire surveys, informal interviews, maps, aerial photographs and hand-held photographs. Aerial photographs (covering the time span 1967 to 1998) were obtained from the Fiji Department of Lands, and were prepared using *Adobe Photoshop*.

The primary survey, covering three settlements in the urban and peri-urban areas of Greater Suva-Nausori and involving the completion of a total of 150 household questionnaires and semi-structured interviews (50 households per settlement), was undertaken in 2000. The settlements were selected to represent the various geographic

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<sup>3</sup> It is to be noted, however, that such data was fairly limited in availability and was frequently rather dated.



regions and environmental conditions within the study area. The subjects of the survey questionnaire included households residing in the urban squatter settlement of Wailea (located within Suva City), and the peri-urban informal settlements of Veisari (located outside Lami Town) and Veratawailevu (located outside Nausori Town) (Figure I). Wailea Settlement is located in Suva Tikina, Rewa Province and situated on crown land. Veisari Settlement is located in Suva Tikina, Rewa Province and is situated on native land and freehold land. Veratawailevu Settlement is located in Bau Tikina, Tailevu Province, and is situated on crown land, while the adjacent Veratawailevu Village is situated on traditional village (mataqali) native land.

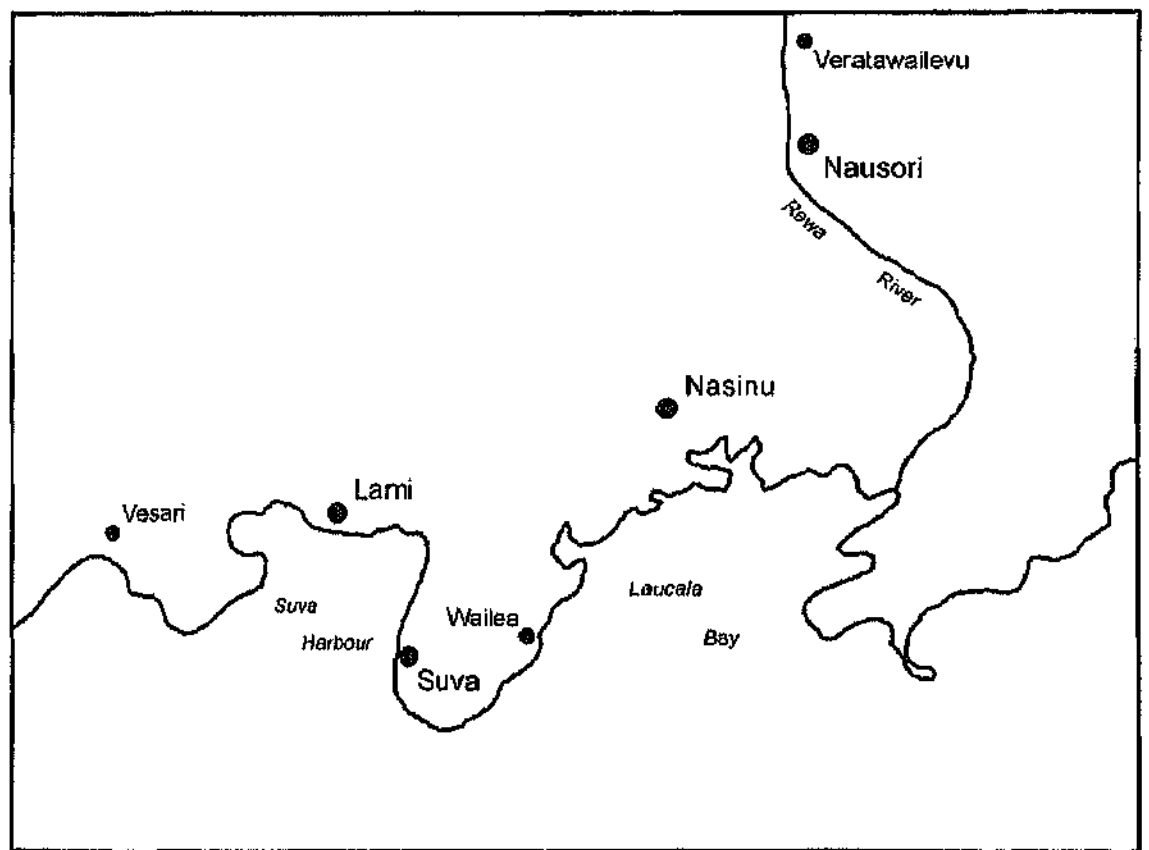


Figure I Location of Wailea, Veisari and Veratawailevu Settlements

The purposes of the questionnaire include: (a) to determine where the Greater Suva-Nausori area's urban and peri-urban dwellers (squatter and informal settlement residents) have moved from and the reasons for their migration, (b) to examine how the areas' residents are faring during the present economic situation in Fiji, (c) to examine how the current arrangements for the provision of housing, basic services and infrastructure impact on the living conditions of the area's urban and peri-urban dwellers,

(d) to identify issues of concern relating to the areas' respective local living and environmental conditions, and (e) to determine whether urban and peri-urban dwellers have been able to influence the agenda of the institutions of municipal governance, including government agencies and civil society or have been able to actively participate in improving the living and environmental conditions in their respective settlements.

### 1.3.2 Scope of Study

The Suva-Lami-Nasinu-Nausori urban corridor is experiencing substantial population growth and considerable development pressure (DTCP 1988:1). As urbanisation and urban development have progressed within the Greater Suva-Nausori conurbation, a significant proportion of the population remains neglected, while the surrounding natural environment has suffered considerable degradation. A flexible approach to integrated urban planning and management can help develop workable balances in bringing about the interrelated goals of environmental protection and equitable economic growth, in the context of a more participatory planning process which aims to improve the quality of life for all residents. These foci are to be understood within the context of a consideration of people's ability to cope with the various external and internal stresses and shocks which make them vulnerable. This study, nonetheless, does not undertake a comprehensive livelihood analysis, for its scope is too narrow to do so. The information gathered during the course of fieldwork does, however, present valuable insights into the lives of vulnerable people and the environmental conditions in which they are living. This study therefore provides a foundation for a greater understanding of people's survival strategies and should help to secure their livelihoods through concerted public, private and civil action.

Little research has thus far been carried out in the Pacific Island region (let alone in Fiji or Greater Suva-Nausori) on the proposed topic<sup>4</sup>. This is despite the fact that relatively rapid and unplanned urbanisation and subsequent environmental degradation are common phenomena in most Pacific island nations. The historical trends, demographic and spatial patterns, and impacts of urbanisation in Fiji and within the Suva-Lami-Nasinu-Nausori conurbation, in particular, are analysed in terms of land, housing, basic services and infrastructure, environmental change, and institutional frameworks. The research may thus

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<sup>4</sup> There have been "few up-to-date studies evaluating the problems of urban development and the opportunities for more effective policy formation" (Connell and Lea 1993b:90).

## **CHAPTER 2: URBANISATION AND ENVIRONMENTAL CHANGE IN THE PACIFIC ISLAND REGION, WITH REFERENCE TO FIJI**

### **2.0 Urban Growth in the Pacific**

#### **2.0.0 Urbanised Pacific Populations**

The past half century has witnessed remarkable growth in the urban populations of the Pacific Island region and, although the common stereotypes emphasise village life and rustic social relations, cities and towns account for an increasing share of the population and economic activity. Thus, while the history of the Pacific region has its foundations in subsistence and plantation agriculture, and while these agrarian and rural influences continue to remain fundamental, contemporary Pacific societies have also become strongly urban in character. Hence, "it is no longer possible to regard Pacific islanders as solely rural people" (Connell 1984:II-A.5). The populations of Pacific island nations are becoming increasingly urbanised and the change is occurring relatively rapidly, particularly in Melanesia (Table 2.0), with urban population growth rates typically outstripping rural and national rates.

The populations of Pacific island cities and towns are continuing to grow through both natural increase and immigration. In fact, there are now many second and third generation urbanites in the Pacific. Pacific islanders have moved internally to urban centres in search of education, jobs, and new life-styles, and also externally (out-migration), for many of the same reasons (Bryant-Tokalau 1994:80; Thistlethwait and Votaw 1992:150,172). Thus, as population growth and migration contribute to a more urban future for the Pacific, "the necessity to plan for increased urbanisation and growing demand for urban services is therefore apparent" (Connell and Lea 1993b:36).

Table 2.0. Percentage of Total Population in Urban Areas in Oceania, 1950-1985

<b>Region and Subregion</b>	<b>1950</b>	<b>1970</b>	<b>1985</b>
Oceania Region	64.5	70.8	71.1
Australia and New Zealand	78.7	84.4	85.2
Melanesia	2.0	15.1	20.2
Micronesia and Polynesia	20.6	32.3	41.6

Source: Adapted from Gilbert and Gugler 1992:8.

### 2.0.1 Urban Definition

Difficulties in defining 'urban' in the Pacific setting arise because the land area is often so small that a movement from 'rural' to 'urban' areas is impossible to measure and all parts of the nation are strongly influenced by both rural and urban development, and because villagers on their traditionally owned land frequently live in what has become an urban area (Bryant-Tokalau 1995:111; Chandra 1996:28,42; UNDP 1996:5). For instance, the Motu-Koitabu people, the traditional residents of the Port Moresby area, are the sole owners of customary land constituting at least one-third of the city's total area, and 10 Motu-Koitabu traditional villages lie within the urban area (Connell and Lea 1993b:70,91). Similarly, the Greater Apia area is actually a collection of villages which act as autonomous political entities (Storey 1999:165). Thus, due to the size of the geographic areas, the relative mobility of the populations, and the land tenure systems, "deciding just who is urban and how permanent people are as urban or rural dwellers can therefore be problematic" (Bryant 1993a:16). The nature of the land tenure systems, in particular, make the drawing of urban boundaries subject to much debate. Moreover, it may be difficult to separate 'rural' from 'urban' since the Pacific has experienced a 'ruralisation' of its cities, as evidenced by the weakening of land use controls and the diverse utilisation of urban space, the spread of informal settlements such as squatter communities and traditional villages, the deterioration of urban services and infrastructure, the rise of petty commodity production and informal economic activities, the maintenance of rural economic links and cultural identities, and the importance of urban agriculture (Hardoy and Satterthwaite 1989:257). For example, in many parts of the urban Pacific, the importance of subsistence activities such as fishing and farming to the livelihoods of urban dwellers remains considerable. A significant proportion of the population still depends on food they grow and gather themselves (either within or outside the city) and/or receive through reciprocal arrangements with extended families and friends in rural areas. Consequently, "the complex interactions between rural economies and the economies of many urban centres, and the arbitrary way in which 'rural' and 'urban' are distinguished", limit the validity of rural-urban characterisations (Hardoy and Satterthwaite 1989:309).

## 2.0.2 Urban Characteristics

Pacific urban centres are significant population concentrations in relation to their rural hinterlands, and are where tertiary occupations predominate as does employment with the Government. For example, in Honiara in 1978, the primary sector accounted for 2.9% of the formal workforce, the secondary sector accounted for 16.7%, while the tertiary sector accounted for 80.4% (Walsh 1982:75). The extent of urbanisation has become great enough to warrant the statement that “most of the driving forces now reshaping Pacific island economies, societies, politics and geographies have their sources in the urban areas” (Ward 1998:22). Thus, the Pacific provides contemporary examples of the urbanisation process in an island setting. Common features of urbanisation in the region include: (a) economic development has increasingly emphasised urban issues, with new developments (particularly increasing industrialisation) putting pressure on the urban infrastructure; (b) land use plans and provisions for urban management tend to be lacking or are not implemented; (c) issues affecting urban development are pursued in several different departments (among which there are often conflicts and uncertainties over the division of responsibility); (d) piecemeal development is normal; (e) an often substantial proportion of the infrastructure was constructed during colonial times and for towns/populations smaller than the present ones; (f) standards that proved adequate in the past are less likely to be adequate in the future as expectations rise and urban residence becomes more common; and (g) costs of providing services are high (Connell and Lea 1998a:14,206). Indeed, “in the Pacific context, the most pressing problems centre on water, sanitation, and the use of land” (Storey 1999:157).

## 2.1 Urbanisation in Fiji

### 2.1.0 Increasing Urbanisation

Within the Pacific Island region, Fiji has the most complex urban functions of any island nation. Fiji is the second most populous country in the South Pacific with over three-quarters of a million people, of which approximately 90% live on the two main islands of Viti Levu and Vanua Levu, and Fiji’s economy is more diverse than that of any other Pacific island nation (Walsh 1977:1; Watling and Chape 1993:3; Whitehead et al. 1994:2). Of the countries in the region, Fiji has one of the longest histories of urbanisation (Appendix 2A). Its original capital of Levuka was founded in 1874, and its

current capital and main urban centre, Suva, was founded in 1877. Fiji also best exemplifies all the common trends of South Pacific internal migration – from outer islands to inner islands, from small islands to large islands, from mountains to coasts, and from rural to urban areas. In addition to migration, Fiji's increasing urbanisation results from the natural growth of the urban population, and the incorporation of formerly rural areas into the peri-urban areas of cities and towns. The relative importance of urban boundary changes has recently been particularly great for the urban areas of Nausori, Sigatoka and Savusavu. In fact, the only urban area where population growth has been primarily the result of internal migration is the portion of the peri-urban area of Suva which is located in Naitasiri Province (Fiji Bureau of Statistics 1998a:137).

#### 2.1.1 Urban Definition and Criteria

While early census reports included references to all *de jure* towns (i.e. those possessing urban local government) as well as to some *de facto* towns (i.e. those possessing urban characteristics), the 1966 census report was the first census which distinguished between urban and rural in a systematic manner using precise urban area boundaries. Since 1966, four types of settlement have been recognised as 'urban' for census purposes in Fiji: (a) cities (settlements with municipal governments and a population exceeding 20,000); (b) incorporated towns (settlements with municipal governments); (c) unincorporated townships (generally regional centres of administration); and (d) urban areas (relatively built-up areas adjacent to towns where a significant proportion of the population is engaged in non-agricultural activities). The term 'urban area' may, however, be used to describe the area outside the town or it may include the town (Fiji Bureau of Statistics 1997:19; Sukhdeo and Griffin 1982:50-51).

Thus, in the 1966 census, two main criteria were used for the delineation of urban areas: a complex of built-up areas contiguous or closely associated with a town, and preponderant economic activity such that a significant proportion of the economically active population was engaged in non-agricultural employment; a further consideration, however, was that of functions and facilities (including industry, port facilities, commerce, administration, and utility services) as a determinant of urbanness (Bloomfield 1967:8). In the 1976 census, the criteria used in 1966 were retained, although they became more difficult to apply in a consistent manner due to the considerable developments which had occurred in and around urban areas during the

intercensal period; in particular, ribbon development had very much increased, and several town boundaries had been extended in order to include all valuable rateable property and exclude Fijian urban villages. Similar issues arose during the 1986 census. In the 1996 census, five criteria were used for the delineation of urban areas: (a) urban attributes (including industry, commerce, administration, and utility services); (b) economic activity (significant proportion of the economically active population to be engaged in non-agricultural/urban-type employment); (c) population size (an urban area should generally have a minimum population of 500 persons); (d) association and contiguity (developments in the peri-urban area should be closely associated with the city/town, and a city/town and its peri-urban area should either form a continuous built-up area or in cases where developments are separated from each other, the distance between these developments should not be more than 200 m); and (e) population density (an urban area should have a minimum population density of 200 persons per km<sup>2</sup>) (Fiji Bureau of Statistics 1997:22-23,26-28).

### 2.1.2 History of Urbanisation

Settlement patterns were initially based on the location of Fijian villages, but with the introduction of a colonial economy, agro-industrial processing of cash crops attracted a denser and multiethnic pattern of settlement, particularly in coastal areas and port towns (Table 2.1). In the post-WWII era Fiji experienced significant urban growth, accounted for by the changed conditions of urban employment brought about by the rise of industrial unionism, a rise in urban wage levels, an increase in occupational mobility, an expansion of urban industries and a greater provision of housing, and in the period 1946 to 1956, the urban population growth rate was 5.4% per annum (Connell and Lea 1993b:37; Walsh 1978:118). In Greater Suva, for instance, the population growth rate during the period 1966 to 1973 was 3.7% per annum as compared with a 3.1% natural growth rate (DTCP 1975:21). The increase in urban populations, in turn, resulted in a major expansion of residential subdivision and of industrial buildings (Watling and Chape 1992:42). In the period 1956 to 1966, the annual urban growth rate was 4.2% as compared to an annual rural growth rate of 3.7%; in the period 1966 to 1976, the annual urban growth rate of 3.7% was more than double that of the rural growth rate of 1.5% (Walsh 1978:119); and in the 1986 to 1996 period, the urban annual growth rate was 2.6% whereas the rural growth rate

was -0.5% (Fiji Bureau of Statistics 1998a:13)<sup>1</sup>. The rate of urbanisation between 1956 and 1966 was 2.8%, increasing to 3.8% between 1966 and 1976, and decreasing to 1.5% between 1976 and 1986 (Fiji Bureau of Statistics 1989:106) (Appendix 2B).

Table 2.1. Ethnic and Urban Character of Population Growth in Fiji, 1911-1996

Year	Fijian Population	Indian Population	Others Population	Total Population	Urban Population	Total Population Urbanised (%)
1911	87,096	40,286	12,159	139,541	9,209	6.6
1921	84,475	60,634	12,157	157,266	12,982	8.3
1936	97,651	85,002	15,726	198,379	19,997	10.1
1946	118,070	120,414	21,154	259,638	39,527	15.2
1956	148,134	169,403	28,200	345,737	63,309	18.3
1966	202,176	240,960	33,591	476,727	159,259	33.4
1976	259,932	292,896	35,240	588,068	218,495	37.2
1986	329,305	348,704	37,366	715,375	277,025	38.7
1996	393,575	338,818	42,684	775,077	359,495	46.4

Source: Adapted from Bakker and Walsh 1976:18; Fiji Bureau of Statistics 1977:74; Fiji Bureau of Statistics 1988a:40; Fiji Bureau of Statistics 1998b:29,247.

Nevertheless, urban drift is apparent, with every division in Fiji having experienced a considerable discrepancy between its urban and rural population growth rates, and, hence, an increase in its level of urbanisation (Appendix 2C). Between 1966 and 1996, the proportion of the Western Division's total population which was urban increased from 27.0% to 37.4%, the Central Division's from 59.5% to 72.1%, the Northern Division's from 13.7% to 21.5%, and the Eastern Division's from 7.3% to 9.2% (Fiji Bureau of Statistics 1998a:13,31).

### 2.1.3 Peri-Urbanisation

In developing countries generally, there has been a relatively recent process of blurring of urban-rural distinctions, particularly in those regions surrounding major metropolitan cities or near transport corridors linking such cities. In the Pacific, rapidly increasing urban populations have mostly settled in peri-urban areas due to the generally limited amount and high cost of urban land (Jones 1993:3; Overton and Storey 1999:249). In Fiji, emphasis has begun to be directed towards the development of new growth centres so that development is spread away from the existing urban centres and to ensure

<sup>1</sup> This urban population growth rate, although in part attributable to the incorporation of formerly rural areas into the urban sector, is in fact much higher than the rate of natural increase and the difference between these two rates would have been even larger had there been less external migration (emigration) during the 1986 to 1996 intercensal period (Fiji Bureau of Statistics 1998a:14).



that people in the rural areas have improved access to urban services. In Fiji, nearly two-thirds of the total population live within approximately 8 km of an urban area, and most rural populations have reasonable access to markets and services (Fiji Central Planning Office 1980:222). Indeed, the relatively high incidence of urban to rural migration in Fiji is in part an indication of an increase in suburbanisation, a process considerably assisted by major improvements in road transportation in the past few decades (Fiji Bureau of Statistics 1989:99). In Fiji, the peri-urban area, defined as one of relatively dense settlement, contiguous to the town proper, and with a higher than average proportion of people employed in non-agricultural activities (Walsh 1982:30), has represented an increasing proportion of the total urban area population (Table 2.2).

Table 2.2. Urban and Peri-Urban Populations of Fiji's Urban Centres, 1986-1996

Urban Centres	Total Population		Incorporated Urban Population				Peri-Urban Population			
	1986	1996	1986		1996		1986		1996	
	No.	No.	No.	%	No.	%	No.	%	No.	%
Suva	141,273	167,975	69,665	49.3	77,366	46.1	71,608	50.7	90,609	53.9
Lami	16,707	18,928	8,597	51.5	10,556	55.8	8,110	48.5	8,372	44.2
Nausori	13,982	21,617	5,242	37.5	5,744	26.6	8,740	62.5	15,873	73.4
Lautoka	39,057	43,274	28,728	73.6	36,083	83.4	10,329	26.4	7,191	16.6
Nadi	15,220	30,884	7,709	50.7	9,170	29.7	7,511	49.3	21,714	70.3
Ba	10,260	14,716	6,515	63.5	6,314	42.9	3,745	36.5	8,402	57.1
Sigatoka	4,730	7,862	2,097	44.3	1,597	20.3	2,633	55.7	6,265	79.7
Labasa	16,537	24,095	4,917	29.7	6,491	26.9	11,620	70.3	17,604	73.1
Savusavu	2,872	4,970	2,179	75.9	2,652	53.4	693	24.1	2,318	46.6
Levuka	2,895	3,746	1,106	38.2	1,096	29.3	1,789	61.8	2,650	70.7

Source: Adapted from Fiji Bureau of Statistics 1998a:36.

Hence, it is even possible to consider that "population growth located beyond the urban boundaries is fundamentally urban, as the in-migrants come to perform urban functions, which are mainly characterised by obtaining monetary employment" (Fiji Central Planning Office 1980:322), and as the small spatial scale involved enables the population to become relatively 'urbanised' without actually residing in urban centres (Chandra 1996:28). Furthermore, as in much of the island Pacific, traditional villages have been engulfed by urban expansion to the extent that lifestyles in such places are fundamentally urban (Table 2.16).

#### 2.1.4 Urbanisation and Inequality

Between 1986 and 1996, Fiji's urban population growth was 2.6%, compared with 0.8% for the population as a whole; thus, Fiji society has been experiencing a profound transition (Fiji Central Planning Office 1999:42). Over 46% of Fiji's population, representing some 359,495 people, lived in urban areas in 1996. By the year 2006 the urban population is expected to reach 400,000, with Fiji being transformed into a predominantly urban society (Whitehead et al. 1994:2). The rapid urbanisation of the society is the most significant demographic change in recent years for Fiji. This urbanising trend has been cause for some concern as society's social ills and communicable diseases have tended to increase with overcrowding, and as the growth in urban population has increased so has the pressure on social services and infrastructure, contributing to social and environmental problems such as crime, squatting, pollution and congestion (Fiji Central Planning Office 1999:42; PACNEWS/Tuqiri 1998a). Indicative of this situation is the fact that an estimated one-quarter of Suva's households in 1993 were considered to be poor (WRI et al. 1998:277), as well as the trend of a growing number of street children living in urban centres such as Suva, which has necessitated the creation of special homes and centres by church organisations and the Social Welfare Department to cater for their basic needs (*Advertiser Weekly* 00(11):3; Bryant-Tokalau 1995:110; *Fiji's Sunday Post*, 26 March 2000). Moreover, urban squatting has increased (despite evictions, legislation and subsidised public housing) along with urbanisation and economic development, reflecting increasing economic disparities (Walsh 1978:429).

It was estimated that during the period 1970 to 1975, the top 20% of households received 48% of the total income whilst the bottom 20% received only 5% (World Bank 1995:113), and in 1977 the top 20% of wage earners received 53% of the total income (Bryant 1993b:14). By 1985 the top 10% of wage earners received 50% of the total income whilst the bottom 10% received only 1% (Bryant 1993b:14), although by 1991 the top 10% of households received 35% of total income (averaging F\$760 weekly household income) whilst the bottom 10% received less than 2% (averaging F\$34 weekly) (UNDP 1997:17). An increase in income inequality is further revealed by the Gini Coefficient<sup>2</sup>; when measured by total household income, inequality in Fiji increased by 4 percentage points, and when measured by per capita

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<sup>2</sup> Gini Coefficients measure inequality, with perfect equality at 0 and absolute inequality at 1.

household income, inequality increased by 6 percentage points from 1977 to 1991. The main factors contributing to income differences in Fiji are place of residence and access to wage employment (UNDP 1997:21,27). Income inequalities are most apparent in the urban centres, where the cost of living is higher and where goods and services are more commercialised. Thus, while incomes are higher in urban areas they are also less equally distributed, with inequality increasing substantially between 1977 and 1991 (Table 2.3). The incomes of the top 20% of urban households are approximately 10 times larger than the bottom 20%, representing a trend of widening income gaps and unequal development within urban areas. Hence, the most highly urbanised province of Rewa had both the highest average income and the highest Gini Coefficient of any province within Fiji in 1991 (UNDP 1997:23-24,27).

Table 2.3. Gini Coefficients for Household Income by Location in Fiji, 1977-1991

	Total Household Income		Per Capita Household Income	
	1977	1991	1977	1991
National	0.42	0.46	0.43	0.49
Urban	0.42	0.50	0.42	0.54
Rural Village	0.39	0.38	0.36	0.43
Rural Settlement	0.39	0.44	0.36	0.44

Source: Adapted from UNDP 1997:23.

#### 2.1.5 Urban Economy and Employment

One of the most influential factors shaping the pattern of population distribution in Fiji in recent times has been the transformation of the agricultural economy to an industrial economy. For instance, the primary sector contributed 44% of the GDP in 1950 but only 21% in 1991, when the urban economy accounted for approximately 60% of GDP (Whitehead et al. 1994:3). The components of Fiji's GDP have changed dramatically with service industries such as government services and tourism having increased, and with primary industries such as agriculture, fisheries, forestry and mining having decreased. Three important characteristics of employment in Fiji are: (a) the concentration of rural employment in farming, fishing and forestry; (b) the large number of urban residents in low-paid employment such as labouring, transport and production jobs; and (c) the concentration of paid employment in urban centres (Fiji Department of Information 1985:7; UNDP 1997:26).

Although urban employment increased and equality of incomes improved as Fiji's economy grew rapidly in the early 1970s due to the expansion of government, tourism and manufacturing for the domestic market, growth slowed after 1975 and economic conditions have continued to deteriorate over the past two decades. After 1980, urban employment growth dwindled, unskilled non-union wages fell sharply, and income differentials widened, particularly between union and non-unionised workers, between agricultural and non-agricultural wage earners, and among wage and salary earners (UNDP 1997:43-44).

Fiji's economic development has not generally kept pace with the rate of urban growth (where the majority of formal sector employment opportunities are located), nor with population growth generally, growth in the population of those aged 15 years and over, nor growth in the economically active population (Table 2.4). Although the number of paid jobs has increased by approximately 25% since 1978, this growth has been outstripped by people's desire for paid employment (UNDP 1997:44). Between 1976 and 1986, the economically active population grew by approximately 6,500 persons per annum, while those in wage employment grew by only 1,100 per annum (Fernando 1996:186; Fiji Bureau of Statistics 1989:124). Consequently, there has been an increase in the proportion of unemployment – from 2.0% in 1966 to 3.4% in 1976, and to 4.1% in 1986 – as well as informal employment, which accounted for 51% of the employment in Suva in 1993 and in which 86% of low-income urban and peri-urban households surveyed in Suva and Labasa in 1989 were found to be engaged (Bryant 1993b:78; Fiji Bureau of Statistics 1989:122; WRI et al. 1998:277).

Inequality, poverty and vulnerability to poverty (Appendix 2E) have also correspondingly increased and deepened, particularly in the urban and peri-urban areas. For example, 37% of households living in urban low-cost housing areas are considered to be poor, having increased from 15% in 1982 (Bryant-Tokalau 1995:110,123-124). Indeed, there has been a general trend of growing inequality, and although the Fiji economy grew by approximately one-quarter between 1977 and 1990, the proportion of the population living in poverty grew by approximately two-thirds, with most of the benefits of economic growth having gone to the relatively well-off and little 'trickle-down' to the poor (UNDP 1997:45). In 1991, average household income had grown to 2.6 times its 1977 level, yet because basic costs had grown more so – the poverty line minimum gross weekly urban household income rising from F\$34 to F\$100 over the

Table 2.4. Growth of Total Population, Population Aged 15 Years and Over, and Economically Active Population Aged 15 Years and Over in Fiji by Ethnicity and Gender, 1966-1986

	Total	Total Male	Female	Total	Fijians Male	Female	Total	Indians Male	Female
Total Population:									
Number:									
1966	476,727	242,747	233,980	202,176	102,479	99,697	240,960	122,632	118,328
1976	588,068	296,950	299,118	259,932	131,413	128,519	292,896	147,194	145,702
1986	715,375	362,568	352,807	329,305	167,256	162,049	348,704	175,829	172,875
% Change:									
1966-1976	23.4	22.3	24.4	28.6	28.2	28.9	21.6	20.0	23.1
1976-1986	21.6	22.1	21.2	26.7	27.3	26.1	19.1	19.5	18.6
Population 15 Years and Over:									
Number:									
1966	253,988	129,565	124,423	112,496	56,386	56,110	121,802	62,627	59,177
1976	346,214	174,103	172,111	152,097	76,314	75,783	172,599	86,441	86,118
1986	441,912	222,316	219,596	200,286	100,824	99,462	217,747	108,999	108,748
% Change:									
1966-1976	36.3	34.4	38.3	35.2	35.3	35.1	41.7	38.0	45.5
1976-1986	27.6	27.7	27.6	31.7	32.1	31.2	26.2	26.1	26.3
Economically Active Population:									
Number:									
1966	125,809	116,433	9,376	56,154	51,631	4,523	58,705	55,945	2,760
1976	176,322	146,823	29,499	81,577	65,563	16,014	82,087	72,086	10,001
1986	241,160	189,929	51,231	113,904	86,259	27,645	113,464	93,962	19,502
% Change:									
1966-1976	40.2	26.1	214.6	45.3	27.0	254.1	39.8	28.9	262.4
1976-1986	36.8	29.4	73.7	39.6	31.6	72.6	38.2	30.3	95.0

Source: Adapted from Fiji Bureau of Statistics 1989:124.

period – the percentage of urban households under the poverty line grew also (from 12% to 30%), as did the size of the poverty gap (Table 2.5). While the heads of poor households are frequently married, male and employed, they are nevertheless unable to sufficiently support their families. Low-income households in Fiji get much of their income from casual employment whereas high-income households get most of their income from (more lucrative) permanent employment (UNDP 1997:2,19,41).

Table 2.5 Poverty Change in Fiji, 1977-1991

	1977	1991
Mean National Household Income	F\$5,398	F\$10,364
National Poverty Line	F\$1,480	F\$4,316
Mean Household Income of the Poor	F\$814	F\$2,939
Poverty Gap	F\$666	F\$1,377

Source: Adapted from UNDP 1997:43.

The number of paid jobs in Fiji grew at approximately 2.8% per annum between 1982 and 1994 while the total labour force grew at approximately 3.5% (UNDP 1997:44). Throughout Fiji there has been an increasing proportion of the population which is economically active, particularly among women. The economically active population represented 49.5%, 50.9% and 54.6% of the total population in 1966, 1976 and 1986, respectively, and the proportion of those unemployed also increased from 2.0% in 1966, to 3.4% in 1976, to 4.1% in 1986, to 5.8% in 1996 (Fiji Bureau of Statistics 1989:122-124; Fiji Bureau of Statistics 1998b:172). The proportion of the population constituting the labour force is particularly high in provinces displaying a relatively urbanised population; for instance, in 1976, 60.0% of Rewa's population was aged 15 to 59 years, as was 55.5% of Naitasiri's and 55.6% of Ba's (as compared to a national average of 54.5%) (Fiji Central Planning Office 1980:327). In a related vein, the proportion of the population of working age (15 to 59 years) who are economically active, indicated by the labour force participation ratio, are highest in the provinces of Rewa, Naitasiri and Ba, in part because the majority of migrants are economically active so the migration process simultaneously raises the labour force participation ratio in the destination provinces and reduces it in the source provinces (Fiji Central Planning Office 1980:329). Labour force participation rates for urban centres

are correspondingly higher than national rates – in 1973, the labour force participation rates for males and females over 15 years of age were 78.2% and 21.1%, respectively, in Greater Suva as compared to corresponding rates of 77.5% and 13.6% for Fiji (DTCP 1975:22).

The unemployment rate in Fiji increased from the 1960s to the 1970s and the 1980s (Appendix 2F) as a consequence of the worsening economic situation and the increasingly large inflow of job seekers into the labour market (Fiji Central Planning Office 1985:3). In fact, the proportion of unemployed male and female workers was highest among those in the younger age brackets in 1996 (Appendix 2G). The proportion of unemployed workers was also significantly higher in urban areas than in rural areas in 1976 and 1986 (Appendix 2H) – for males by approximately a factor of four and for females by approximately a factor of two (Appendix 2I). Furthermore, the proportion of unemployed workers was higher in Suva than in other urban centres (Fiji Central Planning Office 1980:315). In 1976 and 1982, approximately two-thirds of the total urban unemployed and three-sevenths of the total unemployed were located in Suva and Nausori (Fiji Central Planning Office 1985:30), even though these areas only represented approximately one-half of the total urban population and one-fifth of the total national population, respectively, during the same period (Appendices 2J and 2K).

#### 2.1.6 Spatial Patterns of Urbanisation

Urbanisation in Fiji is spatially unbalanced in its distribution and magnitude (Table 2.6), with nearly all of its cities and towns concentrated along coastal areas on the two main islands of Viti Levu and Vanua Levu. In fact, there is an overwhelming concentration of Fiji's total urban population in the Central and Western Divisions located on Viti Levu (Appendix 2L), which together contained 90.6% of Fiji's total urban population in 1996 (Fiji Bureau of Statistics 1998a:34), with Southeast Viti Levu having a particularly high degree of concentration of population as well as economic activity, centred upon the Greater Suva-Nausori area situated in the provinces of Rewa, Naitasiri and Tailevu (Fiji Central Planning Office 1980:335). Indeed, the most urbanised division within Fiji is the Central Division which considered 72.1% of its total population in 1996 to be urban (an increase from 59.5% in 1966), and which accounted for 59.7% of Fiji's total urban population in 1996. The two provinces registering the highest proportions of urbanised populations within Fiji were Rewa

(90.1% in 1996) and Naitasiri (81.3% in 1996) – both of which are located in the Central Division – which are substantially more urbanised than any of the other provinces (Appendix 2M), followed only by Ba (46.4% in 1996) which contains the urban centres of Lautoka, Nadi, Ba, Tavua and Vatukoula. These three provinces also accounted for by far the greatest proportions of Fiji's total urban population (Rewa with 25.5%, Naitasiri with 28.6%, and Ba with 27.4%) in 1996 (Fiji Bureau of Statistics 1998a:34). Fiji's two cities, Suva and Lautoka, have generally registered the greatest absolute increases in population (Appendices 2N and 2O) and in proportions of total urban growth (63.4% and 12.9%, respectively, during 1966 to 1976), and in 1986 and 1996 they together accounted for 65.1% and 58.7%, respectively, of the national urban population (Appendix 2P). Although Fiji has a number of major urban centres as well as unincorporated townships, some of which have recently experienced relatively high growth rates (Appendices 2N and 2O), its hierarchy is still dominated by Greater Suva-Nausori, which has continued to consolidate its position as the urban hub of the South Pacific region and which has become a major export and import centre (Fiji Central Planning Office 1999:42).



Table 2.6. Population Growth in Fiji's Major Urban Centres, 1946-1996

Year	Suva	Lami <sup>a</sup>	Nausori	Lautoka	Nadi	Ba	Sigatoka	Labasa	Savusavu <sup>b</sup>	Levuka	Vatukoula	Rakiraki <sup>b</sup>	Navua <sup>b</sup>	Tavua
1946	26,961	n.a.	2,457	2,388	1,230	2,813	964	1,375	n.a.	1,944	3,457	n.a.	n.a.	444
1956	43,948	n.a.	1,950	7,921	2,412	3,258	1,475	2,202	n.a.	1,589	5,045	n.a.	n.a.	790
1966	80,269	n.a.	9,619	21,221	13,680	8,309	2,339	9,716	1,861	3,000	4,993	2,708	1,595	1,949
1976	117,827	n.a.	12,821	28,847	12,995	9,173	3,635	12,956	2,295	2,764	6,425	3,755	2,568	2,144
1986	141,273	16,707	13,982	39,057	15,220	10,260	4,730	16,537	2,872	2,895	4,789	3,361	2,775	2,227
1996	167,975	18,928	21,617	43,274	30,884	14,716	7,862	24,095	4,970	3,746	7,079	4,836	4,183	2,419

<sup>a</sup> Lami has been an urban area for census purposes only since 1986 and was included with Suva prior to this.

<sup>b</sup> Savusavu, Rakiraki and Navua have been urban areas for census purposes only since 1966.

Source: Adapted from Bakker and Walsh 1976:19; Fiji Bureau of Statistics 1988a:65; Fiji Bureau of Statistics 1997:20; Fiji Bureau of Statistics 1998b:247; Gittins 1947:66; McArthur 1958:57; Whitehead et al. 1994:35; Whitelaw 1966:20.

## 2.17 Ethnic Patterns of Urbanisation

Another important characteristic of urbanisation in Fiji is that it is ethnically uneven. There are significant ethnic differences in the relative proportions of urbanisation, the ethnic composition of the urban population, the rates of urbanisation, and the urban destinations of migrants. Of the total urban population of 359,495 in 1996, Fijians made up 44.9%, Indians made up 46.7%, and the remaining 8.4% was made up of Others (Fiji Bureau of Statistics 1998a:124-125). The Fijian rate of urbanisation and annual rate of urban population increase are much higher than those for Indians and Others (Fiji Bureau of Statistics 1989:109) (Table 2.7), with the proportion of Fijian population which is urbanised having increased from 23.8% in 1966 to 41.0% in 1996 (Table 2.8). This stems from the fact that Fijians tend to be more mobile overall, displaying a higher degree of internal migration in recent decades than that of Indians or Others, and is to be understood within the context of the relaxation in 1966 of regulations of the Fijian Administration aimed to keep Fijians in rural areas (Chandra 1996:39). In 1996, the number of Fijian internal migrants of all types was typically more than two times larger than the corresponding number of Indian migrants (Fiji Bureau of Statistics 1998a:134). In 1986, 32% of all Fijians were enumerated in a province other than that of their birth, while the comparable figure for Indians was 24%. Furthermore, the different ethnic groups appear to have definite preferences for in-migration into urban areas. Suva, Lami, Sigatoka, Levuka and Vatukoula attract a higher proportion of Fijians, while Lautoka, Nadi, Ba, Labasa and Rakiraki attract a higher proportion of Indians, and while Suva, Levuka and Savusavu attract a higher proportion of Others (Fiji Bureau of Statistics 1989:97-98,102,106).

Table 2.7. Urban Population Change in Fiji by Ethnicity, 1966-1986

Ethnicity	Annual Rate of Change		Rate of Urbanisation 1976-1986
	1966-1976	1976-1986	
Fijian	5.1	3.1	2.2
Indian	2.7	2.2	1.9
Others	0.6	0.5	-0.7

Source: Adapted from Fiji Bureau of Statistics 1989:12,110; Walsh 1982:32.

For example, lifetime migration of Fijians from rural areas to the Suva-Lami area amounted to 61.7% of all lifetime rural to urban migration of Fijians, whereas for Indians the comparable figure was 28.2% (Fiji Bureau of Statistics 1998a:123).

Table 2.8. Fiji's Urbanised Population by Ethnicity, 1976-1996

Year	Fijian		Indian		Others	
	Urbanised Fijian Population	% of Total Fijian Population	Urbanised Indian Population	% of Total Indian Population	Urbanised Others Population	% of Total Others Population
1976	79,314	30.5	115,632	39.5	23,549	66.8
1986	107,780	32.7	144,533	41.5	24,712	66.1
1996	161,335	41.0	168,035	49.6	30,125	70.6

Source: Adapted from Fiji Bureau of Statistics 1977:74; Fiji Bureau of Statistics 1988a:66; Fiji Bureau of Statistics 1989:12; Fiji Bureau of Statistics 1998b:29,90.

## 2.2 Pacific Migration Issues and Urban Growth

### 2.2.0 Migration Trends

A high proportion of people in most Pacific island nations are migrants, typically over one-fifth of the adult population (Walsh 1982:6). Throughout the region, people are moving from the remote outer islands to the main islands, from the mountains to the coasts, and from small rural settlements to larger villages and towns, thus contributing to urbanisation (Appendix 2Q). New aspirations, rural underemployment, and pressure on land and natural resources have all encouraged rural to urban migration. There are, however, great differences in the types and degree of migration present in the Pacific island nations. The trend of depopulation of outer islands is especially typical of those states of Micronesia where a high island centre dominates an atoll periphery, but it is also apparent in Cook Islands, Fiji, French Polynesia, New Caledonia, and Tonga (Connell 1984:II-A.3; Storey 1999:159). The movement from mountains to coasts is particularly significant in Melanesia (Connell 1984:II-A.3). Larger countries such as Papua New Guinea are characterised primarily by internal movements, increasingly directed towards the main towns of the country; Solomon Islands is characterised primarily by various types of circular movements within the context of traditional networks (Huguet 1992:391).

A main characteristic of international migration has been very low emigration from western Melanesia (and Kiribati) and very high migration from the central and eastern

Pacific, it being primarily a Polynesian phenomenon, with American Samoa, Cook Islands, Niue, Samoa, Tokelau, and Tonga characterised by pronounced movements to overseas destinations (Connell 1984:II-A.2; Huguet 1992:391; Rallu 1996:29). Much of this migration is channelled through the capital cities of the Pacific during the process of 'step-migration', with some return migration of those who have been overseas and become 'urban folk' (Connell 1984:II-A.2-3).

#### 2.2.1 Urban Population Growth Rates

Urbanisation in the Pacific Islands is a relatively recent phenomenon, and the region has an increasingly urban future. Currently 44.3% of those living in Micronesia are urban dwellers, as are 43.7% of those in Polynesia, and 22.0% in Melanesia (Ward 1998:22). In Pacific island nations, urban populations are growing much faster than rural populations, and peri-urban population growth rates often far exceed those of urban growth rates. In fact, in much of the island Pacific, rural areas are becoming increasingly urbanised as a result of the cash and remittance economy and/or high levels of government expenditure, with more and more rural people depending on urban centres for goods and services, and with the local towns or overseas cities becoming significant points of reference for tastes and aspirations. Urban population growth rates also typically exceed economic growth rates in the islands. As the respective economies have failed both to create sufficient employment opportunities for urban dwellers and to support adequate social services to assist them, urbanisation has been accompanied by rising incidence of poverty, crime and social problems (King 1984:207; Schoeffel 1993:22; Schoeffel 1996:24; Storey 1999:159; Ward 1998:22).

#### 2.2.2 Urban Population Densities

The population distribution is extraordinarily variable throughout the Pacific region. For most island nations, urbanisation has been associated with the over-concentration of people (as well as activities) into a limited portion of the national territory, normally the coastal belt. Some Pacific urban centres have recently developed phenomenally high densities, particularly in Agana, Guam (Dupon and Morhange 1993:6); Ebeye, Marshall Islands (Bryant-Tokalau 1994:81); Majuro, Marshall Islands (Thistlethwait and Votaw

1992:41); informal settlements in Port Vila, Vanuatu (Bryant 1993a:18); and South Tarawa, Kiribati (Thistlethwait and Votaw 1992:151) (Appendix 2R). Such high population concentrations in the small economies of the Pacific "have challenged the capabilities of conventional social and economic development planning", and are the source of many natural resource and environmental concerns (Connell and Lea 1998b:27). In sum, although Pacific populations are small, the speed at which they are growing and their densities in relation to land area are of increasing significance, and have stretched the capacity of authorities to cope in terms of the provision of basic services and infrastructure. The rapid transformation to urban living in the region has outpaced the capacities of Pacific island governments to provide and plan for productive and sustainable urban settlements (Storey 1998b:61; Storey 1999:157).

## **2.3 Migration Issues and Urban Growth in Fiji**

### **2.3.0 Internal Migration**

All four primary types of internal migration (rural to urban, urban to urban, urban to rural, and rural to rural) exist in relatively significant levels in Fiji. Of the identifiable internal migrants aged 15 years and over in 1976, 60% were rural to urban migrants, 8% were urban to urban migrants, 21% were urban to rural migrants, and 11% were rural to rural migrants; of the identifiable internal migrants in 1986<sup>3</sup>, 55% were rural to urban, 20% were urban to urban, and 25% were urban to rural (Fiji Bureau of Statistics 1989:90,96). The destinations for many of these migrants, nevertheless, were concentrated to a few select areas. For instance, the two most urbanised provinces within Fiji, Rewa and Naitasiri, received the largest proportions of inter-provincial migrants, having 62.1% and 58.4% of their respective populations as inter-provincial migrants in 1996 (Table 2.9). Even by 1966, 39% of the total population of Rewa, and 51% of the Fijian population of Rewa, were inter-provincial migrants (John 1969:5). Moreover, there exists a significant level of external migration (emigration) from Fiji as well, particularly in the years following the military

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<sup>3</sup> Note that for 1986 data, only three types of migration categories were possible to identify – rural to urban, urban to urban, and urban to rural; the nature of the data made it impossible to determine the extent of rural to rural migration (Fiji Bureau of Statistics 1989:96).

coups of 1987 (-64,265 between 1986 and 1996), and particularly by Indians and especially from Suva, with a small portion of those living overseas (5,531) having subsequently moved back to Fiji as return immigrants, particularly to Rewa, Naitasiri and Ba (Fiji Bureau of Statistics 1998a:3,133; Fiji Central Planning Office 1980:310).

Table 2.9. Migration Status of the Population by Province, 1996

Province of Enumeration	Population Aged 5 years+	Total Non-Migrants No.	%	Total Migrants No.	%
Western Division:	262,986	196,825	74.8	66,161	25.2
Ba	188,469	145,354	77.1	43,115	22.9
Nadroga/Navosa	47,561	32,954	69.3	14,607	30.7
Ra	26,956	18,517	68.7	8,439	31.3
Central Division:	261,848	117,525	44.9	144,323	55.1
Naitasiri	111,147	42,160	37.9	68,987	62.1
Namosi	4,889	3,453	70.6	1,436	29.4
Rewa	90,401	37,571	41.6	52,830	58.4
Serua	13,484	7,418	55.0	6,066	45.0
Tailevu	41,927	26,923	64.2	15,004	35.8
Northern Division:	120,807	93,894	77.7	26,913	22.3
Bua	12,803	9,655	75.4	3,148	24.6
Cakaudrove	37,514	27,293	72.8	10,221	27.2
Macuata	70,490	56,946	80.8	13,544	19.2
Eastern Division:	35,222	23,962	68.0	11,260	32.0
Kadavu	8,255	6,034	73.1	2,221	26.9
Lau	10,534	7,368	70.0	3,166	30.0
Lomaiviti	13,903	8,922	64.2	4,981	35.8
Rotuma	2,530	1,638	64.7	892	35.3
Total Fiji	680,863	432,206	63.5	248,657	36.5

Source: Adapted from Fiji Bureau of Statistics 1998a:110.

### 2.3.1 Push-Pull Factors of Migration

Factors which have contributed to urban migration within Fiji include rural land issues, urban employment opportunities, urban housing quality, and urban infrastructure and service provision. Many households in Fiji, of all ethnicities, are essentially land poor or landless. The increased urbanisation of the Fijian population is in part attributable to the reality that numerous people have no land in their village of origin and so must stay in urban areas (Bryant 1993a:19; *Fiji Times*, 6 March 1999; *Fiji Times*, 21 August 2000). The significant growth in Nausori's population from 1999 onwards is in part attributed to the widespread expiry of ALTA leases<sup>4</sup> with displaced farming families (predominantly Indian) from the Western and Northern Divisions coming to settle in the Nausori area, as well as to people who wish to build their homes on freehold sites (*Advertiser Weekly* 00(11):1) (Appendix 2S).

(Rural to urban migration in Fiji has occurred largely because of favourable urban employment prospects (Chandra 1996:27). In urban centres such as Suva, "household incomes...are higher than the national levels reflecting the widening gap between urban and rural incomes" (Siwatibau 1987:7), with earning opportunities higher in Suva both for wage and salaried workers and for own account workers (Appendices 2T and 2U). Wage and salary incomes were approximately four times higher in urban areas than rural areas in 1991, and the average income per household member was 64% higher in urban areas than in rural villages and 46% higher than in rural settlements (UNDP 1997:22,28).

Housing adequacy is generally superior in the urban areas. For instance, 25% of urban dwellings in Fiji in 1986 had only 1 or 2 rooms and 41% had 4 or 5 rooms, while the corresponding figures for rural dwellings were the reverse, at 47% and 23%, respectively. Similarly, in 1986, 49% of urban dwellings were constructed of either concrete, cement or brick whereas only 17% of rural dwellings were (Fiji Bureau of Statistics 1989:142-143).

Service supply is very unevenly distributed within Fiji, being heavily concentrated in the urban areas. For instance, the proportion of urban residents whose dwellings had electricity in 1986 was 75.5%, but the proportion for rural residents was 30.6%. Similarly, in

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<sup>4</sup> Between 1996 and 2000, approximately 40% of all native land leases to sugar cane farmers will expire and possibly be due for renewable (Whitehead et al. 1994:4). Between 1997 and 1999, 4% of ALTA leases expired, with a further 28% due to expire between 2000 and 2005, 19% between 2006 and 2010, and 49% between 2011 and 2026 (*Fiji Times*, 9 September 2000).

1986, 90.7% of the urban population had piped metered water supply, yet only 28.5% of the rural population did. In 1986, 61.2% of urban dwellings had their own flush toilet, whereas in rural areas the main type of toilet facility was the pit latrine which served 53.2% of dwellings while only 12.3% of dwellings had their own flush toilet (Bureau of Statistics 1989:144-146,149-150).

Educational and health care facilities in Fiji are also concentrated in the major urban centres. For instance, in 1996, the proportion of rural dwellers who had never attended any schooling was 15.8%, but was lower for urban dwellers at 13.2%, and only 3.0% of rural dwellers had attained post-secondary education, whereas 10.3% of urban dwellers had. Moreover, in 1996, when Fiji's population was roughly evenly split between urban and rural (46.4% and 53.6%, respectively), there was a disproportionately high number of teaching professionals in the urban areas (5,823 total) as compared to rural areas (3,378 total), particularly among secondary school teachers (2,271 in urban areas versus 966 in rural areas) and higher education professionals (612 in urban areas versus 58 in rural areas) (Fiji Bureau of Statistics 1998b:148,151,203-204). Educational facilities are not only disproportionately located in urban areas but are further concentrated in the Greater Suva-Nausori area, where 65% of all schools in 1974 were situated (DTCP 1975:65). This same trend holds true for those in the health professions, as there were 554 health professionals, 277 health technicians and 1,304 nurses, midwives and their assistants in the urban areas of Fiji in 1996, as compared to only 85 health professionals, 40 health technicians and 406 nurses, midwives and their assistants in the rural areas (Fiji Bureau of Statistics 1998b:148,151).

### 2.3.2 Urban Migration

Of the categories of mobility, rural to urban migration has emerged as the most significant, particularly in the past few decades. Suggestive of this fact is that of the 267,081 people born in Fiji and enumerated in urban areas in 1986, 41% were rural born and had subsequently migrated to the urban areas (Fiji Bureau of Statistics 1989:89). Of the 359,495 urban dwellers in Fiji in 1996, 36% were rural born and 64% were urban born (Fiji Bureau of Statistics 1998a:124) (Table 2.10). The main destinations of migrants are all on the main island of Viti Levu, and particularly in the provinces of Naitasiri, Rewa and Ba where the major urban centres are located. Indeed, both in-migration and out-migration appear to be



closely related to the degree of urbanisation of the provinces; with Rewa, Naitasiri and Ba having the most in-migration as well as out-migration (Fiji Bureau of Statistics 1989:90,92; Fiji Bureau of Statistics 1998a:117,120). The Central Division, within which these three provinces are located, is the division most affected by internal migration, as 60% of all internal migrants were enumerated there in 1996 (Fiji Bureau of Statistics 1998a:139-140). The total number per annum and proportion of migrants in provincial populations was particularly high in Naitasiri Province (+2,729 persons and +4.2%, respectively) between 1970 and 1976, and partially as a result, Naitasiri also had the highest annual rate of population growth of any province in Fiji between 1966 and 1976, experiencing a growth rate approximately two-and-a-half times that of the national average. The high level of migration into Naitasiri Province is particularly directed into Naitasiri Tikina (Table 3.3), which includes the Suva-Nausori urban corridor where most of the region's residential developments have taken place such as in Tamavua, Namadi Heights, Caubati, Laucala Beach Estate, Kalabu, Naulu, Kinoya and Waila (Fiji Central Planning Office 1980:308-311).

\* Suva City is the main destination of urban migrants, and attracts migrants not only from the city's hinterland but also from much further away. Suva, with the highest total net recent in-migration (46.0%) of all Fiji's urban centres in 1986 (Table 2.11), was in fact the most dominant destination for migrants, with 45.5% of all lifetime rural to urban migrants, 39.8% of the more recent rural to urban migrants, 43.8% of all lifetime urban to urban migrants, and 42.1% of the more recent urban to urban migrants (Fiji Bureau of Statistics 1989:97-98,104-105). In 1996, 52.2% of all lifetime rural to urban migrants moved to the Greater Suva-Nausori area (Fiji Bureau of Statistics 1998a:122-123).

Table 2.10. Population of Fiji's Urban Centres by Division and Place of Birth, 1996

Division	Urban Centre Population No.	Urban Born Population No.	%	Rural Born Population No.	%
Western Division:	111,070	68,382	61.6	42,688	38.4
Lautoka	43,274	28,146	65.0	15,128	35.0
Nadi	30,884	19,353	62.7	11,531	37.3
Ba	14,716	8,305	56.4	6,411	43.6
Sigatoka	7,862	3,845	48.9	4,017	51.1
Other Centres <sup>a</sup>	14,334	8,733	60.9	5,601	39.1
Central Division:	214,628	145,177	67.6	69,451	32.4
Suva	167,975	113,475	67.6	54,500	32.4
Lami	18,928	13,178	69.6	5,750	30.4
Nausori	21,617	14,260	66.0	7,357	34.0
Other Centres <sup>b</sup>	6,108	4,264	69.8	1,844	30.2
Northern Division:	30,051	14,000	46.6	16,051	53.4
Labasa	24,095	10,798	44.8	13,297	55.2
Savusavu	4,970	2,681	53.9	2,289	46.1
Other Centres <sup>c</sup>	986	521	52.8	465	47.2
Eastern Division:	3,746	2,526	67.4	1,220	32.6
Levuka	3,746	2,526	67.4	1,220	32.6
Total Fiji	359,495	230,085	64.0	129,410	36.0

<sup>a</sup> The other urban centres include Vatukoula, Rakiraki and Tavua.<sup>b</sup> The other urban centres include Navua, Korovou and Pacific Harbour.<sup>c</sup> The other urban centres include Nabouwalu and Seaqaqa.

Source: Adapted from Fiji Bureau of Statistics 1998a:124.

Table 2.11. Recent (Post-1981) Migration by Urban Area, Population Aged Five Years and Over, 1986

Urban Area	Rural to Urban In-Migration	Urban to Rural Out-Migration	Urban to Urban In-Migration	Urban to Urban Out-Migration	Net Rural In-Migration	Net Urban In-Migration	Total Net In-Migration
Suva	22,688	10,399	9,069	6,846	12,289	2,223	14,512
Lami	4,395	633	2,605	1,506	3,762	1,099	4,861
Nausori	3,130	386	1,576	1,725	2,744	-149	2,595
Lautoka	8,263	3,446	2,828	3,103	4,817	-275	4,542
Nadi	4,707	2,212	1,358	1,575	2,495	-217	2,278
Ba	3,134	2,556	778	1,217	578	-349	229
Sigatoka	2,465	382	421	650	2,083	-229	1,854
Labasa	2,909	2,295	1,007	1,714	614	-707	-93
Savusavu	787	350	319	405	437	-86	351
Levuka	355	351	277	683	4	-406	-402
Vanukoula	1,018	929	408	437	89	-29	60
Rakiraki	1,973	388	271	630	1,585	-359	1,226
Tavua	254	485	269	668	-231	-399	-630
Other Towns	967	660	378	495	307	-117	190
Total	57,045	25,472	21,564	21,564	31,573	0	31,573

Source: Adapted from Fiji Bureau of Statistics 1989:103.

There is a trend emerging in which Suva's dominance diminishes as more and more rural to urban migrants as well as former Suva residents are drawn to the satellite towns of Lami, Nasinu and Nausori (urban to urban migrants) and their adjacent peri-urban and rural areas (urban to rural migrants) rather than to Suva City. Consequently, Naitasiri Province (where much of Nausori's urban and peri-urban areas as well as most of Suva's peri-urban area are located) has experienced the highest net migration (+17,629 persons between 1981 and 1986) and Rewa Province (where most of Suva's urban and a small portion of its peri-urban area as well as a small portion of Nausori's peri-urban area are located) has experienced the lowest (-7,598 people), indicating a substantial in-migration into suburban Suva (Fiji Bureau of Statistics 1989:92). Because Rewa Province contains only a small portion of the total Suva urban area (the highly urbanised and densely populated Suva peninsula itself), the major growth areas of Suva are actually located in Naitasiri Tikina in Naitasiri Province (Fiji Central Planning Office 1980:310).

Table 2.12. Urban Centres' Population (%) by Place of Birth and Ethnicity, 1996

Urban Centre of Enumeration	Born in Same Province as Urban Centre is Located			Born in Same Division but Different Province			Born in Different Division		
	Total	Fijian	Indian	Total	Fijian	Indian	Total	Fijian	Indian
Western Division:	--	--	--	--	--	--	18.8	32.0	8.0
Lautoka	71.5	56.1	83.2	8.0	8.1	8.6	20.5	35.8	8.2
Nadi	70.2	61.3	78.6	9.5	5.6	12.9	20.2	33.1	8.5
Ba	83.0	63.8	89.2	5.8	9.5	4.7	11.2	26.7	6.0
Sigatoka	68.1	69.5	68.1	15.9	8.2	22.1	16.0	22.2	9.8
Other Centres <sup>a</sup>	77.8	69.2	89.9	1.8	2.0	1.8	20.4	27.3	8.4
Central Division:	--	--	--	--	--	--	32.6	36.1	28.0
Suva	56.9	53.9	59.8	8.4	8.8	9.1	34.6	37.3	31.1
Lami	61.2	58.9	62.0	8.3	8.7	12.0	30.6	32.3	26.0
Nausori	77.5	68.7	82.2	1.3	1.2	1.4	21.2	30.0	16.4
Other Centres <sup>b</sup>	56.8	45.6	65.3	20.0	24.0	15.9	23.2	30.1	18.8
Northern Division:	--	--	--	--	--	--	12.1	25.1	6.2
Labasa	79.1	50.1	88.1	10.2	24.1	6.1	10.6	25.8	5.8
Savusavu	63.8	66.8	61.5	18.8	9.9	30.2	17.5	23.2	8.3
Other Centres <sup>c</sup>	70.6	65.5	84.8	6.9	8.4	3.3	22.5	26.1	12.0
Eastern Division:	--	--	--	--	--	--	32.4	29.9	46.1
Levuka	62.7	64.7	52.9	4.8	5.4	1.0	32.4	29.9	46.1

<sup>a</sup> The other urban centres include Vatukoula, Rakiraki and Tavua.

<sup>b</sup> The other urban centres include Navua, Korovou and Pacific Harbour.

<sup>c</sup> The other urban centres include Nabouwahu and Seaqaqa.

Source: Adapted from Fiji Bureau of Statistics 1998a:127.

Furthermore, in both 1986 and 1996 Rewa experienced the most out-migration of any of Fiji's provinces, with Suva City being the urban centre which contributed the largest proportion (40.8%) of recent (1981 to 1986) urban to rural migrants, although some of this migration does not necessarily indicate a break with the urban centre per se but rather a tendency to move out of the high cost urban centre to proximate rural areas where the cost of living is lower (Chandra 1996:28; Fiji Bureau of Statistics 1989:92,99,103; Fiji Bureau of Statistics 1998a:117,120). The result has been the development of an urban/peri-urban corridor stretching between Lami, Suva, Nasinu and Nausori (in Rewa, Naitasiri and Tailevu Provinces), as indicated by these urban areas' high total net in-migration and proportion of migrants in their total population (Table 2.12). Hence, although somewhat of a dispersal of population has occurred, a true deconcentration of population has not and the Greater Suva-Nausori area remains the primate urban area within Fiji.

## **2.4 Primacy of the Pacific's Main Urban Centres**

### **2.4.0 Urban Primacy**

Primacy is a distinguishing feature of many Third World urban systems. Many countries have urban settlement systems in which the distribution of cities is extremely skewed and is dominated by a 'primate city' – a metropolitan area that is enormously larger than the next largest city – in which a large percentage of the urban population is concentrated and in which most of the country's industries, nonagricultural employment opportunities, services and infrastructure, and facilities and establishments are found. Whether such primacy is beneficial to a nation or not is debatable. Primate cities have been thought to be both parasitic, inhibiting development by absorbing skills and capital needed for regional development and the growth of secondary towns, but also to be especially beneficial in small, developing countries by concentrating scarce skills and capital where they can best be used. Some economists, arguing that in poor countries where capital is scarce, the highest rates of return on investments are obtained in the largest metropolitan areas, therefore hold that primate cities should be encouraged to grow. Where not only capital but resources and skills are scarce, it is generally more efficient to concentrate investment and

capitalise on economies of scale and agglomeration. Indeed, metropolitan areas typically play a dominant role in national economic development, performing crucial economic functions such as serving as communications and transport hubs, nodal points in networks of trade, and financial and banking centres, and therefore, economic policies tend to emphasise the growth of large cities to propel national development<sup>5</sup>. Metropolitan areas thus maintain a disproportionately large share of modern activities, and provide economies of scale and proximity that are conducive to industrialisation, allowing the cities to absorb large numbers of people in manufacturing jobs, and allowing governments to construct modern infrastructure, health, education, commercial and other facilities that make them even more attractive to rural migrants. Yet, rapid large city expansion and primacy are often considered in a negative light as they tend to be related to mounting urban problems, spatial imbalance, underdevelopment and rural poverty (Rondinelli 1983:15,19; Rondinelli 1991:794,797; Walsh 1977:4; Wei 1994:53-54).

The spatial distribution of Pacific urbanisation is highly skewed, with the vast majority of urban population and resources concentrated in single centres (Appendix 2V), and a corresponding lack of smaller towns. The major trend towards urbanisation in the Pacific is therefore more specifically a trend toward a concentration of population in one primate city or town, usually the national or provincial capital (Minerbi 1989:20; Thistlethwait and Votaw 1992:172).

The trend since independence in many Pacific island states has been towards increasing centralised control, and the primacy of the 'main' island and town (Overton and Storey 1999:253).

Urban primacy is especially common in those countries which are small, highly centralised, of medium income, with an export-oriented economy, rapid population growth, and a history of colonialism. In the Pacific, urban primacy is accentuated by the entrepot functions of the primate cities as well as their history as centres of administration, trade and industry. Urban primacy is also partly a function of the tripartite employment structure of the urban centres – an administrative and service sector, a small manufacturing sector, and the informal sector. As in many other parts of the developing world, the comparative advantages

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<sup>5</sup> For instance, in Samoa, "Apia is home to almost all secondary industries, which now account for 40 per cent of GDP and over 90 per cent of the country's paid employment" (Storey 1999:160).

of such primate regions arose from preferential investment during colonial and postcolonial periods, as well as from macroeconomic policies that reinforced their dominance of the settlement system, and hence have exacerbated the difficulties of controlling their growth (Connell and Lea 1993b:43,49; Gilbert and Gugler 1992:37; Hardoy and Satterthwaite 1989:19; Rondinelli 1991:794; Walsh 1977:4).

#### 2.4.1 Consequences of Primacy

The primacy of Pacific cities has been cause for some concern, both because urban problems are largely concentrated in the capital cities and because development is concentrated often at the expense of rural areas. Thus, uneven development is a common feature of the Pacific, with a heavy concentration of both people and economic activity in the same locations. This linking of people with economic activity has had serious environmental, social and economic consequences – especially because it has typically occurred in urban centres situated on coastal areas of the islands, which also have characteristically had poorly planned development, weak urban government and overtaxed urban services (Bryant-Tokalau 1995:111; Connell and Lea 1993b:42; Dupon and Morhange 1993:1; SPREP 1994:1).

Rarely have municipal governments in the primate cities of small developing countries enjoyed the preconditions necessary for them to operate effectively as urban managers. They are commonly subjugated by national government located in the same city and make do with scant resources (Connell and Lea 1998a:16).

### 2.5 Primacy of Urban Centres in Fiji

#### 2.5.0 Urban Primacy in Fiji

Fiji, like most Third World nations and former colonies, is characterised by a skewed urban hierarchy. Suva is the primate city within Fiji. In addition to being the capital city of Fiji, Suva is also the major port, the largest commercial and industrial centre, and the core of the largest urban complex. Suva's predominance originates in a combination of historical, political, economic and social factors. As Suva was the first major site for economic activities in Fiji, the market economy itself increasingly magnified Suva's attractiveness for

subsequent new investment because of external economies of scale. Indeed, flows of public and private investment have tended to gravitate towards the major urban centres, especially to the Greater Suva area, where economic rates of return are highest. Other important considerations include agglomeration factors, existing infrastructure and markets, locational advantages, and the presence of the most skilled and educated workers (Chandra 1990:166; Duddy 1993:6; Fiji Central Planning Office 1980:307).

### 2.5.1 Suva as a Primate City

Suva's primacy is therefore deeply rooted in the historical pattern of development in Fiji, and rests on colonial and post-colonial resource allocations<sup>6</sup>. Being colonial, the historical pattern of development of Fiji emphasised the development of only a few centres, and, as the capital city, Suva has gained from the significant increase in government bureaucracy, as well as from the many educational institutions sited within its region (Chandra 1990:166; Chandra 1996:35). Indeed, major political centres, generally, retain greater political power, employ a large number of government workers, receive more state investment, and enjoy better urban facilities. In 1970, Suva accounted for 56% of all government and private services, 66% of national retail turnover, and 65% of national service and wholesale turnover (Connell and Lea 1993b:42; DTCP 1975:56-57) (Appendices 2W and 2X). In 1973, employment in distribution services and tourism in the Greater Suva area accounted for 49% of the national employment of wage and salaried staff in that sector and 79% of the employment in business services (DTCP 1975:51-52). The Suva-Nausori corridor in 1980 accounted for 22% of Fiji's total population, 25% of Fiji's total economically active population, 52% of Fiji's paid employment, 37% of Fiji's GDP, 58% of Fiji's GDP derived from manufacturing (excluding sugar milling), and 69% of GDP derived from banking and other financial intermediary activities, as well as a relatively high GDP per capita index (Fiji Central Planning Office 1980:335,316) (Appendix 2Y). Thus, modern

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<sup>6</sup> For example, Suva accounted for 72% of the total recurrent and capital expenditure on public utility electricity supplies in the Colony in 1966 (Fiji Central Planning Office 1966:45). Likewise, under the third stage of the Fiji Road Upgrading Project (FRUP III) co-financed by the Fiji Government and the Asian Development Bank, works to be carried out in the Suva-Nausori corridor account for F\$25.3 million out of a total budget of F\$125.0 million (*The Nation* 1999a:15-16).



sector activity within Fiji is overwhelmingly concentrated in Greater Suva, with the primacy of the urban corridor in services evident (Appendices 2Z and 2AA).

Suva caters for the major share of manufacturing and wholesale/retail economies. Fiji's first industrial estates (in Walu Bay and Vatuwaqa) were established in Suva, and 36% of Fiji's industrial establishments in 1981 were located in Suva (Chandra 1996:35; Fiji Bureau of Statistics 1989:13; Siwatibau 1987:33). The structure of the Suva urban economy is excessively tertiary (Appendix 2BB), as in 1976 only 4.3% of Suva's work force was employed in primary activities (as compared to 15.8% for all other urban areas), 19.4% in secondary activities (as compared to 23.8%), and 76.3% in tertiary activities (as compared to 60.4%) (Walsh 1982:34). Furthermore, Suva is the principal seaport of Fiji, handling 55% of Fiji's imports in 1974, and having experienced an annual cumulative growth of the tonnage of cargo in overseas trade passing through at 8.2% over the period 1961 to 1974 (Floyd 1976:16).

The bulk of Fiji's urban population growth in the past half century has continuously occurred in the Greater Suva-Nausori area; over the 1966 to 1976 period, for instance, 69% of all urban growth took place in the Suva-Nausori area (Fiji Central Planning Office 1980:307). In 1966, 18.9% of the national population lived in the Greater Suva-Nausori area, rising to 22.2% by 1976, to 24.0% by 1986 and to 26.9% by 1996 (Fiji Bureau of Statistics 1988a:65; Fiji Bureau of Statistics 1998b:247; Fiji Central Planning Office 1980:312); corresponding figures for Greater Suva-Nausori's proportion of Fiji's total urban population were 56.4%, 59.8%, 62.1% and 58.0% (Appendix 2CC). In 1986 and 1996, Greater Suva-Nausori accounted for 61.0% and 59.2%, respectively, of Fiji's total incorporated urban centres' population (Appendix 2DD), as well as for 63.0% and 57.1%, respectively, of Fiji's total peri-urban population (Appendix 2EE). By the year 2006, 68% of Fiji's expected 400,000 urban dwellers and 30% of the national population are expected to be living in the Greater Suva-Nausori area (Connell and Lea 1993b:34).

## **2.6 Decentralisation Efforts and Governance in the Pacific**

### **2.6.0 Decentralisation and Governance**

Population concentration in cities points not only to policies of decentralisation and improvements in rural development, but also to measures to adapt and strengthen municipal government and the institutions governing the delivery of urban services. Indeed, urban management stresses strengthening local government through supporting decentralisation, with the assumption that local government will result in better governance. Subsidiarity, the principle which states that action should be taken at the lowest effective level of governance, implies that a central authority should perform only those tasks which cannot be performed effectively at a local level, and therefore provides a strong presumption in favour of decentralisation. Thus, planning may be decentralised with decision-making shifted to lower levels according to the principle of subsidiarity. Decentralisation of governments may include both political/administrative decentralisation<sup>7</sup> (dispersal of government functions and powers) and geographical decentralisation (dispersal of government personnel, physical plant and services).

Decentralisation also entails creating a greater role and autonomy of action for the local government and decentralising decision-making. Decentralisation therefore shifts the focus of accountability from the central government to constituents, and implies a responsiveness to local needs and demands. By decentralising decision-making to subnational levels, closer to the citizens, localisation may nourish responsive and efficient governance, and may increase participation as people are given a greater chance to shape the context of their own lives – something cardinal to the process of improving living standards and effective development. Moreover, governments can further devolve their powers through deconcentration (increasing the autonomy of staff in regional offices) and privatisation (moving responsibility out of the public sector) (Connell and Lea 1993b:2; Drakakis-Smith 1997:808; Jenkins 2000:138-139,147,151; Jordan 2000:1308,1311; Kearns and Paddison 2000:846; Schrader 1998:10; Wolfers 1985:3; World Bank 2000:4-5,8,108).

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<sup>7</sup> Political decentralisation specifically entails the decentralisation of power by devolution to a political body such as a subnational legislature, whereas administrative decentralisation specifically entails deconcentration to appointed officials in the field (Wolfers 1985:3). Yet, decentralisation must not be perceived simply as delegation of tasks or people but also as a means to strengthen the roles of municipalities as prime contributors to national development (UNCHS 1993:23).

Local government has the potential to coordinate community development and local services and infrastructure. Although the municipal authority plays a pivotal role as the interface between the central government, the urban community, organised groups, the private sector and professional advisors, most local authorities lack the appropriate concepts and tools to plan and manage urban projects and programmes as well as the ability to integrate these into a coherent strategy for sustainable and equitable urban development. Attempts to decentralise tend to be ambivalent, and so "most Pacific Governments have policies which promote rural development, and thus slow down urbanisation, but in many cases the Government's practice is contrary to policy" (Crocombe 1994:6). What has been lacking is consensus that the decentralised system should at least exist, and firm political and administrative commitment to make it work (Minerbi 1989:31; Overton and Storey 1999:253; Rondinelli 1991:792; Tuts 1995:10; Wolfers 1985:20).

In many cases, "policy implementation has been undermined by lack of political commitment", by spreading limited financial and managerial resources too thinly (when trying to develop too many small towns and cities at one time), and by lack of cooperation and coordination among national ministries in implementing the policies (Rondinelli 1991:798). For instance, efforts to increase participation in decision-making and raise the accountability of provincial and local government in Papua New Guinea continue to be plagued by basic problems such as confusion about the respective roles of departments at the district, provincial and national levels, as well as severe human resource constraints, and thus their generally weak governance has been complicated by government decentralisation (*Pacific Islands Monthly* 1999:11)<sup>8</sup>. Effective decentralisation is often hampered by financial, human and technical resource limitations. Effective local government is "particularly important in countries comprising many scattered islands, yet it is noticeably weak, even dysfunctional in most Pacific islands" (Schoeffel 1996:129).

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<sup>8</sup> For example, in Lae, Papua New Guinea, the fact that there are two five-year development plans for the Lae district – that of the Lae urban authority and that of the Ahi local level government – has created problems in terms of delivering goods and services due to the duplication of duties and responsibilities (*The National* 1999).

## 2.7 Urban Investment and Focus in the Pacific

### 2.7.0 Urban Versus Rural Focus

In response to the 'urban bias' of foreign aid and national development policies and expenditures of the 1950s and 1960s, and to the increasing poverty in rural areas of Third World countries during the 1970s, has come a re-evaluation of the role of urban versus rural development focus. Economic critiques of urbanisation have often stated that cities appropriate a disproportionate and economically unjustified share of national resources, or that national capitals are subsidised by the country at large, whereby urban governments and urban dwellers receive more national government resources, programmes, and subsidised goods and services than those in rural areas. Resource allocations, within urban areas and rural areas as well as between them, reflect urban priorities rather than equity or efficiency, and thus tend to reinforce the attractiveness of large cities and contribute to their growth. Subsequent high levels of rural to urban migration and rapid urban growth have resulted in the concentration of deprivation and urbanisation of poverty within many Third World countries such that development attention has refocused on cities as of the early 1990s (Drakakis-Smith 1997:806; Hardoy and Satterthwaite 1989:308; Harris 1992b:xiii-xiv; Lipton 1988:13; Rondinelli 1983:9; Wei 1994:54).

### 2.7.1 Rural Rhetoric

Despite the increasing urbanisation of Pacific island nations, their development plans and politicians' speeches continue to place greater emphasis on rural areas and rural development than on urban areas and urban development. Indeed, development in the rural areas is a widespread priority in the region (Dahl and Baumgart 1983:13; Ward 1998:22).

The 'cure' for urban ills is most frequently sought by improvement in rural services,...with a resistance on the part of Pacific leaders to also address the issues facing permanent urban dwellers and the social and environmental problems which are increasing in magnitude (Bryant-Tokalau 1994:80).

The poorly regulated pattern of urbanisation, coupled with a lack of national resources and insufficient investment, have seen urban decay and environmental degradation

proliferate in the towns and cities of the Pacific, although urban issues, particularly those relating to the natural environment, are still not yet viewed as a priority in the region (Bryant-Tokalau 1993:161; Storey 1999:157). Thus, the situation is one in which Pacific governments have been seeking ways to encourage people to remain or become more committed to their rural heritage<sup>9</sup>, and yet, the region's "towns will never disappear altogether" (Bryant-Tokalau 1993:165). To make Pacific urban and peri-urban areas more healthy and less likely to marginalise their increasing numbers of residents remains the fundamental task.

## 2.7.2 Urban Reality

Urban population growth and urban-oriented economic growth are dominant features of both development planning and development reality. Despite the regional and rural development rhetoric encouraging decentralisation and devolution, the reality of economic policy and practice has encouraged centralisation of government services and urban economic activities. In most Pacific island nations, despite expressions of concern over the regional implications of development planning, preoccupations with spatial equity have given way to demand for economic growth, and explicit spatial policies have waned<sup>10</sup>. Consequently, efforts towards population decentralisation have generally not effectively contributed to rural or regional development nor have growth centres contributed to a new spatial distribution of development. To varying degrees, rural development policies have been negated by a definite urban bias towards national development programmes as social infrastructure and industrial growth have continued to be concentrated in urban areas despite public pronouncements of intentions to reverse this pattern<sup>11</sup>. While such policies and practices have in fact encouraged urbanisation, the inability to manage it has led to the deterioration of urban infrastructure and services as well as to the emergence of social

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<sup>9</sup> For example, in 1997, Fiji's Prime Minister, Sitiveni Rabuka, stated that native Fijians in urban centres who are poor would be better off to return to their rural villages of origin (Radio Australia 1997).

<sup>10</sup> The relatively recent trends towards the development of manufacturing and tourism as generators of economic growth are tending to promote increasing levels of urban bias, as cities and towns are the preferred locus for most new major developments (Potter 1989b:1).

<sup>11</sup> For example, both Tonga and Samoa appear to be pursuing development plans that concentrate greater activities in urban areas and on their main island (Storey 1998b:73-74). Likewise, within Papua New Guinea there has been an increasing concentration of resources into economically developed areas, despite decentralisation and equalisation efforts (King 1984:211).

problems, so that "whether or not economic policies will continue to favour urban development at the expense of rural development, urbanisation must be managed more efficiently" (Connell and Lea 1993b:9). Thus, as is typically the case in developing countries, public authorities have generally failed to employ the relative wealth of the cities to actually make the cities work. In fact, throughout the region, governments have been slow to plan for their urban futures, and urban authorities have been underfunded for the tasks that they have been expected to perform (Connell and Lea 1993b:74; Harris 1992a:51; Storey 1999:157). "Until Pacific countries recognise that urbanisation and urban living are an integral part of the total development of the countries, then little can be done to provide balanced development" (Bryant-Tokalau 1994:82). Indeed, urban productivity is crucial to national development – including the development of rural areas – and to improving the conditions of the poor (Chee et al. 1999:15; Connell and Lea 1993b:46-47; Drakakis-Smith 1997:815; Harris 1992b:xviii).

As long as interests remain predominantly urban, "the countryside may get the 'priority' but the city will get the resources" (Lipton 1988:18). The idea that there is 'urban bias' in the expenditures of governments in developing countries is increasingly being questioned and reconceptualised, as it is principally residents in large cities who benefit from the bias in resource allocations, and since the existence of superior urban infrastructure, services and facilities does not necessarily mean that poorer residents have access to them. Thus, as those urban amenities that are badly provided to low-income earners are usually well provided to high-income earners, there is a 'pro-rich bias' of public policies. This 'urban bias' may also actually be more of a 'large city bias' which acts to accentuate the primacy of the respective capital cities in the Pacific Island region (Cairncross et al. 1990b:13; Coolidge et al. 1993:4-5; Hardoy and Satterthwaite 1989:309). Although their focus continues to be on economic issues, Pacific island governments are beginning to address the causes and consequences of their populations' increasing urbanisation. But, as has been the case in Kiribati, "relatively small island states are likely to focus on crucial economic development issues, rather than on long-term problems and urban management" (Connell and Lea 1998b:30). Thus, Pacific island governments continue to primarily emphasise economic goals, and specifically economic growth rather than more broad-based and long-term economic development. In Fiji, pressures on central and municipal agencies to

secure economic growth and employment creation have often resulted in inappropriate or poorly controlled development, which in many instances, is known to exert undue pressure on urban sanitation services or result in the pollution of watercourses and the marine environment. Indeed, throughout the Third World, land use planning and environmental management are generally seen by many as far less important than economic development planning (Potter 1989b:17; Whitehead et al. 1994:27).

## **2.8 Land Use Planning and Urban Management in the Pacific**

### **2.8.0 Land Use Planning**

Land classification is based on the land's quality for a particular purpose, with the results being presented as a land classification map and which can serve as a basis for land use planning decisions. Land use classification is the classification of land according to the use made of it. Land use decisions are the crux of urban planning. Land use is concerned with the spatial aspects of all human activities on the land and the ways in which the land surface is adapted, or could be adapted, to serve human needs. In this way, land is distinguished by its functional uses to meet people's needs (e.g. agricultural, residential, recreational). A land use planning scheme enables limits to the type, location and effects of specific types of development to be set, taking into account the carrying capacity of the environment. In addition, planning can help to minimise inter-sectoral conflicts and help toward harmonisation of land use policies (Myers and Muhajir 1997:381; Nunn et al. 1999:202; Stewart 1983:6; Thistlethwait and Votaw 1992:318).

Planning, in allocating the use of land and promoting future change, is a determinant of the value of land, creating, apportioning and redistributing wealth. A planning scheme is a means of setting out the uses to which people are able to put their land, compatible with the wider objectives of the community. Land use must therefore be understood as the product of human decisions operating within social, political and legal frameworks (Mather 1986:viii)<sup>12</sup>.

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<sup>12</sup> For instance, in Palau, where over 4,000 foreign workers (primarily Filipinos) dominate the private sector and comprise a large proportion of the urban workforce, "the short- to medium-term prospects for improving housing for guest workers are not good, given the pressure to develop the tourism industry with new hotels and other attractions. Housing in this context is also politically sensitive and requires more direct management and attention" (Connell and Lea 1998a:179,162). In general, increasing industrialisation often spurs land speculation, creating conflicts in land use and raising costs (Rondinelli 1991:796).

### 2.8.1 Urban Land Use Planning

The aims of land use planning must conform with those of economic and social planning. Effective urban land use planning is essential to support the role of urban centres in generating national economic growth and in improving resident's and workers quality of life. In urban areas, categories for residential, industrial, commerce, office, retail, open space and public uses are usually distinguished. In many parts of the island Pacific, however, "urban physical planning, effective building codes, and land use plans are in their infancy" (Connell and Lea 1998a:32).<sup>13</sup> A regulatory system governing land use and development operates through an urban plan which is concerned with the physical arrangement of land uses and buildings, linking physical development to wider aspects of planning and management, and encourages the efficient allocation of land use to different urban functions. In addition, the urban plan may provide a guiding framework by means of policy statements, within which the planning authority has discretion on applications to develop land, or alternatively, the framework may take the form of a detailed land use plan or zoning scheme. Thus, the planning framework provides guidelines on where and how development should be undertaken, and can enhance management. Urban planning and zoning controls are generally introduced to ensure orderly development and distributional equity in areas such as service delivery (Connell and Lea 1995:58; Dean and Lindfield 1997:34; Khan 1994:53; Radoki 1996:1556)<sup>13</sup>.

There are generally two different types of planning – urban consolidation and urban sprawl. A more compact urban model allows for greater urban concentration, as well as more efficient public provision of urban services and less encroachment onto adjacent areas. Hence, central planning leads to densely populated settlements surrounded by green spaces (e.g. recreational areas, agricultural areas, natural protected areas). In contrast, a more decentralised urban model involves lower density of settlement, with semi-autonomous or quasi-independent communities covering more land area and incorporating more green spaces within the greater urban area (often as productive home gardens), as well as greater

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<sup>13</sup> For instance, in an attempt to reduce urban primacy, governments may, by enacting stronger zoning regulations and requiring construction permits for building and expansion, make it more difficult and costly for more large industries to locate in the major metropolitan area. Similarly, greenbelts reserved around metropolitan areas may help prevent the continued concentration of industries in the city by severely restricting the amount of land available for development, although this also may encourage higher density development and raise land costs within the metropolitan area (Rondinelli 1991:796).



community and individual provision of services. Furthermore, this type of planning scheme breaks up the typical patterned urban design of a central business district surrounded by suburbs, in which the suburban areas continue to grow on the fringe yet areas in the centre are forgotten resulting in decaying infrastructure, inner city decline and environmental degradation (Lowe 1991:87,91-93; Overton and Storey 1999:243-246).

## 2.8.2 Sociocultural Context of Land Use Planning

A land use planning scheme is a framework which can provide, through the elected representatives of the city and agreed to by the elected representatives of the people of the country, rules by which development can be undertaken (Stewart 1983:6).

The orderly and optimum development of cities rests on popular recognition of a desired lifestyle and the acceptance of the costs and benefits in achieving it. Urban planning is usually the means adopted by government to conduct acceptable interventions in guiding and controlling development (Connell and Lea 1995:59).

At one level, land use planning is therefore concerned with reconciling the conflicting objectives of individuals and groups in societies<sup>14</sup>, and at another level, it may seek to mediate or adjudicate between objectives of interest groups and thereby to establish compromise goals or to balance broad policies. Thus land use planning is a highly political process which has the effect of removing control over land development from a local community to central or municipal government, thus downgrading the basis upon which power is exercised locally; however, allowing the allocation of land to be primarily politically determined, without reference to land use plans, may allow for a greater degree of corruption in the system<sup>15</sup>. Planning in the region is generally inhibited by a culture of inertia combined with policy caution created by the prevailing social, cultural and political context. The

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<sup>14</sup> Urban planning and management involve guiding conflict between and among government departments, government and donors, between public authorities and the community, and among communities (Storey 1998b:62).

<sup>15</sup> For instance, in Micronesia, "the challenge currently being addressed is to integrate environmental considerations into the newly strengthened land use planning procedures under circumstances in which technical skills and financial resources are very limited and any form of bureaucratic intervention is resented" (Connell and Lea 1998a:113-114). In Kiribati, for example, despite considerable support for superior urban management, translating policies and plans into practice has proven extremely difficult due in part to the manner in which urban management and planning are oriented to achieving public interest issues (rather than accommodating the traditional dominant rights of landowners) and to the way they operate at a quite different scale from traditional forms of social organisation (Connell and Lea 1998b:30).

popular constituency for the various levels at which planning operates (from national to local) are not the same, and the broader the scale involved and the more ubiquitous the issues, the more difficult it is to persuade people of its value and importance (Connell and Lea 1993a:14; Mather 1986:212; UNDP 1996:22)<sup>16</sup>.

Land tenure lies at the core of land use planning. The Pacific's land tenure situation has complicated urban management efforts as well as coordinated land use planning efforts. "To date, it has been land tenure arrangements that have dictated the nature of urban spatial growth and not national planning" (Storey 1999:165). The issues of land registration and ownership, which are sources of conflict in the increasingly densely settled urban areas of the Pacific, therefore need to be resolved by the respective governments. The most difficult urban development problems are typically political and institutional matters, which are often difficult to confront so are simply avoided. A case in point is that of the role of customary land tenure in urban land issues, which has served to limit the amount of land available for urban development in much of the region (Bryant 1993b:54; Connell and Lea 1993b:114), such as in Cook Islands (Crocombe 1987a:67; Thistlethwait and Votaw 1992:13), Micronesia (Connell and Lea 1998a:209), Papua New Guinea (Kaitilla and Sarpong-Oti 1993:73), and Tonga (Fukofuka 1994:147). For land reform and land administration policies to succeed, landowners, users (and potential users) and governments must reach consensus on the mechanisms for land mobilisation and the manner in which changes in land tenure and use might be achieved and compensated for. Furthermore, because land development processes are structured through the power relations of capital, labour and landowners, and because the sociocultural context provides the environment in which planning takes place, the driving force that particularly determines the spatial structure or pattern of land use is political, and hence it is often the paramouncy of the interests of the elite that determine the direction of development. Hence, the effective involvement of local people and landholding groups in development decisions on resources over which they have

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<sup>16</sup> In Nuku'alofa, for instance, "considerable faith is placed in 'planning' as a solution to many problems, ranging from traffic congestion to new forms of housing development, but there has been no consideration of the difficulties in securing enforcement in a town largely comprised of residential plots held under customary tenure" (Connell and Lea 1995:64). Similarly, in Papua New Guinea, the completion of the recently planned relocation of Port Moresby's wharf facilities away from the central business district to a more spacious location farther down the harbour will ultimately "depend on land and access issues" (*Pacific Islands Monthly* 2000b:18-19).

traditional rights is vital (Connell and Lea 1993b:114-115; Connell and Lea 1995:71; Connell and Lea 1998a:209; *The Independent* 1999; Kahimbaara 1993:1003; Nunn et al. 1999:205; Radoki 1996:1565; *Saipan Tribune* 1998; Thistlethwait and Votaw 1992:25). In Fiji, for instance, “resource use problems associated with traditional rights, foreshore reclamation, rivers and streams, agricultural land practices, land use, etc. are being ignored or treated superficially for political fear of confronting the landowners” (Watling and Chape 1992:148).

### 2.8.3 Urban Management and Governance

Underpinning urban management choices are political decisions made between the state, local authorities, and society – the three constituents which lie at the core of urban governance. The concept of governance refers to the complex set of values, norms, processes and institutions by which society manages its development (Storey 1998a:32; TIT 2000). Governance has been defined as

the exercise of political, economic and administrative authority to manage country’s affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences (UNDP 2000c).

Thus, governance applies not only to governments, but to others such as NGOs and CBOs as well; governance includes the state, but transcends it by encompassing the private sector and civil society whereby the state creates a conducive political and legal environment, the private sector generates employment and income, and the civil society facilitates political and social interaction. Moreover, underlying governance are more fundamental issues regarding the nature of traditional and modern elites, the relationships between politicians and public servants, the nature of political parties, and public expectations of politicians, political parties, public servants, and of government itself. Urban government and governance play crucial roles in urban planning and management, and are bound into national debates over the allocation of resources, accountability and transparency in decision-making, state-society relationships and rights, as well as public sector performance, bureaucratic openness, and official corruption (Dean and Lindfield 1997:31; Larmour 1995:7; Macdonald 1995:24; Oh 1995:9; Storey 1998a:32; TIT 2000) (Appendix 2FF).

Public service systems in the Pacific have been criticised for being a “continuation of colonial models, largely untouched by more recent, efficient and cost effective approaches to public administration and management”, with problems of poor governance weakening public confidence in government and its institutions, and undermining development efforts (Schoeffel 1996:137-138). Moreover, governance suffers from a duality of structures in which formal government institutions are based on Western models, while governance itself is often carried out through informal channels and through personal connections, resulting in non-transparent governance and those controlling the system averse to changing the status quo (Dean and Lindfield 1997:26-27).

#### 2.8.4 Urban and Environmental Management

Most Pacific governments are faced with the serious difficulties of having to comply with local customary rights over land and its use. While urban planning is an essential prerequisite to other forms of infrastructure improvement, it is ineffectual without the capacity to implement planning priorities and to control unwanted development. Major constraints to urban management and planning are the uncertain effects of local decision-making processes, the lack of development incentives, retarded institutional development, evolving property rights, fragmentation of authority, weak coordination, a lack of concern over public interest, resistance to central control, interpersonal and traditional rivalries, and a faith in technical solutions (Connell and Lea 1998a:111; Storey 1998b:67)<sup>17</sup>. Moreover, it has often been the case that Pacific “governments lack the political will and the incentive to establish genuine national development policies rather than pursue sectional, personal, and regional interests” (Connell and Lea 1998a:112). Poor urban planning and management is in part a function of the absence of urban authorities, or limitations of their powers, and also relates to the absence of skilled human resources and to the substantial costs of the urban bureaucracy. Yet, the ability of governments to respond to rapid urbanisation depends, in part, on the planning, management and financial capacity of local and municipal authorities. The underprovision of urban services (including management and planning) ultimately leads to disorganised and unplanned towns with resulting inefficiencies and additional costs.

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<sup>17</sup> In Nuku'alofa, for instance, urban management continues to be dispersed among several departments and organisations, with little central direction and lordship (Storey 1998b:67).

Although more direct public intervention in urban management is appropriate, this may be combined with privatisation and user pays principles (Connell and Lea 1993b:10).

§ “If issues such as population growth, environmental degradation, land distribution and tenure, as well as employment opportunities are not urgently addressed, the future prospects for many Pacific Islanders are not good” (Bryant-Tokalau 1995:112). The national reports prepared in 1992 for the United Nations Conference on Environment and Development (UNCED) of all 13 of the participating Pacific island nations<sup>18</sup> expressed concern regarding the inadequacy of their government policies or practices of (a) land use planning (especially coastal zone management), (b) environmental monitoring (of resource use and pollution or degradation), (c) educational programmes to improve public awareness of environmental risks, and (d) the proper pricing of resources to recover all costs (including environmental damage rents and other externalities) from national allocation of scarce land, water, trees, and beach areas. In addition, the national reports of 11 nations cited land use controls as a significant environmental issue, 10 nations cited both land availability/tenure and land reclamation, 7 cited population growth, 9 cited both population of urban centres and internal migration rate to urban centres, 7 cited fuelwood shortages in the urban areas, 10 cited urban planning and management, 12 cited liquid waste management, all 13 cited both solid waste management and sewage and sullage disposal, 10 cited both coastal erosion/degradation and mangrove destruction, and all 13 cited marine pollution of reef/lagoon. These concerns obviously relate primarily to the growing concentration of population and economic activities in urban and coastal areas, and suggest that more people are seeking land which is less available and hence leading to a greater intensification of land use (Thistlethwait and Votaw 1992:205). Population pressure and urbanisation were also indicated as major concerns in the state of the environment report prepared in 1982 for the Conference on Human Development in the South Pacific (Nunn et al. 1999:199). The need for improved land use planning and urban management in the region is therefore strikingly obvious. Implementation of relevant planning and management controls that are likely to be respected and adopted by the urban population is central to the adequate protection of the physical environment in Pacific island nations.

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<sup>18</sup> The 13 participating SPREP nations include: Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Niue, Papua New Guinea, Samoa, Solomon Islands, Tokelau, Tonga, Tuvalu, and Vanuatu.

In Pacific island nations, concerns about the environment and sustainable development must be addressed in relation to demographic and urbanisation trends, and integration of environmental planning with other forms of planning at all levels of government must be achieved. Furthermore, this requires that urban planners and their superiors have the political will to tackle poverty and socioeconomic inequality as the most pressing of environment-development issues. Appropriate planning and management are crucial to the sustainable development process, for without them, the natural resource base may become overwhelmed by the effects of escalating demand and competing human needs. However, "there has been minimal response from the authorities to curb increasing urban degradation and ad hoc development, and a reluctance to implement such plans and establish planning organisations" (Storey 1999:160)<sup>19</sup>. Indeed, urban and environmental planning are not traditional activities in the Pacific, and the few planning controls that exist are generally inadequate and difficult to enforce. In fact, the physical expansion of most Pacific urban centres is occurring without the emergence of clear policy support or urban development models. Given Pacific islands' rapidly growing urban centres and the shortage of land, there is an urgent need for long-range planning. Successful planning requires sustained policy directions over a long period. There is also the need for improved participation by landowners and the public generally in land use planning processes in Pacific island nations (Bryant-Tokalau 1995:128; Connell and Lea 1993a:14; Connell and Lea 1993b:8; Connell and Lea 1998a:113; Dahl and Baumgart 1983:10; Myers and Muhajir 1997:382; Overton and Storey 1999:248; SPREP 1994:2; USAID 1990:47).

Careful resource management is vital for environmental protection and sustainable economic development, yet many governments lack appropriate legislation and/or do not take effective action to limit damage, or have only limited jurisdiction over

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<sup>19</sup> "Apia, as evidenced in its widening sprawl, the destruction of its fringing mangroves and reefs, and in the spatial disorder that combines residential, commercial and marginal environments, is a town in need of improved management and planning if it is to meet the needs of future generations in a sustainable fashion" (Storey 1998b:65).

land use. Sustainability of the development process in the Pacific islands depends fundamentally on tackling issues of natural resources management and economic growth in a coordinated fashion (SPREP 1994:2; Thistlethwait and Votaw 1992:219).

In the Pacific islands, economic interests and the requirements of urbanisation must be reconciled with the quality of life, not only of town dwellers but of island communities in general. There must be a conscious and deliberate inclusion of environmental concerns in the general aims of sustainable development (Dupon and Morhange 1993:8).

#### 2.8.5 Urban Planning Problems

Many Pacific urban centres are facing substantial planning problems due to their lack of land use rules and proper zoning regulations. In the absence of enforceable planning, urban land uses are haphazard and ill-defined. In fact, over one-half of the Pacific island nations have reported problems associated with land use and land tenure, including unplanned development such as incompatible adjacent developments and inefficient use of limited land areas. Because, frequently, either no zoning exists or it is poorly implemented, there tends to be an uncoordinated mix of land uses found in Pacific urban centres. A unique feature of land use in urban areas in the region is the existence of pockets of agricultural land and open spaces within town boundaries. Indeed, it is sometimes not even clear where urban boundaries lie (Connell and Lea 1995:83; Connell and Lea 1998a:113,206; Dahl and Baumgart 1983:7; Dupon and Morhange 1993:5; PACNEWS 1998; Storey 1999:164).

With many Pacific urban centres hosting "a complex and highly differentiated urban mosaic", huge demands are placed on the poorly developed network of infrastructure services (Connell and Lea 1993b:1). Such a mix of business, residential and agricultural activity reduces the efficiency and effectiveness of service provision. Moreover, urban centres are also characterised by numerous partially completed buildings and poor infrastructure in their many suburbs. Specific remedies within urban areas may focus on the control of land uses so as to adjust population densities and direct movement. For instance, an increasing Kiribati population, particularly in South Tarawa<sup>20</sup>, has recently forced the government to establish a

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<sup>20</sup> The Kiribati 1995 Census Report found a high concentration of people living in each South Tarawa residence, including nearly 1,000 dwellings containing more than ten occupants (PACNEWS/Radio Kiribati 1999).

new land use policy to prevent overcrowding and the associated social and environmental problems; the Urban Management Planning Office has issued new land use policy guidelines which require South Tarawa residents to obtain building permits before building new homes and the Ministry of Health has participated by providing family planning support (PACNEWS/Radio Kiribati 1999).

In the Pacific Island region, planning has tended to lack congruence, integration and comprehensiveness. There is little integrated physical, economic and environmental planning, and often there are no enforceable town plans and an absence of building codes and other appropriate legislation such as guidelines on which to base the zoning of land and the allocation of services. The typically large number of organisations involved, their overlapping responsibilities, and the sociocultural and politically charged nature of land issues have made effective land use planning difficult. Where attempts to formulate urban policies have occurred, these have generally consisted of piecemeal plans and projects in particular urban centres which have lacked coordination. Coherent and long-term planning is rare in the region, with 'crisis management' more typically the essence of planning (Connell and Lea 1993b:3; Connell and Lea 1998b:28; Storey 1998b:67).

Attempts are being made to democratise decision-making and give the targets of urban programmes a genuine say in the content of policy, and in Tonga and Samoa, for instance, "there are indications that urban development problems are inciting increased public dissatisfaction and censure, as residents are intensifying demands and asserting their rights as urban citizens" (Storey 1998b:73). It is often the case, however, that deep ethnic, regional and religious cleavages in civil society as well as a general lack of grassroots political involvement hamper public participation. In many of the Pacific island nations, the electorate is neither informed nor assertive, and political dissatisfaction is not necessarily expressed in political action, but often by turning hopefully to religious and traditional systems (Schoeffel 1996:138-139). In particular, there frequently seems to be little in the way of effective avenues for poor communities to influence the agendas of municipal government. For example, in Papua New Guinea, despite the fact that an independent government has control over urban development policy, there has been a notable lack of middle-level pressure groups that can serve to express the desires of common people and influence that policy (Levine and Levine 1979:23).



Similarly, in Micronesia,

there are few or no direct ways in most towns for urban residents to express their wishes and participate in the urban decision-making process....The absence of a recognizable urban constituency, an urban political culture, and an informed population has done much to prevent popular debate and participation in any facet of planning (Connell and Lea 1998a:208-209).

In Fiji, the proposed principles highlighted in the 1968 interim report to the Suva City Council which were to be the main guidelines in the preparation of the new Planning Scheme for Suva City were widely publicised with comments invited, and

while the response from the public was not numerically great, many valuable comments were received from the business community, government departments and citizens which have had a significant influence on the manner in which these principles have been incorporated in the new scheme (John 1969:11-12).

Civic sector institutions such as community organisations, women's groups, youth groups and parent-teacher associations tend to already exist in most communities, and have proven their strength and determination to generate self-help and promote self-reliance; these institutions are therefore obvious candidates for partnership arrangements with local authorities on urban development projects. Such partnerships help move in the direction of more meaningful popular participation. Hence, it is essential that attention be given to the nature of associational life and decentralisation rather than simply championing the rise of NGOs and CBOs and local control. Indeed, it is largely through indirect means that the poor participate in the political and planning process in the Pacific (Bryant 1993b:58; Post 1997:363).

## **2.9 Administration and Urban Management in Fiji**

### **2.9.0 Administration**

For purposes of local administration, Fiji is divided into four administrative divisions (Western, Central, Northern and Eastern), each headed by a division commissioner who is assisted by district officers. These four divisions are each further divided into fourteen provinces (Figure II), plus the Fiji protectorate of Rotuma Island. The Western Division contains the provinces of Ba, Nadroga/Navosa, and Ra; the Central Division contains the provinces of Naitasiri, Namosi, Rewa, Serua and Tailevu; the Northern Division contains the



urban and peri-urban areas are located within Suva Tikina; the Nasinu urban and peri-urban areas are located within Naitasiri Tikina; and the Nausori urban and peri-urban areas are located within the tikinas of Rewa, Naitasiri and Bau (Table 3.2).

### 2.9.1 Urban Management

Poor institutional capacity (encompassing lack of expertise in land use planning and environmental management, insufficient financial resources, and inadequate private sector and community involvement) undermines most government efforts to manage urban land and cultural resources effectively. Although there have been attempts made at reforming urban planning, management and governance in Fiji, change has been incremental. Fiji's cities and towns continue to suffer from weak urban municipal government (Connell and Lea 1993a:14; UNDP 1996:10).

Local Governments in Fiji in general and Suva City Council in particular are weak, disorganized, rural-urban based, ethnically oriented, polemical and lack the professional and organizational expertise to provide for a coordinated development strategy (Sukhdeo and Griffin 1982:223).

There is much in current municipal government in Fiji that requires attention, particularly in public relations, finance, internal relations, personnel management and training. These all bear directly on the all-important issue of increasing the public accountability of urban authorities (Qalo 1985:203).

For instance, within the Suva City Council, there have been demonstrations of factionalism, incidence of excesses, misuse of Council funds, and little attention paid to development, resulting in an alienation of the Council from the ratepayers (Sukhdeo and Griffin 1982:186). Recently, municipal council representatives have voiced concerns regarding their financial problems (specifically their insufficient revenue bases), the lack of support (financial and other) from central government, and the continuing interference of councillors in the day-to-day administration of the councils (*Advertiser Weekly* 00(13):1). In Suva, the majority of council members passed a motion of no confidence against the Deputy Lord Mayor, Diwan Shankar in August 2000 on account of his record of absenteeism at council meetings (having missed 35 meetings between January and May 2000) as well as allegations of financial misconduct and involvement with trade unions

(*Fiji Times*, 17 August 2000). There is therefore much scope for improving urban management generally (Table 2.13), and land use planning in particular, in Fiji's various municipalities.

Table 2.13. Government Policy Objectives for Urban Development in Fiji

**Policy Objectives**

- To ensure that the provision of basic infrastructure services in urban areas (water, sanitation and electricity) are maintained in line with population growth
- To improve the performance, efficiency, and public accountability of city and town councils
- To minimise the level of environmental degradation associated with urbanisation through the integration of urban development and environment policies
- To significantly increase the level of public involvement in the planning process
- To promote the principles of local government and local responsibility in urban development through the devolution of power to municipal councils
- To improve the level of horizontal and vertical coordination among agencies within urban local government and with central agencies/departments
- To encourage private sector initiatives in urban development

Source: Adapted from Fiji Central Planning Office 1999:42.

It can be concluded that, in Fiji, where many major urban centres do not yet have even a structure plan to help guide land use and development, "there is a clear and pressing need for an effective planning process" (Whitehead et al. 1994:16). In fact, although some municipalities have planning schemes (often decades old), no master development plan exists for any of Fiji's cities or towns apart from the now outdated 1975 *Greater Suva Urban Structure Plan*, while the long period taken to prepare a planning scheme for Central Suva was partly due to the lack of qualified staff and the way in which staff are deployed. Fiji's town planning schemes are a mixture of planning techniques and terminology from the UK, USA, and Australia, with little having been derived from local policies and needs. By employing a regulatory and negative approach designed to avoid bad development rather than encourage good development, the planning scheme establishes neither a strategy nor objectives for Suva's improvement (Connell and Lea 1993b:67; Floyd 1976:2; Stewart 1983:3,19). Hence, "the Town Planning Authorities at both central and local Government levels are very much guiding and controlling rather than initiating bodies" (DTCP 1975:84-

85)<sup>21</sup>, with Independence not having led to a relaxation of zoning or building regulations, more egalitarian planning, or greater efficiency (Walsh 1978:429; Sukhdeo and Griffin 1982:183). Lastly,

town planning schemes have generally been prepared and/or reviewed with little direct regard to resource requirements. Pressures on central and municipal agencies to secure economic development (and job creation) have resulted in inappropriate or poorly controlled development. In many instances, this is known to exert undue pressures on urban sanitation services, or result in the pollution of water courses and maritime environment (Whitehead et al. 1994:27).

In Fiji, eight townships developed through the provisions of the *1928 Townships Ordinance*.<sup>1</sup> Local government includes city, town and municipal councils. Urban areas are governed by multiple jurisdictions. The 1972 *Local Government Act* has been the main instrument of local government after Independence, being aimed primarily at removing the anomalies of the dual colonial system where Townships and Town Boards existed side by side with no clear and rational distinctions between them; the *Act* lays down how any local governing body should be conducted irrespective of population size (Qalo 1985:193; Whitehead et al. 1994:16). The Local Government Unit within the Ministry of Local Government, Housing and Environment helps ensure that municipal councils comply with financial and administrative provisions of the *Act*. The *Act* is currently under review by a committee appointed by the Minister, which will closely monitor the performance of the municipal councils (Fiji Ministry of Finance 1999:171). The *Fiji Budget Estimates 1994* accounted for an expenditure of F\$50,000 for the development of an urbanisation policy, and in 1995 a National Housing and Urbanisation Policy was finally approved and is now being implemented (Fiji Ministry of Finance 1994a:169; Fiji Ministry of Finance 1995:163).

The Fiji Government has recently begun to address these issues, however (Table 2.14). The Government has in the past emphasised the “need to find the appropriate balance between centralised and decentralised arrangements that will promote development most effectively” (Fiji Central Planning Office 1985:164). It had aimed to

provide this balance by deconcentrating some amount of administrative authority to lower levels within central government ministries; delegating managerial

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<sup>21</sup> The Nausori Town Planning Scheme, however, purports to both provide a framework (in the form of a zoning plan and general planning provisions) within which future development proposals can be assessed and set out a development programme by which specific improvements can be made to the Town (DTCP 1988:2).

responsibility for specifically defined functions to organisations that are outside the regular bureaucratic structure and that are only indirectly controlled by the central government; strengthening sub-national units of government e.g. City and Town Councils; and whenever necessary, privatisation of certain government responsibilities (Fiji Central Planning Office 1985:165).

Table 2.14. Government Indicators for Urban Development in Fiji

Performance and Accountability Indicators
<ul style="list-style-type: none"> <li>• Amend and repeal all urban legislation where appropriate to allow the maximum devolution of authority to municipal councils (2001)</li> <li>• The Municipality of Nasinu to be established (1999)</li> <li>• The Naboro landfill facility commissioned (2001)</li> <li>• A broadly based joint committee established for the administration and relocation of squatters (1999)</li> <li>• The urban squatter population reduced as a percentage of the total population by 0.5% annually</li> <li>• Navua/Deuba Town established (2000)</li> <li>• Municipalities to adopt accrual accounting (2001)</li> <li>• Town Planning Schemes established by all municipal councils (2001)</li> <li>• Environmental Impact Statements be established for all development within the urban boundaries (2001)</li> </ul>

Source: Adapted from Fiji Central Planning Office 1999:42.

There are twelve municipal councils in Fiji, two of which – Suva and Lautoka – are city councils<sup>22</sup> which have their own planning and development control departments. They are headed by mayors. Some members of municipal councils are appointed, but the majority of members are elected. The municipalities of Suva City<sup>23</sup>, Nausori Town, Lami Town, and Nadi Town have elected town councils that are responsible for promoting municipal health and welfare. Nasinu Town will initially be headed by an interim committee of nominated councillors, and then by an elected council (*Fiji Times*, 1 January 2000). Municipality councils can provide and maintain public works, acquire and dispose of land, maintain streets and drains, implement low-income housing schemes, pass building plans, and prepare land use plans (Table 2.15). They also have the power to appoint special committees, hold elections, and make by-laws and regulations. The funds for the execution of municipal

<sup>22</sup> The promotion of status from town to city has been based solely on a population size criterion of a minimum of 20,000 persons, as was the case for Suva and Lautoka, but this has not been the case for Nasinu (Fiji Bureau of Statistics 1997:44).

<sup>23</sup> "The city of Suva is still administered by a 20-person council appointed annually under the terms of the *Local Government Act (Amendment No. 1) Decree 1988*. This arrangement disenfranchises the urban population, making it difficult for central government to win active support from residents" (Connell and Lea 1993b:12).

functions are derived from: rates collected by the council; rents and profits from the property of the council; fines, penalties and forfeitures recovered by the council; authorised loans; voluntary contributions; moneys paid to the council by the Government by way of grant or in lieu of rates; and other moneys which may become the property of the council. These funds, however, do not necessarily always provide an adequate revenue base for many of the municipal councils. In fact, "most municipal councils in Fiji are facing potentially serious financial problems", and many, such as those of Suva, Lami, Nasinu and Nausori, are consequently considering increasing fees levied for such services as rubbish collection in an effort to increase overall rate income (*Advertiser Weekly* 00(13):1)<sup>24</sup>.

The relative financial independence of Fiji's municipalities is revealed by the case of Suva City Council. Grants issued by the central government to Suva City Council in 1977 amounted to F\$29,220 (less than 1% of its expenditure), in 1980 amounted to F\$23,234 (less than 0.5% of its expenditure), in 1981 amounted to F\$22,300, and were F\$30,000 in 1994, 1995 and 1996 (Fiji Ministry of Finance 1994a:169; Fiji Ministry of Finance 1994b:165; Fiji Ministry of Finance 1995:165; Qalo 1985:200-201). Yet in 1981, Suva budgeted for F\$4.66 million in income from all sources and had an expenditure of F\$4.63 million. These figures have been increasing due to the mandatory provision of necessary services which include roads, public utilities and public health; for example, the Health Department of the Suva City Council finances its administration, employee benefit, refuse collection, street and gutter cleaning, dog control, public conveniences, night soil collection and other services (Qalo 1985:200).

In Fiji, urban management functions, especially land use planning and control, are complicated because of the lack of a single body to coordinate the fragmented institutional framework which is divided between a range of national, local and specialised actors (Table 2.15). "There are twenty-five Acts administered by fourteen different ministries. Laws which affect urban areas suffer from this complexity" (Bryant 1993b:31). The institutional framework for planning and service delivery is consequently highly complex, with many agencies effectively involved in land use decisions, including: the Department of Town and

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<sup>24</sup> The Suva City Council, however, has recently demonstrated its ability to "turn the corner financially", having announced in early April 2000 a profit of F\$3.5 million (*Advertiser Weekly* 00(13):1), and following the Council's loss of F\$1.58 million in 1997, were profits of F\$1.41 million in 1998 and F\$3.46 million in 1999 (*Fiji Times*, 4 April 2000).

Country Planning of the Ministry of Local Government, Housing and Environment; the Native Land Trust Board (NLTB); the Housing Authority; local planning boards; and individual landowners. It has been argued that

the management of human settlements in Fiji is complex....This tripartite ministerial responsibility for local government is confusing and in need of rationalisation (Connell and Lea 1993b:78).

The Department of Town and Country Planning assists municipal councils in the preparation, revision and implementation of their town planning schemes to ensure the proper use and development of urban areas. It issues land use approvals and coordinates all authorities concerned with the approval process through the *Subdivision of Lands Act* and the *Town Planning Act*, and there is a Forward Planning Unit to undertake special planning projects and prepare town plans where local authorities lack planning facilities. The Department of Town and Country Planning facilitates investment by promoting the development of land resources through the application of appropriate planning standards and continued revision of planning legislation. The Department of Town and Country Planning also coordinates the provision of urban services in public utilities and transport, and the Ministry of Infrastructure and Public Utilities provides roads, bridges, sewerage and water supplies through its Public Works Department.

Table 2.15. Fiji's Urban Management by Level of Government

Urban Management Function	Level of Government		
	National	Specialised	Local
Cartography, mapping, valuation	Ministry of Lands and Mineral Resources (MLMR)		
Land development and subdivision control	MLMR and Department of Town & Country Planning		
Preparation of land use standards and approval of land use requests	Department of Town & Country Planning	Provincial Councils (for Fijian villages)	
Preparation of land use plans	Department of Town & Country Planning		Municipalities
Production of urban land	Housing Authority	Native Land Trust Board	
Public housing	Housing Authority and Public Rental Board	HART (an NGO); Methodist and other churches	Municipalities
Public health and building inspection	Ministry of Health	Rural Local Authorities	
Road maintenance	Public Works Department		Municipalities

Source: Adapted from Whitehead et al. 1994:17.



### 2.9.2 Peri-Urban Management

Fiji's local government machinery is sectarian with urban-based City/Town Councils and rural-based Provincial Councils. Peri-urban areas are administered by rural local authorities that come under the Ministry of Health. They provide public health, solid waste collection and building inspection services but, because of their limited capacity (e.g. they have no power to tax), other activities such as infrastructure provision and housing are handled by central ministries. For example, the Ministry of Infrastructure and Public Utilities is the supplier of piped water systems in peri-urban areas, although treatment of water is limited to storage and chlorination, which at times may be chemically contaminated or suffer from shortage of demands (Sukhdeo and Griffin 1982:187; Watling and Chape 1992:78). The Ministry of Health "lacks the mandate and capacity to manage even the basic range of planning and service delivery functions required" (Whitehead et al. 1994:30). In general, the increasing population and urban expansion into the peri-urban areas of Greater Suva-Nausori intimate "the need to upgrade the quality of peri-urban administration to proper municipal standards in the near future" (Connell and Lea 1993b:150). In such cases where rural local authorities are attempting to administer the peri-urban areas adjacent to towns, it has been recommended by the UN that there be establishment of new municipalities or extension of existing urban boundaries.

### 2.9.3 Suburbanisation and Urban Villages

Fiji's established municipalities have been substantially affected by population movements. The political pressures (compounded by ethnic tensions and the land tenure system) exerted on Government make the creation, extension or alteration of town boundaries sensitive and difficult. Two additional factors, in particular, have created problems for municipalities. The development of good roads has enabled many to live beyond the urban areas (thus avoiding rates), but this has made it difficult for city/town councils to maintain facilities used by outlying residents that do not contribute to the cost. Areas particularly affected are those between Suva and Nausori, Nadi, Lautoka and Ba, Sigatoka, Labasa, and Savusavu. Another major (and historical) problem is the confusion of areas, franchises, and regulations and rates caused by the continuance of the legislation governing Fijian villages within municipalities (Table 2.16). Some municipalities have grown up around traditional villages which politically

Table 2.16. Fijian Urban Villages Included Within Municipalities

Municipalities	Fijian Urban Villages	Urban Village Since
Suva City	Tamavua	1966
	Kinoya	1966
	Kalabu	1966
Lami Town	Lami	1966
	Suvavou	1966
	Waiqanake	1966
	Muaivuso	1966
	Nabaka	1966
Nausori Town	Nausori	1976
	Vunimono	1976
	Nadali	1976
	Namono	1976
	Molituva	1996
	Verata	1996
	Namoli	1966
Lautoka City	Nawaka	1976
Nadi Town	Namotomoto	1976
	Nakavu	1976
	Saunaka	1976
	Navoci	1976
	Narewa	1976
	Vunayasi	1996
	Yavusania	1996
	Sikituru	1996
	Vatutu	1996
	Nailaga	1996
	Nasigatoka	1966
	Yavulo	1966
	Laselase	1966
	Nayawa	1966
	Lawai	1966
Labasa Town	Volivoli	1976
	Nasama	1976
	Vunavutu	1976
	Nasekula	1966
	Nacula	1966
Savusavu Town	Yaroi	1966
	Nacekoro	1996
	Nukubalavu	1996
	Levuka	1966
Levuka Town	Vuma	1966
	Waitovu	1966
	Vagadaci	1966
	Draiba	1966
	Naikorokoro	1996
	Toki	1996
	Vatukalo	1996
Rakiraki Town	Rakiraki	1966
Tavua Town	Tavualevu	1966

Source: Adapted from Fiji Bureau of Statistics 1997:137-138.

come under the Ministry of Fijian Affairs; provincial councils supervise land use in the urban villages, and municipalities often provide services, though village residents are not obligated to pay for them (Qalo 1985:194-195; Whitehead et al. 1994:17).

Although within a city/town area, urban villages are not subject to the 1972 *Local Government Act*. Nevertheless, the 1972 *Act* (clause 125) provides that a council may, subject to the approval of the Fijian Affairs Board and the Minister, make by-laws for the incorporation of Fijian villages into municipalities and for rates and building controls therein, but this has typically yet to occur. For political reasons, traditional villages are still systematically excluded from legal cities and towns<sup>25</sup>. Most urban villages are either located within a city/town area or they are very close to a city/town boundary in the peri-urban area, and the decision to include an urban village in an urban area has tended to depend on the economic structure of its population (Fiji Bureau of Statistics 1997:29,65; Fiji Bureau of Statistics 1998a:122; Qalo 1985:196). Therefore, this confusion of boundaries continues to pose problems of health and building regulation (since many contain illegal structures), as well as in the non-payment of rates. A UNDP policy paper for the Ministry of Housing and Urban Development states:

A continuing enigma is the Fijian village in municipal territory. The residents enjoy all the privileges of the municipality but make no contribution to the cost of services nor are they subject to the health and amenity controls of the local municipal council (UNDP, in Fiji Bureau of Statistics 1997:65).

These urban villages are therefore, in effect, being subsidised since villagers do not pay fully for services such as the collection of refuse, drainage, cleaning and street lighting, and subsequently there have been recommendations calling for the subjection of Fijian villages which fall within the urban boundaries to municipal by-laws and to taxation so as to widen the local tax base (Connell and Lea 1993b:79; Qalo 1985:195; Sukhdeo and Griffin 1982:186-187). In addition to traditional villages, there are also numerous settlements within urban boundaries; for example, in Greater Suva in 1976, settlements recognised by the District Officer included Bilo, Delainavesi, Delaivisama, Kalekana, Kinoya, Lami, Laqere, Laucala Beach Estate, Matata, Nadera, Naisogoaluvu, Naivikinikini, Namara, Nasole, Nawaigasa, Nepani, New Town, Qauia, Tamavua-i-wai,

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<sup>25</sup> The only exception thus far is Namoli Village which is part of Lautoka City, having been included in 1976.

Tauluga, Tovata, Veisari, Vugalei, Wailekutu, Wailoku, Wainidinu, and Wakanisila (Bakker and Walsh 1976:27)<sup>26</sup>.

#### 2.9.4 Growth of Fringe and Urban Agglomeration Areas

It is in the peri-urban fringe areas that population growth and physical expansion (and resultant land use changes) are most rapid, and poverty and vulnerability are most evident (Bryant 1993a:19). In particular, two sets of these jurisdictions are growing together into urban agglomeration areas – the Greater Suva-Nausori conurbation and the Lautoka-Nadi corridor. Yet despite this agglomeration trend, it was nevertheless reported earlier this decade that

there is no regional planning to guide or control urban growth beyond municipal administrative boundaries, or even any reliable information on its pace or direction. Nor is there provision for metropolitan management. The present structure is characterized by: (a) central government planning and control that does not involve adjacent local authorities in a coordinated manner; (b) a lack of communication between municipal governments, Rural Local Authorities, and urban villages in the same metropolitan area; (c) a tax burden to support urban development that falls unevenly on beneficiaries in the urban region; and (d) capacity to address needs of the population that varies greatly across jurisdictions (Whitehead et al. 1994:17).

While these problems do certainly still exist, there have been some recent attempts to address the growth of the peri-urban and rural areas adjacent to Fiji's major cities and towns. For instance, the NLTB has identified key study areas for new opportunities in residential, commercial and industrial areas for 1999. For the Central and Eastern Divisions, these areas include (in order of priority): Suva-Nausori corridor, Suva-Lami corridor, Nausori peri-urban/rural area, Korovou rural area, Navua rural area, and the Levuka peri-urban/rural area; for the Western Division: Lautoka-Nadi corridor, Lautoka peri-urban/rural area, Nadi peri-urban/rural area, Sigatoka peri-urban/rural area, Ba peri-urban/rural area, Tavua peri-urban/rural area, and Rakiraki peri-urban/rural area; and for the Northern Division: Labasa peri-urban/rural area, Savusavu peri-urban/rural area, and Nabouwalu rural area (Matasere 1999:pers. comm.).

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<sup>26</sup> Whereas an officially recognised village comprises people of a common descent group, residing on their traditional lands under the leadership of an accepted turaga-ni-koro, a settlement is formed by migrants (Walsh 1978:142).

## **2.10 Environmental Concerns in the Urban and Peri-Urban Pacific**

### **2.10.0 Urban Environmental Problems**

There is evidence of environmental degradation in urban areas throughout the Pacific Island region, with degradation of soil, freshwater, coastal and land-based food supplies common. Such environmental problems are reducing the productive capacity of natural resources, as well as endangering the health of the population. The environmental repercussions of urban growth in the Pacific particularly include problems of congestion, air and water pollution, wastewater and solid waste disposal (household as well as industrial and hazardous), destruction of nearby marine and mangrove ecosystems, and their resulting impacts on human populations (Bryant 1993b:18; Bryant-Tokalau 1993:156-157; Bryant-Tokalau 1994:80; Dahl and Baumgart 1983:25; Overton and Storey 1999:241).

Despite their relatively small size and recent development, urban and peri-urban areas in the Pacific Island region have nevertheless begun to experience mounting environmental problems. "In such small and fragile environments, a major concern is the environmental degradation which accompanies urban growth" (Bryant-Tokalau 1994:80). The island Pacific has been subjected to numerous changes in its environment due to human related activities, especially rapid urbanisation. The primary causes of environmental degradation are thus the local populations placing pressure on their immediate environments as well as economic development, particularly industrialisation and export-based manufacturing (Bryant 1993b:35; Naidu and Morrison 1988:1). Urban centres affect both local and regional environments by consumption of goods and the generation of residuals. In the Pacific, it is generally in the major cities and towns that the environment has suffered the most severe damage both because of the concentration of the damaging factors and because of the primarily coastal setting of most urban centres. In fact, not only are most urban areas located near the coast, but within these settlements, the population is further concentrated in the coastal sections. Within the Apia urban area in 1976, for instance, the overall population density was 535 persons per km<sup>2</sup>, as compared to a coastline population density of 3,210 persons per km<sup>2</sup> (Walsh 1982:83).

To date, there remains a dearth of workable policies in place for the resolution of the region's environmental problems. Throughout much of the island Pacific, environmental

management is hindered by problems of inter-departmental communication and coordination, and the frequent lack of political will to make sometimes difficult decisions. In dealing with urban environmental problems, there has been “attempted regulation and control, weakened by lack of administrative resources and occasional official lassitude”, with measures primarily acting to “deal with the symptoms of environmental problems – cleaning up the mess or limiting the activities of polluters – but they have often done little to address the underlying processes of environmental changes in urban areas” (Overton and Storey 1999:241). For instance, urban air pollution from vehicular transport, road dust and industries (particularly cement factories, asphalt plants and furniture making) is a major issue in several Pacific island nations, but the problem is perceived to be too expensive to be dealt with effectively (Bryant 1993b:23). In sum, there exists a greater need for anticipatory policies rather than curative policies in most Pacific island nations.

#### 2.10.1 Regional Impacts

The natural environment of an urban centre includes not only the immediate physical setting of the city but also the rural surroundings with which it interacts, and indeed, the adverse consequences of urban expansion are felt in areas surrounding cities as well as inside the cities themselves<sup>27</sup>. Thus, the city interacts with its wider region, which generally includes large areas considered to be rural, whose natural resource base (and inhabitants) usually suffer from a series of environmental impacts coming from urban-based activities, urban-generated demands and/or urban-based wastes. For example, within the Nadi-Sabeto River catchment (which drains part of the western portion of Viti Levu) occurs intensive agricultural activity with sugar farming and some forestry, Emperor Goldmine’s Tovatu prospect license area, a growing tourist industry with numerous resorts in place or planned at the coast on the delta-front of both rivers, Fiji’s international airport and oil terminal, and the major urban area of Nadi Town; furthermore, the majority of the population (including tourists) supported by this development is dependent on a water supply from Vaturu Dam

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<sup>27</sup> However, the reverse may also be true, as forest clearance for (rural) highland agriculture has increased water and sediment, along with fertiliser and pesticide, transport into (urban) coastal areas (Nunn et al. 1999:199). For example, high sediment loads in rivers resulting from inappropriate logging and agricultural practices in many of Fiji’s catchment areas have caused water supply systems to be closed down periodically, as occurred in Ba in 1991 (Whitehead et al. 1994:7). Likewise, in Apia, a major water catchment area, which is under village control, has been cleared and cultivated for communal and commercial use (Storey 1999:163-164).

also within the headwaters of the catchment (Howorth 1999a:2). The demand for firewood or charcoal from urban dwellers and enterprises may contribute to rural deforestation; demand for electricity in urban centres, met by hydroelectric dams, may result in the loss of agricultural land and the exacerbation of waterborne diseases in rural areas<sup>28</sup>; mining and agricultural activities which produce raw materials for urban-based activities may have negative environmental consequences in the rural areas; and roads and bridges linking smaller settlements with cities may contribute to problems of flooding. Regional environmental problems associated with urban-based activities are regularly linked to the disposal and dispersal of domestic and industrial waste, frequently leading to the contamination of water sources and the decline in fishing stocks. In the outskirts of Papeete, there is highly polluting waste coming from semi-industrial livestock enterprises operating in the valleys (Dupon and Morhange 1993:4), and near Lautoka, copper, chromium and arsenic used in the preservation of Fiji pine have been detected in water and shellfish samples downstream of the Tropik Woods Timber Mill (Zann 1992:28). In such cases, there is often little incentive for industry to reduce polluting emissions since penalties are rare and are generally so small as to have minimal deterrent effect. In Fiji, for example, there are problems of legislative weakness, lack of monitoring and enforcement, and minimal fines; the maximum fine for pollution of a harbour, for instance, is only F\$400 and/or up to six months imprisonment (Cowey 1993:129) (Figure III).

Throughout the island Pacific, there has been a recent loss of essential land resources, such as from urban expansion into fertile agricultural land. In general, agricultural land and open spaces are susceptible to urban encroachment, and these natural ecosystems are being converted to provide urban infrastructure such as housing, roads, factories and other facilities

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<sup>28</sup> For instance, in Fiji, the two major dams which have been constructed are both on Viti Levu. Vaturu Dam, which has a 2.0 km<sup>2</sup> lake impoundment, was specifically constructed to provide water for the dry Western Division of Viti Levu and currently serves the major population centres of Lautoka and Nadi. Monasavu Dam, which has a 6.7 km<sup>2</sup> lake impoundment, supplies 97% of all electricity in Fiji but has no water provision function; also, "it is instructive to note that no comprehensive EIA was undertaken prior to the construction of the dam" (Watling and Chape 1992:37,97). An additional small dam, with a shallow 0.8 km<sup>2</sup> lake impoundment, has been built on the Wainikavika Creek near Navua to provide water for local rice irrigation (Watling and Chape 1992:37). These developments, while having increased Fiji's self-sufficiency in energy supply are also of concern since the poor construction and design of water supply systems such as dams may lead to their serving as breeding grounds for disease vectors. Moreover, excessive extraction of water from watercourses for irrigation may cause harmful ecological downstream effects (Brodie and Morrison 1983:4). Lastly, while hydroelectric dams bring environmental impacts to rural areas, their benefits fall largely to urban consumers. In fact, the rural villages surrounding the Monasavu catchment area are still without electricity supply (*Fiji Times*, 2000).

Through the imposition of structures, buildings, paved surfaces and compacted soil surfaces, human settlements have dramatically impacted the natural environment. Owing to the predominance of sealed surfaces, urbanisation impacts soils and relief, and natural slope erosion can be temporarily increased 10 or 50 times by construction-related activities, with sedimentation caused by the resultant runoff having potentially severe consequences on the function of wetlands downstream, contributing to surface water and coastal water pollution, and increasing the risk of flooding in low-lying areas. Changes in land use have interfered with the recharge of groundwater reserves and increased the risk of contamination. Moreover, as a result of urban expansion and increases in demand due to industrial and tourism activities, as well as problems of pollution, it has in many cases become necessary to pipe in water from outlying areas. In Majuro, for example, the degree of pollution of the groundwater lens has necessitated that water needs be met by water pumped from distant non-urbanised motus, water from the airport runway catchment, and from desalinated seawater (Dupon and Morhange 1993:1,3,7). Another significant environmental issue is that of the exploitation of marginal lands such as hillsides, river beds and coastal mangrove swamps, particularly in peri-urban informal settlements. Hence, inadequate land use practices, the often environmentally-damaging strategies of the land insecure, and growing pollution problems have generated a deterioration of the landscape in the urban-rural interface (Fazal 2000:134; Nunn et al. 1999:198; Storey 1999:157).

#### 2.10.2 Coastal Impacts

The coastal areas on which most Pacific urban centres are built are coming under increasing strain due to the escalating and changing demands of growing populations and economies. The coastal zone is one of the most environmentally sensitive areas in Pacific island nations and is subject to significant conflicts in uses with development. High urban populations along coasts have caused a range of attacks on the environment and have disturbed the nearby marine environment on which these centres depend, in varying degrees. There have been substantial deleterious impacts of rapid urban growth and seaport activity on adjacent coastal resources, particularly seagrass beds and coral reefs. The immense population pressures on local environments are especially evident when urban development has taken place within the confines of fragile seafront, lagoon and mangrove boundaries, and



the most damaged coastal environments are typically those closest to the densest human settlements. Changes to land use, particularly coastal construction activities associated with urban development, as well as inadequate disposal of solid and liquid wastes have contributed to increased stream loads, and sediment, nutrient and pollutant inputs to coastal areas (Bryant-Tokalau 1993:157; Dupon and Morhange 1993:2; Holdgate 1993:482; Nunn et al. 1999:197-199; Storey 1999:157).

The alteration of the shoreline through land reclamation, mangrove clearance, conversion of vegetation, sand mining, earth moving, and construction of artificial structures is having a major impact on coastal habitats due to erosion (Bryant 1993b:23; Nunn et al. 1999:199,201). The development of coastal towns such as Papeete and Noumea has "deeply affected the coastal and lagoon environments through the pollution and waste produced by human activity and through the artificialisation of coastal features" (Jost 1998:73). Indeed, coastal resources are finite and can easily be degraded by urban-based activities. For instance, the Fanga'uta Lagoon in Tonga has been subjected to considerable degradation due to overfishing, land reclamation, sand mining, and the removal of mangroves (Brodie and Morrison 1983:15). Mangrove areas have often been reclaimed or lost to development. Papeete had 25 km of artificial coastline in 1997, and Noumea had 39 km, with land reclamation affecting their bays, reef flats and mangroves (Jost 1998:73). Similarly, attention has been drawn to the "dangers in land reclamation from the sea as a means of addressing the lack of strategically placed land for expansion in Apia, a major problem in several small island capitals in the region" (Connell and Lea 1995:61). In fact, nearly one-third of Pacific island nations have reported problems associated with land reclamation (Dahl and Baumgart 1983:8). An 800 m seawall in Papeete, built on the reef, prevented the renewal of oceanic waters and this led to the almost total destruction of coral organisms in the lagoon due to the increased turbidity and the pollution of port waters (Jost 1998:73). Likewise, the construction of seawalls for tourist resorts along the Coral Coast of Viti Levu, Fiji has caused localised severe damage to the adjacent reefs and coastal environment (Zann 1992:24). Coastal erosion (and the resultant sedimentation of marine environments) is not only related to shorefront reclamation but also to the construction of roads, causeways, airports and harbours (Bryant 1993b:18; Bryant-Tokalau 1994:81; Nunn et al. 1999:198). The building of causeways in Noumea, Port Vila, and Tarawa have lead to significant changes in tidal flows

and lagoonal water residence times, and has had significant effects on nutrient and plankton levels. Similarly, airport runway construction and infilling of the lagoons have had adverse effects on marine life in Micronesia (Brodie et al. 1990:14), while in Fiji, the expansion of marine transport and infrastructure has been associated with damage to coral reef and shore environments as a result of the creation of harbours and ports (e.g. Suva, Lautoka, Levuka and Savusavu), wharves and marinas (e.g. Malolo Lailai), and boat channels (Zann 1992:24).

The growth of public works and building activity in many Pacific island urban centres has led to a heavy demand for sand for cement manufacture. Extraction from the lagoon is carried out either by dredging and scooping with mechanical shovels (e.g. Wallis and Futuna, Fiji and French Polynesia<sup>30</sup>) or by suction off the reef flats (e.g. New Caledonia), and clouds of particles disturbed by the extraction suffocate reef organisms (Jost 1998:70). More than one-half of the Pacific island nations report environmental problems associated with the extraction of sand and aggregate, as sand removal from beaches leads to beach loss and coastal erosion, dredging of sand and coral from the reef or lagoon bottom destroys fisheries resources and produces pollution, and quarrying leaves pits and cuts that are difficult to restore (Dahl and Baumgart 1983:5). In Majuro, Marshall Islands, where sand is required for construction, block making and public works projects, the present rate of sand mining is not sustainable and nearshore quarrying is contributing to coastal erosion problems (UNDP 2000b). In Papeete, the exploitation of the reef and lagoon for building materials has led to a more intense erosion of the coast in certain areas and to silting of the lagoon in others (Jost 1998:73). More than 1.6 million tonnes of fill material were extracted from Papeete's lagoons up to 1987, to the detriment of the lagoon biotopes and the neighbouring megapode colonies, and "today the urban area boasts a hundred hectares of disturbed lagoon floor from which marine life has completely disappeared" (Dupon and Morhange 1993:4). In the Greater Suva area, coral sand dredging has caused heavy mortality of turtle grass (*Syringodium isoetifolius*) and a subsequent decline in fish species and abundance (Lal 1984:320). Furthermore, the over-deepening of the beds of watercourses in Tahiti, French Polynesia as a consequence of the removal of building materials such as sand, stones and blocks of rock (23,000 m<sup>3</sup> in 1988) has caused erosion upstream, ravining and changes in

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<sup>30</sup> The Windward Islands used to produce approximately 800,000 m<sup>3</sup> of sand per year, and in Tahiti, 100 ha of lagoon topography have been affected at 36 sites, 13 of which are in the urban area (Jost 1998:70).

flow dynamics (Jost 1998:70). Coastal erosion is a widespread, chronic and locally severe problem throughout much of the region, and since beaches derive much of their sediment from the surrounding reefs, factors which damage the health of living reefs can also have adverse effects on beach sediment supply, which in turn affects not only local people's use of the coastal resources but the tourism industry as well (Nunn et al. 1999:202; USGS 1998).

### 2.10.3 Land Tenure and Peri-Urban Environmental Issues

Under Pacific custom ownership laws, land is not readily available for development of housing estates, often resulting in the growth of informal settlements, which in turn may contribute to the loss of valuable agricultural resources and the degradation of forests, lagoons and reefs. The ramifications of land shortages and tenure problems in Micronesia, for example, include illegal occupation and the growth of unregulated squatter areas, which often encroach onto water reserves (Connell and Lea 1998b:27). In Tonga, "the lack of land in urban areas has led to the subdivision of very good agricultural land on the periphery. These new subdivisions are grabbed by those who can afford the escalating 'compensation' cost while the poor are pushed to the swamps and mudflats" (Fukofuka 1994:147). On Funafuti, Tuvalu, high population densities and rapid urbanisation have led to problems of landlessness and competition for land<sup>31</sup>, with immigrant groups from the outer islands being particularly disadvantaged, their presence having consequently led to high density informal settlements on Fogafale islet (Thistlethwait and Votaw 1992:116). Such unplanned informal peri-urban development has become one of the most visible and pressing environmental issues in the Pacific Islands region. Many of the squatter settlements suffer from overcrowding, poor housing, unsanitary conditions, water pollution and low incomes (Bryant 1993a:19; Levine and Levine 1979:19; Thistlethwait and Votaw 1992:178).

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<sup>31</sup> Throughout Tuvalu, land shortages have led to a reluctance to sell, lease or transfer rights, which, in turn, has led to increasing land disputes (Connell and Lea 1995:89). This situation is compounded by the fact that in 1979, the population density on Funafuti was 757 persons per km<sup>2</sup> as compared to a density of 276 persons per km<sup>2</sup> for Tuvalu as a whole (Walsh 1982:181). By 1993, the density on Funafuti had reached 1,071 persons per km<sup>2</sup> (Bryant-Tokatau 1994:81).

#### 2.10.4 Water Resources

Many Pacific island nations suffer from problems associated with the quality and utilisation of water resources (Table 2.17), including inadequate freshwater supplies and inadequate and/or unsuitable storage and reticulation facilities (Brodie and Morrison 1983:3-4). In Port Vila, for instance, where water supplies come from a spring and three boreholes (thought to be near the limits of extraction of the aquifer), the piped distribution system is inefficient – up to 35% of water was wasted because of leaking pipes in 1988 – and the submersible pumps in the bores are near the end of their economic life (Connell and Lea 1993b:136). Similarly, in Honiara, at least 25% of water supplied disappears through leaks, and in Port Moresby, wastage may be as high as 50% (Connell and Lea 1993b:139). Hence, throughout Melanesia, the main problems with most water supply systems have been: (a) the excessive amount of water that is wasted, either through physical leakage, non-metering (largely through illegal connections), and/or the non-collection of revenue; and (b) the difficulty of maintaining water supply systems with limited managerial and technical expertise (Connell and Lea 1993b:140). Such problems have typically been exacerbated by greater industrialisation, increased tourism, and the associated problems of population drift and urbanisation. The demands for increased supplies (frequently of higher quality) together with the necessity of disposing of the increased wastes (both human and industrial) have tended to place a great strain on the water resources available.

Freshwater resources are particularly susceptible to pollution, with rivers, streams, wells and groundwater borehole supplies suffering contamination by chemical, human and animal wastes. In flowing through urban centres, waterways become increasingly polluted with sewage, industrial effluents and even solid waste (Brennan 1999:13; Morrison and Brodie 1985:71). For example, in the Marshall Islands, old fresh or brackish water wells are often used as pit latrines, increasing the danger of severe contamination by directly channeling wastewater into the groundwater (Howorth 1999b:2). Water quality problems are particularly bad on Majuro Atoll where sources of pollution include unsanitary disposal of household wastes, residences not hooked to sewerage system, and pig pens located along the coasts, and are associated with a lack of environmental health education, sanitary and solid waste disposal system, and proper enforcement of legislation from the local and national level (UNDP 2000a). In Kiribati, the heavily populated main islet on Tarawa, Betio, “reeks

of the smell of decaying sewage and, after it rains, fuel oil” because “when it rains the power station – an environmental disaster all on its own – sends its great ponds of spilled fuel oil through the island. It soaks into the soil and the groundwater” (Field 1999:9). Nearly one-quarter of Pacific island nations have reported oil pollution problems resulting from oil spills from port accidents, leaks in pipelines or storage depots, and shipwrecks (Dahl and Baumgart 1983:11).

Table 2.17. Water Quality Problems in the Pacific

Water Quality Problems
<ul style="list-style-type: none"> <li>• Excessive extraction of groundwater causing saltwater intrusion of the groundwater lens and soil subsidence</li> <li>• Treatment of water supplies with chemicals that may produce harmful reaction by-products</li> <li>• Removal of vegetation causing erosion and siltation</li> <li>• Poor design and construction of water supply systems providing breeding grounds for disease vectors</li> <li>• Inefficient use of agricultural chemicals causing pollution of potable water sources</li> <li>• Badly sited waste-stabilisation ponds causing pollution of groundwater</li> <li>• Excessive extraction of water from watercourses for irrigation causing harmful ecological effects downstream</li> </ul>

Source: Adapted from Brodie and Morrison 1983:4.

#### 2.10.5 Wastewater

As most urban centres in the Pacific are located on the coast, the discharge of liquid wastes into coastal waters, especially lagoons with restricted water circulation and where mangroves have been cleared (and, hence, where sewage effluent is retained in nearshore areas), not only puts fragile ecosystems at risk but also reduces the productivity of subsistence fisheries and may contribute to food poisoning. Sewage is the most significant source of marine pollution in the region, with nearly every island nation suffering critical environmental and public health problems resulting from the disposal of human waste and industrial discharge (Greenpeace Pacific 1997:1). Increasing pollution from wastewater is the result of urban growth and inadequate sewage collection, treatment and disposal systems, with waste generally passing through pipes which discharge into the ocean. For example, in Honiara, the domestic wastewater for 75% of the population is discharged raw through 14 outfalls (all of which are in poor condition) along the shore, and some areas discharge wastewater via septic tanks directly into the sea or the Mataniko River although there is the

further problem of an inadequate capacity to empty septic tanks as regularly as is required (Connell and Lea 1993b:146; Greenpeace Pacific 1996:15). Particularly in the atolls, there is contamination due to latrines being situated directly over the sea, draining of septic tanks onto the shore, and underground seepage, which, in turn, cause problems with groundwater supply (Bryant 1993b:19). In the Marshall Islands, most of urban Majuro is served by a saltwater supply system to flush toilets for which a sewerage system collects the wastewater and discharges it into the ocean, while in some areas open defecation on the beach or in the bush is very common; these current sanitation practices therefore contribute to the stagnation of lagoon waters, reef degradation and fish kills, and present a high risk of transmitting water-borne diseases with the risk invariably higher for populations that rely on groundwater or shallow wells for water (Greenpeace Pacific 1996:14; Howorth 1999b:2). The high reliance of Pacific Islanders on coastal food resources has led to outbreaks of diseases such as cholera (e.g. Federated States of Micronesia, Kiribati and Tuvalu) and viral hepatitis (e.g. Fiji) as well as ciguatera (Greenpeace Pacific 1996:12; UNDP 1996:20). A recent Land-Based Pollutants Inventory estimated that 21,675 tonnes of BOD, 12,252 tonnes of suspended solids, 10,499 tonnes of nitrogen, and 1,250 tonnes of phosphorus enter the South Pacific Ocean per annum from domestic wastewater, making it the main source of these pollutants in the region (Hildebrand 1999b:24).

In 1980, 75% of the Pacific island nations had problems of coral reef pollution, 90% had problems with the disposal of liquid wastes, particularly human wastes (Carew-Reid 1989:83), and 60% had problems with disposal of solid wastes, particularly vehicles, appliances, cans and bottles (Dahl and Baumgart 1983:10). Nearly every Pacific island nation has identified critical environmental and public health problems resulting from the disposal of human excrement, including algal blooms and eutrophication in lagoons, dying coral reefs, contaminated drinking water, and outbreaks of gastrointestinal diseases, cholera and leptospirosis (Hildebrand 1999b:24). For example, 17 people died from leptospirosis in early 2000 in the Northern Division of Fiji, with the increase in cases (four patients per day being treated for suspected leptospirosis at the Labasa Hospital) causing concern (*Fiji Times*, 19 April 2000).

Waste problems are generally most severe in the urban areas. Throughout the region, rapid urbanisation has resulted in increased deposition of human waste and domestic rubbish

into surrounding aquatic environments due to inadequate waste disposal facilities. Pacific urban areas, being primarily coastal, face substantial issues of water pollution (through effluent dumping, faecal pollution and industrial waste), solid waste disposal, destruction of coral reefs, and degradation of mangrove and seagrass environments (Naidu and Morrison 1988:1; Storey 1999:157). Wastes generated at the levels occurring in urban areas of various sizes in the region (Table 2.18) can have major health and environmental consequences if not adequately treated. In Suva, Port Vila, Tarawa and Fanga'uta (Tonga) lagoons, faecal coliform levels have been found to be high and of concern to public health (Bryant-Tokalau 1994:81). In Apia, for instance, where there is no public sewerage system, human waste contaminates groundwater after flooding. Similarly, in Tonga, refuse, combined with urban sewerage and runoff, has led to significant lagoon and ocean pollution, and in the capital city of Nuku'alofa overflowing septic tanks periodically make groundwater supplies unfit for drinking (Storey 1999:164-165). In Tarawa, faecal contamination of shellfish as a result of inadequate sanitation is the cause of outbreaks of diarrhoeal diseases, hepatitis and cholera. Overcrowding has contributed to the contamination, not only from sewage, but also from the disposal of animal waste (especially pigs) and household rubbish (Bryant-Tokalau 1994:81). Likewise, in Tahiti, water in many bathing places is of mediocre quality, with the most polluted beaches located in areas where the population density is highest, and where human pollution is worsened by waste coming from the numerous pig farms (Jost 1998:75).

Table 2.18. Weekly Waste Water Contaminant Loadings in Pacific Urban Centres

Urban Population	Waste Water Loadings (kg/week)			
	BOD <sup>a</sup>	Solids	Nitrogen	Phosphorus
5,000	2,240	1,200	350	21
20,000	9,000	4,900	1,400	84
50,000	22,400	12,200	3,500	210
100,000	45,000	24,500	7,000	420

<sup>a</sup> Biochemical oxygen demand – an international standard which measures oxygen depletion in water.

Source: Adapted from Carew-Reid 1989:85.

#### 2.10.6 Industrial Wastes

Increasing development and its associated changes are causing substantial waste disposal problems to occur near the major urban centres where the expansion is happening. As the economies of the islands move more towards a cash-based, consumer goods society,

the volumes and complexity of waste products increases, with a growing proportion of the waste stream comprised of non-biodegradable, imported and even hazardous materials. In particular, increasing industrialisation is leading to the production of large volumes of solid and liquid waste products and subsequent problems stemming from their disposal into the surrounding environment, as well as to localised air pollution associated with the concentration of industrial development in urban areas. Because the majority of industries are located in and around urban centres, the adverse effects of the effluent and emissions are most visibly felt by the urban population and the surrounding environment. Industrial pollution is generally uncontrolled in most of the region's urban centres. The almost complete lack of effective environmental legislation and monitoring exacerbates the industrial pollution problems as does the reliance of a large section of the islands' population on coastal resources. Industrial wastes are frequently dumped on poorly prepared and poorly maintained landfill sites or discharged into watercourses, leading to contamination of soil and water (Brodie et al. 1990:13; Dahl and Baumgart 1983:14; Goldstein 1992:68; Khan 1994:50; Morrison and Brodie 1985:72; Naidu and Morrison 1988:1; SPREP 1999:1; UNDP 1996:20).

Throughout the Pacific Island region, "incidents of dangerous and illegal pollutants being discharged into streams and oceans have increased, hand-in-hand with a growing manufacturing industry, especially in Fiji" (Bryant-Tokalau 1994:81). The lack of central sewerage systems and the congestion that typically exist in many of the urban areas have made the management of industrial wastes more difficult, contributing to environmental degradation. For example, the coral reefs and mangroves fringing Apia and the north-west coast of Upolu are suffering from the polluting effects of leaching landfills, oil refinery leakage and direct discharging of abattoir waste (Storey 1999:165). The major types of industrial waste present in urban centres come from chemical storage, manufacture and use, storage and production of pharmaceutical wastes, fuel and oil storage, engineering and metal fabrication, paint storage, manufacture and use, printing and publishing, production of plastics, production of cement, production of paper, production of resins, production of fibreglass, and production of electronic equipment.



Table 2.19. Special Wastes in the Pacific

Waste Type	Quantity
Buried Waste Pesticides	11 tonnes
Potentially PCB Contaminated Transformer Oil	135 tonnes
Waste Bitumen	330 tonnes
Waste DDT	10 tonnes
Waste Fertilisers	87 tonnes
Waste Oil	180 tonnes
Waste Medical Drugs	21 tonnes
Waste Pesticides (not including DDT)	47 tonnes
Waste Timber Treatment Chemicals	160 tonnes
Miscellaneous Special Wastes	38 tonnes

Source: Adapted from SPREP 1999:13.

Although chemicals and other hazardous wastes are generally used in relatively small quantities, companies are often careless in their disposal methods, frequently reusing or dumping containers which had contained dangerous chemicals. The special wastes which exist in the Pacific Island region, which may be toxic, flammable or explosive, and which are dangerous to people and/or the natural environment, are not suitable for normal landfilling and require special handling and disposal (Bryant 1993b:22; SPREP 1999:11) (Table 2.19).

Secondary industries in the Pacific principally involve processing of food and alcohol, and produce substantial quantities of organic waste (Table 2.20) which are often discharged untreated into the environment, particularly rivers, lagoons and harbours, leading to nutrient overloading (eutrophication). The requirements of well designed and operated treatment, disposal and monitoring systems for industrial wastes are not easily met in the region. The industries of major concern include dairies, breweries, distilleries, fish processors, cake/biscuit producers, vegetable oil processors, sugar mills, ginger factories, soft drink manufactures, saw mills, and soap manufactures. For instance, the South Pacific Timber Mill in Lae (Papua New Guinea) generated 53,000 tonnes of waste in 1978, of which approximately 80% was disposed of through burning (Walsh 1987:188). Fiji's sugar mills discharge large quantities of both organic wastes resulting from cane crushing and caustic soda from washing water, and fish kills downstream have been frequently reported due to anoxic conditions (Zann 1992:26). Industrial waste from the fish canneries in Levuka (Fiji), Pago Pago (American Samoa) and Tulagi (Solomon Islands) have contributed to the

biological pollution of the marine environment close to the respective towns in which they operate (Dupon and Morhange 1993:5). In fact, the organic waste produced by a major food processing industry can equal or exceed the quantity of human waste produced in the surrounding towns (Carew-Reid 1989:84).

Table 2.20. Organic Pollution Problems in the Pacific

Country/Territory	Organic Pollution Problem
American Samoa	Disposal of rubbish and malfunctioning septic tanks in urban areas; odours, effluents and sludge from the fish canneries
Cook Islands	Disposal of waste from the juice cannery has led to a reduction in fish and biotic diversity in the harbour
Federated States of Micronesia	Poor drainage; leaks of sewage system into water supply; no organised rubbish collection
Fiji	Untreated sewerage disposal and depletion of coral communities through tourist resort sewage outfalls; malfunctioning septic tanks; odours, effluent and sludge from fish cannery and food manufacturing plants
French Polynesia	Discharge of domestic sewerage and refuse into rivers and lagoons
Guam	Lack of knowledge about the northern groundwater, sewage disposal, stormwater runoff, erosion and hazardous wastes
Kiribati	Coastal erosion, pollution, physical degradation of the environment on which subsistence livelihood depends; contamination of lagoon and shellfish from human waste
Niue	Inadequate sewage disposal with public health consequences
New Caledonia	Significant water pollution in urban areas
Papua New Guinea	Sewage disposal, improperly controlled effluent from factories and effluents from improper housing conditions in urban areas
Samoa	Disposal of effluent from the feed mill, the proposed Apia sewerage system, septic tanks and a proposed hotel sewage outfall
Solomon Islands	Liquid organic wastes from the palm oil processing plant pollute the adjacent sea; possible large-scale health problems from raw sewage disposal to the sea
Tonga	Septic tanks and sewage treatment
Tuvalu	Significant pollution of groundwater by human and animal wastes
Vanuatu	Sewage pollution in Port Vila Harbour and eutrophication of lagoons associated with the growing urban population; possibility that some large agricultural projects could cause water pollution

Source: Adapted from Bryant 1993b:21; Carew-Reid 1989:84.

In Papeete Harbour, hydrocarbons, oils and detergents contaminate the upper layer of water in the port area to a degree above that which the marine life can tolerate, while heavy metals such as mercury, copper, lead and zinc are present in the seabed sediment in concentrations up to 12 times higher than normal (Dupon and Morhange 1993:4). Fish samples taken from Pago Pago Harbour were found to have dangerously high levels of arsenic, lead, zinc, nickel and chromium (Zann 1992:25).

#### 2.10.7 Solid Wastes

Where they do exist in the Pacific, rubbish collection services do not serve the entire urban population, especially fringe and informal settlements. Disposal of urban waste is particularly difficult in Pacific island nations due to their isolation, limited land area and budget constraints, and consequently, "the issues of solid and industrial waste disposal are of high priority in the Pacific" (Bryant-Tokalau 1994:81), particularly as dump sites have typically contributed to the "physical, chemical and visual degradation of the environment" (Dupon and Morhange 1993:4). Many of the waste disposal sites in the region are located in valleys, nearby to coastal waters and streams, and, in the atolls, where land shortage is particularly severe, dump sites are frequently located in flood prone areas or on highly porous soils, leading to contamination of groundwater. With often limited land available for disposal sites, 18 Pacific island nations suffered from major waste disposal problems in 1981 (Khan 1994:48). Disposal sites are not only limited but also poorly managed, and "as consumption increasingly takes on more modern forms, so the demand for room to dispose of solid waste increases" (Connell and Lea 1998a:30). For example, in French Polynesia, the average production of waste is 1,000 kg per inhabitant per annum (Jost 1998:75), and in Guam is over 2 kg per inhabitant per day, where, in addition, there are between 5,000 to 10,000 abandoned vehicle bodies on the island (Dupon and Morhange 1993:6). Common waste disposal methods include burning, burying and/or dumping into water bodies and there are very limited recycling and waste reduction programmes in the island nations. Across the region, "waste collection and disposal is not seen as a major issue by the community, hence there is little government and community support to resolve the issues of environmental degradation" (UNDP 1996:20).

Most land in the island Pacific remains under customary land tenure, and as a consequence, obtaining land for solid waste disposal is difficult. Appropriate landfill sites are often hard to find and hazardous wastes pose special problems. In Wallis, for instance, household waste and obsolete machinery were for a long time tipped into the crater of the Lanumaha volcano, at the risk of polluting the groundwater which emerges at the bottom (Jost 1998:75). In South Tarawa, solid waste has built up along the coastline and is dumped in selected foreshore areas by the municipal authorities, contributing to the pollution of the lagoon, and in Majuro, "the town and water's edge, on the lagoon side in particular, are starting to look like a refuse dump" (Dupon and Morhange 1993:3). In Kolonia, Pohnpei (Federated States of Micronesia), there is no organised solid waste collection, forcing residents to dispose of rubbish in their backyards, on the roadside, or privately haul it to a dumping site, and relatedly, problems of diarrhoea, parasites and other infections are rife (Bryant 1993b:20). In Apia, one of the principal environmental problems has also been in waste management, with the town's rubbish being dumped openly, until recently, at Vaitoloa (one of the largest mangrove sites in Western Polynesia), and with the dumping of both household and industrial waste having led to serious off-shore pollution in waters important for sources of food, recreation and tourism attractions (Storey 1999:163). In Port Vila, the municipal rubbish dump has already become saturated and has caused contamination of shellfish (Bryant 1993b:24). Similarly, the municipal dump in Noumea is encroaching on the mangroves and reef flats (Jost 1998:74), as is the Lami Dump serving the Greater Suva area. In fact, most of Fiji's municipal dumps are located in mangrove areas, which despite their unsuitability, continue to be used because they are generally on crown land and thus do not have to be negotiated nor involve the payment of lease rent; hence, their use is merely a financial and expediency measure (Watling and Chape 1992:108,110).

## **2.11 Environmental Changes in Urban and Peri-Urban Fiji**

### **2.11.0 The Population-Environment Nexus**

The population of Fiji has demonstrated a concentration effect (Table 2.21), with the Central Division (which contains only 23.5% of the national land area) having steadily increased its proportion of the national population from 31.4% in 1946 to 38.4% in 1996,

primarily as a result of the dramatic increase in the population of Naitasiri Province within which the majority of Suva's peri-urban area is located. Between 1986 and 1996, the annual rate of population growth for the Central Division was 1.3%, as compared to 0.5% for the Western Division, 0.8% for the Northern Division, and -0.5% for the Eastern Division. This skewed distribution of Fiji's population has resulted in uneven population densities throughout the country. In fact, 75% of Fiji's population lives on Viti Levu, while another 18% lives on Vanua Levu, and with the remaining 7% dispersed among all other inhabited islands. In 1996, 38.4% of the national population lived in the Central Division and 38.3% lived in the Western Division, mostly residing on Viti Levu. When averaged over the total land area of Fiji, there were 42.42 persons per km<sup>2</sup> in 1996, having increased from 39.15 persons per km<sup>2</sup> in 1986, 32.18 persons per km<sup>2</sup> in 1976, and from 26.09 persons per km<sup>2</sup> in 1966 (Table 2.22). Between 1966 and 1976, the average annual population growth rate for Fiji was 2.08%, although this varied greatly across divisions – Western (1.99%), Central (2.97%), Northern (2.04%) and Eastern (-0.01%) – as well as provinces, with Naitasiri experiencing the highest growth rate at 5.13% per annum. The four provinces which dominate the sugar industry (Ba, Nadroga/Navosa, Ra and Macuata) comprised approximately one-half of the total population of Fiji in 1996, and along with Rewa and Naitasiri provinces, these six provinces accounted for 68.3% of all Fijians and 90.5% of all Indians in Fiji in 1996. Likewise, population densities are particularly high in those provinces which include major urban centres such as Rewa, Naitasiri and Ba (Table 2.22); these three provinces together accounted for 81.5% of Fiji's total urban population in 1996. Rewa and Naitasiri Provinces have experienced a marked increase in density (with Naitasiri's having more than quadrupled between 1956 and 1996) owing to increased migration into the Suva-Nausori urban corridor; Suva City had 116 more persons per km<sup>2</sup> in 1996 than in 1966. Thus, in 1996, Rewa Province had by far the highest population density in Fiji (nearly by a factor of five) with 373.3 persons per km<sup>2</sup>, while Naitasiri Province had the third highest density with 76.0 persons per km<sup>2</sup>, and both provinces are notable in that the majority of their populations (90% and 81%, respectively) live in urban areas (Fiji Bureau of Statistics 1998a:10,38; Fiji Bureau of Statistics 1998b:31,34; Fiji Central Planning Office 1980:309; Watling and Chape 1992:20).

Table 2.21. Proportions of Fiji's National Land Area and Population by Province, 1946-1996

Province	Location	Proportion of Land Area (%)	Proportion of Population (%)					
			1946	1956	1966	1976	1986	1996
Western Division:	Viti Levu	34.8	39.1	39.3	41.2	40.6	39.6	38.3
Ba	Viti Levu	14.4	25.9	27.2	28.4	28.4	27.6	27.4
Nadroga/Navosa	Viti Levu	13.1	7.8	7.9	7.9	7.8	7.6	7.0
Ra	Viti Levu	7.3	5.5	4.8	4.7	4.3	4.4	4.0
Central Division:	Viti Levu	23.5	31.4	32.3	32.5	35.2	36.4	38.4
Naitasiri	Viti Levu	9.1	6.9	7.9	8.3	11.1	14.0	16.3
Namosi	Viti Levu	3.1	0.9	0.7	0.6	0.6	0.7	0.7
Rewa	Viti Levu	1.5	13.0	13.8	14.7	14.8	13.6	13.1
Serua	Viti Levu	4.5	1.8	1.9	1.7	1.9	1.9	2.0
Tailevu	Viti Levu	5.2	8.8	8.0	7.2	6.8	6.2	6.2
Northern Division:	Vanua Levu	33.9	17.6	17.6	17.7	17.5	18.1	18.0
Bua	Vanua Levu	7.5	2.3	2.2	2.1	1.9	2.0	1.9
Cakaudrove	Vanua Levu	15.4	6.6	6.8	6.3	5.8	5.7	5.7
Macuata	Vanua Levu	11.0	8.7	8.6	9.3	9.8	10.4	10.3
Eastern Division:	Outer Islands	7.8	11.9	10.2	8.7	6.7	6.0	5.3
Kadavu	Outer Islands	2.6	2.8	2.2	1.8	1.5	1.4	1.2
Lau	Outer Islands	2.7	4.2	3.9	3.4	2.5	2.0	1.6
Lomaiviti	Outer Islands	2.3	3.7	3.2	2.8	2.3	2.2	2.1
Rotuma	Outer Islands	0.3	1.1	0.9	0.7	0.5	0.4	0.4

Source: Adapted from Fiji Bureau of Statistics 1998a:28,38.

Population pressure is particularly problematic in areas that have insufficient carrying capacity to support it, such as where the available arable land area per capita is small (Nunn et al. 1999:198). In Fiji, the population density on arable land was in excess of 170 persons per km<sup>2</sup> in 1986, and agriculture is expanding into marginal hill areas and steep lands, thus causing localised land degradation, as there is already an almost complete utilisation of first class arable land (Watling and Chape 1992:21). For example, as a result of poor land use practices<sup>32</sup>, sedimentation has been extensive in all of Fiji's major waterways, greatly increasing flooding, necessitating dredging of estuaries (e.g. Rewa, Ba, Navua), and causing a siltation problem on nearby reefs (Zann 1992:24,29). In the Greater Suva area, for instance,

<sup>32</sup> For example, very severe erosion of hillsides has recently occurred as a result of slope cultivation of sugarcane and ginger, for which the rates of soil loss range from 10 to 170 mt/ha/y (Zann 1992:28).

the far edge of mangrove forest in the Rewa Delta (formed on an intricate network of islands) has been advancing seaward at a rate of up to 5 m per annum from sedimentation (DTCP 1975:11; Zann 1992:28). In a similar vein, fishing remains an important part of the livelihood of many urban households and inshore fisheries are becoming depleted around densely settled areas. Nevertheless, "little has been done to identify environmental degradation vis-à-vis population pressure" in Fiji (Watling and Chape 1992:21).

Table 2.22. Population Density in Fiji by Province, 1956-1996

Province	Population					Land Area (km <sup>2</sup> )	Density				
	1956	1966	1976	1986	1996		1956	1966	1976	1986	1996
Western Division:	138,145	195,760	238,547	283,349	297,184	6,360	21.7	30.8	37.5	44.6	46.7
Ba	94,004	135,968	167,095	197,633	212,197	2,634	35.7	51.6	63.4	75.0	80.6
Nadroga/Navosa	27,443	37,494	45,929	54,431	54,083	2,385	11.5	15.7	19.3	22.8	22.7
Ra	16,698	22,298	25,523	31,285	30,904	1,341	12.5	16.6	19.0	23.3	23.1
Central Division:	111,507	154,429	206,875	260,110	297,607	4,293	26.0	36.0	48.2	60.6	69.3
Naitasiri	27,347	39,485	65,111	100,227	126,641	1,666	16.4	23.7	39.1	60.2	76.0
Namosi	2,361	2,721	3,292	4,836	5,742	570	4.1	4.8	5.8	8.5	10.1
Rewa	47,758	69,901	87,257	97,442	101,547	272	175.6	256.9	320.7	358.1	373.3
Serua	6,513	8,181	11,263	13,356	15,461	830	7.9	9.9	13.6	16.1	18.6
Tailevu	27,528	34,141	39,952	44,249	48,216	955	28.8	35.7	41.8	46.3	50.5
Northern Division:	60,769	84,244	103,122	129,154	139,516	6,198	9.8	13.6	16.6	20.8	22.5
Bua	7,622	9,758	11,457	13,986	14,988	1,378	5.5	7.1	8.3	10.1	10.9
Cakaudrove	23,339	30,053	34,251	40,433	44,321	2,816	8.3	10.7	12.2	14.4	15.7
Macuata	29,808	44,433	57,414	74,735	80,207	2,004	14.9	22.2	28.7	37.3	40.0
Eastern Division:	35,316	41,248	39,524	42,762	40,770	1,422	24.8	29.0	27.8	30.1	28.7
Kadavu	7,450	8,631	8,699	9,805	9,535	478	15.6	18.1	18.2	20.5	20.0
Lau	13,500	15,988	14,452	14,203	12,211	487	27.7	32.8	29.7	29.1	25.1
Lomaiviti	11,244	13,264	13,568	16,066	16,214	411	27.4	32.3	33.0	39.1	39.5
Rotuma	3,122	3,365	2,805	2,688	2,810	46	67.9	74.0	61.7	59.0	61.1
Total Fiji	345,737	476,727	588,068	715,375	775,077	18,272	18.9	26.1	32.2	39.2	42.4

Source: Adapted from Fiji Bureau of Statistics 1989:18; Fiji Bureau of Statistics 1998a:39; Fiji Bureau of Statistics 1998b:30; McArthur 1958:57.

Population pressure can rapidly lead to significant impoverishment and deterioration of fragile island environments. Particular problems in Fiji include degradation of land resources, unsustainable exploitation of marine resources, and the environmental impact of urbanisation. Urban and peri-urban environmental conditions have deteriorated in parallel with the growth in urban population, industrialisation and vehicle density.

The needs of increasing urban and peri-urban populations are not confined to the provision of basic services (e.g. housing, water, sewerage) which are currently overextended and under-resourced in most if not all localities, but the effects extend out into the rural hinterland and to the land use and agricultural activities of smallholder farmers (Watling and Chape 1992:42).

Urban drift is currently and will increasingly cause localised demographic imbalances with potentially serious implications for Fiji's natural environment (Watling and Chape 1992:21). Poor and overcrowded living conditions, lack of access to adequate basic services, and the growing demands of informal gardening and subsistence fishing, impact urban and peri-urban environments. For instance, the indiscriminate cutting of trees to clear gardening land and for fuel has led to the loss of topsoil, land slides, and in one case in 1986, deaths from mud flows engulfing people's dwellings (Bryant 1993b:82).

Table 2.23. Government Policy Objectives and Indicators for the Environment in Fiji

<b>Policy Objectives and Indicators</b>
<b>Policy Objectives:</b> <ul style="list-style-type: none"> <li>• To develop and incorporate environmental policies into national economic planning through the adoption of environmental impact assessments, the creation of a National Council of sustainable Development, and the adoption of natural resource accounting into the National Accounts</li> <li>• To strengthen the institutional capacity for sound environmental management</li> <li>• To consolidate and update resource and environmental management legislation under a single enabling and enforceable legal framework (Sustainable Development Bill)</li> <li>• To encourage traditional resource and environmental management methods</li> <li>• To adopt economic incentives in the management of industrial pollution</li> <li>• To adopt appropriate pollution standards</li> </ul>
<b>Performance and Accountability Indicators:</b> <ul style="list-style-type: none"> <li>• Enactment and implementation of the Sustainable Development Bill (1999)</li> <li>• A national accounts framework that takes account of natural resource depletion and environmental degradation established (2001)</li> <li>• Rate of land degradation reduced by 50% (2001)</li> <li>• Rate of loss of coastal resources reduced by 50% (2001)</li> <li>• Levels of urban air pollution reduced by 50% (2001)</li> <li>• Water pollution from industrial activities reduced by 50% (2001)</li> <li>• The commissioning of the Naboro waste disposal facility to international standards (2001)</li> </ul>

Source: Adapted from Fiji Central Planning Office 1999:40.

The pressure on urban land has contributed to problems of bush and mangrove clearing. Major areas of mangrove habitat have been reclaimed for urban development (e.g.



Walu Bay and Vatuwaqa in Suva), for agricultural development (e.g. Ba)<sup>33</sup>, and for development of tourist facilities (e.g. Nadi) (Zann 1992:24); recent estimates of mangrove forest approximate that 42,000 ha remain of an original resource of 45,000 ha (Watling and Chape 1993:4). In recognition that these and related problems undermine the quality of life and the sustainable income generating capacity of natural resources, the Fiji Government has identified some of the key policy initiatives for the goal of sustainable use of natural resources (Table 2.23).

#### 2.11.1 Concentrated Populations and Pollution

It is local concentrations of population and urbanisation of particular areas more so than mere growth of a population in relation to the area of a territory which creates accelerating destruction of the environment (Jost 1998:64). The negative environmental impact of human activity is especially evident in densely populated urban areas, and, indeed, many of Fiji's more serious environmental problems occur in urban areas or in their near vicinity. In Fiji, every significant town, most villages, and the vast majority of the population, industry, important infrastructure, commerce and economic activity is located in the coastal zone. This concentration has already resulted in significant environmental and social problems in some urban and peri-urban locations. For instance, Fiji's rate of urbanisation is contributing to escalating air and noise pollution problems (Watling and Chape 1992:45; Watling and Chape 1993:53)<sup>34</sup>. In Fiji, direct regulating control and monitoring of air and water pollution are absent. Owing to the relatively rapid urbanisation, industries and vehicles are increasing faster than the regulating agencies are able to maintain control, and consequently, the pollution situation is deteriorating, pollution having become locally severe in certain locations<sup>35</sup>. Principal air pollutants from stationary sources include: (a) dust from quarries, asphalt plants, cement mills, stone crushers, furniture factories, and

<sup>33</sup> A major Government-initiated (and World Bank funded) mangrove reclamation project for sugarcane and rice cultivation commenced in the mid-1970s, having reclaimed approximately 4,000 ha within a decade (Lal 1984:317).

<sup>34</sup> Similarly, the urban centres of Micronesia are now also experiencing air pollution from vehicles and burning waste, as well as noise pollution (Connell and Lea 1998a:31).

<sup>35</sup> However in an effort to remedy this, the *Land Transport Act*, passed in September 2000, which nonetheless merely provides that drivers do not emit visible smoke from their vehicle for a period of more than 10 seconds (rather than specifying specific standards of vehicle emissions) is to be enforced by agents of the Land Transport Authority, police, environment officers, and municipalities (*Sunday Times*, 10 September 2000).

road dust from vehicles; (b) odour nuisances from fish canneries, slaughter houses/abattoirs, sewage treatment plants, edible oil refineries, breweries, soap factories, and rubbish disposal sites; and (c) poisonous gas and fume emissions from diesel buses and lorries, petrol driven vehicles, mines and asphalt plants, and soot and smoke from sugar mills and timber mills (Watling and Chape 1992:110-111). In certain locations such as at bus stands, the background levels of dust and particulates are high, along with gas pollutants such as carbon monoxide, nitrogen dioxide, sulphur dioxide, hydrogen sulphide and ozone. The increasing number of public and private motorised vehicles has led to a noticeable change in Suva's atmosphere (Bryant 1993b:23-24). The sources of urban noise pollution in Fiji include: vehicles, industrial processes, recreational venues, dogs barking, and those from residential premises (e.g. motor mowers). Spot-checks have indicated that Suva, in particular, is a "very noisy city where background noise levels are above the 'acceptable limit' and in many cases above the extreme limits, almost irrespective of location" (Watling and Chape 1992:111).

#### 2.11.2 Solid Wastes

In Fiji, pollution and waste disposal have become issues of considerable concern because the issues are being effectively ignored or mismanaged. The storage, collection, transport, treatment and final disposal of solid wastes have proven problematic due to problems related to inadequate budgets, lack of technical expertise and equipment, and lack of public cooperation (Khan 1994:48; Watling and Chape 1992:117).

Despite our concerted effort to keep our city clean, especially streets, it is often noticed that many residents do not strictly follow the refuse collection schedule dates. This is aggravated when maintenance contractors at times fail to collect them on time (Suva City Council 2000a).

These problems are further complicated by the fact that Fiji's anti-pollution laws are ineffective, with minimal control or monitoring for compliance, and prosecution of anyone causing pollution never having yet occurred. Although litter laws are now in force, the problem of enforcement continues to plague urban areas in particular, along with a lack of anti-

litter and general pollution education campaigns<sup>36</sup>. Public awareness of litter problems is relatively low in Fiji<sup>37</sup>, solid wastes are routinely discarded indiscriminately on roadsides, onto the foreshore<sup>38</sup>, mangroves and into rivers and the sea, and public areas are frequently underserved with rubbish bins (Bryant 1993b:31; Watling and Chape 1992:111; Watling and Chape 1993:9) (Figure IV). This litter is aesthetically offensive, and dangerous to humans and the natural environment. In many of Fiji's informal settlements, solid waste disposal is a major problems with rubbish simply deposited behind dwellings or in drains. The Lautoka City Council has noted that during rainy periods, some local residents and shopkeepers dispose of rubbish into flooded drains and creeks, causing damage to other resident's property, blockages of the drains and creeks, and hazards to aquatic life (*Fiji Times*, 7 June 2000).

Refuse disposal and management of dumps (Table 2.24) are a national dilemma (particularly with the changing consumption patterns of an increasingly urbanised population) which requires government initiative, including legislation, as well as public education<sup>39</sup>. Waste generation rates in Fiji are relatively high as compared to other Pacific island nations, reflecting the greater industrialisation and GDP; the solid waste collected in 1993 from Suva, Lautoka, Nadi, Ba and Sigatoka totalled 129,000 tonnes (Whitehead et al. 1994:9,39-40). Most of Fiji's urban centres experience problems with their solid waste disposal sites, with none of the municipal rubbish dumps managed to accepted international standards or qualifying as a 'sanitary landfill' (Watling and Chape 1992:108,110; Watling and Chape 1993:8). Despite the fact that such areas are "totally unsuitable for garbage

<sup>36</sup> One measure has been the recent Suva City Council's Suva City Garbage Disposal Awareness Campaign notice published in the newspapers which reiterated that "it is an offence to...throw or deposit on any pavement, roadway, vacant land or foreshore or into any stream or creek, any filth, garbage or refuse. You could be given a spot fine of \$40 or upon prosecution a minimum/or not less than \$100 fine if you are found to have deposited or abandoned litter in, on or near any public place" (Suva City Council 2000b). The nation-wide project, Operation Sasawaki, formed by the Fiji Police Force, Suva City Council and the Ministry of Environment, was launched in April 2000 and aims to minimise the littering of public places by enforcing the Litter Decree Law introduced in 1991 (*Fiji Times*, 28 February 2000).

<sup>37</sup> In Lami, for instance, "littering in the town has become a major problem" (DTCP 1998:9).

<sup>38</sup> For example, averaged results from a shoreline rubbish survey carried out between 1987 and 1988 reveal that, at Suva Point, 34.5% of the area is covered by rubbish (comprised of 52.3% plastic bag, 14.8% other plastic, 7.1% metal, 10.0% clothing and 16.0% rubber tyre), and at Lami Shore, 38.6% of the area is covered by rubbish (comprised of 31.9% plastic bag, 17.3% other plastic, 10.3% metal, 22.9% clothing and 18.0% rubber tyre) (Naidu and Morrison 1988:55).

<sup>39</sup> The 1996 Programme Statement of the Department of Environment of the Ministry of Local Government, Housing and Environment indicated that efforts would be concentrated on the development of a national waste and pollution minimisation strategy, while the 2000 Programme Statement of the Local Government Unit of the Ministry of Local Government, Housing and Environment indicated that efforts would be made to improve the facilities for waste management and disposal of solid waste in municipalities (Fiji Ministry of Finance 1995:163; Fiji Ministry of Finance 1999:171).

Table 2.24 Municipal Waste Dumps in Fiji

City/Town	Population Served	Dump Area Type	Dump Location	Owner of Land	Land Area Total (ha)	Land Area in Use (ha)	Remarks
Suva/Lami	75,000	Mangrove	River, sea and urban area	State	5	5	Burning, levelling, compaction, insecticide, dump is full, pollution of sea/river/air
Lautoka	30,000	Mangrove	River and urban area	State	15	3	Burning, levelling, compaction, insecticide
Nausori	5,000	Forest and swamp	River	State	1	1	Levelling, insecticide, pollution of river/air, lack of cover soil
Nadi	16,000	Mangrove	Sea	Private	1	1	Levelling, compaction, dump is full, pollution of sea, shallow watertable
Ba	8,000	Forest	Urban area and village	State	5	1	Burning, levelling
Labasa	16,000	Mangrove	River	State	4	2	Levelling, insecticide, waste covering
Levuka	8,200	Mangrove	Sea	NLTB	0.6	0.2	Levelling, compaction, pollution of air, lack of cover soil
Savusavu	4,000	Mangrove	Sea	NLTB	2.5	0.5	Levelling, insecticide
Navua	25,000	Mangrove	Sea	State	1	0.2	Levelling when funds and machinery are available, pollution of air
Rakiraki	5,000	Mangrove	Sea	State	2	0.2	Levelling, compaction, insecticide, lack of cover soil and machinery
Tavua	33,000	Depression	n.a.	Private	2	1	Levelling, no treatment of wastes

Source: Adapted from Watling and Chape 1992:108-109.

### 2.11.3 Industrial Wastes

In Fiji, as in many parts of the Pacific Island region, the issues of solid and industrial waste disposal are of growing concern. Industrial pollution has become a problem for Fiji's major urban areas, and particularly as the manufacturing industry expands, dangerous and illegal pollutants are increasingly being discharged into streams, rivers and oceans. Industries discharging their wastes directly into Fiji's coastal waters include flour mills, sugar mills, fish canneries, electroplating plants, fuel oil depots, and shipbuilding and repair docks (Bryant-Tokalau 1994:81; Lal 1984:319; Whitehead et al. 1994:33). The industrial waste discharge from the Suva, Lautoka and Ba areas has been characterised as "severe", with large quantities of chemical and thermal waste, frequently of high strength, being discharged, often untreated, directly into water courses (Whitehead et al. 1994:8,39-40). As a consequence of contamination linked to industrial pollution, fish yields have fallen substantially from inshore fisheries in proximity to urban centres (particularly close to ports at Suva and Lautoka), and there have been several cases of large numbers of fish dying in the vicinity near where factories discharge their waste (Bryant 1993b:22; Whitehead et al. 1994:10). Waters adjacent to industrial discharges are highly polluted and foreshore waters pose a health risk after rains in Lautoka; Nadi experiences some wastewater pollution of local drains and creeks, with a health risk in the Nadi River and around the river mouth after heavy rains; Ba faces pollution of local drains, with a health risk in the Ba River; and there is some health risk along the foreshore after rains in Sigatoka (Whitehead et al. 1994:10).

Although the Fiji Government has increasingly considered the industrial and manufacturing sector to be "crucial and strategic for future economic development in the country" (Fiji Central Planning Office 1985:96), it was particularly after the military coups in 1987 that it viewed manufacturing as the leading sector of the national economy (Appendices 2HH and 2II) and initiated policies to promote it, especially incentives for export production. Incentives offered to local and foreign entrepreneurs investing in manufacturing industries include tax and tariff concessions and the establishment of industrial estates (Chandra 1993:47; Kurian 1992:638). Consequently, the contribution of manufacturing to total paid employment in the economy grew from 17.8% in 1987 to 23.6% in 1990 (Connell and Lea 1993b:52). Furthermore, Fiji's manufacturing sector has become more diversified, with food accounting for 48% of the value added of the sector, clothing and footwear accounting for

14%, wood products accounting for 12%, paper and printing accounting for 9%, chemical products accounting for 7%, machinery and equipment accounting for 5%, non-metallic and basic metal products accounting for 4%, and miscellaneous products accounting for 1% in 1990 (Chandra 1993:32). Most of Fiji's manufacturing firms are family concerns, many of which originated from retailing and wholesaling. Yet, experience in other developing countries has shown that the environmental degradation caused by small-scale production units can be considerable, and this is compounded by the reality that "it is almost impossible to regulate the small-scale production sector" (Van Diermen 1997:30).

#### 2.11.4 Wastewater

Fiji's relatively rapid rate of urbanisation has resulted in considerable requirements for the disposal of solid and liquid wastes. Urban growth, however, has outstripped planning and development resulting in inadequate sewage treatment capacities for nearly all the urban centres (Watling and Chape 1992:45,107) (Table 2.25). Indeed, the Government itself has admitted that "sewerage infrastructure has not been able to keep pace with rapid urbanisation" (Fiji Central Planning Office 1999:32). In the urban areas of Fiji in 1986, only 61.2% of the 49,579 households had a flush toilet in which wastes were either retained in septic tanks or discharged into the local sewerage system (Fiji Bureau of Statistics 1989:149). Both sewage treatment plants and individual sewage facilities in unsewered urban areas are sources of contamination, with inadequate and undersized septic tanks, cesspools and latrines known to overflow and discharge leachate into the marine environment either directly or through streams and storm drains<sup>40</sup>. The combined effects of inadequately treated sewage and septage runoff are pollution of watercourses and the coastal environment, with numerous marine pollution problems associated with domestic sewage in Fiji (Greenpeace Pacific 1996:13). The two major concerns with sewage waste are: (a) diseases caused by pathogenic bacteria in human faeces, and (b) algal blooms that are destructive to the ecology of the receiving waters caused by high concentrations of nutrients<sup>41</sup> (Watling and Chape 1992:106).

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<sup>40</sup> In addition, following heavy rain, wastewater sometimes floods through into the bathroom and kitchen drains of houses which are located on the lowest point of the sewer pipelines in Lautoka (*Fiji Times*, 12 December 2000).

<sup>41</sup> Indeed, this is a problem throughout the Pacific Island region. For example, Erakor Lagoon in Vanuatu receives much of the nutrients from Port Vila's urban sewage and is consequently highly eutrophic and has frequent localised plankton blooms (Brodie et al. 1990:22).

In the Suva area, for instance, 95% of kaikoso (mangrove bivalve) collected in eight sites were found to exceed World Health Organisation (WHO) limits for human consumption (Bryant-Tokalau 1994:81).

Table 2.25. Sewerage Facilities in Urban Centres of Fiji, 1986

Urban Centre and Population	Population Capacity of Sewage Treatment Plant	Type of Sewage Treatment Plant	Point of Sewage Discharge Waste
Suva (141,273)	50,000 (Kinoya) + 15,000 (Raiwaqa)	Trickling filter (secondary)	Laucala Bay
Nausori (13,982)	6,000	Trickling filter Trickling filter (5 day ponds)	Vatuwaqa River Rewa River
Lautoka (39,057)	25,000	Oxidation ponds (12.5 day)	Sea outfall
Nadi (15,220)	10,000	Pasveer ditch (secondary)	Nadi River
Sigatoka (4,730)	4,000	Oxidation ponds	Sigatoka River
Labasa (16,537)	6,000	Oxidation ponds	

Source: Adapted from Lal 1984:319; Watling and Chape 1992:107.

## CHAPTER 3: URBAN EXPANSION AND ENVIRONMENTAL CHANGE IN THE SUVA-LAMI-NASINU-NAUSORI CONURBATION

### 3.0 History of Greater Suva-Nausori

#### 3.0.0 Suva's Establishment

Y Suva was established in an area where there was no formal town prior to permanent European influence and settlement, with the land south of Nubukalou Creek having been purchased from the Buli Suva by two settlers in 1858. In 1868, a Melbourne association, the Polynesia Company, had obtained rights over the land by charter, and in 1870 the first settlers arrived to take up allotments of land granted by the Polynesia Company. These settlers' attempts to grow sugar cane were unsuccessful and most of this land in Suva lay dormant until 1877, when the Fiji Colonial Government selected it as an alternative site for the capital. Once the decision had been made, a plan of the proposed township was prepared. The selected area was situated south of Walu Bay and extended one mile along the harbour front and the same distance inland. Negotiations were opened for the acquisition of land from the holding company, and ultimately the Government secured every alternate lot within the township area as well as a site for Government offices and a recreational reserve. In 1880 public land sales were held, with work on the construction of roads and buildings taken up soon there after, and in 1882 the capital moved from Levuka to Suva (Floyd 1976:v; Whitelaw 1964:1).

#### 3.0.1 Suva City

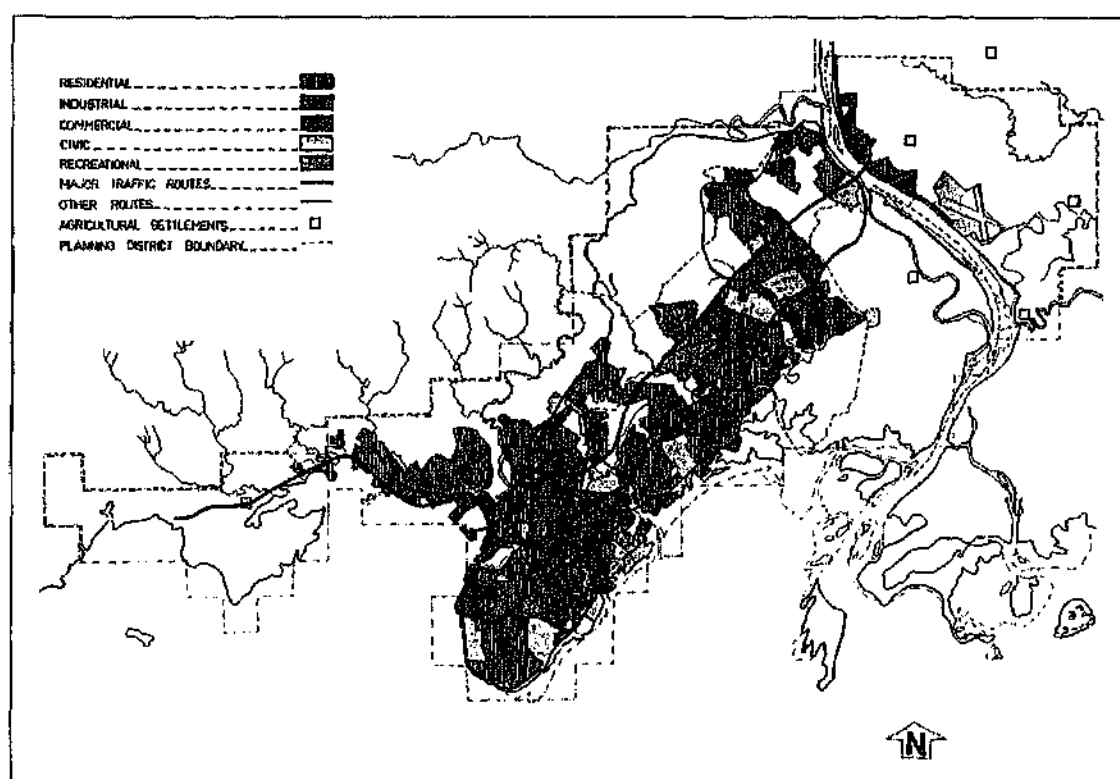
From 1881, the Suva Town Board was governed under the stewardship of a Warden, and when Suva became a municipality in 1910, a Major became its political executive. In recognition of their growing importance, Suva and Lautoka were given the status of towns under the *Local Government (Towns) Ordinance of 1948*, while other urban centres retained their township status established in 1928. The area of Suva, however, was still restricted to the original 1 mile<sup>2</sup> of the 1880s<sup>1</sup>, despite

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<sup>1</sup> Suva's first boundaries were proclaimed in 1881 and re-proclaimed in 1886 (Bloomfield 1967:34).



extensive suburban growth, especially in Samabula, having taken place from the 1920s (Bakker and Walsh 1976:24; Qalo 1985:193; Sukhdeo and Griffin 1982:183). Further considerable residential development took place beyond the Town boundary during the post-war period, particularly in the form of ribbon development along the three main outlets from Suva – at Lami on the Queens Road, at Tamavua along the Princes Road, and from Nabua to Nasinu along the Kings Road (Figure V).



Adapted from: DTCP 1975: Illustration 1

Figure V Land Use, Greater Suva-Nausori, 1975

Extensive urban development had taken place along the main outlets leading from the Town as some of the larger public institutions associated with Suva had been developed in its fringe areas (Bakker and Walsh 1976:25; Bloomfield 1967:15).

On the Princes Road, the Tamavua Hospital (1945) and Fiji School of Medicine (1953) are city functions which had been decentralised, whilst on the Kings Road, the Nasinu Teachers' Training College (1946) and Nasinu Approved School, together with extensive residential growth, added to the urban characteristics of the area. To the west, on the Queens Road, the private residential subdivision and the cement works at Lami as well as the Fijian settlements continued the urbanised area outwards for several miles beyond the city boundary (Bakker and Walsh 1976:25).

In addition, there was also extensive settlement on the slopes between the Tamavua Ridge and Nasinu, with much of this settlement representing an intermediate stage between the rural village and urban town which typically combines subsistence gardening and partial cash employment links in Suva. Just prior to Suva being proclaimed a city in October 1953, Suva's boundary was extended from 1 mile<sup>2</sup> to 8 miles<sup>2</sup> in January 1952, thus allowing much of the dense suburban development adjacent to the City to be incorporated within its boundaries (Bakker and Walsh 1976:24; Qalo 1985:193). There are four wards within Suva: Suva, Muanikau, Samabula and Tamavua<sup>2</sup>.

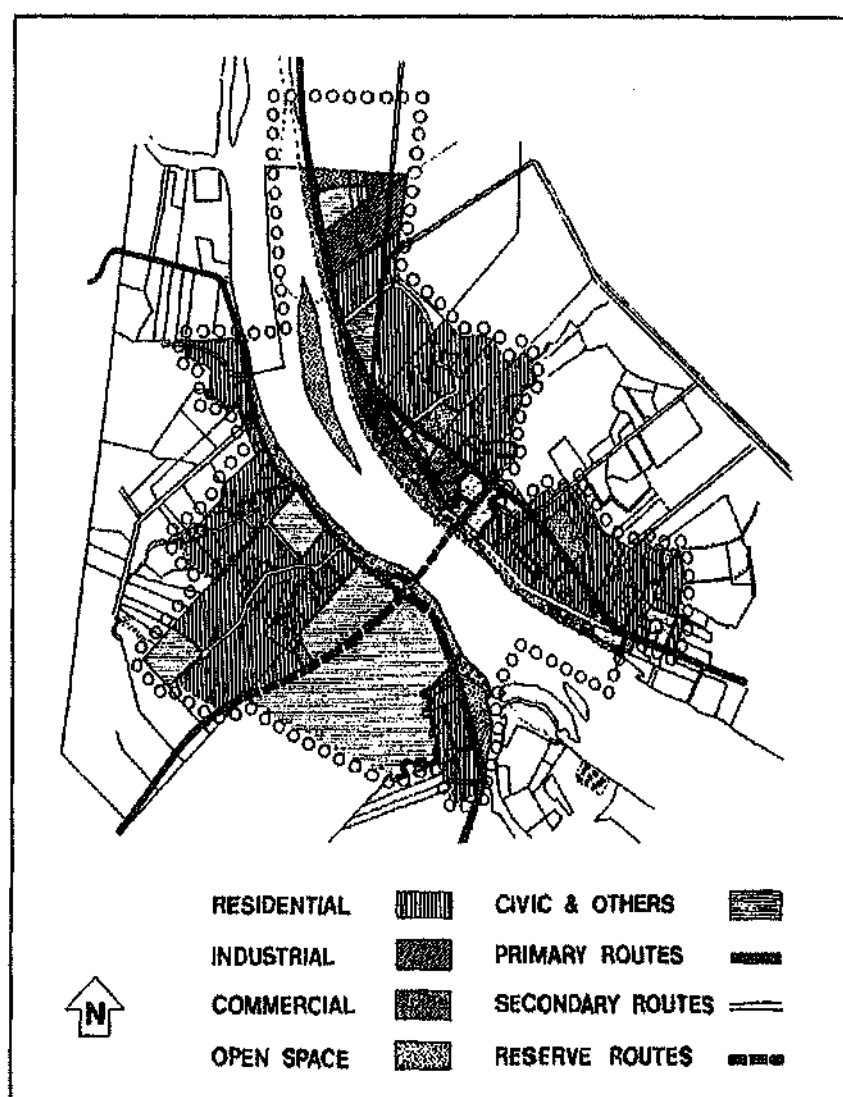
### 3.0.2 Nausori Town

Nausori Town lies at the lowest bridging point of the Rewa River at the head of the Rewa Delta, approximately 18 km northeast from Central Suva on the Kings Road. Nausori, which serves as a service and administrative centre for a dense rural hinterland and which contains an extensive shopping area and market (Figure VI), developed in close association with the Colonial Sugar Refining Company sugar mill (1882-1959), with further growth fostered by the opening of the Rewa Bridge (1938), the Nausori Airport (1950s), the Koronivia Agricultural School (1949), and the Methodist Mission settlement (Bakker and Walsh 1976:43; DTCP 1975:55; DTCP 1988:1). Nausori was proclaimed a township in 1931, and its boundaries were revised in 1954, again in 1961 when the former Colonial Sugar Refining Company compound was incorporated into the Township, and further increased in 1973 (Bakker and Walsh 1976:17; Bloomfield 1967:21). There are two wards within Nausori: Nausori and Davuilevu.

Following the closure of the sugar mill and due to the proximity to the employment opportunities of Suva, a considerable amount of daily commuting from Nausori began taking place; "Nausori has become more closely associated with Greater Suva, especially as it provides part of the labour force for the city and also contains the [local] airport" (Bloomfield 1967:21). Hence, Nausori has, in part, become a 'dormitory suburb' of Suva with a large body of commuters travelling between the areas each day, and there is "an almost continuous thread or ribbon of development stretching along the main road from Suva to Nausori" (Whitelaw 1964:6).

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<sup>2</sup> At the time of its boundary extension in 1952, Suva was divided into three wards – Central, Muanikau and Samabula – with the Central Ward closely corresponding with the former (1881-1951) Town boundary.

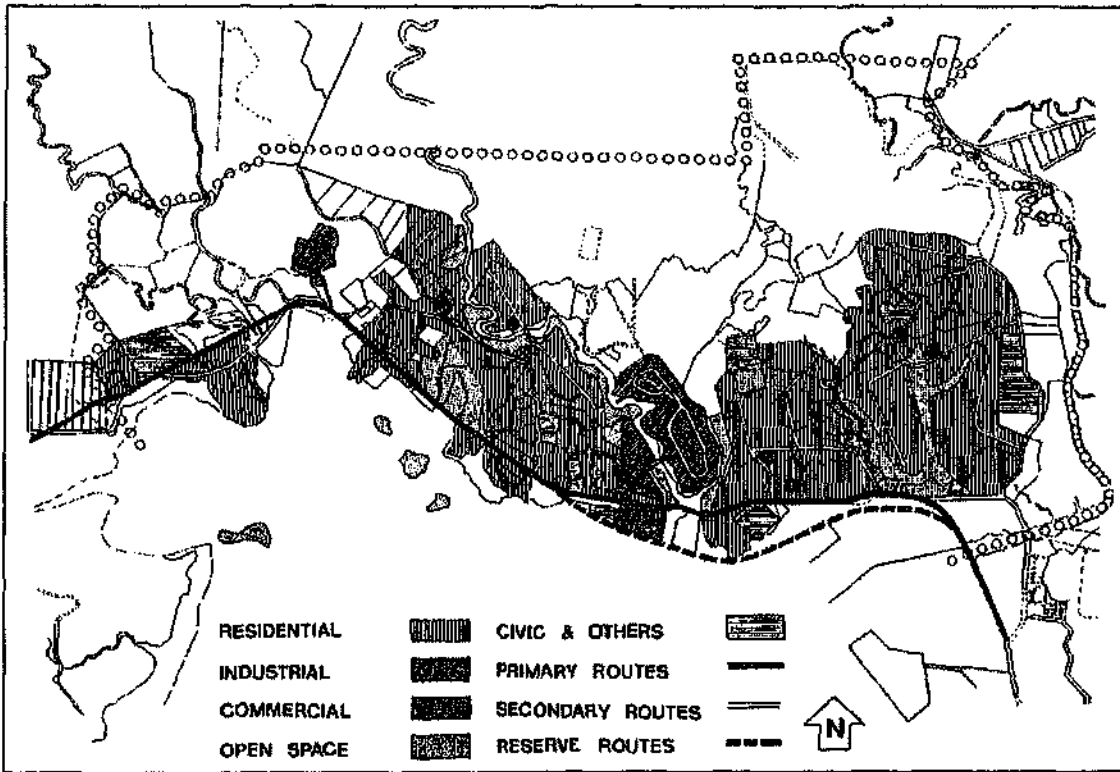


Adapted from: DTCP 1975: Illustration 28

Figure VI Land Use, Nausori Town, 1975

### 3.0.3 Lami Town

Prior to its becoming a town, Lami was part of the Suva Rural Town Planning Area and was under the jurisdiction of the Suva Rural Local Authority. Lami was proclaimed a town in 1977, with difficulties concerning the definition of Fijian villages (excluded from the town area) having delayed the implementation of the decision of the new town boundaries. The boundaries were amended in 1988 to exclude some areas of land opposite the Suvavou Village for village reserve purposes (DTCP 1975:91; DTCP 1998:1; Fiji Bureau of Statistics 1997:43).



Adapted from: DTCP 1975: Illustration 23

Figure VII Land Use, Lami Town, 1975

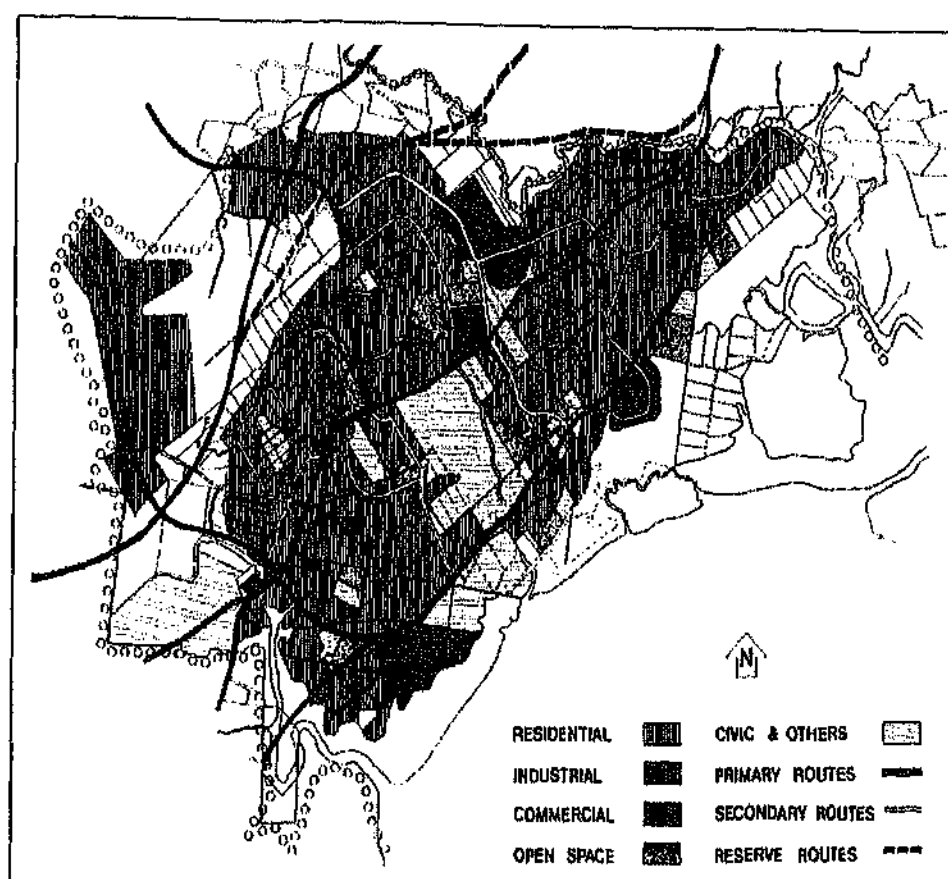
In 1986, there were three wards within Lami: Eastern, Western and Central, but in 1993 the number of wards was reduced to two as part of the Central Ward was allocated to the Western Ward and part to the Eastern Ward.

Lami is approximately 2 km from Central Suva and comprises 630 ha of land, most of which is characterised by undulating and hilly terrain (DTCP 1998:1,4). Much residential development has taken place in Lami, and even its fringe villages have been “drawn into the orbit of the [Suva] City” (Whitelaw 1964:6). While the principle residential areas are at Lami Town and Delainavesi, considerable squatter development has also occurred in the Qauia area. Situated between Suvavou Village and Lami Town, the low-lying area of Wailada has been developed for industrial purposes (DTCP 1975:92) (Figure VII).

### 3.0.4 Nasinu Town

Prior to its becoming a town, Nasinu was part of the Suva Rural Town Planning Area and was under the jurisdiction of the Suva Rural Local Authority (DTCP 1983:2).

Nasinu was proclaimed a town in January 2000, although the exact town boundaries will not be determined until 2001 (*Fiji Times*, 1 January 2000).



Adapted from: DTCP 1975: Illustration 25

Figure VIII Land Use, Nasinu Town, 1975

“In the regional context, Nasinu’s significance can be said to be that of a housing dormitory”, with most of the Housing Authority’s residential development in the Greater Suva-Nausori area centred there (DTCP 1983:4), and with their extensive housing developments having increased the population substantially in the area over the past few decades (DTCP 1975:8). There are five Housing Authority subdivisions in the area, including those at Kinoya, Nadera, Nepani, Valelevu and New Town; in addition, there are four crown subdivisions, including those at Caubati, Kalabo, Caqiri and Nasole, and freehold subdivisions, including those at Caubati and Laucala Beach. Some of Government and civic services such as the Housing Authority’s headquarters, the Department of Road Transport, the Kinoya Sewerage Treatment Plant, the Kinoya Electricity Generating Station, the Royal Military Forces Barracks and the Nasinu Teachers College are also located in Nasinu. In addition, Nasinu has industrial estates at Kalabo (including a tax free

zone), the Nasinu Cooperative Site and Laucala Beach Estate, as well as a commercial centre at Valelevu (DTCP 1975:96-97; DTCP 1983:4) (Figure VIII).

### **3.1 Suva-Lami-Nasinu-Nausori Corridor and Peri-Urban Growth**

#### **3.1.0 Urban Decline and Fringe Growth**

The urban centres of Melanesia are “characterised by rapidly growing uncontrolled areas of peri-urban customary land, often on the fringes, and pockets of traditional villages now swallowed up by the expanding town” (Connell and Lea 1993b:1). Greater Suva’s physical growth, to become the agglomeration it is today, has involved the linking-up of smaller urban and peri-urban settlements spread around its original city core to form the Suva-Lami-Nasinu-Nausori conurbation. The *Greater Suva Urban Structure Plan* (1975) proposed consolidation of an urban corridor between Lami and Nausori, with some decentralisation of industrial and commercial activities away from Central Suva, supported by an improved regional road system. The basic form of urban growth proposed is that of a corridor from Suva peninsula to Nausori with a predominance of new developments in the Nasinu-Nausori section. Decentralisation of shopping and commerce has occurred at two levels – decentralisation of service activities to other centres outside the region and decentralisation of these activities from the Suva Central Area. Indeed, a basic principle of the *Greater Suva Urban Structure Plan*, carried over from previous Suva City Council policies aimed at decreasing traffic congestion and transportation costs<sup>3</sup>, has been to encourage the development of a number of commercial and industrial estates in areas outside the Suva peninsula (DTCP 1975:73; Floyd 1976:iii,8-9).

The components of the Greater Suva-Nausori agglomeration have experienced unequal degrees of growth, with the centre of population growth having shifted to the outlying area (DTCP 1975:60; Fiji Bureau of Statistics 1998a:137). Indeed, “most cities reflect their growth in the changes taking place on their peripheries, and Suva is no exception to this” (Whitelaw 1964:6). In 1966, the proportion of the Greater Suva-Nausori population living in the urban areas as opposed to the rural areas was 76% (DTCP 1975:23); by 1976, 59% of the total Greater Suva-Nausori population were urban residents, by 1986 this proportion had further decreased to 49%, and to 45% in 1996

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<sup>3</sup> Traffic problems in Central Suva have arisen partly as a consequence of the high proportion of jobs being confined in a comparatively small area; together the Central Area, the wharves and Walu Bay employed 68% of all workers in 1973 (DTCP 1975:40).

(Table 3.0). Thus, the growth experienced by the peri-urban areas of Greater Suva-Nausori has been much greater than that experienced by their respective urban areas. Between 1976 and 1986, the population of Suva City increased by 6,037 persons, growing by another 7,701 persons between 1986 and 1996, whereas the population of Suva's peri-urban area grew by 17,409 between 1976 and 1986, and by 19,001 persons between 1986 and 1996 (Table 3.0). Between 1976 and 1986, the population of Nausori Town actually decreased by 20 persons, but increased by 502 persons between 1986 and 1996, whereas the population of Nausori's peri-urban area grew by 1,181 between 1976 and 1986, and by 7,133 persons between 1986 and 1996. Between 1986 and 1996, the population of Lami Town grew by 1,959 persons, whereas the population of Lami's peri-urban area grew by only 262 persons.

Table 3.0. Urban and Peri-Urban Population of Greater Suva-Nausori, 1976-1996

Year	Suva			Lami <sup>a</sup>			Nausori		
	Total	City	Peri-Urban	Total	Town	Peri-Urban	Total	Town	Peri-Urban
1976	117,827	63,628	54,199	n.a.	n.a.	n.a.	12,821	5,262	7,559
1986	141,273	69,665	71,608	16,707	8,597	8,110	13,982	5,242	8,740
1996	167,975	77,366	90,609	18,928	10,556	8,372	21,617	5,744	15,873

<sup>a</sup> Lami has been an urban area for census purposes only since 1986 and was included with Suva prior to this.

Source: Adapted from Fiji Bureau of Statistics 1977:75; Fiji Bureau of Statistics 1988a:83; Fiji Bureau of Statistics 1998b:39.

Considerable population movement occurred within the Greater Suva-Nausori area between 1966 and 1976, with Suva City having grown by only 18%, the inner city having lost one-fifth of its population, outer suburbs having increased from 41% to 61%, and the peri-urban area outside Suva having increased by 106% (Walsh 1977:3). Hence, urban-rural/peri-urban population shifts have resulted in a regional process of 'counterurbanisation', characterised by internal spatial reorganisation, peripheral suburban growth and increasing urbanisation of fringe rural areas (Spencer and Goodall 1992:291).

Between 1966 and 1973, the population of Suva City grew at a rate of 3.1% per annum, whereas the population of Suva's peri-urban fringe area grew at 9.6% per annum, for a total Suva urban area growth rate of 5.5% per annum (Walsh 1976:172). Between 1966 and 1976, the annual rate of population growth in Suva City was 1.6%, while the rate for Suva's peri-urban areas was 7.3%, for a total Suva area increase of

2.8% (Walsh 1982:31). This increase in Suva's peri-urban areas was nearly twice the rate of increase of the other peri-urban areas of Fiji; in absolute terms, this increase in the population of Suva's peri-urban areas was 16 times the combined increase of all other peri-urban areas (Chandra 1990:165). Thus, the decline in the growth of Suva City has been accompanied by a significant increase in the growth of Suva's peri-urban areas. The annual rate of population growth in Suva City decreased to 0.9% between 1976 and 1986, although this was in part due to changes made in the urban boundary during this period, with Lami (which was considered part of Suva in the 1976 census) declared as a town prior to the 1986 census. The annual rate of population growth for Suva's peri-urban area during the same period was 2.8%, for an overall total urban growth rate for the Suva area of 1.8% (Fiji Bureau of Statistics 1989:13,108). Between 1986 and 1996, the annual rate of population growth in Suva City was 1.1% (due to changes made in the urban boundary during this period, which resulted in the incorporation of a part of its peri-urban area located in Naitasiri Tikina into the City), while the annual population growth rate for Suva's peri-urban area was 2.4% (Fiji Bureau of Statistics 1998a:137-138). Thus, it is still true that

with future population increases assured, greater thought will need to be given to the planning and control of development. Not only does this imply planning within the narrow confines of the [Suva] city proper, but planning on a regional scale to control and coordinate the changes which must occur in the peri-urban areas as well (Whitelaw 1964:6).

### 3.1.1 Patterns of Urban Growth

Until 1986, Suva City was located entirely within Rewa Province, but the 1994 extended city boundary (which saw parts of Tamavua and Namadi added to the Tamavua Ward of Suva City) also includes a portion of Naitasiri Province; the peri-urban area of Suva is located primarily within Naitasiri Province and a portion of Rewa Province (Table 3.1). Both Lami Town and its peri-urban area are located in Rewa Province. Both Nasinu Town and its peri-urban area are located in Naitasiri Province. Nausori Town is located within Naitasiri Province and Tailevu Province; the peri-urban area of Nausori is located within Naitasiri Province, Tailevu Province, and, since 1996, a portion of Rewa Province (Table 3.2). These various components of the Greater Suva-Nausori area have displayed very different growth rates during the past few decades. For instance, the annual rate of population growth between 1986 and 1996 for Naitasiri Province was 2.3%



(the highest of any province in Fiji) and for Tailevu Province was 0.9%, both considerably higher than the 0.4% for Rewa Province or the national provincial average of 0.8%. More specifically, the component tikinas forming the Greater Suva-Nausori area also have displayed very different growth rates (Table 3.3). For instance, the annual rate of population growth between 1986 and 1996 for Naitasiri Tikina was 2.7%, for Rewa Tikina was 1.4%, for Bau Tikina was 0.9%, and for Suva Tikina was 0.3% (Fiji Bureau of Statistics 1998a:10,225).

Table 3.1. Population of the Component Portions of Suva, 1986-1996

Portion of Urban Area	Population		% of Urban Area Population	
	1986	1996	1986	1996
Total Urban Area:	141,273	167,975	100.0	100.0
Part located in Rewa Province <sup>a</sup>	71,233	71,617	50.4	42.6
Part located in Naitasiri Province <sup>b</sup>	70,040	96,358	49.6	57.4
City:	69,665	77,366	49.3	46.1
Part located in Rewa Province <sup>c</sup>	69,665	71,184	49.3	42.4
Part located in Naitasiri Province <sup>d</sup>	n.a.	6,182	n.a.	3.7
Peri-Urban:	71,608	90,609	50.7	53.9
Part located in Rewa Province <sup>e</sup>	1,568	433	1.1	0.3
Part located in Naitasiri Province <sup>b</sup>	70,040	90,176	49.6	53.7

<sup>a</sup> In Suva Tikina and Rewa Tikina.

<sup>b</sup> In Naitasiri Tikina.

<sup>c</sup> In Suva Tikina.

<sup>d</sup> In Naitasiri Tikina but only since 1994. In 1986, Suva City was entirely located in Rewa Province (Suva Tikina).

<sup>e</sup> In 1986 in Suva Tikina and Rewa Tikina but in 1996 only in Rewa Tikina.

Source: Adapted from Fiji Bureau of Statistics 1998a:37.

Table 3.2. Population of the Component Portions of Nausori, 1986-1996

Part of Urban Area	Population		% of Urban Area Population	
	1986	1996	1986	1996
Total Urban Area:	13,982	21,627	100.0	100.0
Part located in Tailevu Province <sup>a</sup>	8,924	14,073	63.8	65.1
Part located in Naitasiri Province <sup>b</sup>	5,058	6,615	36.2	30.6
Part located in Rewa Province <sup>c</sup>	n.a.	929	n.a.	4.3
Town:	5,242	5,744	37.5	26.6
Part located in Tailevu Province <sup>a</sup>	2,364	2,176	16.9	10.1
Part located in Naitasiri Province <sup>b</sup>	2,878	3,568	20.6	16.5
Peri-Urban:	8,740	15,873	62.5	73.4
Part located in Tailevu Province <sup>a</sup>	6,560	11,897	46.9	55.0
Part located in Naitasiri Province <sup>b</sup>	2,180	3,047	15.6	14.1
Part located in Rewa Province <sup>c</sup>	n.a.	929	n.a.	4.3

<sup>a</sup> In Bau Tikina.

<sup>b</sup> In Naitasiri Tikina.

<sup>c</sup> In Rewa Tikina but only since 1996.

Source: Adapted from Fiji Bureau of Statistics 1998a:37.

### 3.1.2 Patterns of Urban Expansion

The southern portion of Suva is located in Rewa Province and the northern portion in Naitasiri Province (Fiji Bureau of Statistics 1997:22). "Growth in the part of Suva City which is located in Rewa Province has virtually come to a standstill" (Fiji Bureau of Statistics 1998a:137), reflecting the fact that the urban area within which growth can take place is extremely limited, particularly in Suva Tikina which had a high population density of 561.4 persons per km<sup>2</sup> in 1996 (Table 3.3). There is, in fact, little scope for the further expansion of the urban area of Suva City, especially now that Nasinu has become an incorporated town, its boundaries having been carved out of much of Suva's peri-urban area (located in Naitasiri Tikina and Rewa Tikina) (Fiji Bureau of Statistics 1998a:138). Indeed, subsequent to the proclamation of Nasinu Town in 2000, the only possible direction for future expansion of Suva City is north along Princes Road. Likewise, Nasinu's urban area is, in turn, 'boxed in' by Suva City to the south, by Nausori Town to the north, and by very low lying land to the east, and thus further expansion is only possible towards the west within Naitasiri Tikina (Fiji Bureau of Statistics 1997:42,44). The urban area of Lami also has limited possibilities of further extension of its boundary (Fiji Bureau of Statistics 1998a:138), in that although "there is no scope for further extension of the urban area to the east and very little scope for further extension to the north" or to the south, further extension is likely to occur in a westerly direction along Queens Road within Suva Tikina (Fiji Bureau of Statistics 1997:43). The part of Nausori to the west of Rewa River is in Naitasiri Province and the part to the east of Rewa River is in Tailevu Province; the southern part of Nausori is in Rewa Province. There were significant extensions of the Nausori urban area prior to the 1996 census, with the urban area which lies east of the Rewa River having extended in both a northern and eastern direction, and the urban area which lies west of the Rewa River having extended along Princes Road (Fiji Bureau of Statistics 1997:22,48). The peri-urban areas of Nausori, which are located primarily in Bau Tikina (population density 239.2 persons per km<sup>2</sup> in 1996), but also in Naitasiri Tikina (population density 441.2 persons per km<sup>2</sup>) and Rewa Tikina (population density 122.1 persons per km<sup>2</sup>), are thus not as densely settled as is the urban area of Nausori Town.

Table 3.3. Population of the Component Tikinas of Greater Suva-Nausori, 1996

Tikina	Population	Annual Growth Rate (%)	Land Area (km <sup>2</sup> )	Population Density
Bau Tikina, Tailevu Province	22,627	0.9	94.6	239.2
Naitasiri Tikina, Naitasiri Province	111,809	2.7	253.4	441.2
Rewa Tikina, Rewa Province	5,824	1.4	47.7	122.1
Suva Tikina, Rewa Province	92,012	0.3	163.9	561.4

Source: Adapted from Fiji Bureau of Statistics 1998a:225.

### 3.1.3 Suburbanisation and Peri-Urban Villages and Settlements

As has occurred elsewhere during the course of the last few decades, there is a tendency towards suburbanisation, and this has mainly taken the form of spread within the agglomeration region. Thus, 'concentrated deconcentration' is occurring, and the distinction between urban and suburban may have become more salient than that between urban and rural, or similarly, the urban/rural divide may be rejected in favour of a more realistic dichotomy between the largest urban centres, on the one hand, and the smaller urban centres and rural areas on the other (Hoyle 1996:174; Potter 1989a:318). With better transport and improved accessibility to Suva City from outlying areas, substantial suburban development has taken place, further extending the built-up area of the City and physically linking pre-existing settlements into a single sprawling conurbation – Lami Town, Nasinu Town and Nausori Town are all partially satellite centres of Suva City. Even as early as 1966, more than one-half (5,727 out of 11,205) of the total workforce of Suva consisted of people who lived outside the City's boundaries and whose commuting exacerbated peak-hour traffic congestion (John 1969:7).

The trend in which the peri-urban fringe areas are growing more rapidly than Suva, Lami and Nausori themselves (Appendices 2M and 2N) is likely to continue since in 1996 the median age of peri-urban residents was less than that of urban residents (e.g. 21.2 versus 22.7 years in Suva, 19.7 versus 20.8 years in Lami, and 21.8 versus 22.0 years in Nausori) (Fiji Bureau of Statistics 1998:39). Another significant aspect of the urban expansion of Greater Suva-Nausori has been the envelopment of many Fijian villages and settlements into the peri-urban areas. Consequently, the villages and settlements which are located within the Greater Suva-Nausori area have relatively high proportions of urbanised populations, ranging from 15.2% to 57.7% (Table 3.4). It is for such reasons that the NLTB designated the peri-urban sites as their highest priority study areas for new opportunities in residential, commercial and industrial areas for 1999 (Matasere 1999:pers. comm.). The future that the NLTB envisions for the area is one which

provides for the limited expansion of the Suva-Nausori Native Land corridor by encouraging both subsistence living where appropriate and urban development at selected places (which will promote cost-effective servicing by transportation systems, utility network systems and other infrastructure and services of regional significance), thereby maintaining balance between rural and urban development and the needs of each mataqali regarding land use (Land Use Services 1999:19).

Table 3.4. Village and Settlement Population within Greater Suva-Nausori by Tikina

Tikina	Population Type	Total Population	Urban Population	% Urban
Naitasiri Province:	Village	16,315	4,427	27.1
	Village + Settlement	19,100	4,618	24.2
Naitasiri Tikina	Village	2,264	544	24.0
	Village + Settlement	2,603	614	23.6
Rewa Province:	Village	9,462	3,265	34.5
	Village + Settlement	9,690	3,325	34.3
Rewa Tikina	Village	2,015	1,163	57.7
	Village + Settlement	2,015	1,163	57.7
Suva Tikina	Village	2,533	403	15.9
	Village + Settlement	2,647	403	15.2
Tailevu Province:	Village	25,661	8,370	32.6
	Village + Settlement	25,868	8,532	33.0
Bau Tikina	Village	2,886	1,473	51.0
	Village + Settlement	2,886	1,473	51.0

Source: Adapted from Ministry of Fijian Affairs 1995:18-20,25-28.

## 3.2 Land Use in Greater Suva-Nausori

### 3.2.0 Land Use in Suva

A reflection of the rapidly developing nature of the Greater Suva area is the “ever-increasing growth of conflicting demands for land” (John 1969:3). As the urban area continues to develop and expand within a context of a limited and decreasing amount of undeveloped land, the conflicting demand both for the land itself and for the necessary concomitants (such as vehicular access and quietness) will need to be carefully evaluated and planned. Within Suva City during the late 1960s, residential land occupied approximately 53% of the developed land (10% being Residential A, 39% being Residential B and 3% being Residential C), commercial and industrial land accounted for approximately 13%, civic, governmental and religious land accounted for approximately 6%, educational land accounted for approximately 17%, and open spaces and playing fields occupied 12% (John 1969:4,13) (Figure IX).

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Adapted from: DTCP 1975: Illustration 22

Figure IX Land Use, Suva City, 1975

Two particular issues which have presented obstacles to urban planning in Suva are uncontrolled development (such as squatting), and private and quasi-private (NLTB) land ownership resulting in speculation, inflated land prices and the withholding of land needed for development (Walsh 1978:265). Development control regulations in Suva basically fall into two categories – zoning provisions and site and building provisions. The scope of zoning policies relating to land use in Suva City's Central Area, according to the *General Provisions*, are relatively restricted to simply defining the zones for particular land uses in

terms of the areas of land involved as well as the permitted, conditional and non-permissible developments within each zone (Appendix 3A). The effects of ordinances on each land use zone are in terms of the location, area and height of the development (Floyd 1976:36; Stewart 1983:11,14).

### 3.2.1 Greater Suva's Land Use Zones

The land use zones of Greater Suva are typical of a colonial city, with the following distinguishable zones: (a) port zone (the port and related activities on land reclaimed from the harbour); (b) industrial zone (adjacent to the port and also on largely reclaimed land, it is where manufacturing industry is located, comprising steel rolling, a brewery, bakeries, bus and boat building, timber yards, and numerous repair and service yards); (c) western commercial zone (adjacent to the port and comprising several multistoried buildings of major overseas firms, banks and insurance companies); (d) alien commercial zone (two-storied Indian and Chinese family-based firms, with those close to the port comprising mainly duty-free stores and those further back comprising retail, wholesale, servicing and craft industry); (e) mixed land use zone (formerly substantial homes in Toorak are used for storage, light industry and manufacturing, repairs, servicing, and boarding houses and rented rooms); (f) government zone (adjacent to the western commercial zone, comprising parliament and government departments); (g) middle-density residential zone (generally older substantial houses, to the north penetrated by motel and flat development, to the east and north consisting mainly of private homes); (h) low-density high class residential zone (occupied by senior government personnel and several education institutions to the south, and the commercial elite in areas to the north); (i) new suburbs and squatter zone (mostly sparsely settled land consisting of private lower-middle class housing, public housing, and squatter settlements); (j) new industrial estate zone (development at Vatuwaqa built partly to dissuade backyard industries in residential areas); and (k) market gardening zone (outside the city boundaries and retreating before residential expansion)<sup>4</sup> (Walsh 1977:4-5).

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<sup>4</sup> "Between Suva and Nausori lies an area of mixed uses. Agriculturally, market gardens predominate and there is a limited amount of dairying" (DTCP 1975:12)

### 3.3 Land Tenure in Fiji, Focusing on Suva

#### 3.3.0 Freehold, Crown and Native Land

Three types of land tenure exist in Fiji – freehold, crown and native land. The most relevant fact of land tenure as it affects the urban scene in Fiji is that native land cannot be alienated, and this has been the case since the islands were ceded to Great Britain in 1874. The only exception to this has been the period 1905 to 1909 when Fijian land was placed on the open market, during which 20,000 acres (8,094 hectares) sold. This, along with land that was alienated prior to Cession, amount to a total of some 727,438 acres (294,394 hectares) having passed into the hands of non-natives, and represent 16.4% of the total land area in the form of crown land (managed by the Department of Lands)<sup>5</sup> and freehold land. The remaining 83.6% of the land (1,972,236 hectares) remains the property of the Fijian people, which is held on a communal basis (by approximately 14,000 mataqali), and for which the responsibility has been passed to the Native Lands Trust Board (NLTB) (Whitelaw 1966:247-249). Of this 83.6%, approximately one-third has been set aside in reserves for the exclusive use of native Fijians<sup>6</sup>. Native land is only alienable to the Crown (Cole 1994:46; Prasad 1998:51).

#### 3.3.1 The Native Lands Trust Board (NLTB)

As Fiji's economy grew, "it became clear that given the numbers of landowning units, the demands of national development and the need to ensure access to land for non-indigenous communities, what was required was a more orderly and effective mechanism for land administration" (Volavola 1995:49). Hence, since the 1940s, native Fijians' rights to sell and lease their customary lands have been compulsorily transferred to the NLTB, a statutory body that acts as the intermediary between the mataqali (traditional landowning unit) in leases and subdivisions of native land and prospective investors, and which was set up as a way of making land available for development, while protecting the interests of the mataqalia. Thus, it is in the NLTB that the management and control of all native land is vested. The NLTB has classified land into ten categories and of these, nine categories<sup>7</sup> are

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<sup>5</sup> There are two classes of crown land: Crown land schedule A (native land which reverted to the state after the extinction of the landowning mataqali) and Crown land schedule B (state land on which there was no ownership claim by any mataqali) (Prasad 1998:48).

<sup>6</sup> Specifically, there are four classes of native land: unreserved native land (48.31%), unreserved native land leased (19.62%), reserve native land (27.93%), and reserve native land leased (4.14%) (Prasad 1998:52).

<sup>7</sup> The nine land use categories of native land are (in order of decreasing proportion of total land area): agriculture, reserve agriculture, timber concessions, public utility, forestry, residential, hotel/tourism, commercial, and industrial (Prasad 1998:212).

available to any persons who can establish justification for being granted a lease; the remaining category of leases are only available to native Fijians and are located within native reserves. Leases are generally long-term and transferable, and are accepted by banks as collateral. Once leased, the lessee has sole right of occupancy. All transfers or changes to these leases requires the approval of the NLTB (Cole 1994:46-47; Prasad 1998:51; Volavola 1995:50; Ward 1994:139; Whitehead et al. 1994:4).

### 3.3.2 Land Tenure and Ethnicity

There are only two ways in which native land may be obtained by non-natives: (a) the Crown has the right to compulsory acquisition of any land for national purposes, and (b) by leasing (Whitelaw 1966:248). Indians now hold approximately 70% of the freehold land in Fiji, and about 90% of the leased crown land is also held by Indians (Crocombe 1987b:385).

The ethnic distribution of the population is of considerable importance in a pluralistic society like Fiji's. The absentee tax on Fijians who were living away from their villages had a limiting effect on rural-urban migration for the Fijian population. The tax was not lifted until 1966. By contrast, Indians migrated freely to the early towns and had established a substantial urban population of wage earners and entrepreneurs by the 1920s. Indian tenure of land, through leasehold rather than ownership, has assisted in producing a strong Indian orientation towards participation in the cash economy, both through agriculture and commerce (Whitehead et al. 1994:2-3) (Table 3.5).

Table 3.5. Tenure of Land in Fiji by Ethnicity, 1996

Tenure Type	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Owned outright (freehold)	26,594	8,029	14,991	3,574	18.4	12.0	21.7	41.7
Leased from State	27,849	7,627	18,643	1,579	19.3	11.4	27.0	18.4
Leased from NLTB	37,722	9,344	26,823	1,555	26.1	14.0	38.8	18.1
Occupying native land <sup>a</sup>	4,338	2,556	1,662	120	3.0	3.8	2.4	1.4
Occupying without legal status <sup>b</sup>	5,770	1,802	3,693	275	4.0	2.7	5.4	3.2
Traditional village tenure <sup>c</sup>	35,647	33,757	1,045	845	24.6	50.3	1.5	9.9
Other tenure	6,697	3,883	2,190	624	4.6	5.8	3.2	7.3

<sup>a</sup> These are households which are occupying land belonging to another mataqali and either pay rent or live rent-free with the mataqali's permission but without legal tenure or lease.

<sup>b</sup> These are households which are living on freehold, state (crown) or reclaimed mangrove land without legal arrangement.

<sup>c</sup> These are typically Fijian households living on their own mataqali land and which do not pay rent.

Source: Adapted from Fiji Bureau of Statistics 1998b:258-260.



### 3.3.3 Land Tenure in Suva

Due to the nature of the land tenure system, the choice of lands for development is relatively limited.

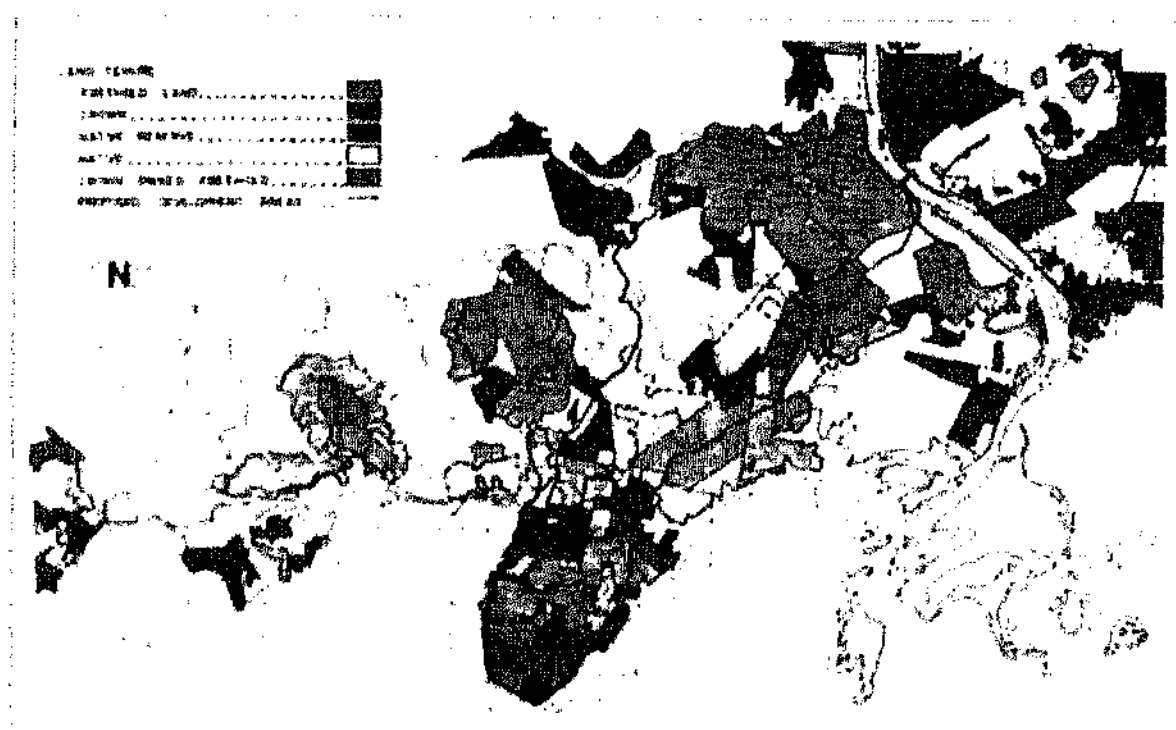
There is a tendency for land to become available for development in a random fashion governed by conditions of land tenure and other factors....The system of land tenure adds immeasurably to the difficulties of achieving logical growth (DTCP 1975:84-85).

Within Fiji, urban-type development tends to by-pass native land and take place on freehold land or crown land – irrespective of their suitability for this purpose – and leads to high rental rates (DTCP 1975:84-85; DTCP 1998:5; Fiji Bureau of Statistics 1997:31). One consequence of this is that there are many examples of ‘leap-frog’ development in Fiji, with areas of native land being by-passed, although this pattern may also arise when land is too low, steep or otherwise inappropriate for development purposes (Fiji Bureau of Statistics 1997:63). Thus, because land which becomes available for development is often divorced from the rest of urban area, it entails high initial costs in the provision of proper roads, infrastructure and services (DTCP 1975:84). Approximately one-half of Suva City is crown land or crown lease and the other half is freehold, while there is no native land within the city boundaries (Table 3.6). In contrast to Suva City itself, all three main forms of land ownership (crown, native and freehold) are represented in its peri-urban area, with native land predominating (Figure X). The pattern of tenure is fairly simple, with a broad band of crown land lying along Kings Road from the city boundary to Nausori with smaller parcels of freehold interrupting this band in several places and becoming more common along the banks of the Rewa River<sup>8</sup>.

Approximately halfway between Kings Road and Princes Road the tenure changes to native ownership and this continues westwards in a broad sweep through the Tamavua area to Lami and beyond, with native land comprising 51.2% of the total land area in the Lami municipality (DTCP 1998:5). In general, the area to the west on native land is predominantly Fijian occupied whereas that to the east on crown land and freehold land is predominately Indian occupied (Whitelaw 1966:191-192).

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<sup>8</sup> The older part of Nausori Town grew up on land owned by the Colonial Sugar Refining Company (now crown land) and freehold land owned by the estate of the Ross family; the remainder of the eastern side of Nausori is surrounded by either crown or native land, while land on the west bank of the Rewa River is freehold land owned by private individuals and the Methodist Church (DTCP 1986:8).



Adapted from DTCP 1975, Illustration 21

Figure X Land Tenure, Greater Suva-Nausori, 1975

Table 3.6. Land Tenure Types in the Urban and Peri-Urban Areas of Suva

Tenure Type	Suva City Area	Peri-Urban Area	Total Area
Crown <sup>a</sup>	52.3%	13.8%	21.1%
Native <sup>b</sup>	0.0%	64.1%	51.9%
Freehold	47.7%	22.1%	27.0%
Hectares	2,050	8,760	10,810

<sup>a</sup> Includes crown lease in urban area, almost all of which is native land

<sup>b</sup> Includes native reserves (which account for 790 ha)

Source: Adapted from Walsh 1978:132

### 3.3.4 Land Reclamation

There is a growing gap between the supply and demand for land in Greater Suva. One minor partial solution has been the reclamation of coastal areas, although there have been negative environmental consequences for lagoon and mangrove forest resources (Dupon and Morhange 1993:5; Veitayaki 1995:102) (Figure XI), and, hence, a policy of the *Lami Town Planning Scheme* is that "the reclamation and development of the coastline be discouraged" (DTCP 1998:22). Nevertheless, since Suva's first major harbour work in 1881 when a wharf, the old post office, old customs house, old produce market and old Suva Yacht Club were all erected in a reclamation site, much of the land on which Suva's commercial centre and industrial areas and wharves have been built has been reclaimed, with the older reclamations having been encircled by new reclamations to gain more

waterfront land, consequently shifting the foreshore line (DTCP 1975:7; Floyd 1976:vii,viii,xii) (Figure XII). Land reclamation for public use has been the focus of Government attention in part because of the land tenure system (Richmond 1981:59)<sup>9</sup>. Programmes of land reclamation are "evidence of the problems of urban development in terms of absolute land shortages and also indicate the way in which reclaiming land enables governments to avoid even more difficult problems attached to land tenure" (Connell and Lea 1998a:207)<sup>10</sup>. Coastal land reclamation has nonetheless created problems regarding traditional areas of marine tenure (qoliqoli) and have led to compensation payments to traditional owners for the loss of fishing rights (Veitayaki 1995:102). For instance, 10 of the residential lots developed under the Ravivavi reclamation scheme (for squatter resettlement) in 1992 were allocated to the owners of fishing rights to compensate them for their loss (*Fiji Times*, 3 December 1992).

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<sup>9</sup> In fact, throughout Polynesia, "governments are actively pursuing the possibilities of land reclamation, not so much because there is an urban land shortage of a physical kind (although this is undoubtedly a factor in some places) but because the shortage is artificial" (Connell and Lea 1995:91).

<sup>10</sup> Indeed, a number of Pacific island nations have carried out land reclamation for industrial and institutional development (e.g. Fiji, Samoa) and for housing (e.g. Marshall Islands, Kiribati) where land is at a premium (Bryant-Tokalon 1994:82).

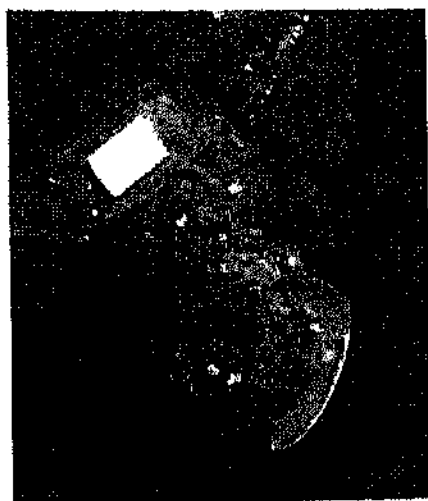
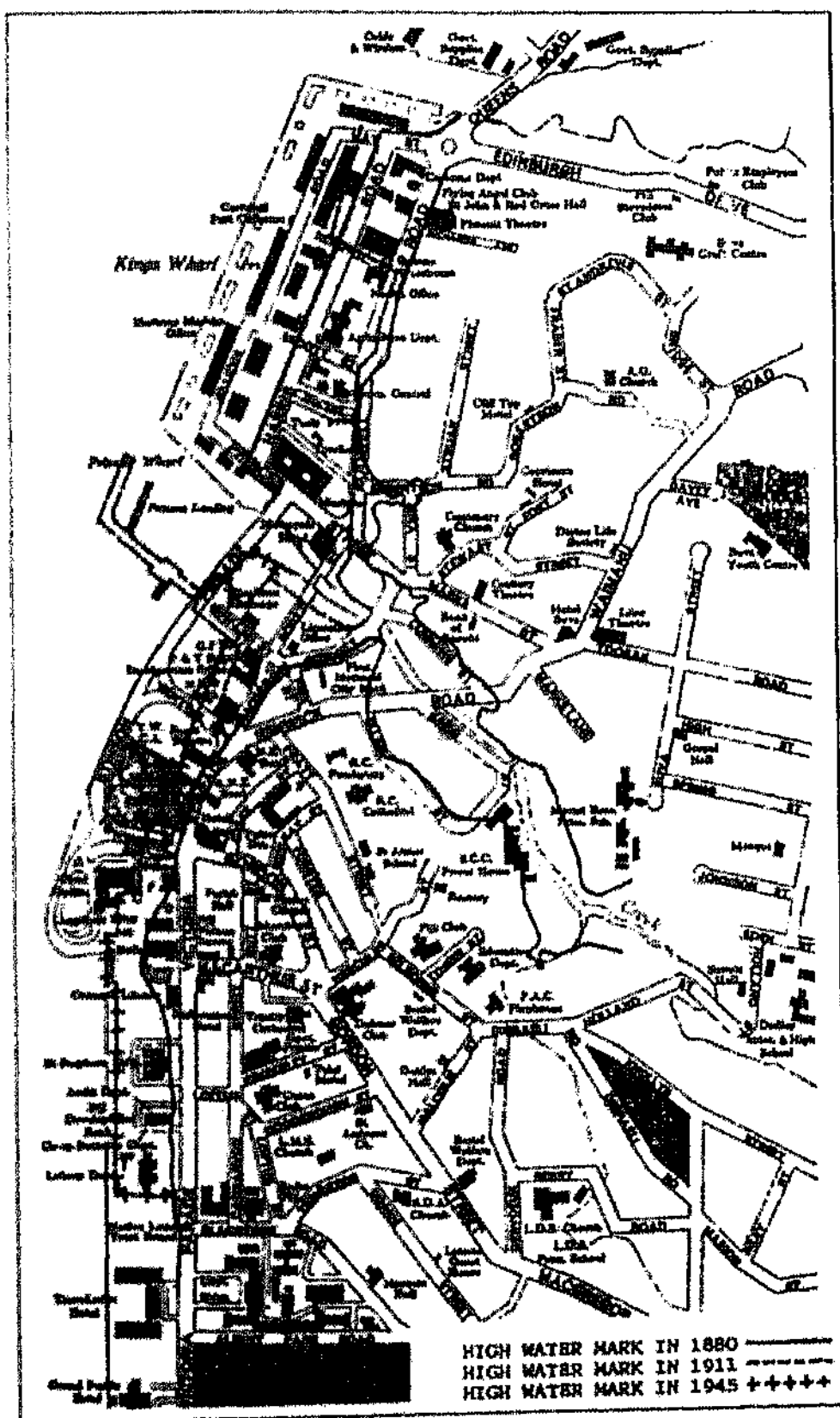


Figure XI Coastal Reclamation – Uduya Point, Lami, 1967 and 1998 (top); Lami Town Centre, 1967 and 1998 (middle); Vatuwaqa, Suva, 1978 and 1998 (bottom)



Adapted from: Floyd 1976:1

Figure XII Changes in the Downtown Suva Foreshore, 1880-1945

### 3.4 Access to Land for Housing in Greater Suva-Nausori

#### 3.4.0 Urban Land and Housing Markets

Land issues are integral to housing policy and national urban development programmes. In terms of land requirements, residential land is the most important urban land use, with the need for adequate housing the most significant urban planning problem in the Greater Suva-Nausori area (DTCP 1975:66-67).

Availability of suitable land has always been a problem for the provision of housing in Fiji (Bryant and Khan 1990:201).

The mounting pressure for housing in Fiji's urban areas, particularly in Suva, and the conflict with demand for industrial land, will have inevitable consequences not only for the urban environment, but also for the lifestyle of the poorest group (Bryant 1993b:83).

In Suva, the supply of available land for urban development, especially for housing, has not kept pace with demand, being limited by the geographical location of the City (which lies on a peninsula) and its topography<sup>11</sup>, the nature of existing urban development, and the attributes of Fiji's land tenure system. Even as early as 1955, it was recognised that the demand for housing in Fiji's urban areas, especially Suva, had far outgrown the satisfactory accommodation available. The housing demand in Greater Suva-Nausori arises from people migrating to the area, the natural increase of the population, the renewal of existing housing stock, the rehousing of people in overcrowded dwellings, and the housing of the homeless (DTCP 1975:67; Finseth and Barr 1991:13).

Throughout Fiji, the supply of urban housing has continued to lag behind the rapid increase in demand, while high housing costs have exacerbated the problem of unaffordability among low-income earners. Moreover, rapid urbanisation has greatly increased the demands for affordable housing of reasonable quality; yet, the provision of affordable housing for low- to middle-income households has been adversely affected by the increased cost of both land subdivision and building materials, and by inadequate loan finance (Fiji Central Planning Office 1985:128; Fiji Central Planning Office 1999:37).

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<sup>11</sup> In Suva, development is undesirable at elevations of 700 feet or more, and on slopes of more than a gradient of 1 to 3 % is impossible while that on slopes from 1 in 2 to 1 in 3 % is difficult (DTCP 1975:33-34). In Lami, topographical constraints in the form of soil type and steep land (sandstone which is susceptible to landslides and unsuitable for intensive or high load bearing types of development) have proved very expensive, discouraging developers (DTCP 1998:4.8).

There appears to be a widespread lack of appreciation by local authorities and others of the costs imposed by existing standards and the extent to which such regulations can hinder rather than facilitate development (Fiji Central Planning Office 1980:231).

The urban land market is generally constrained in Fiji, resulting in high land and housing prices on formal land and squatting elsewhere, and with the rising cost of living along with declining real incomes, pressure on basic services and living space has increased (Bryant 1993b:52; Whitehead et al. 1994:4). Freehold serviced sites sold for F\$10,000 to F\$15,000 in 1983, although the price for raw land may be as high as F\$25,000 to F\$100,000 per hectare in Suva and, thus the purchasers in the private land market tend to be from the upper income bracket (Bryant and Khan 1990:198). At times, land speculation by local and overseas interests has further increased prices (Walsh 1984:186); in Suva, a wave of land speculation started in "the mid-1960s, when a good deal of undeveloped land tracts in the City were sold at inflated prices to overseas interests by owners who could not afford to develop them themselves" (Suva City Council, in Walsh 1978:136)<sup>12</sup>. Likewise, high rents are partly a result of insufficient housing stock – when there is very limited availability of rental accommodation and when demand exceeds supply, rent prices increase (Connell and Lea 1993b:109) (Appendix 3B). For instance, at the upper end of the private rental market, rents which were F\$350 per month for a three bedroom home in 1990 rose to over F\$1,000 per month in 1991, while at the lower end, rents which were previously F\$50 per month rose to F\$300 per month, a change reflected in a 16% rise in the housing index. Even the costs of subsidised housing experienced a marked increase following the transfer of Housing Authority rental flats to the Public Rental Board and the reassessment of rental rates in 1991 (Bryant 1993b:66; UNDP 1997:10,87). Lastly, there is often a strong correlation between accessibility (to work places, to shopping and to other residential areas) and land values in Greater Suva, with high accessibility areas commanding a high market value (DTCP 1975:36).

#### 3.4.1 Suva's Scarcity of Land

In Fiji, the development and densification of freehold land are governed by an archaic 1947 act, while crown land (controlled by the Department of Lands) can be

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<sup>12</sup> There is no compulsion on landowners to develop according to any time scale (DTCP 1975:85).

accessed only after a lengthy set of procedures (Whitehead et al. 1994:4). As only approximately 8% of Fiji's land is held under freehold and is available on market for sale, there is a great demand for this type of tenure. However, because of ordinances restricting sale of native and crown land, freehold ownership is becoming scarce as these become owner-occupied and its value has become inflated (Dean 1981:25; Walsh 1978:134). Freehold land tends to be concentrated in the urban areas, and hence in 1996, 42.1% of all households in Rewa Province (Table 3.7) – as compared to a national average of only 18.4% (Table 3.5) – occupied dwellings situated on freehold land which they owned outright. Government has been making crown land available for development whenever possible and approximately one-quarter of all households in Rewa and Naitasiri Provinces in 1996 occupied crown land leased from the State (Tables 3.7 and 3.8) – a relatively higher proportion than that of the national average of 19.3% (Table 3.5) – but crown land has become increasingly scarce, so scarce, in fact, that when prospective settlers now approach the Department of Lands requesting vacant land in the Greater Suva area, staff respond that the only land left available is tiri (low-lying mangrove swamp) (Bryant and Khan 1990:201; Tokailagi 1999:pers. comm.). As there is little land still available for housing, there has consequently been a growing tension over urban land in Fiji, such that “both formal and informal housing developments are moving increasingly to the periphery” (Bryant 1993b:55).

Table 3.7. Tenure of Land in Rewa Province, Fiji by Ethnicity, 1996

Tenure Type	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Owned outright (freehold)	7,822	2,240	3,808	1,774	42.1	24.4	59.8	58.3
Leased from State/Crown	4,274	2,213	1,337	724	23.0	24.1	21.0	23.8
Leased from NLTB	1,470	902	271	297	7.9	9.8	4.3	9.8
Occupying native land <sup>a</sup>	627	537	74	16	3.4	5.9	1.2	0.5
Occupying without legal status <sup>b</sup>	1,415	690	610	115	7.6	7.5	9.6	3.8
Traditional village tenure <sup>c</sup>	2,497	2,366	59	72	13.4	25.8	0.9	2.4
Other tenure	481	222	213	46	2.6	2.4	3.3	1.5

<sup>a</sup> These are households which are occupying land belonging to another mataqali and either pay rent or live rent-free with the mataqali's permission but without legal tenure or lease.

<sup>b</sup> These are households which are living on freehold, state (crown) or reclaimed mangrove land without legal arrangement.

<sup>c</sup> These are typically Fijian households living on their own mataqali land and which do not pay rent.

Source: Adapted from Fiji Bureau of Statistics 1998b:258-260.

In the Greater Suva area, for instance, undeveloped land is scarce and its supply is constrained: 1991 estimates for freehold land were 550 hectares, 620 hectares for crown land, and 670 hectares for native land (Whitehead et al. 1994:4). Yet, even in 1968, when the population of Suva City was only 54,157 people, the rate



of housing development was already 9 hectares per annum (Krishnamoorthy 1968:10).

Table 3.8. Tenure of Land in Naitasiri Province, Fiji by Ethnicity, 1996

Tenure Type	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Owned outright (freehold)	4,885	1,498	3,051	336	21.8	13.4	30.6	27.6
Leased from State/Crown	6,157	2,444	3,401	312	27.5	21.8	34.1	25.6
Leased from NLTB	4,674	2,259	2,009	406	20.9	20.2	20.1	33.4
Occupying native land <sup>a</sup>	654	507	92	55	2.9	4.5	0.9	4.5
Occupying without legal status <sup>b</sup>	1,323	359	951	13	5.9	3.2	9.5	1.1
Traditional village tenure <sup>c</sup>	4,167	3,880	220	67	18.6	34.7	2.2	5.5
Other tenure	529	248	253	28	2.4	2.2	2.5	2.3

<sup>a</sup> These are households which are occupying land belonging to another mataqali and either pay rent or live rent-free with the mataqali's permission but without legal tenure or lease.

<sup>b</sup> These are households which are living on freehold, state (crown) or reclaimed mangrove land without legal arrangement.

<sup>c</sup> These are typically Fijian households living on their own mataqali land and which do not pay rent.

Source: Adapted from Fiji Bureau of Statistics 1998b:258-260.

Table 3.9. Tenure of Land in Tailevu Province, Fiji by Ethnicity, 1996

Tenure Type	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Owned outright (freehold)	900	419	461	20	10.1	7.2	15.7	12.6
Leased from State/Crown	678	147	511	20	7.6	2.5	17.4	12.6
Leased from NLTB	2,259	580	1,601	78	25.3	10.0	54.6	49.1
Occupying native land <sup>a</sup>	312	244	65	3	3.5	4.2	2.2	1.9
Occupying without legal status <sup>b</sup>	310	74	232	4	3.5	1.3	7.9	2.5
Traditional village tenure <sup>c</sup>	4,386	4,318	41	27	49.2	74.1	1.4	17.0
Other tenure	74	45	22	7	0.8	0.8	0.8	4.4

<sup>a</sup> These are households which are occupying land belonging to another mataqali and either pay rent or live rent-free with the mataqali's permission but without legal tenure or lease.

<sup>b</sup> These are households which are living on freehold, state (crown) or reclaimed mangrove land without legal arrangement.

<sup>c</sup> These are typically Fijian households living on their own mataqali land and which do not pay rent.

Source: Adapted from Fiji Bureau of Statistics 1998b:258-260.

### 3.4.2 Low Residential Densities

As is common throughout most of the urban centres of Melanesia, the cities and towns in Fiji are characterised by a low density layout (Fiji Bureau of Statistics 1997:30). Physical development in the major urban centres in Fiji has typically taken the form of "expanded villages with sprawling patterns of residential growth", resulting in very low residential densities (Krishnamoorthy 1968:2). Although the Suva City Council adopted the principle of limited external development, implying that "the Town Planning Board be asked to take any necessary steps to encourage the development of the land within the City before the outward spread of development beyond the City is allowed to further aggravate the problems of extended services and long journeys to work", shortages of land readily available for development (especially housing) as well as the economic

reality that land is less expensive for the developer outside the city boundaries have made this policy unrealistic (John 1969:10,14). In 1966, the population density of Suva City was 4.33 persons per ha, and in 1976, the population density of Suva City had only increased to 4.82 persons per ha, while the population density of Suva's peri-urban area was a mere 0.97 persons per ha (John 1969:5; Walsh 1978:134)<sup>13</sup>. These densities are very low to moderate, as compared with similar urban situations in other developing countries, with "Suva already experiencing a low density sprawl and haphazard fringe development" (Krishnamoorthy 1968:3). Furthermore, this situation has continued to exist alongside the anomaly of undeveloped land within the core of the City. So while there has been substantial outward movement of, for instance, certain commercial land uses (such as retailing towards the Government centre and along Waimanu Road, and offices behind Government Buildings towards Nasese), there has also been substantial underutilised capacity for such uses within Central Suva (John 1969:14; Stewart 1983:11).

Consequently, there has been a recognition of the advantages of density reorganisation (by which the population capacity of the existing and proposed housing areas are increased to the desirable levels) in the housing areas of Suva in light of its requirements of urban land and housing demands, as well as the need for the community to set the limits for outward expansion of Suva (Krishnamoorthy 1968:2,10; Stewart 1983:11). In 1967, there were 1,570 undeveloped subdivided plots within Suva City, although provision for an additional 2,000 plots was possible, even at the minimum of 32 or 40 perches (John 1969:6). In Suva in 1981, the average household of 5.8 people occupied 39.4 m<sup>2</sup>, which is greater than the Fiji public health stipulation of 5.68 m<sup>2</sup> per adult and 3.78 m<sup>2</sup> per child (Siwatibau 1987:8). Within the City, population density control and plot ratio control are based on the category of residential zone and on the presence of a sewerage system; 10 units per acre (or 2 flats per 32 perch lot) is the maximum permitted without the provision of a sewerage system (John 1969:22). For an average sized dwelling site, under planning regulations, with a septic tank sewage disposal, a floor area/plot ratio of 0.2 to 1.0 is allowed (but with sewerage this would be 1.0 to 1.0); thus, there is the related need to remove this restriction to allow further development and improvement within the built-up areas of Suva (Fiji Public Works

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<sup>13</sup> There are marked differences in population density between higher and lower income areas; the discrepancy between actual and ideal capacity densities is greatest in higher income, and only Housing Authority areas approximate their ideal capacities (Walsh 1978:263).

Department 1993:4). In Lami, the unavailability of a reticulated sewerage system has precluded land being developed to its highest potential (1.0 to 1.0 plot ratio), with large lot sizes and medium density residential subdivisions resulting, these being unaffordable for low-income earners (DTCP 1998:6,8).

In 1996, 80.3% of all households in Fiji lived in a single family detached dwelling (Appendix 3C). This extent of detached housing has contributed to very low density urbanisation and has substantially increased the cost of providing infrastructure. Thus, there is considerable scope for urban consolidation. In addition, the average household size in Fiji decreased from 6.3 persons in 1956 and 1966, to 6.0 in 1976, to 5.8 in 1986, and to 5.4 in 1996. Furthermore, this trend is most pronounced in Fiji's urban areas, where the average household size was 5.6 persons in 1976, as opposed to 6.2 in rural areas, and was 5.6 persons in 1986, as opposed to 5.9 in rural areas. This decrease in the average urban household size (Appendix 3D) implies an increase in the demand for housing units beyond that of mere population growth, as indicated by the fact that between 1966 and 1976 the urban and peri-urban population increased at an average annual rate of 3.2%, yet urban households grew more rapidly at 4.1% per annum due to the trend towards smaller family sizes. This may be particularly true in the Greater Suva-Nausori area, where the number of urban households grew at 4.8% per annum during the period 1966 to 1976 (Fiji Central Planning Office 1980:230), and where the mean household size in Suva City (5.5 persons in 1986) has indeed been consistently smaller than that of the rest of Rewa Province, Naitasiri Province, Tailevu Province or of that at the national level (Appendix 3E). Similarly, nuclear households have become more prevalent, their number increasing relative to extended households, and representing 44% of all households in Fiji in 1986 (Appendix 3F), but representing 62% of all households by 1989 (Bryant 1993b:74; Bryant and Khan 1990:195-196; Fiji Bureau of Statistics 1988a:160; UNDP 1997:89).

Therefore, many causal factors (such as land issues and the changing nature of the extended family whereby there is a movement toward the nucleation of the household unit) are at work influencing both the demands for urban housing and the institutional capacity to respond adequately. For instance, even in Fiji's informal settlements the overall increase in demand for separate housing due to the increase in the number of nuclear households has contributed to a housing shortage and consequent increased

densities and incidence of subletting as well as a deterioration in living conditions<sup>14</sup>. While there has been a general decline in the average household size in Fiji, this is an average and there still exists much overcrowding in informal settlements and for other poor households (Bryant and Khan 1990:202; UNDP 1997:87)<sup>15</sup>. For instance, due to a shortage of land for building, the Muslim League settlement in Suva City has become more densely settled with increasing numbers of inhabitants sharing dwellings and subletting rooms rather than building separate dwellings, such that the average number of persons per dwelling rose from 6.5 in 1983 to 8.7 in 1986 (Bryant 1993b:73-74). The Public Rental Board has estimated that the majority of their housing units contain two families, and that units which were designed to accommodate one family of up to five people are actually accommodating eight to ten people (Finseth and Barr 1991:14).

### **3.5 Housing Problems in Fiji, Focusing on Greater Suva-Nausori**

#### **3.5.0 Housing Demand in Fiji**

The demand for housing in Fiji far outstrips its supply, and the inadequacy of housing provision may well be the most obvious problem of urbanisation. In Fiji, there was an annual increment of 1,259 households between 1966 and 1976, yet an average annual increment (between 1971 and 1974) of only 801 dwellings (Chandra 1990:173). Between 1981 and 1985, there was an estimated 2,023 new urban dwellings required per annum, and between 1986 and 1990, there was an estimated 2,871 new urban dwellings required per annum (Fiji Central Planning Office 1980:230-231; Fiji Central Planning Office 1985:130). In addition to the urgent need for new dwelling units, there is also need for improvement of existing stock. It was estimated that between 1981 and 1985, 180 urban dwellings per annum would require replacement due to their old age<sup>16</sup> and 360 urban dwellings per annum would require upgrading due to their substandard quality, for a combined total urban housing demand of 2,563 dwellings per annum, or approximately four times the recorded urban housing completion rate of 1976 to 1978 (Fiji Central Planning Office 1980:230-231). In 1994, when Fiji's housing stock requirement was

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<sup>14</sup> Within urban Fiji, "the lack of cheap housing is apparently forcing newly formed nuclear families to sublet rooms from other householders, frequently unrelated" (Bryant 1993b:74).

<sup>15</sup> Even in 1944, approximately one-half of tenement houses and one-quarter of all rooms in tenement buildings were found to be overcrowded (Walsh 1978:128).

<sup>16</sup> Approximately 2% of urban dwellings were more than 50 years old and approximately 21% were over 25 years old (Fiji Central Planning Office 1980:230).

approximately 3,500 dwellings per annum, the construction industry was able to produce no more than 1,500 dwellings (UNDP 1997:87). Thus, pressure on the housing market is intensified by low levels of housing construction. Uncertainties following the military coups in 1987 deeply affected the level of activity in the housing industry and further reduced private sector construction of dwellings (Connell and Lea 1993b:109)<sup>17</sup>.

### 3.5.1 Housing Demand in Greater Suva-Nausori

Greater Suva-Nausori, in particular, suffers from an inadequate provision of residential land and housing, and this problem is becoming more acute as the area's population continues to grow. In Suva during the 1960s, there was an average annual increment of 64 dwellings against an estimated demand of 500 dwellings per annum (Krishnamoorthy 1968:8). In the Greater Suva-Nausori area, the Housing Authority's building rate was 260 dwellings per annum and for the private sector was 200 dwellings per annum between 1969 and 1973, or approximately one-quarter of the dwellings required (DTCP 1975:67). By the 1981 to 1985 period, there was an estimated 1,416 new dwellings (70% of the national urban total) required per annum in the Suva-Nausori area, and an estimated 1,800 dwellings required per annum between 1976 and 1986 if not only new households were to be housed but also households residing in temporary dwellings were to be rehoused (DTCP 1975:67; Fiji Central Planning Office 1980:230). Moreover, the path from acquisition of land for residential purposes in Suva to the first stage of dwelling construction requires compliance with up to twenty regulations administered by at least three government departments and either of two local authorities<sup>18</sup>. Because of the involvement of multiple authorities in approval and supervision of subdivisions, considerable delays are experienced. From the time land is acquired it often takes more than 18 months to prepare subdivisional plans and to obtain the necessary approval before awarding contracts for development, the process typically requiring a minimum of two years in Suva (Bryant and Khan 1990:201; Walsh 1978:139).

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<sup>17</sup> For example, in the case of the Housing Authority, investment fell from a pre-coups figure of F\$11.5 million in 1986 to F\$4.7 million in 1989 (Connell and Lea 1993b:130). Similarly, the Fiji Department of Town and Country Planning received 40% fewer applications for subdivisional approval in 1990 than it did in 1986 (Connell and Lea 1993b:67).

<sup>18</sup> The Directorate of Town and Country Planning is the controlling authority for all land subdivisions in Fiji, although local authorities and town and city councils also have their own conditions to impose on developments in their areas of jurisdiction (Bryant and Khan 1990:201).

### 3.5.2 Limited Options for the Poor

Each city has its own unique mix of various housing sub-markets, the range and form of which is influenced by factors such as the city's employment structure, income distribution, structure of land ownership and government attitudes to different kinds of illegal housing development (Cairncross et al. 1990b:17). In urban Fiji, access to land for housing is constrained and prices are inflated, often beyond the means of considerable portions of the population.

The most critical urban problem is certainly the acquisition of land at a reasonable price for low-income housing (DTCP 1975:86).

With the establishment of overseas land development interests, vacillating attitude towards the squatters, intensive [Suva] City Council and Housing Authority bureaucracy and stringent building regulations combined with unavailability of land for housing, the plight of the poor in terms of adequate shelter does not seem promising (Sukhdeo and Griffin 1982:183).

The price of both land and housing tend to be beyond the means of many urban households. The problems of shortage of urban housing is further compounded by the inability of people to pay rent or home payments (Bryant and Khan 1990:196). It has been estimated that housing for the private sector is available at a price which is affordable for only the top 14% of wage earners (DTCP 1975:69).

As is common in developing countries, the demand for urban housing has far exceeded the ability and willingness of Government to supply dwellings of a suitable type, leading to problems of housing quality and informal settlements<sup>19</sup>. The Report of the Senate Select Committee on the Housing Authority and the Public Rental Board (1995) emphasised the severe housing problem in the urban and peri-urban areas of Fiji, including those associated with poverty, disease and unhealthy living conditions. The most acute housing problems found have been those in rented rooms and tenements, squatter settlements, and informal settlements (Fernando 1996:76; Walsh 1978:128).

Few migrants to Fiji's urban areas can afford to purchase freehold land, or endure the costly and time-consuming procedures to obtain crown or native land. While initially living with relatives for short periods of time is customary for migrants, there is increased overcrowding due to delays in finding other accommodation resulting from the housing

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<sup>19</sup> Indeed, it has been noted that in most developing world urban areas, "landownership structures and the inability or unwillingness of governments to intervene in these structures are perhaps the main factors contributing to illegal settlements and chaotic urban sprawl" (WCED 1987:9-15—9-16).

shortages in Fiji's urban areas (Finseth and Barr 1991:14). Due to the constraints on access to affordable land in Fiji, poor urban dwellers are faced with a limited number of options, including: (a) rent from the Public Rental Board<sup>20</sup> (Fiji Housing Authority), (b) move into charity housing for the destitute, (c) squat on underdeveloped land, or (d) invoke kinship obligations to live in one of several urban villages, under differing arrangements that provide varying degrees of tenure (Whitehead et al. 1994:5). A further option is that many recent arrivals in the informal settlements are renting rooms rather than building, not only because there is limited land available but out of necessity (Bryant 1993b:55). Hence, housing conditions have effectively worsened in Fiji's urban areas, with informal settlements increasing in extent, poverty and insecurity. "The growth of Fijian settlements on native land in urban and peri-urban areas and the increasing number of Indian settlements on native land without a lease, even on some reserve land, is causing concern", generating public discussion and criticism leading to political action (Kamikamica 1987:227,232).

### 3.5.3 Households' Tenure of Living Quarters

In Fiji in 1986, 74.4% of all households owned their own living quarters (with mortgage), 8.6% had cash rental from a private landlord, 2.3% had cash rental from the Housing Authority, 3.7% occupied government or institute housing, 2.6% occupied their employer's living quarters, 3.5% had no tenure (i.e. were squatters), and 4.0% had other tenure arrangements (Appendix 3G); for urban households, these values were 56.7%, 17.5%, 5.5%, 5.7%, 2.7%, 6.9%, and 4.0%, respectively (Appendix 3H). In the Greater Suva-Nausori area in 1986, 99.6% of households (representing 98.0% of the total population) lived in conventional dwellings, as opposed to an institution or other collective (Appendix 3I). In Fiji in 1996, 65.2 % of households owned their own living quarters (with mortgage), 10.2% had cash rental from a private landlord, 2.4% had cash rental from the Public Rental Board, 3.7% occupied government or institute housing, 2.0% occupied their employer's living quarters, 11.3% had no rent/informal tenure, and 5.2% had other tenure arrangements (Appendix 3J). Thus, the period between 1986 and 1996 witnessed a trend of

<sup>20</sup> As of the early 1990s, the Public Rental Board had only 1,753 rental units ostensibly for the poor (Finseth and Barr 1991:14).

decreased home ownership but increased renting, squatting and other tenure arrangements, particularly in the urban areas. Moreover in Fiji,

forecasts indicate that during the coming 15 years, urban housing will have to increase by nearly 19,000 units in order to accommodate even a modest population growth. This will place increasing pressure on services and infrastructure (Thistlethwait and Votaw 1992:23).

#### 3.5.4 The Housing Authority

The Fiji Housing Authority was established under the *Housing Act of 1955* as a statutory corporation in response to what was becoming a major housing shortage, and was originally responsible for the provision of both rental and sale properties. The Housing Authority comes under the Ministry of Local Government, Housing and Environment's jurisdiction (Connell and Lea 1993b:131; Fiji Ministry of Finance 1999:171). The original intention was that the Authority would be a non-profit body that provided workers a chance to lease or purchase homes at prices that matched their incomes, through rental subsidies or rebates where necessary, but there has subsequently been a movement away from a primarily welfare position which tried to protect the lowest income earners to one which builds homes for letting or sale at economic rentals.

In Suva the Housing Authority has attempted to lease better quality land at above development costs to the relatively wealthy and to use the revenue to provide housing at cost for those purchasing its houses, and below cost for sitting tenants who need to be removed for more intensive development and for those occupying rental flats (Connell and Lea 1993b:104).

Nevertheless, the Housing Authority remains the key provider of formal housing for the low-income group within Fiji (Bryant and Khan 1990:203; UNDP 1997:88). Between 1959 and 1970, the Authority provided a total of 2,544 housing units and loans, of which 75% were to the Greater Suva area (Fiji Central Planning Office 1980:232). By 1973, the Authority had constructed 1,800 housing units in the Greater Suva area (Walsh 1978:128). During the period 1978 to 1988, the Housing Authority produced 15,000 rental and sale properties, and in 1990 Housing Authority housing sales in the urban areas of Suva, Lautoka and Nadi numbered some 800 lots (Connell and Lea 1993b:130-131). By the late 1970s, nearly one-fifth of Suva's urban households lived in rented or mortgaged Housing Authority accommodation, although a further one-fifth could not even afford such subsidised accommodation,



and by the early 1980s, approximately one-quarter of the Suva City population lived in Authority accommodation (Sukhdeo and Griffin 1982:168; Walsh 1998:1).

In 1987 the Housing Authority was reorganised and in 1989 its rental operations were transferred to a new statutory body, the Public Rental Board (along with a debt of F\$16.6 million incurred by the Housing Authority over the period 1979-1988), which was to provide economically sustainable short-term rental housing for low-income urban households (UNDP 1997:88-89). The Public Rental Board also comes under the Ministry of Local Government, Housing and Environment's jurisdiction. These two agencies, however, have had "considerable difficulty in meeting the demand"<sup>21</sup>, owing to its limited budget, its detachment from the real concerns of tenants, land shortage, the inability of people to pay for the house they are allocated" (Bryant and Khan 1990:203), and consequent large arrears in loan repayments and an uneconomic rental scheme (Fiji Central Planning Office 1985:129)<sup>22</sup>. It has subsequently been suggested by UN agencies that the Housing Authority be corporatised with a view to eventual privatisation, thereby allowing capital restructuring and more efficient operation (Connell and Lea 1993b:131). The *1994 Fiji Budget Estimates* indicated that no further housing subsidy would be given to the Housing Authority, which was expected to be commercially viable from there on, and which was intended to be corporatised in the near future (Fiji Ministry of Finance 1994a:167).

Although suitable stocks are rapidly being exhausted, the supply of land in the Greater Suva area is critical to the success of the Housing Authority's operations. A lack of coordination has resulted in the Authority competing with the Department of Lands and various civil agencies for scarce crown land (Connell and Lea 1993b:131). In addition, prime housing sites in Greater Suva have usually been taken up for private development or have been laid aside until such time as the demand for this land has materialised (DTCP 1975:69). The scarcity of available crown land and the inflated value of the limited freehold land in Suva have placed these beyond the reach of the Housing Authority, which has had to pursue other sources of land in order to meet the demand for

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<sup>21</sup> For instance, in 1976, there were 8,207 households (22% of the total number of urban households in Fiji) on the waiting list of the Housing Authority (Connell and Lea 1993b:107), and the Public Rental Board (which constructed 430 flats between 1994 and 1996) had 2500 applicants wait-listed for flats by 1996, with an annual increment of approximately 200 applicants per annum (UNDP 1997:89).

<sup>22</sup> In addition, the Housing Authority has suffered from rental and mortgage payment arrears, with collection efficiency no more than 60% in 1991 (Connell and Lea 1993b:116).

serviced sites and has consequently led to the development of land deemed less suitable for housing (Bryant and Khan 1990:201; Walsh 1978:134,136). Because much of the native land suitable for residential development in the Greater Suva area has not been made available to the Housing Authority as the NLTB has preferred to lease it to clients who are able to pay higher rentals, the resultant shortage of land has obliged the Authority to develop difficult land distant from the City (Walsh 1984:199). Likewise, the pre-emption of the best crown land within the Suva City boundary for "low density and high class government dwellings and institutions" has meant that public housing has been primarily limited to low-lying areas or steep slopes (Walsh 1978:134).

The Housing Authority has been faced with considerable difficulties in acquiring land suitable for housing development within the Greater Suva Urban Area at a price which would make it economical to develop (DTCP 1975:69).

The scarcity of land within the urban area and the reluctance on the part of tenants to accept sites in outlying areas have been two significant problems which have plagued the Authority (Fiji Central Planning Office 1985:129). In addition, the cost of Housing Authority housing has escalated as building costs and subdivision standards (demanded by both Local Authorities and the Subdivision of Lands Board) have increased. Furthermore, delays in the acquisition of land under negotiation, in large part caused by the multiplicity of local and government authorities involved, have also served to raise costs (UNDP 1997:88; Walsh 1978:137; Walsh 1984:199). In the early 1980s, it was estimated that only one-fifth of employed urban workers could afford to buy the existing types of Housing Authority homes, thus "indicating a need to substantially reduce costs through less expensive land, land development, construction and finance" (Fiji Central Planning Office 1980:230).

### 3.5.5 Peri-Urban Native Land

Most of the native land in Fiji is unoccupied, some is in agricultural or other lease, and a small portion is native reserve occupied by mataqali (Walsh 1978:134). "There are many good reasons why native land in peri-urban areas should be developed in preference to less suitable freehold or crown land" (DTCP 1975:85). The development of native land in the peri-urban areas of Greater Suva could help to ease the shortage of land for housing, but this would involve infrastructure costs on

presently undeveloped land, and hence, low-income earners would be unlikely to benefit from such development unless subsidies were provided to reduce the price of lots (Bryant and Khan 1990:201). Moreover, the NLTB's plans for the peri-urban lands include high class residential development, bringing higher returns to the native landowners. Therefore because the majority of land outside Suva City is native land (Table 3.6), and because it is administered by the NLTB, a unique situation is presented for comprehensive urban planning in the Greater Suva-Nausori area (Walsh 1978:134). Indeed, as throughout much of Melanesia, land tenure issues "pose particular problems as urban growth extends beyond the historical urban boundaries" (Connell and Lea 1993b:98).

### 3.5.6 Households' Dwelling Adequacy

It was estimated that in the Greater Suva area in 1973, 23% of all dwellings were temporary structures, whereas 44% of the dwellings located outside the Suva City boundaries were temporary structures (DTCP 1975:67)<sup>23</sup>. In 1977 in the urban areas of Fiji, 60% of the households lived in single-unit dwellings, 30% lived in flats, and 10% lived in bures or temporary structures. Furthermore, 20% of the urban households lived in single rooms and 65% lived in three rooms or less, and approximately 50% of the dwellings were constructed primarily of concrete, approximately 30% were constructed of wood, 13% were constructed of corrugated metal, and 7% were constructed of less substantial materials (Fiji Central Planning Office 1980:230). In 1986, the proportions of urban households living in dwellings of small sizes (one to three rooms) was less than, and those living in dwellings of large sizes (four to eight or more rooms) was greater than, the corresponding proportions for all households at the national level (Appendices 3K and 3L). In 1986, approximately one-half of urban households lived in dwellings constructed of concrete or brick, approximately one-quarter lived in dwellings of wood, another one-quarter lived in dwellings of corrugated metal, and the remainder lived in dwellings of less substantial materials (Appendix 3M). In 1996, the proportions of all households living in dwellings of various sizes (ranging from one to eight or more rooms) was rather evenly distributed, but decreased for larger sizes (Appendix 3N). In 1996, approximately

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<sup>23</sup> The distinction between the categories of permanent and temporary dwellings was made in relation to construction materials, size and facilities, with temporary dwellings mainly located in unsubdivided areas (DTCP 1975:67).

one-third of all households lived in dwellings constructed of concrete or brick, another one-third lived in dwellings of corrugated metal, another one-fifth lived in dwellings of wood (good condition), and the remainder lived in dwellings of less substantial materials (Appendix 3O). In 1996 in Fiji, 6% of households had dwellings of superior quality, 12% had dwellings of well above average quality, 32% had dwellings of average quality, 25% had dwellings of well below average, and 25% had dwellings of inferior quality (Appendix 3P).

In 1986, approximately one-quarter of all dwellings in Fiji had one to three occupants, approximately one-half had four to six occupants, and approximately one-quarter had seven or more occupants; generally the greater the number of occupants per dwelling, the greater the number of rooms, although notably 10% of dwellings with ten or more occupants contained only one to two rooms (Appendix 3Q). Furthermore, some public housing units which were designed to accommodate a single family of five people frequently have eight to ten occupants, and, in some cases, there are as many as twelve occupants sharing a single flat designed for four people (Adinkrah 1995:164; Bryant 1993b:51). Hence, overcrowding does exist in some urban areas of Fiji. Although Suva is characterised by a relatively low population density, the density is not only steadily increasing but the average is exceeded in most parts of the City. For instance, while Suva's average population density was 4.3 persons per hectare in 1966, the density in Toorak was 68.8 and in Nabua was 44.5. There is a strong relationship between the age of an area's development and its residential density, with the older areas of Suva generally having the highest densities; there is also a strong relationship between the pattern of distribution in population density and occupancy rate per household, with areas of high residential density generally having high occupancy rates (John 1969:5-6)<sup>24</sup>.

### 3.5.7 Informal Settlements in Fiji

In general, when demand for land for housing exceeds supply and when institutions are unable to control urban land use, the result is often unplanned settlement of environmentally sensitive areas (USAID 1990:47). The shortage of urban housing has been a contributing factor giving rise to informal settlements in Fiji's urban areas (Bryant

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<sup>24</sup> In subdivided areas, however, low population densities are generally characterised by high occupancy rates (John 1969:6).

and Khan 1990:196). Rooming was the most common form of housing for the urban poor in the immediate post-WWII years, but with rising rents and further rural to urban migration during the 1950s, there was a subsequent increase in squatting (Walsh 1978:128). "By the end of the 1950s, urban inequalities became visible as shantytowns had begun to proliferate, especially around Suva", and even as early as 1964, it was estimated that approximately one-fifth of Fiji's total urban population lived in squatter settlements (Whitehead et al. 1994:5).

While Fiji's squatting is partially a consequence of a shortage of low-priced housing in a situation of rapid urban growth, it is also but one manifestation of widening regional and class inequalities induced by the type of urbanisation and development which is occurring in the country (Walsh 1984:185) and evidenced in "gross rural-urban and income disparities" (Walsh 1998:1). Low wage levels coupled with rising land and building costs have placed many people in a position where they are unable to provide their housing by legal means. Thus, in addition to being a product of rapid urban growth, informal settlements are also a symptom of a housing delivery system that is unable to meet demand, and indicative of a history of inappropriate and unaffordable official building standards and areas of unused urban land (some once held for speculative purposes). Two interrelated housing issues in Fiji are therefore the number of poor people in the population who can not afford basic housing, and the institutional problems that constrain improvement of the situation and contribute to the growing deficit of affordable housing (Partnership For A Liveable Environment 1992:2; UNDP 1997:87; Walsh 1978:128; Walsh 1998:1).

Part of the squatter problem in the urban areas has to do with the need for a piece of land to live on. Squatters live in clusters between Suva and Nausori (Tu'uholoaki in Connell and Lea 1993b:5).

The problem of squatters in Melanesian urban centres lies in the main in "overcoming difficulties arising out of traditional attitudes towards land and the weak institutional environment, both of which have prevented an adequate supply of residential land becoming available for development" (Connell and Lea 1993b:7)<sup>25</sup>. Indeed, many urban households in Fiji suffer from inadequate dwelling quality and insecure tenure, and may have no other option but to squat on environmentally

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<sup>25</sup> Consequently, the proportion of informal population in Honiara in 1990 was estimated to be 23% and in Port Moresby in 1984 was estimated to be 25% (Walsh 1998:2).

sensitive land. Early squatter settlements tended to establish on marginal urban land, particularly steep slopes and on the edges of mangrove forest, so as to be close to employment in the central commercial and industrial areas; more recent settlements have established or relocated beyond town boundaries in the peri-urban areas<sup>26</sup>. Within Suva City, squatter settlements are typically located on land zoned residential, relatively small and capable of being upgraded; outside the City, a major problem has been in providing alternative sites for 'sitting tenants' on land being developed by the Housing Authority (Walsh 1978:265; Walsh 1998:1; Whitehead et al. 1994:5).

In Fiji, 'informal settlements' refer to both the illegal and legal settlements which are typically unplanned and which include informal dwellings with few basic services, and where the inhabitants are generally poorer than the inhabitants of formal, privately owned dwellings. In Fiji, the term 'squatter' tends to refer not only to those households occupying land illegally but also to all informal settlements which have substandard and unauthorised structures and which lack basic services, and thus includes those households with permission to occupy land and who pay rent but who have no security of tenure (Bryant 1993b:52,67-68)<sup>27</sup> (Table 3R). If a 'squatter' is defined as a resident of a dwelling which is illegal according to planning by-laws regardless of whether the landowner has given consent, then approximately 15% of Fiji's urban dwellers were squatters in 1976 and approximately 20% were in 1996 (Fiji Central Planning Office 1980:231; Walsh 1998:2).

There are sizeable squatter populations in most of Fiji's major urban areas, and their resident populations are increasing more rapidly than the urban population as a whole (UNDP 1997:86). In 1976, it was estimated that 14.6% of the households in Suva City were squatters, 9.4% in Lautoka City, 4.8% in Ba Town, 9.2% in Labasa Town, and 19.2% in Levuka Town (Fiji Central Planning Office 1980:232) (Appendix 3S). By 1996, when Fiji's urban informal population was estimated to total 70,310, these urban areas' proportions had risen considerably (Appendix 3T). In 1996, 73% of squatter dwellings were made of tin, 16% were one room (31% in 1976), 20% lacked adequate toilets and close access to reticulated water (80% had pit toilets in 1976 and 59% inadequate water access), 20% paid some form of land rent, and 5% of households were

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<sup>26</sup> In part, this may be because some squatter settlements in Fiji have been removed from central urban locations in the guise of rationalising land use and organising urban space (Connell and Lea 1993b:121).

<sup>27</sup> Encouraging the growth of informal settlements, particularly in urban and peri-urban areas, on Fijian communally-owned (*mataqali*) land are institutional arrangements such as informal and insecure *vakavanua* leasing arrangements (UNDP 1997:10).

renting from other squatters (2% in 1976) (Walsh 1998:2-3). For instance, of 35 dwellings surveyed from the Muslim League settlement in Suva City in 1986, 25 housed tenants, of which seven housed more than one tenant family (Bryant 1993b:74).

### 3.5.8 Informal Settlements in Suva

Owing to its relatively high proportion of the unemployed and the proliferation of squatter settlements, the growing urban agglomeration centred on Suva has been the central focus of concern over urbanisation in Fiji. In fact, in 1986, a full 81.1% of Fiji's total urban squatter households were located in the Greater Suva-Nausori area (Whitehead et al. 1994:2,36). The estimated urban informal population in the Greater Suva-Nausori area totalled 37,775 people in 1996, with actual numbers higher than official ones (UNDP 1997:86; Walsh 1998:2)<sup>28</sup>.

The number of temporary housing or shack developments which are springing up overnight in many parts of the [Greater Suva-Nausori] urban area are a particular matter of concern (DTCP 1975:82).

The greatest evidence of urban poverty and vulnerability seems to be in the urban fringe settlements and traditional villages on the outskirts of Suva where people, although more involved in the informal sector, have only erratic cash income from this and cannot meet basic needs (Bryant 1993a:19).

In 1979, squatters were found to contribute significantly both to Suva's food supply and to the production of tourist artefacts. Many squatters are engaged in informal sector activities (especially important among women), employment is typically insecure casual or menial activities, unemployed and underemployed levels are high, and most (especially Fijians) rely heavily on gardening and fishing to supplement low incomes (Connell and Lea 1993b:117; Walsh 1998:3).

In 1958, the squatter population in Greater Suva was estimated to be 6,119, increasing to 7,629 by 1960, and 7,638 by 1964 (Walsh 1978:178). Between 1966 and 1976, the annual population growth of Suva was the highest of Fiji's urban areas and was over double the rate of rural areas, with most of the growth in Suva having occurred among the rural migrant and urban poor populations living in squatter areas where their growth rate was more than double that of the urban area as a whole

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<sup>28</sup> For example, the Lami Town Council recognises only 24 squatter households although the true figure may be closer to 300 (UNDP 1997:86).

(Walsh 1984:185). Between 1967 and 1976 the number of squatter dwellings in the Suva area increased by 12% per annum compared with an overall urban population growth rate of 4.5% for the same area. In 1976, the squatter population in Suva City was estimated to be 9,289 (14.6% of the area's total population) and in the Suva peri-urban area was 11,693 (21.6% of the area's total population), for a combined total of 20,982 squatters (17.8% of the area's total population) living in 3,640 dwellings (Fiji Central Planning Office 1980:232). In 1978, there were an estimated 1,063 squatter dwellings in Suva City, by 1983 there were an estimated 1,351 squatter dwellings<sup>29</sup>, and by 1986 there were an estimated 1,503 squatter dwellings (Bryant and Khan 1990:196,198; Whitehead et al. 1994:36) (Table 3.10). In the late 1980s Suva City had 26 squatter settlements, and by the early-mid 1990s there were between 30 and 50 squatter areas located in and around Suva (Connell and Lea 1993b:118; Whitehead et al. 1994:5). In 1991, the Ministry of Housing estimated that 25% of Suva's households were living in informal settlements and fringe villages (Bryant 1993b:52,81).

Table 3.10. Urban Squatting in Greater Suva-Nausori, 1986

Urban Area	Total Dwellings	Squatter Dwellings	Proportion (%)
Suva City	12,716	1,503	11.8
Suva peri-urban	12,235	1,142	9.3
Lami Town	1,342	7	0.5
Lami peri-urban	1,209	4	0.3
Nausori Town	889	10	1.1
Nausori peri-urban	1,509	100	6.6
Total Greater Suva-Nausori	29,900	2,766	9.3

Source: Adapted from Whitehead et al. 1994:36.

The locations of Suva City's squatter settlements are largely sited in the Tamavua Ward and the Samabula Ward, but growing numbers live outside the city boundaries where they are under increasing threat of demolition as pressures mount to establish new industrial estates, tax free zones, or housing subdivisions (Bryant 1993b:68). For example, the Muslim League settlement is a 22 hectare freehold property owned by the Fiji Muslim League, and which (as of 1986) accommodated 178 squatter dwellings whose owners had permission to be on the site and some of

<sup>29</sup> Of the 1,063 squatter dwellings in Suva in 1978, 818 (77%) were owner occupied, 139 (13%) were owner/tenant occupied, and 106 (10%) were tenant occupied; of the 1,351 squatter dwellings in 1983, 1090 (81%) were owner occupied, 163 (12%) were owner/tenant occupied, and 98 (7%) were tenant occupied (Bryant and Khan 1990:198).



which paid an annual rent to the Muslim League; yet, "there is no security for the tenants as the site may eventually be developed by the Muslim League for recreational facilities, or part of it sold to the Suva City Council for a road bypass" (Bryant 1993b:70).

In 1978 the Suva City Council<sup>30</sup> identified 7,848 squatters, of which 56% were Indian, 41% were Fijian and 3% were Others; in 1983, it identified 9,137 squatters, of which 60% were Indian, 37% were Fijian and 3% were Others; and in 1986, it identified 9,330 squatters, of which 57% were Indian, 40% were Fijian and 3% were Others (Bryant-Tokalau 1995:125; UNDP 1997:87). These squatters suffer from residential insecurity, with Indians believing themselves to be less secure than Fijians; until recently those on private land could be evicted without compensation (Connell and Lea 1993b:125). Squatters often compete with intended future uses of urban land. The Fiji government, the Housing Authority, NLTB and private landowners have all encountered problems in the sale and/or development of squatter-occupied land which is otherwise suitable for development (DTCP 1975:85; Walsh 1978:179,261). Most Indian squatters are typically located on freehold land to the north and northeast of the City, and generally pay land rent to the owners; refusal to accept rent usually heralds land development and ultimate eviction or resettlement. Likewise, Kai Solomoni have tended to establish their informal settlements on Anglican Church land at or beyond the urban perimeter and contribute towards Anglican church rates payments (Walsh 1978:176; Walsh 1998:1)<sup>31</sup>. In 1994, there were 5,350 squatters on freehold land in Suva (UNDP 1997:40).

Most urban squatters settle on vacant crown land, being charged a token land rent, although this land too has become scarce and causes problems when it is to be developed and the people must be resettled (Bryant and Khan 1990:196; Walsh 1978:176,261). "In the guise of rationalizing land use, squatter settlements have been gradually removed and are being replaced by middle- and high-income housing developments", in effect driving the urban poor farther away from central city employment opportunities to fringe areas where access to basic urban services are deficient (Whitehead et al. 1994:5). A

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<sup>30</sup> The Suva area as administered by the Suva City Council includes only the four wards of Suva Central, Samabula, Muanikau and Tamavua, and not the suburbs beyond; thus the Suva City Council's squatter estimates are lower than those which include the peri-urban areas as well (Bryant and Khan 1990:198).

<sup>31</sup> The two Suva urban fringe settlements of Wailoku and Newtown contain a high proportion of Kai Solomoni (descendants of Solomon Islander indentured plantation labourers) who have married into the Fijian community and observe Fijian customs and behaviour yet have no rights to mataqali land; the inhabitants carry out a high degree of subsistence activity and are relatively low-income (Bloomfield 1999:119-120; Bryant 1993b:72-73).

significant proportion of Suva's squatter settlements occupy marginal lands and environmentally fragile areas such as mangroves, unstable hillsides, stream banks, flood-prone areas, and areas adjacent to rubbish dumps or industries (Walsh 1978:176,261; Whitehead et al. 1994:5). Most Fijians squatting beyond the city boundary have settled on native land, and while permission may be obtained through presentation of tabua (sperm whale tooth) to the traditional landowners, this customary practice is not recognised by the NLTB as a legal arrangement and the occupants may consequently be subject to eviction. In fact, any arrangement without the consent of the NLTB is null and void (Prasad 1998:52; Walsh 1978:134). Thus, even when squatters have the permission of the landowners to settle, meet their traditional obligations and pay rates or rent, they still lack security of tenure, and hence may lack the incentive to invest to improve their dwellings or neighbourhood environment (Bryant and Khan 1990:196; Fiji Central Planning Office 1980:232; Walsh 1998:1; Whitehead et al. 1994:13).

### **3.6 Water and Sewerage Sanitation Services in Fiji, Focusing on Greater Suva-Nausori**

#### **3.6.0 Provision of Water Supply**

In all urban areas of Fiji, water supply and sewerage services are provided by the Public Works Department (PWD) in the Ministry of Infrastructure and Public Utilities, although there have been plans to semi-privatise supply through a new corporation. As water supply and sanitation systems have generally been planned in isolation from overall land use and development strategies for the urban centres and their peri-urban areas, infrastructure costs are consequently higher than necessary (Connell and Lea 1993b:145; Whitehead et al. 1994:30).

In 1977, an estimated 61% of Fiji's total population had access to clean piped water (37% individual and 24% shared supply), although this supply was concentrated in the urban areas where 94% of the population was served (70% individual and 24% shared supply) as compared to 35% of the rural population (11% individual and 24% shared supply) (Fiji Central Planning Office 1980:221). Furthermore, this supply does not reach certain pockets of urban dwellers such as those in squatter and informal settlements who cannot get a metered water connection from the PWD without the written permission of the landowner (Whitehead et al. 1994:7). In Lami, for instance, some settlements are without reticulated water supply because of their distance from the system or

topographical constraints (DTCP 1998:5). Likewise, whereas the main water source for 63.0%, 34.8% and 2.2% of Fiji's households never, sometimes and yearly dries up, respectively, the corresponding proportions for the urbanised provinces of Rewa (83.5%, 16.1% and 0.3%) and Naitasiri (74.6%, 24.6% and 0.8%) are much better (Fiji Bureau of Statistics 1998b:255).

A total of F\$7.4 million was spent on water supply development between 1971 and 1975; approximately F\$4 million was spent on urban water supplies, of which approximately 40% was spent on supply and distribution in the Greater Suva area (Fiji Central Planning Office 1975:205). Until the late 1970s, the bulk of expenditure went into an expanded reticulation network from urban centres into new housing developments, peri-urban areas and nearby rural communities; through the late 1970s and early 1980s, the focus shifted such that emphasis in all urban areas was on securing additional sources, treatment and storage rather than extension of supply. Consequently, there has been a "significant backlog in satisfying demand, rising expectations, and over-extended mains systems", as well as considerable pressure and need to undertake improvement and extension of existing distribution systems for piped water (Fiji Central Planning Office 1980:222). Hence, the principal water supply problems relate more to access and reliability rather than to quality. Planned maintenance and upgrading of water supply service in Suva is approximately seven years behind schedule with the system operating with reduced standby capacity and, consequently, with service expected to deteriorate and supply disruptions expected to increase in frequency<sup>32</sup>. To improve the Suva water supply system, there is a critical need for increased water treatment and pumping capacity to deliver bulk water to distribution reservoirs, and for increased reservoir capacity and reticulation to serve existing deficient areas and priority new developments (Whitehead et al. 1994:1,19-20).

### 3.6.1 Provision of Sanitation Services

There has been an improvement in the provision of sanitation facilities in Fiji, although the majority of the population continues to rely on individual systems (88% in 1980) such as septic tanks or pit latrines rather than sewerage systems (12% in 1980) for

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<sup>32</sup> The frequent interruptions to the water supply throughout parts of the Suva-Nausori corridor are related to the occurrence of power cuts since financial constraints have prevented the PWD from operating backup generators at the area's water treatment plants (*Fiji Times*, 3 December 2000).

their disposal. The proportion of the population served by sewerage treatment plants rose from 2% in 1973 to 5% in 1977 and to 6% in 1980, while the corresponding proportions for raw sewerage discharge were 5%, 5% and 6% (Fiji Central Planning Office 1980:222).

In Suva in 1970, the only areas with sewerage were the City Centre where raw sewage was discharged directly into Suva Harbour near the then Travel Lodge (now Centra) Hotel, and at Raiwaqa where sewage was treated from Housing Authority estates and at a few other new subdivisions which had installed their own treatment works. The 1971 Greater Suva Sewerage Scheme recommended that the whole region be sewered and treatment take place at a regional plant at Kinoya with an ocean outfall into Laucala Bay (Connell and Lea 1993b:147-148; DTCP 1975:50). Between 1971 and 1975, the capital expenditure on sewerage nearly totalled F\$5 million, of which the Kinoya sewerage treatment plant for the Greater Suva area accounted for approximately F\$1.5 million (Fiji Central Planning Office 1975:205). A sewerage reticulation system was developed in the Nasinu and Wainibuku areas, and connection to the Kinoya sewerage treatment plant was made to the new housing area at Namadi Heights (DTCP 1975:50). By 1984 the first two stages of the Greater Suva Sewerage Scheme had been completed at a cost of F\$10.7 million (Connell and Lea 1993b:148).

### 3.6.2 Households' Water Supply in Greater Suva-Nausori

The Greater Suva urban water supply extends from Lami through the Suva peninsula, along Kings Road to Waila, and through much of the Rewa Delta. As of 1980, the Suva Regional Water Supply Scheme, which aimed to provide long-term reliable supply to the Greater Suva urban, peri-urban and nearby rural areas (including extensive distribution along Kings Road between Nasinu and Nausori) by doubling treated water flow to 95 litres per day, was approximately 50% complete (Fiji Central Planning Office 1980:224-225). By the early 1990s, the source of water supply for 93% of the households' of Greater Suva-Nausori was piped metered, for 1% was piped communal, for 1% was roof tank, for 1% was borehole, and for 3% was well, river or creek (Whitehead et al. 1994:37). The proportion of Greater Suva-Nausori households with piped (metered) water supply was higher than the averages for Rewa, Naitasiri and Tailevu Provinces (Table 3.11) or than the national average for urban areas in 1986 (Table 3.12). Nevertheless, there were considerable differences between the levels of

pipled metered supply in the urban and peri-urban areas of Greater Suva-Nausori, particularly in Lami (Table 3.13). As of the early 1990s, it was within the Central and Western Wards of Lami that dwellings did not have pipled metered water connections (Connell and Lea 1993b:143). Furthermore, difficulties have been experienced in serving areas which are at elevations greater than 300 feet, as sufficient head to reticulate water from existing reservoirs cannot be provided (DTCP 1975:49-50)<sup>33</sup>. In sum, although pipled water is available throughout much of the Greater Suva-Nausori area, many poor households do not have individual connections, provision being particularly inadequate on the urban periphery (where urban growth is most rapid), and water pressure remains inadequate in some areas.

For Greater Suva-Nausori, there were approximately 49,000 connections and a total water usage of 75,000 m<sup>3</sup> per day or 375 litres per capita per day (including both domestic and industrial users and an estimated leakage of 30%) (Whitehead et al. 1994:39). Existing sources of supply from the Waimanu River, Rewa River, Savura Creek and some small gravity intakes are, together with expanded reservoir capacity, considered to be sufficient for future needs, although there have been warnings that "the amount of water presently drawn from the Waimanu River to supply the Suva area cannot continue to increase without the very real possibility of severe impacts of reduced flow downstream where many people depend on the river for their food and general livelihood" (Howorth 1999a:3). Nevertheless, as throughout Fiji, freshwater tends to be regarded by the public as an abundant resource and waste is commonplace. The water demand of Suva urban dwellers is estimated to be 120 litres per capita per day, as compared to a corresponding figure of 90 litres per capita per day for rural dwellers. Two large treatment plants at Tamavua and Waila handle the majority of water purification for the Greater Suva area, with an additional small plant in Nausori, and the total treatment capacity is 94,000 m<sup>3</sup> per day. Monitoring of water quality is the responsibility of the Ministry of Health which carries out regular bacteriological monitoring of drinking water supplies (Connell and Lea 1993b:143-144; Howorth 1999a:3; Watling and Chape 1993:6; Whitehead et al. 1994:18,39).

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<sup>33</sup> For example, Tamavua Heights has had to be served by a small separate reservoir of limited capacity, while the distribution of water to Koronivia and Delainavesi suffer from insufficient pressure (DTCP 1975:50).

Table 3.11. Households' Main Source of Water Supply and Toilet Facilities in Fiji by Location, 1996

	Rewa Province		Naitasiri Province		Tailevu Province		Fiji Total	
	No.	%	No.	%	No.	%	No.	%
Water Source:								
Piped Metered	17,395	93.6	17,798	79.5	5,433	60.9	86,684	59.9
Piped Communal	697	3.8	2,612	11.7	1,859	20.8	29,944	20.7
Roof Tank	114	0.6	696	3.1	413	4.6	3,992	2.8
Well	198	1.1	407	1.8	775	8.7	13,404	9.3
River or Creek	126	0.7	555	2.5	378	4.2	5,887	4.1
Other	56	0.3	321	1.4	61	0.7	4,706	3.3
Total	18,586	100.0	22,389	100.0	8,919	100.0	144,617	100.0
Toilet Facilities:								
Own Flush Toilet	13,457	72.4	13,686	61.1	3,020	33.9	63,070	43.6
Shared Flush Toilet	694	3.7	674	3.0	223	2.5	4,089	2.8
Own Water-seal Toilet	2,391	12.9	3,482	15.6	2,944	33.0	28,816	19.9
Shared Water-seal Toilet	469	2.5	456	2.0	465	5.2	3,749	2.6
Own Pit Latrine	1,067	5.7	3,557	15.9	1,981	22.2	38,362	26.5
Shared Pit Latrine	442	2.4	489	2.2	199	2.2	4,788	3.3
None	59	0.3	23	0.1	55	0.6	1,547	1.1
Other	7	0.1	22	0.1	32	0.4	196	0.1
Total	18,586	100.0	22,389	100.0	8,919	100.0	144,617	100.0

Source: Adapted from Fiji Bureau of Statistics 1998b:255.

Table 3.12. Percentage Distribution of Conventional Dwellings by Tenure, Main Source of Water Supply and Toilet Facility in Urban Fiji, 1986

	Tenure of Living Quarters							
	Own	Rent, private	Rent, public	Institutional	Employer	Squatter	Other & Not Stated	Total
Water Source:								
Piped Metered	91.8	97.7	98.9	97.6	60.1	74.0	75.0	90.7
Piped Communal	1.7	0.9	0.2	1.0	4.6	6.2	4.4	2.0
Roof Tank	1.3	0.3	0.0	0.1	6.5	3.4	0.8	1.3
Borehole	0.6	0.1	0.1	0.0	0.3	1.3	0.5	0.5
Well	2.2	0.3	0.1	0.1	0.7	10.4	1.0	2.1
River or Creek	0.9	0.2	0.0	0.0	0.2	0.7	0.4	0.6
Other & Not Stated	1.4	0.6	0.8	1.1	27.6	4.0	17.8	2.9
Toilet Facility:								
Own Flush Toilet	56.4	81.7	92.6	96.6	72.8	5.0	41.4	61.2
Shared Toilet	1.3	2.4	0.1	0.8	17.3	1.9	5.6	2.1
Water-seal Toilet	13.3	3.2	4.3	1.6	2.5	12.0	14.4	10.1
Pit Latrine	28.6	12.6	2.9	0.9	7.3	80.7	26.8	25.8
Other & Not Stated	0.4	0.2	0.1	0.1	0.1	0.4	11.7	0.9

Source: Adapted from Fiji Bureau of Statistics 1989:144,149.

Table 3.13. Percentage Distribution of Households' Main Source of Water Supply and Toilet Facilities in Greater Suva-Nausori

	Suva			Lami			Nausori		
	Total	City	Peri-Urban	Total	Town	Peri-Urban	Total	Town	Peri-Urban
Water Source:									
Piped Metered	94	97	92	81	70	90	95	98	93
Piped Communal	1	1	1	5	10	0	0	0	1
Roof Tank	0	0	2	3	3	3	1	0	2
Borehole	0	0	1	3	2	3	1	0	1
Well, River, Creek	3	1	5	9	14	4	3	1	4
Toilet Facilities:									
Flush (Sewer)	26	33	19	1	2	0	0	0	0
Flush (Septic)	43	50	35	39	59	16	59	88	41
Shared Toilet	1	1	1	3	1	6	2	1	3
Water-seal Toilet	8	3	13	32	21	45	7	3	9
Pit Latrine	21	12	31	23	16	32	32	7	46
Other	1	1	1	1	1	1	1	1	1

Source: Adapted from Whitehead et al. 1994:37-38.

### 3.6.3 Households' Sanitation Facilities in Greater Suva-Nausori

Of the Greater Suva-Nausori households, 22% have sewer sanitation facilities, 44% have septic tanks, 1% have shared toilets, 10% have water-seal toilets, 22% have pit latrines, and the remaining 1% have other facilities (Whitehead et al. 1994:38), which compares favourably to the corresponding national averages (Table 3.11) and to Fiji's urban areas generally (Table 3.12). These averages varied rather widely, especially between urban and peri-urban areas; furthermore, it was primarily households in the Suva area which had sewer sanitation facilities (Table 3.13). For instance, a reticulated sewerage system has not yet been provided for Lami's residential areas (although industrial areas are connected to a sewage treatment plant at Wailada) because the Ministry of Infrastructure and Public Utilities has indicated that housing densities are insufficiently low (DTCP 1998:17-18). In addition, there were notable differences in urban dwelling's type of toilet facilities, which varied according to the type of housing unit occupied – single, multi or other (Appendix 3U).

Although reticulation systems are provided or are under construction in all the major urban centres of Fiji, they generally do not extend to the peri-urban areas where much of the population growth is occurring (Whitehead et al. 1994:8). In 1973, 18% of Fiji's population had septic tanks, rising to 20% in 1977 and to 28% in 1980 (Fiji Central Planning Office 1980:222). In 1996, 39.6% of Fiji's households had septic tanks, whereas the corresponding figures for the provinces of Rewa and Naitasiri were 62.7%

and 49.1%, respectively (Fiji Bureau of Statistics 1998b:255). As of 1993, there were 1,452 ha of sewered areas, 1,660 ha of developed but unsewered areas, and 3,245 ha of undeveloped unsewered areas in Suva (Fiji Public Works Department 1993:5). There were 13,300 sewer connections serving the Greater Suva-Nausori area, with the receiving water bodies including Laucala Bay, Vatuwaqa River and Rewa River (Whitehead et al. 1994:39). It was estimated that for Suva in 1993, 87% of all wastewater underwent some form of treatment (WRI et al. 1998:279). The regional treatment plant for Suva's sewerage scheme is located at Kinoya and presently treats sewage from approximately 60,000 people, although it is planned to eventually extend its service to treat sewage from 350,000 people (Fiji Public Works Department 1993:2). In addition, there is a small sewerage treatment plant in Raiwaqa. It has been recommended that these two treatment facilities be expanded and upgraded so as to stem further deterioration of the quality of effluent discharged to Laucala Bay and to accommodate high strength wastewater from industries which has an equivalent treatment load to several thousand households (Greenpeace Pacific 1996:13; Whitehead et al. 1994:8).

### **3.7 Solid Waste and Drainage Services in Greater Suva-Nausori**

#### **3.7.0 Provision of Solid Waste and Drainage Services**

In Fiji, sanitation, solid waste and drainage are local government functions. In Suva City, the Health Services Department is responsible for solid waste and sludge removal, while the Engineering Department is responsible for drainage; contractors are used for garden refuse collection, market cleaning and drain maintenance. The cost of solid waste and drainage services are met mainly through municipal rates, supplemented to a limited extent by tipping fees for trade waste at the dump sites (Whitehead et al. 1994:16). In addition, the Suva City Council has recently adopted the policy of charging a fee (although subsidised) for the collection of garden refuse from properties (Suva City Council 2000a). During 1992 to 1994, the costs of solid waste and drainage averaged approximately F\$0.90 to F\$0.95 million per annum, and represented approximately 15% of the Suva City Council's expenditures (Whitehead et al. 1994:16).



### 3.7.1 Households' Solid Waste Generation and Disposal

Suva City has three rubbish collections per week as does Nausori Town, and Lami Town has two collections per week for developed areas with proper roads. The main rubbish tip in the Greater Suva-Nausori area, used by the Suva City Council and Lami Town Council as well as private contractors serving parts of the nearby peri-urban and rural areas, is situated in Lami at the mouth of the Tamavua River and was nearing its capacity even 25 years ago. The other rubbish tip in the area, located at a site adjoining the Kings Road along the Rewa River, is used by the Nausori Town Council which operates a refuse collection and disposal services for the Town and parts of the nearby peri-urban and rural areas (Connell and Lea 1993b:150; DTCP 1975:51; DTCP 1998:6,18). In 1993, there were 60,000 tonnes of solid waste collected in the Greater Suva-Nausori area, 95% of which was taken to the Lami Dump with the remaining 5% taken to the Nausori Dump (Whitehead et al. 1994:39). The per capita solid waste generation in Suva in 1993 was estimated to be between 1.10 kg and 1.75 kg per day, a relatively high amount comparable to that of more industrialised cities, with waste generation closely linked to economic status, as higher income households spend more money on consumer goods and consequently produce more solid waste. Paper, organic vegetable, and wood and coconut wastes all contribute significantly to the composition of Suva's waste stream (Table 3.14), and, hence, unnecessarily to landfill space (Connell and Lea 1993b:150; SPREP 1999:3-4; WRI et al. 1998:279).

Table 3.14. Solid Waste Stream Analysis, Suva

Component	Proportion (%)
Paper	31
Organic (Vegetable)	25
Metals	15
Vinyl/Plastics	9
Wood/Coconut	7
Glass/Ceramics	7
Fibre/Textiles	4
Other	2

Source: Adapted from SPREP 1999:4.

The relatively highly urbanised provinces of Rewa and Naitasiri, within which most of the Greater Suva-Nausori area is located, are better served by local authorities for household rubbish disposal than other regions within Fiji (Table 3.15). However, even within the Greater Suva-Nausori area, it is the urban dwellers who are better served while

the “services in the rapidly growing peri-urban areas are not satisfactory and these areas are likely to generate an additional 24,000 tonnes of solid waste by the year 2001” (Connell and Lea 1993b:150). Furthermore, whereas there is relatively high quality rubbish collection service, solid waste disposal and management of dumps remain problematic (Whitehead et al. 1994:9).

Table 3.15. Households' Waste Disposal Methods in Fiji by Location, 1996<sup>a</sup>

Waste Disposal	Rewa Province		Naitasiri Province		Fiji Total	
	No.	%	No.	%	No.	%
Local Authority	13,895	74.8	12,366	55.2	41,857	28.9
Bury	3,774	20.3	9,321	41.6	84,586	58.5
Burn	3,859	20.8	10,309	46.0	86,564	60.0
River or Sea	926	5.0	477	2.1	8,813	6.1
Backyard	572	3.1	2,243	10.0	13,636	9.4
Other	18	0.1	100	0.5	966	0.7
None	394	2.1	216	1.0	1,840	1.3
Total	18,586	126.2	22,389	156.4	144,617	164.9

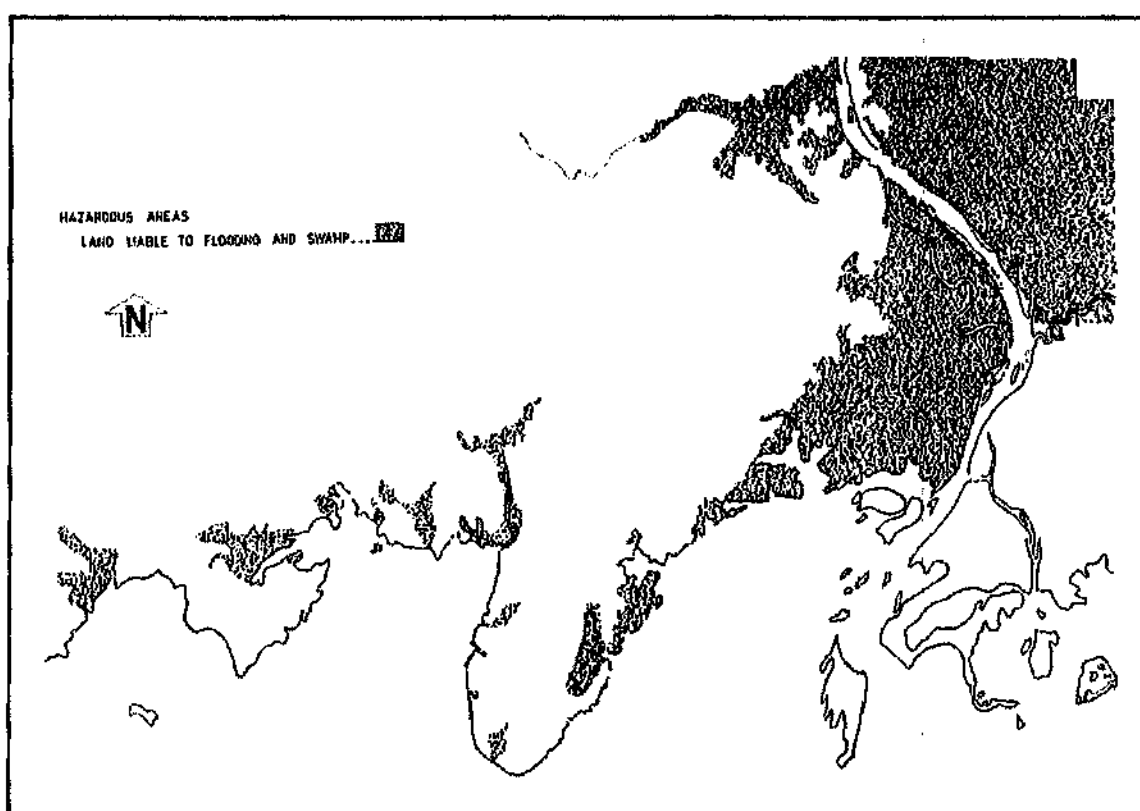
<sup>a</sup> Households may utilise more than one disposal method.

Source: Adapted from Fiji Bureau of Statistics 1998b:255.

### 3.7.2 Drainage

The Greater Suva-Nausori region lies on the windward and wet side of Viti Levu, with drainage affected mainly by the Rewa River, although the Nasinu River, Tamavua River and Lami River also drain the area. As the upper portions of river catchments are developed, there is increased run-off and, consequently, many of Fiji's urban areas are experiencing increased flood risks (Figure XIII). In Suva, although drainage catchments are small, some local flooding occurs from time to time (DTCP 1975:8; Whitehead et al. 1994:8,22). Recently, there was flooding within the city's Central Area, its severity blamed on the Suva City Council's lack of drain maintenance (*Fiji Times*, 1 May 2000; *Fiji Times*, 2 May 2000). The impact of poor drainage tends to be more economic than environmental, with damage and loss of personal property generally greatest in areas of squatter and low quality housing (Whitehead et al. 1994:21). In Lami, the flat areas along the Tamavua River, the Wailada Industrial Estate, and Nasevou Street are subject to flooding (DTCP 1998:4). Nausori, which is located in a flood plain, suffers from nuisance and mainstream flooding during heavy rains, with land which is less than one metre above mean sea level particularly susceptible. The severity of flooding is related to the large volume of water borne by the Rewa River, and so to reduce flooding frequency the Department of Primary Industries has undertaken dredging of the Rewa River.

Because much of the land in the flood plains is badly drained and because of the low bearing capacity of the land, landfilling is often required and development of surface drainage, sewerage and building foundations typically cost more than in other locations (DTCP 1975:34; DTCP 1986:9; Whitehead et al. 1994:9).



Adapted from: DTCP 1975:Illustration 11

Figure XIII Areas Liable to Flooding, Greater Suva-Nausori, 1975

Flood damage costs are high and insurance premiums in Nausori are continually increasing as a result of flood-related claims. Nevertheless, there are few effective flood prevention/amelioration strategies in place in the Greater Suva-Nausori area, although planning controls have been instituted for low-lying coastal areas in Suva under which developers of marginal lands are required to undertake flooding impact studies. In Suva, there is a need for repair of flood gates and widening of drainage outlets, while in Nausori, more significant flood control measures are required (Whitehead et al. 1994:8,21-22). In the *Lami Town Planning Scheme* “it is proposed that areas prone to flooding should not be developed further or development be restricted” (DTCP 1998:22).

### 3.8 Electricity Services in Greater Suva-Nausori

#### 3.8.0 The Fiji Electricity Authority (FEA)

The FEA, a wholly Government-owned statutory authority, is responsible for the generation, transmission and distribution of electrical power in Fiji; it is the most important supplier of electricity in both urban and rural areas on Viti Levu, Vanua Levu and Ovalau. In late 1990, FEA had sales of 369 GWh<sup>34</sup>, with 72,500 customers, of which 86% were domestic, 12% were commercial and industrial, and 2% were others (World Bank et. al 1992:iii). For the month of September 1981, the average monthly FEA bill for electricity for urban Suva area households was F\$22.57, for peri-urban Suva area households was F\$28.23, and for rural Suva area households was F\$12.51 (Siwatibau 1987:4).

#### 3.8.1 Households' Electricity Supply

The Greater Suva area consumed 56% of the total electricity sales in Fiji in 1987 (Chandra 1996:35). Virtually all of the Greater Suva-Nausori urban area is capable of connection to the electric supply generated from the Suva City Council Power Houses at Kinoya and in the City centre (DTCP 1975:50). Commercial and industrial establishments make wide use of electricity, which accounted for 46% of the total energy demand of the Suva commercial sector in 1981, and represented 41% of the total energy expenditure of the Fiji industrial sector in 1980 (Siwatibau 1987:xii,33). Similarly, residential dwellings are becoming more dependent upon electricity as well.

In 1977, 70% of urban dwellings, 3% of rural village dwellings and 23% of rural settlement dwellings had supply of electricity, increasing to 82%, 12% and 36%, respectively, by 1991 (UNDP 1997:42). In 1986, 49% of all dwellings in Fiji had supply of electricity, increasing to 67% of all dwellings in 1996 (Appendices 3V and 3W). In urban areas in 1986, 65% of ethnic Fijian dwellings, 79% of Indian dwellings and 89% of Others dwellings had supply of electricity, whereas in rural areas the corresponding proportions were 18%, 43% and 38%, respectively (Fiji Bureau of Statistics 1989:146). In 1996, 86% of dwellings in Rewa Province, 78% in Naitasiri Province and 54% in Tailevu had supply of electricity from various sources (Table 3.16). In Lami, electricity is provided in the properly developed subdivisions whereas households in unsubdivided settlements are not connected to the electric supply (DTCP 1998:6).

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<sup>34</sup> The bulk of the sales came from the hydro-based Viti Levu Interconnected System (VLIS), although FEA also operates isolated diesel systems at Rakiraki, Labasa, Savusavu and Levuka (World Bank et. al 1992:iii).

Table 3.16. Households' Source of Electricity in Fiji by Location, 1996

	Rewa Province		Naitasiri Province		Tailevu Province		Fiji Total	
	No.	%	No.	%	No.	%	No.	%
Electrified dwellings:								
FEA	15,336	82.5	16,478	73.6	4,182	46.9	83,031	57.4
Village plant	176	1.0	332	1.5	210	2.4	5,178	3.6
PWD	118	0.6	4	0.1	10	0.1	534	0.4
Own plant	267	1.4	490	2.2	428	4.8	6,823	4.7
Vatukoula	12	0.1	8	0.1	6	0.1	639	0.4
FSC <sup>a</sup>	16	0.1	37	0.2	19	0.1	551	0.4
Nonelectrified dwellings	2,661	14.3	5,040	22.5	4,064	45.6	47,861	33.1
Total dwellings	18,586	100.0	22,389	100.0	8,919	100.0	144,617	100.0

<sup>a</sup> The Fiji Sugar Corporation.

Source: Adapted from Fiji Bureau of Statistics 1998b:258.

### 3.8.2 Households' Source of Cooking Fuel

In 1986, the use of electricity as a source of cooking fuel varied widely according to the tenure of the dwelling, being more common in owned, employer, institutional and private rental tenure arrangements, and less common in squatter and public rental tenure arrangements where the use of wood, kerosene and other fuels was more prevalent (Fiji Bureau of Statistics 1988b:52) (Appendix 3X). In Suva households in 1981, the lower the income level, the higher the incidence of reliance on firewood for cooking fuel needs, and in Nadi-Lautoka in 1982, firewood and kerosene were the main energy sources for low-income households while electricity and LPG were for high-income households (Lloyd et al. 1982:112; Siwatibau 1987:iii). In 1996, 5.9%, 2.9%, and 2.0% of the households in the provinces of Rewa, Naitasiri and Tailevu, respectively, used electricity as their main cooking fuel, whereas 2.6% of households at the national level did so (Table 3.17).

Table 3.17. Households' Main Source of Cooking Fuel in Fiji by Location, 1996

	Rewa Province		Naitasiri Province		Tailevu Province		Fiji Total	
	No.	%	No.	%	No.	%	No.	%
Electricity	1,092	5.9	641	2.9	180	2.0	3,785	2.6
LPG	9,620	51.8	7,918	35.4	1,705	19.1	40,770	28.2
Kerosene	6,295	33.9	9,380	42.0	2,916	32.7	29,951	20.7
Wood Stove	149	0.8	228	1.0	346	3.9	7,740	5.4
Open Wood Fire	1,401	7.5	4,118	18.4	3,740	41.9	61,761	42.7
Other	29	0.2	104	0.5	32	0.4	610	0.4
Total	18,586	100.0	22,389	100.0	8,919	100.0	144,617	100.0

Source: Adapted from Fiji Bureau of Statistics 1998b:258.

### 3.9 Transportation Services in Greater Suva-Nausori

#### 3.9.0 Administration of Fiji's Transport Sector

Viti Levu has a relatively extensive, and in parts, an intensive transportation network. Greater Suva-Nausori serves as a major transportation hub within Fiji, having the primary seaport (Suva), an airport (Nausori), and numerous road links. The administration of the transport sector in Fiji is handled primarily by the Road Transport Department, which oversees the Central Traffic Authority, the Transport Control Board and the Principal Licensing Authority, as well as by the Roads Section of the PWD (Whitehead et al. 1994:14). The responsibility for various aspects of transport in Fiji is therefore shared by a number of ministries and agencies, and consequently suffers from a lack of sufficient coordination with the result being a limited integrated approach to the solution of urban transport problems. Indeed, Fiji's *Ninth Development Plan* acknowledged that the fragmentation of administration of road transport between these institutions has been ineffective and called for reorganisation (Fiji Central Planning Office 1985:108). Moreover, there have been allegations of corruption within the Department of Road Transport involving the provision of vehicle registration and drivers' licenses as well as "letting people off the hook in traffic related offences" (*Sunday Times*, 28 May 2000).

#### 3.9.1 Road Transport

Between 1970 and 1985, 80% of the total Fiji capital budget for transport was allocated to building new roads (Fiji Department of Information 1985:19). Most of the areas of high quality land, especially on Viti Levu, are now accessible to some degree via the roading network (Fiji Central Planning Office 1980:318). Between 1970 and 1984, the road network was expanded from 2,600 km to 4,600 km, of which 600 km are tarsealed. Yet, due to this emphasis on expansion, the upgrading of existing heavily trafficked and congested roads was relatively neglected, with the result being that many of the arterial roads in the major urban centres and floodable main roads warrant upgrading. The purposes of addressing these issues include removing traffic bottlenecks and alleviating flooding problems so as to ensure that roads are accessible at all times (Fiji Central Planning Office 1985:104,107). In the Greater Suva-Nausori area, problems of traffic, apart from those associated with the

congested city and town centres, are the result of either there being only one feasible route for any journey, or the conflict between through traffic and local traffic on the same road (especially Kings Road and Queens Road). In Nausori, for example, over two-thirds of traffic on the Rewa Bridge travelling to and from Suva (on the Kings Road) turn into or out of N.G. Patel Road, the Town's main street. Traffic between Suva and Nausori on the Kings Road increased by 71% between 1973 and 1980 (DTCP 1986:53; DTCP 1988:5; John 1969:8).

With the growing urban population pressure, accompanied by the increasing motorised vehicle fleet, the urban transport infrastructure will likely be less and less able to cope with traffic and mobility needs. Indeed, it has been acknowledged that "some of the roads have been placed under considerable pressure due to substantial increases in traffic volume" (Fiji Central Planning Office 1985:104). The escalating damage to roads and bridges, many of which are several decades old and were built to accommodate smaller sized vehicles, is abetted by the fact that there has been a recent growth in the numbers of larger sized vehicles, which are also frequently overloaded (Fiji Central Planning Office 1985:108). For example, Nausori residents warn that the Rewa Bridge shakes when heavy trucks and buses pass through, and, in August 2000, several trusses, already weakened by corrosion, cracked after a 10 tonne container truck passed on its way to Suva (Fiji Times, 25 August 2000; Fiji Times, 26 August 2000).

### 3.9.2 Motorised Vehicles in Fiji

The growth rate in the number of motorised vehicles in Fiji has been in excess of population growth. The total number of vehicles licensed in Fiji has increased by 47% from 1979 to 1984, a 100% increase since 1974 (DTCP 1986:52). The total number of motorised vehicles in Fiji has increased from approximately 16,100 in 1970 to 32,000 in 1974, to 60,300 in 1986, and to 84,500 in 1994 (Appendices 3Y and 3Z). Between 1970 and 1980, the number of private cars per capita increased 7.5%, as compared to 3.4% for the bus fleet (Fiji Central Planning Office 1980:241). In fact, the number of private cars has dramatically increased, as for example more than doubling from 8,601 to 17,347 between 1970 and 1974 (Fiji Central Planning Office 1975:142). This trend has consequently increased vehicular traffic, which, as early as three decades ago, was estimated to be growing at approximately 10% per annum in Suva (John 1969:7).

### 3.9.3 Vehicle Ownership in Greater Suva-Nausori

The number of motorised vehicles licensed in Suva increased 25% from 1979 to 1984, with private vehicles having increased 33% between 1982 and 1985 and motorcycles having increased 79% between 1982 and 1984 (DTCP 1986:52). Of the 144,617 households in Fiji in 1996, 24,027 (16.6%) owned at least one car and 9,763 (6.8%) owned at least one truck or carrier. The ownership of motorised vehicles has tended to be disproportionately concentrated in the more urbanised areas, as well as, to a lesser extent, in the sugar cane farming areas of Fiji. In 1996, the three provinces of Rewa, Naitasiri and Ba together accounted for 76.7% of Fiji's cars and 59.3% of its trucks and carriers (Fiji Bureau of Statistics 1998b:258). In the case of the Greater Suva-Nausori area, it is in the tikinas of Rewa, Suva, Naitasiri and Bau within the provinces of Rewa, Naitasiri and Tailevu that the ownership of motorised vehicles is further concentrated. Within Rewa Province, Rewa Tikina accounted for 18.2% of all cars and 60.0% of all carriers, and Suva Tikina accounted for 18.2% and 5.0%; within Naitasiri Province, Naitasiri Tikina accounted for 70.4% and 13.7%; and within Tailevu Province, Bau Tikina accounted for 16.2% and 5.3% (Ministry of Fijian Affairs 1995:43-45). Hence, vehicle ownership figures are particularly high in major urban centres such as Suva. For instance, of 1,312 households surveyed in Suva in 1981, 33% owned private cars, 2% owned motorcycles, 3% owned taxis, and 6% owned other types of motorised vehicles. Mobility patterns among Suva households have been found to differ according to ethnicity, in that Fijians had a greater tendency to use buses and taxis, while Indians and Others were more likely to own private vehicles (Siwatibau 1987:23,25) (Appendix 4F). In 1970, a full 72.6% of all national car sales were in the Greater Suva-Nausori area (DTCP 1975:56).

### 3.10 Environmental Consequences of Greater Suva-Nausori's Growth

Environmental effects vary with types and intensity of land use, and with management practices. Environmental problems typically accompany rapid urbanisation. The expansion of the urban area of Greater Suva-Nausori has been accompanied by considerable environmental damage. The area is

the scene of major environmental deterioration. Marine resources have been stripped from most of the nearby reefs and inshore fisheries, and rubbish is



still routinely disposed of by dumping in the sea. Little has been done to control air pollution from automobiles and factories and many local creeks are heavily polluted. Clearly, it is questionable whether either the Suva City Council or the Government of Fiji have the means or strong desire to promote a more sustainable future for the City (Overton and Storey 1999:246).

### 3.10.0 Industrial Pollution

Fiji's economic and development strategies have moved from the promotion of import substitution and the protection of key industries to policies which promote the acceleration of the rate of economic growth through the expansion of exports. There has been a strategy which aims to accelerate economic growth through private sector initiative, emphasising exporting, and thus generally deregulating (and diversifying) the economy (Watling and Chape 1992:41; World Bank 1996:182).

As the capital of Fiji and the commercial centre of the whole South Pacific, Suva has grown steadily in terms of population, industry, and economy over the past few decades. This in turn has led to increased industrial effluent, human waste disposal, and port activity, all of which presently contribute to considerable coastal pollution problems (Corless 1995:2).

Industrial activities in Fiji are varied and quite robust for a small country in an isolated location, with an extensive range of manufacturing – from food to shipbuilding, from matches to the production of video and audio tapes – having developed over the past few decades. Consequently, however, industrial pollution is a major problem, and pressures are increasingly being placed on its urban infrastructure (Chandra 1993:31; Connell and Lea 1993b:17; Thistlethwait and Votaw 1992:22).

In Fiji, the push for an expansion of the manufacturing sector will further encourage an increase in the urban and peri-urban populations in “locations where environmental issues of social concern are already deteriorating, in particular housing, sewerage and sanitation and waste disposal” (Watling and Chape 1992:102). Squatters living near factories in the industrial areas of Suva have (Figure XIV), on occasion, been threatened by pollution, fumes and fires (Bryant 1993b:82). Likewise, the central abattoir at Wainibuku, despite efforts to eliminate nuisance and odours, is “badly located in relation to existing residential development and has sterilised a large area of land which might otherwise have been valuable for future development” (DTCP 1975:63) (Figure XV). Moreover, as the diversity of industry expands, currently inadequate pollution controls are further taxed (Watling and Chape 1993:8).

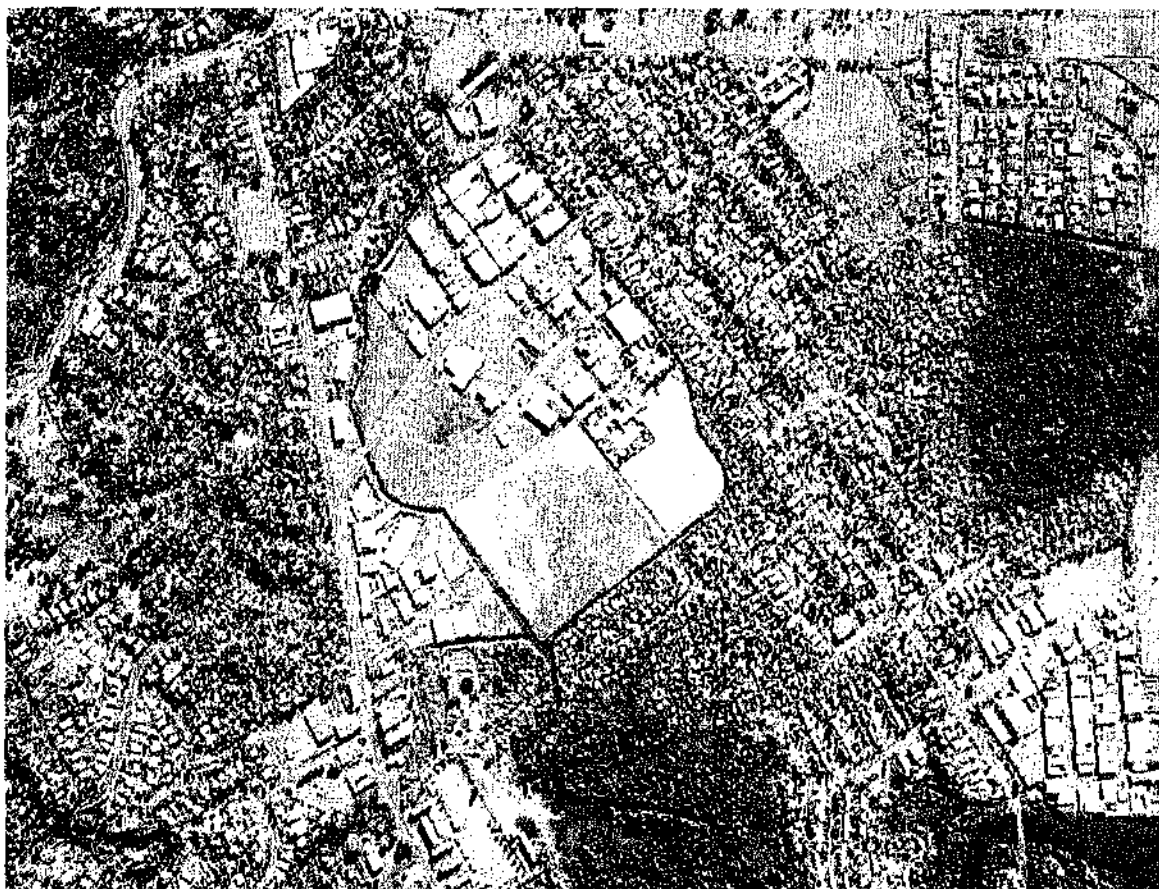


Figure XIV Squatter Settlements, Vatuwaqa Industrial Estate, Suva, 1998



Figure XV Abbatoir, Wainibuku, Nasinu, 1998

### 3.10.1 Coastal Degradation

Reclamation for public use has long been the focus of Government attention in Fiji (Richmond 1981:59), and there are 29.49 ha of reclaimed land in the Suva area. Much of the present Central Area has been formed from reclamation started in the 1880s, and it has proven one way in which open space can be provided in the high-value city centre where population and development pressures are greatest (Floyd 1976:46) (Figure XVI). Coastal land reclamation schemes have damaged the lagoon and mangrove environments around the Greater Suva area and have led to a substantial decline in fish catches per effort (Dupon and Morhange 1993:5; Veitayaki 1995:102)<sup>35</sup>, yet this practice continues as indicated by Lami Town's recent application for reclamation of 45 acres (18.21 ha) of land located on the foreshore near the Lami Police Station to allow for further expansion of the Town's commercial centre to meet retail, service and employment needs (DTCP 1998:11; Fiji Bureau of Statistics 1997:43) and by the PWD's present foreshore reclamation works widening the Queens Road along the Walu Bay area (*Advertiser Weekly* 00(29):1).

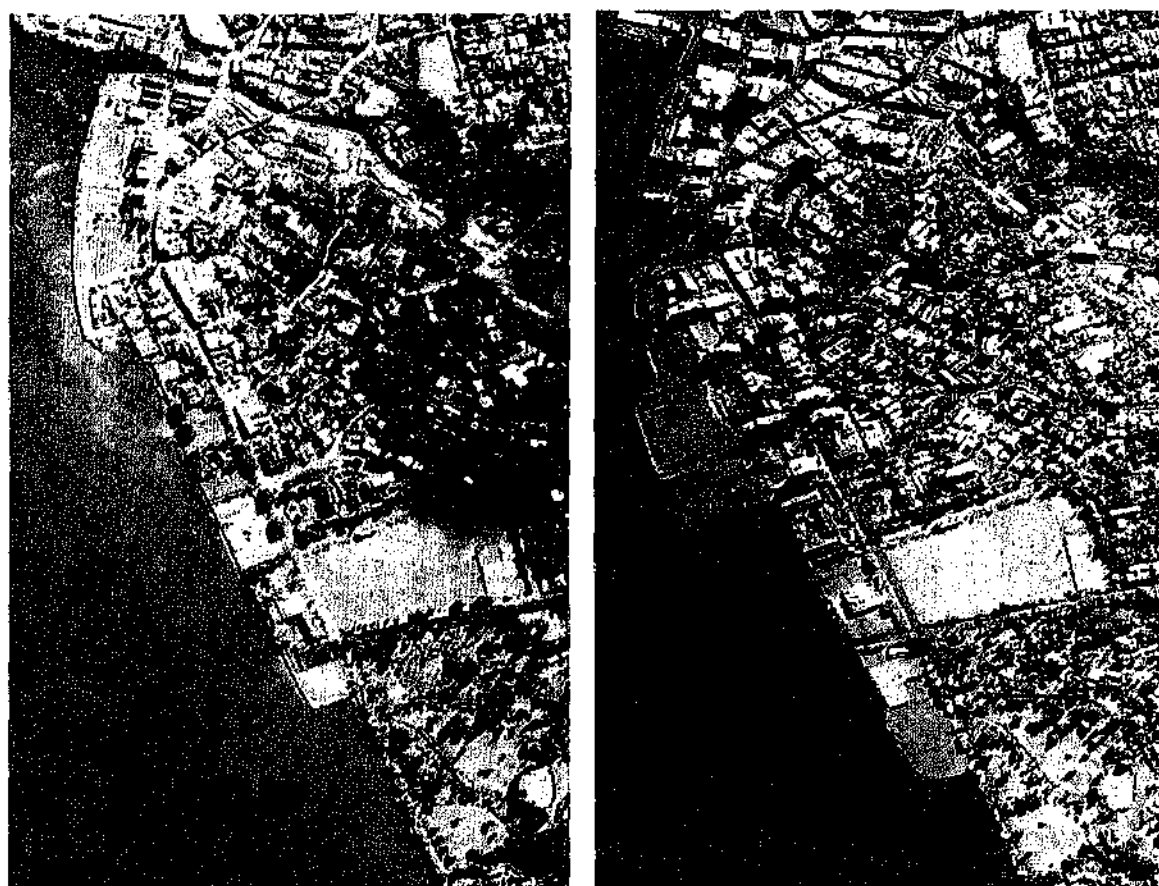


Figure XVI Open Space Foreshore Reclamation, Central Suva, 1967 and 1998

<sup>35</sup> "As the City develops, many of the mangrove communities have been sacrificed for reclamation and urban development" (DTCP 1975:62).

Further, mangrove swamps are commonly receptacles for effluent and solid waste. As Suva is located on the coast near a harbour, there are problems of pollution derived from urban, industrial and port activities. Chemical and biological pollution of coastal waters has occurred in the Suva port area, Laucala Bay, Walu Bay and Vatuwaqa industrial areas, areas close to the Kinoya and Raiwaqa sewerage treatment plants, and near the Lami Dump (Dupon and Morhange 1993:5). The drainage systems and coastline of the Greater Suva area are polluted from several sources including: surface water runoff, rubbish in drains, effluents from dump sites, ship discharges and spillages, septic tank effluents, sewage treatment effluents, and industrial discharges (Fiji Public Works Department 1993:2).

### 3.10.2 Pollution of the Freshwater and Marine Environment

The concentrated population, heavy shoreline industry, and international port facilities of Suva collectively impact the aquatic environment through the introduction of sewage and industrial wastes. Waterborne pollutants include biodegradable pollutants such as those from sewage, timber mill wastes, and discharges from food processing plants (which trigger aerobic degeneration when released into water), and non-biodegradable pollutants such as heavy metals, detergents and DDT (which cannot be disposed of by the aquatic ecosystem) (Veitayaki 1995:101).

Heavy metal dumping from land-based industries at the Wailada Industrial Estate in Lami, for instance, is making significant impacts in terms of the heavy metal constitution of the water and sediments in the surrounding estuary and coastal area (Tabudravu 1995:112). Suva Harbour, which lies between the Suva peninsula on the east and the Suvavou Village on the west, is surrounded by two industrial zones containing shipyards, manufacturing plants, oil storage depots, and food processing industries. Areas such as Lami, Walu Bay, Vatuwaqa and Laucala Beach Estate around Suva, have a collection of smaller industries (bottling plants, food processing plants, paint manufacturing, machine shops, furniture plants, petroleum storage, garment manufacturing) that produce liquid wastes that discharge into the coastal lagoons (Corless 1995:3; Watling and Chape 1992:104). For instance, the tailings from the Fiji Industries Ltd cement factory in Lami are washed into Waica Creek and Draunibota Bay, damaging marine life (DTCP 1998:9) (Figure XVII).

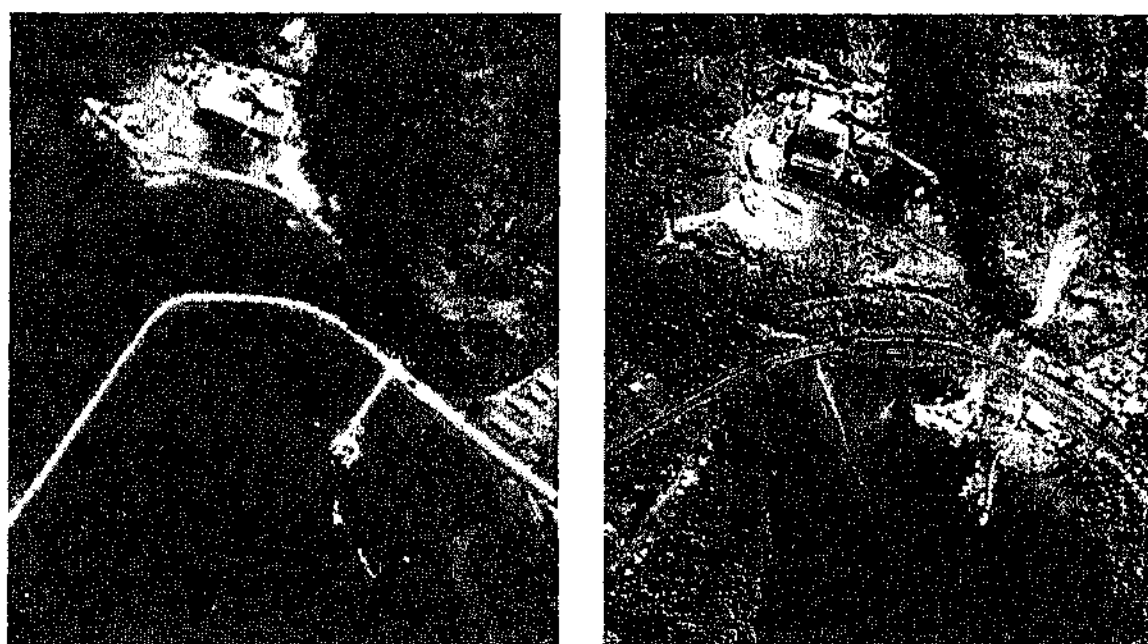


Figure XVII Fiji Industries Ltd Cement Factory, Lami, 1967 and 1998

In a recent survey, 23 of 39 industries in Suva were found to discharge directly into port waters, into a river that drains into the port, or into the stormwater drainage system (Whitehead et al. 1994:11). The discharges from a number of industries in the City have been found to contain elevated BOD, elevated nutrients, high pH, high suspended solids, and high faecal coliform bacterial levels. Major pollution contributors have included: Carlton Brewery (BOD, pH, oils, grease, suspended solids), Fiji Foods (BOD, nutrients, pH, oils, suspended solids, faecal coliform bacteria), CASCO Steel (oils, heavy metals), paint factories (lead), electroplating (zinc, cyanide), and service stations (motor oils). Owing to the relatively high number of these light, medium and heavy industries and because their discharge of wastes is relatively uncontrolled<sup>36</sup>, levels of pollution in Suva Harbour are moderate to very severe (Zann 1992:26). In addition to the polluting effluents of these industries, the long- and short-term anchorage of large ships is another source of contamination through oil/fuel leakage, septic tank disposal and antifouling paint, as is the Lami Dump which is located on the harbour shore and which contributes significantly to the pollution problem in the form of leachates of a wide spectrum of hazardous chemicals (Corless 1995:1-3). Furthermore, sediments in the immediate vicinity of foreshore slipways and boatyards in Suva Harbour have been found

<sup>36</sup> "There are no effective regulations to control the profusion of sources of water pollution in these industrial estates, and the streams and creeks that drain these areas are the most polluted in the country" (Watling and Chape 1992:105).

to have the highest concentrations of tri(*n*-butyl)tin, a potent environmental toxin which can persist for decades, yet measured globally<sup>37</sup> (Stewart and de Mora 1992:507).

### 3.10.3 Sand and Gravel Mining

The company Fiji Industries Ltd operates a cement manufacturing plant outside Lami for which they require a large quantity of calcium carbonate as raw material. Coral biotopes have come under attack from quarrying and reclamation works, with 17.5 ha of reef destroyed between 1962 and 1983 alone (Dupon and Morhange 1993:5). The coral and alluvial sands are obtained by a continuous dredging operation in two locations in Laucala Bay, one at the inner edge of the barrier reef and the other in an area of alluvial sediment. This dredging of coral sand in the barrier reef lagoon has been occurring for decades, with the company moving from site to site after exhausting each one (Richmond 1981:59-60; Watling and Chape 1992:89). From 1960 to 1979, approximately 123 million tonnes of coral sand were extracted from seven different sites off Suva (Zann 1992:24). As of the early 1990s, Fiji Industries Ltd's annual production was approximately 80,000 tonnes of cement, and as 1.5 tonnes of sand was required for each tonne of cement, approximately 120,000 tonnes of sand were consumed annually, with reserves estimated at seven to eight years (Watling and Chape 1992:89). The specific environmental concerns related to the operations include: damage caused to surrounding habitats by the increase in suspended fine sediments disturbed during dredging, changes in water circulation and processes, changes in the marine food resource base following modification of the substrate, heavy air pollution from dust<sup>38</sup>, particulates and gaseous discharges (including sulphur dioxide)<sup>39</sup>, direct destruction of seagrass beds and associated fisheries (with a decline in both fish species diversity and abundance having been observed), an increase of turbidity (Watling and Chape 1992:89; Zann 1992:24), as well as the general "defacing of a most pleasant area" (DTCP 1975:62). Furthermore, Fiji Industries Ltd has illegally reclaimed 11 ha of mangrove and coastal land using factory

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<sup>37</sup> The greatest concentrations of tri(*n*-butyl)tin in Suva Harbour (38,000 ng g<sup>-1</sup> or more than 3.5 times the previously reported maximum level) were found in the vicinity of the slipways (i.e. in areas where ship hull hydroblasting and repainting operating are conducted) from which waste waters are discharged without restriction into the harbour, transporting tri(*n*-butyl)tin contaminated paint residues (Stewart and de Mora 1992:509).

<sup>38</sup> The dust emission from the cement factory is an ongoing problem that is threatening some of the flora on Mt. Korobaba with extinction (DTCP 1998:9).

<sup>39</sup> In recent years, however, Fiji Industries Ltd has invested more than F\$1 million in improving the polluting outputs of the cement factory (Bryant 1993b).

waste sludge (Lal 1984:320) (Figure XVII). Similarly, Standard Concrete Industries has been blasting for Nasinu basalt gravel at its quarry in Nasinu and has been dredging for concrete aggregate gravel in the Navua River for the past half century, with a production of approximately 60,000 cubic metres per annum (Prakash 2000:pers. comm.) (Figure XVIII).



Figure XVIII Gravel Quarry, Nasinu, 1998

#### 3.10.4 Sewage Wastes and Faecal Coliform Pollution

Partially treated and untreated sewerage effluents significantly contribute to high nutrient levels and organic enrichment in the waters off Suva. For instance, wastes in suspension from the Voko Industries fish cannery in Laucala Beach are not treated before disposal, and the cannery's effluent (which has a very high BOD) is discharged into the sewerage system, greatly taxing the Kinoya treatment plant. Disposing the majority of sewage wastes for the Suva region, Kinoya sewerage plant effluent enters Laucala Bay through an 800 m outfall pipe, while the Raiwaqa sewerage plant effluents are discharged directly into the Vatuwaqa River which in turn flows into the Bay (Figure XIX).



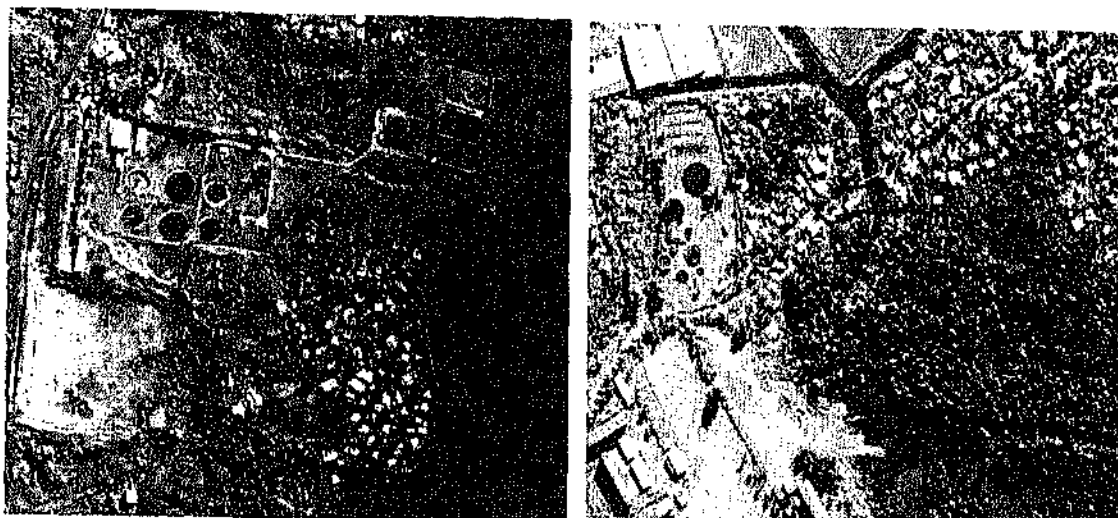


Figure XIX Sewerage Treatment Plants, Suva – Kinoya, 1998 (left); Raiwaqa, 1998 (right)

In addition, there are sewage effluent discharges into Wailada Creek at Lami and Leveti Creek at Nasova. Infiltration is a significant problem, particularly in the older portions of the system in Central Suva, and there are a number of direct stormwater connections (Corless 1995:2; Watling and Chape 1992:104,108; Whitehead et al. 1994:8). Because of the inefficient functioning of the sewerage treatment plants, the very poor permeability of Suva's substrate – soft clay marl or soapstone (which does not allow septic tank effluents to percolate properly), and because there is high rainfall (3000 mm annual average) and low evaporation (1300 mm annual average) (which results in frequent saturation which tends to prevent oxygen penetration), there is slow and inefficient natural treatment from the City's septic tanks and widespread seepage of sewage waste effluent into the City's drains and creeks which eventually discharge onto the foreshore, causing eutrophication and contamination of local waters with pathogenic organisms (Fiji Public Works Department 1993:4; Watling and Chape 1993:9; Zann 1992:27).

Suva Harbour, Laucala Bay, Vatuwaqa River and Samabula River all demonstrate high faecal coliform bacteria levels (Watling and Chape 1993:9; Zann 1992:27). For instance, "from a bacteriological perspective the Vatuwaqa River is significantly polluted. The segment of the River near the Raiwaqa Sewage Plant outfall is grossly polluted" and is "definitely unsuitable for primary contact activities"; likewise "from a bacteriological perspective, the Samabula River is significantly polluted" (Pescod 1988:5.1.1-5.1.2). Similarly, in most of Suva's creeks, average faecal coliform concentrations greatly exceed internationally acclaimed standards, and "of particular concern is Nubukalou



Creek which drains a major area of the City which is without sewerage. With faecal coliform levels thousands of times above an acceptable level it should be regarded as a sewer" (Watling and Chape 1992:106-107) <sup>40</sup>. The major source of freshwater into Suva Harbour is the Tamavua River, with minor sources coming from the Lami River and Nubukalou Creek apart from seepages from stormwater pipes and septic overflows. The major source of freshwater into Laucala Bay is the Vunidawa River (a distributary of the Rewa River), with minor sources coming from the Vatuwaqa River and the Samabula River (Naidu and Morrison 1988:3,5). Hence, the numerous sources of freshwater input around Suva Harbour and Laucala Bay serve as additional sources of pollution and/or nutrient enrichment, as upstream dwellers use these waterways for waste disposal, domestic washing and recreation. Consequently, the general water quality status in the Suva area exhibits high faecal coliform levels, high to very high nutrient levels (nitrate and phosphorus)<sup>41</sup>, and trace amounts of cadmium (Corless 1995:2-3). For instance, the recorded faecal coliform levels off the Lami Town Council Building were 46,300 organisms per 100 ml water and 1,070,000 per 100 ml off the Vatuwaqa River (whereas the maximum international standard for bathing waters is 200 organisms per 100 ml) (Zann 1992:27). *Dioniveitiri* (mangrove oyster, *Crassostrea mordax*) and *kai* (freshwater clam, *Batissa violacea*) along the Laucala Bay shoreline and in the Rewa River have been found to be unacceptable for human consumption owing to their high faecal coliform content associated with locally high sewage levels (Veitayaki 1995:102); the recorded levels of faecal coliform in mangrove oysters from the Suva area had up to 11,000 and even 24,000 faecal coliforms per gram shellfish tissue (whereas the international safety standard for human consumption is 2.3 faecal coliforms per gram) (Naidu and Morrison 1988:50,52)<sup>42</sup>. Moreover, the recorded ratio for nitrogen to phosphate in Suva Harbour is around 1 to 10-15 (whereas that for unpolluted waters is 1 to 1) (Zann 1992:29).

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<sup>40</sup> Samples taken from the Nubukalou Creek between 1987 and 1988, revealed levels of 7,500 and 36,000 faecal coliforms per 100 ml of water (Naidu and Morrison 1988:54).

<sup>41</sup> Inputs of dissolved organic forms of nitrogen into Suva Harbour are mainly from industrial discharges and river inputs; the major inputs into Laucala Bay are the effluents from the Kinoya and the Raiwaqa sewerage treatment plants, industrial effluents, and inputs from rivers (Vunidawa, Vatuwaqa, Samabula and Nasinu) (Naidu and Morrison 1988:8).

<sup>42</sup> These faecal coliform levels are extremely high and are indicative of heavy contamination from the Kinoya and Raiwaqa sewerage treatment plants; these bivalves should consequently be considered potentially hazardous and should not be eaten raw, as the risk of infection is high (Naidu and Morrison 1988:50).

### 3.10.5 Solid Wastes

Designed to protect public health and the environment, a landfill site should meet engineering requirements in terms of ground water, surface water, soil condition, geology, flood plain, permeability of soil, cover material, as well as other factors (Lowe 1991:89). This has failed to adequately happen in Fiji. The most problematic of Fiji's municipal dumps is the 5.16 hectare Lami Dump, established more than 50 years ago on mangrove forest adjoining the Tamavua River, and which has exceeded normal capacity and is now merely increasing in height and giving off foul odours; the rubbish currently constitutes an eight metre high pile (Howorth 1999a:2; Watling and Chape 1992:108; Whitehead et al. 1994:11) and is characterised as "unsightly and noxious" (DTCP 1975:51) (Figure XX). Lami Town Clerk Anil Singh, who reports that the residents of Lami are disappointed that despite their repeated complaints regarding the Lami Dump nothing concrete had yet been done to resolve the situation, recently stated:

People are finding it very hard to put up with the foul offensive smell from the dump which is also an eyesore that affects the entire environment. And on top of that people are scavenging freely on the dump everyday (*Advertiser Weekly* 00(13):1).

The Suva City Council has expressed concern over the increase in the number of scavengers, including families with school-age children, which take items such as toilet paper rolls, disks, batteries and foodstuffs from the Lami Dump (*Sunday Times*, 28 May 2000). Despite repeated warnings issued by the authorities as well as the recent death of a young boy who was crushed by a D-6 Bulldozer, scavenging activities continue and may actually necessitate the hiring of security guards or the fencing of the site<sup>43</sup> so as to prevent access – otherwise the Suva City Council will be issued a F\$100,000 fine by the Ministry of Labour and Industrial Relations (*Advertiser Weekly* 00(21):1).

Furthermore, the water leaching from the Dump carries pollutants (including pesticides used daily to control vermin) directly into Suva Harbour in an area heavily used for recreational and fishing purposes. The Lami Dump is indeed a significant source of heavy metals into the coastal environment of Suva Harbour. Hence, sediments and shellfish found adjacent to the Lami Dump have shown high levels of

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<sup>43</sup> The cost of the security guards has been estimated at F\$12,096 for a 29 week period, while approval for fencing would be required from the Lands Department and the Lami Town Council (*Fiji Times*, 3 July 2000).

The search for an alternative site has been long, tortuous and to date unsuccessful. It is clear that if the [Lami] dump had in the past been managed to acceptable standards, the reaction to having a new site anywhere in the vicinity would not be as vehement as it currently is (Watling and Chape 1992:108).

There have been recent proposals to shift the dump site from its present highly visible coastal site to a secluded valley near Naboro.

The location of the dump is not really the issue at all. The issue is what goes into the dump in the first place. Further, properly implemented solid waste sanitary landfill procedures were needed at the Suva [Lami] dump, are needed now, and will be needed into the future wherever the dump is located. One thing is for sure, there are more and more residents in the Suva area supplying increasingly to the dump, and this fact alone will make it critical to guarantee dump leachate is kept to a minimum and within accepted international standards (Howorth 1999a:2).

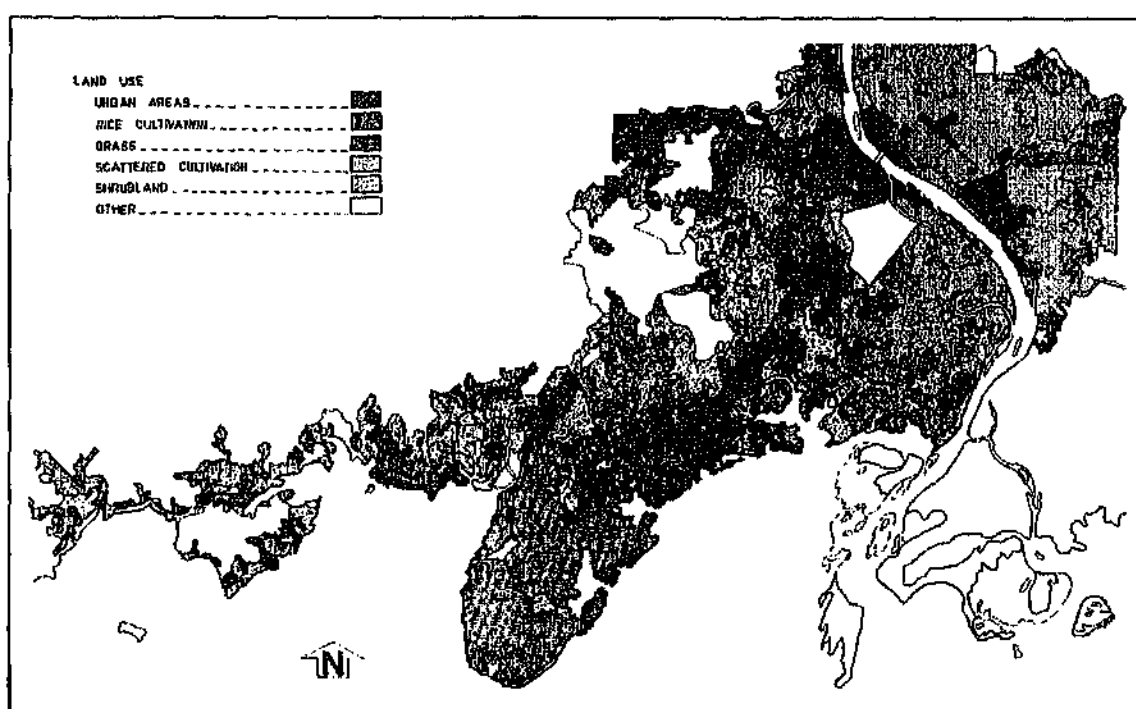
In the *2000 Fiji Budget Estimates*, an expenditure of F\$1,500,000 was under requisition for the relocation of the Lami Dump (Fiji Ministry of Finance 1999:175).

The Nausori Dump is another example of poor waste management. Established upstream from Town on the bank of the Rewa River in the 1960s, the Dump is a source of not only flies and mosquitoes but also River contamination through leaching, smoke, spontaneous combustion and scavenging dogs, and rubbish is susceptible to being washed directly into the River during periodic floods (Watling and Chape 1992:110; Whitehead et al. 1994:11) (Figure XXI). In fact, despite being considered as a temporary site even back in 1975 due to the area's liability to flooding, use of the Nausori Dump continues still today (DTCP 1975:51).

The specific types of hazardous wastes being generated in Fiji include: pesticides, chemicals used in forestry, petroleum wastes and waste lubricating oils, asphaltic oils, tarry and bituminous wastes, dental and hospital wastes, PCBs, asbestos-containing materials, and a wide variety of chemicals (such as heavy metals, acids and alkalis, solvents and organic chemicals) used in industries. Indeed, because there are no industrial waste treatment plants or hazardous waste landfills in Fiji, it must be assumed that virtually none of this material is being disposed of properly (Watling and Chape 1992:105-106). For instance, in September 2000, during a period of heavy rain, oil overflowed from the FEA diesel power generator at Kinoya, killing shellfish, crabs, young mangroves, and root crops along coastal areas (*Fiji Times*, 17 September 2000).

### 3.10.7 Changes in Urban and Peri-Urban Land Use

Land transformation is one of the primary forms of human induced environmental modification. As land cover, settlement (the occupation of land for human living space) represents the most profound human alteration of the natural environment (Figure XXII). With reference to urban settlements, land transformations involve both the conversion of non-urban lands into urban use and intra-urban land use changes. The major land use changes in the Greater Suva-Nausori area have been from vacant urban land and non-urban land to urban land. It is especially the peri-urban areas of Greater Suva-Nausori that are experiencing the greatest population growth, and because the densities of settlement are generally low, the rate of land urbanisation on the outer edges is relatively rapid. In Greater Suva-Nausori, population growth and the demand for land have given rise to the degradation of the peri-urban landscapes surrounding the urban centres, as the urban centres have generally grown horizontally rather than vertically (Adenyini 1980:1449; Fazal 2000:133-134,141; Queijo et al. 1989:73).



Adapted from: DTCP 1975:Illustration 7

Figure XXII Land Cover, Greater Suva-Nausori, 1975

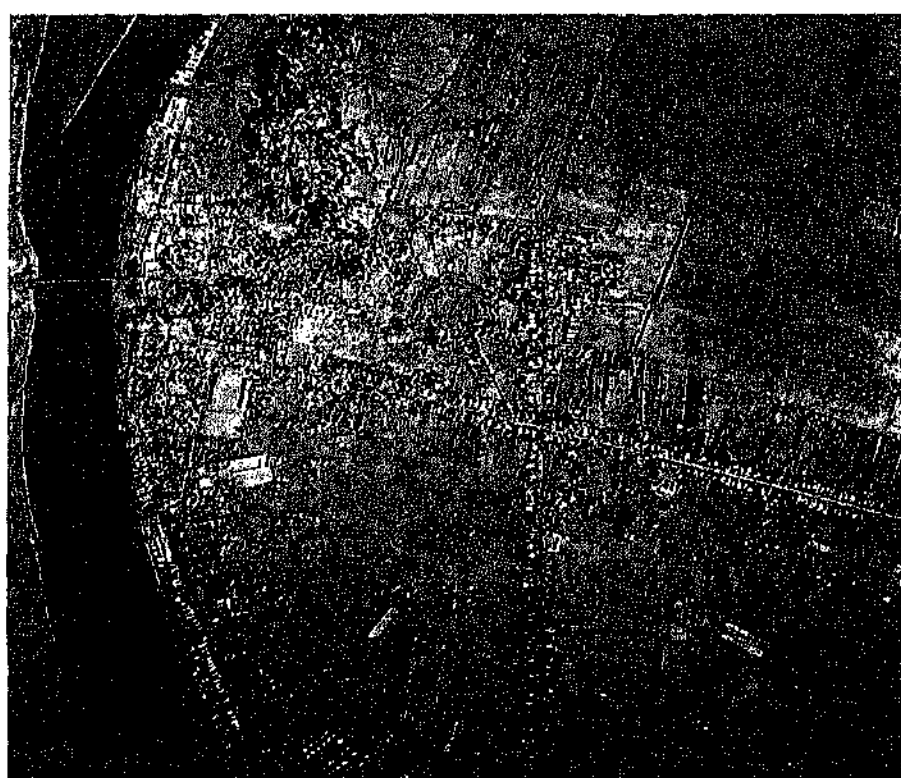


Figure XXIII Ribbon Development, Nausori, 1998

Land use development in the peri-urban areas have, in the past, been characterised by linear expansion along the major arterial roads, giving rise to significant ribbon development (Figure XXIII). In the Greater Suva-Nausori area, “the most suitable areas for future urban development were found to be situated on the marl or soapstone areas within the corridor of land between Suva and Nausori on either side of Kings Road” (DTCP 1975:1). This fact likely relates to transportation limitations and the need to maximise accessibility between the area’s urban centres (Bloomfield 1967:15; Briggs and Mwamfupe 2000:804).

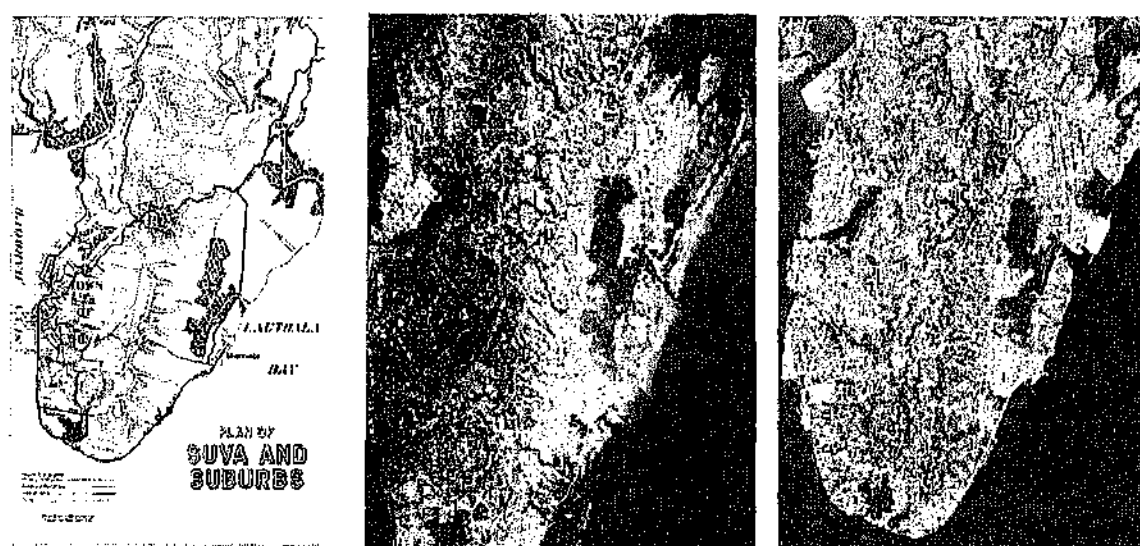


Figure XXIV Infill Development, Suva, 1936, 1967 and 1994

In recent decades, the spatial pattern of urban and peri-urban land use development, taking place against a background of continuing population growth and economic diversification, has also involved the densification of existing linear settlement and is characterised by substantial infilling, particularly within the Suva peninsula itself (Figure XXIV). Thus, the Greater Suva-Nausori area has experienced both an expansion in size and also a significant interchange of land between land use classes. Intra-urban land use changes have involved not only the development of urban vacant land but also the conversion of urban built-up areas to other uses<sup>44</sup>. Most commonly, there has been increased infilling of open spaces between buildings, a greater commercialisation of residential areas, and intensification of residential uses through both formal and informal subdivision. In particular, substantial residential development has occurred throughout

<sup>44</sup> One current example of this in Suva is the conversion of an institutional land use (Laucala Bay Secondary School) to a recreational land use (sporting facilities being built for use in the 2003 South Pacific Games).

much of the Greater Suva-Nausori area during the past few decades. Moreover, it is typically ‘dry’ vegetated vacant land which is converted to planned formal residential use (Figure XXV), and ‘wet’ vegetated vacant land which is converted to unplanned informal residential use (Figure XXVI).

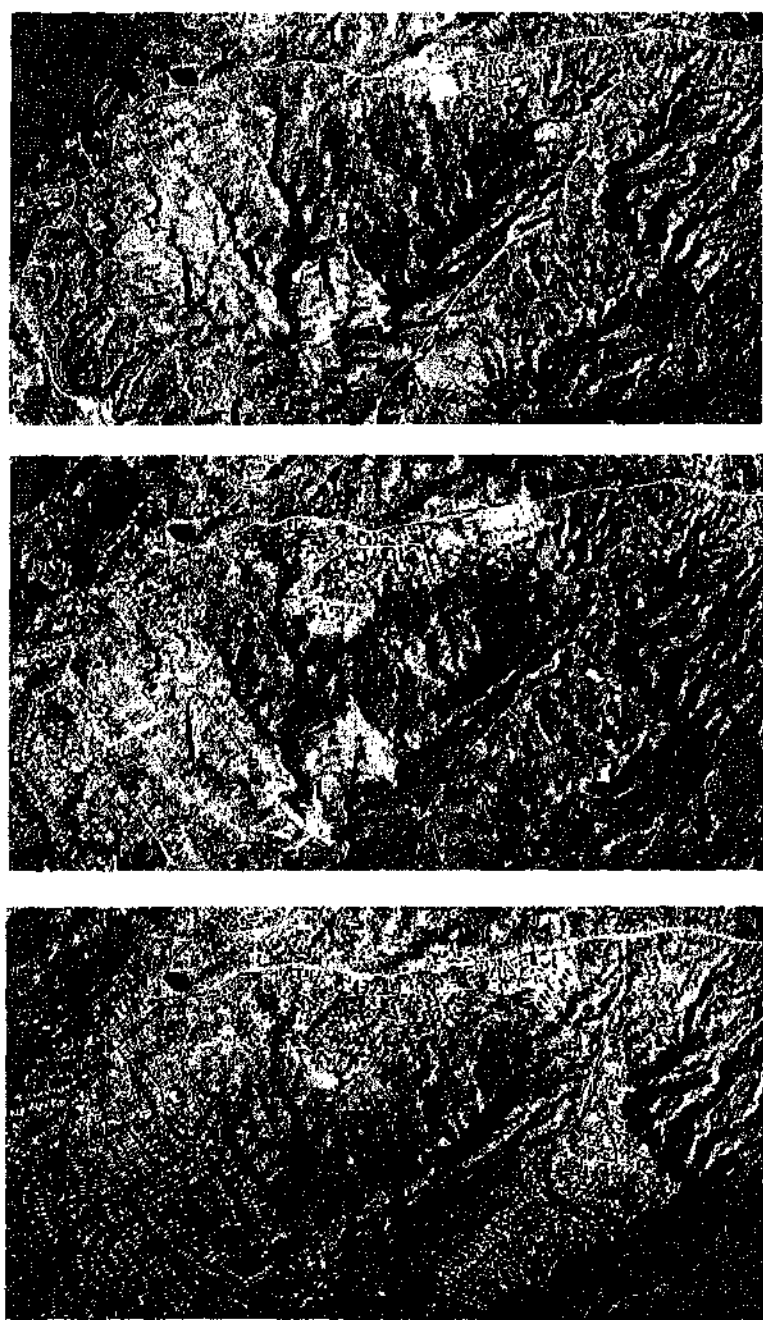


Figure XXV    Planned Formal Residential Development, Suva – Namadi Heights and Tacirua Plains Subdivisions, 1967, 1978 and 1998

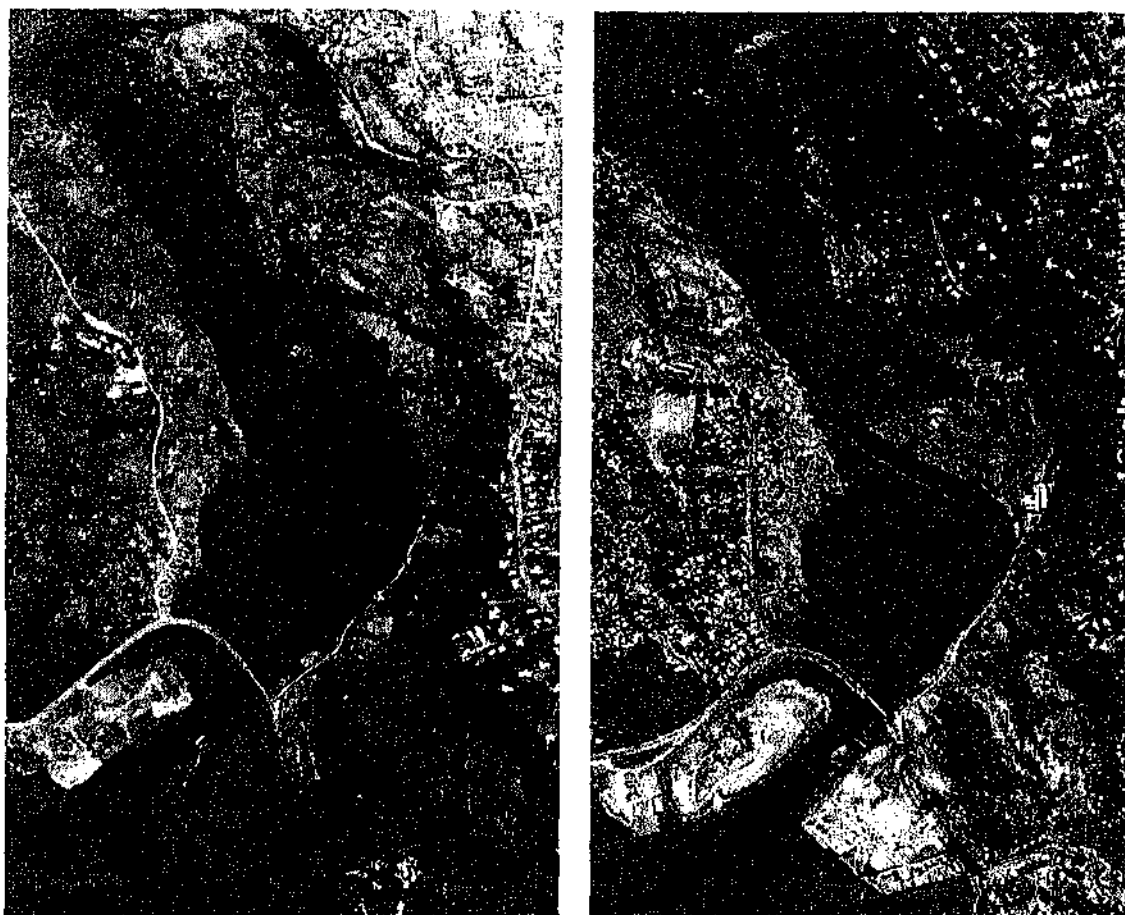


Figure XXVI Unplanned Informal Residential Development, Suva – Tamavua-i-Wai Settlement, 1967 and 1998

In addition, the requirement for new industrial complexes may be met through the erosion of agricultural land or through the reclamation of mangroves and coastal areas (Watling and Chape 1992:102), such as in the Walu Bay and Vatuwaqa industrial areas of Suva and the Wailada industrial area of Lami (Figure XXVII). In Nausori, “despite a strong manufacturing base in the Town, there is a considerable amount of commuting and an unemployment rate which could be as high as 20%. Land for industrial purposes and the ability of the Town to attract new industry is therefore very important” (DTCP 1988:5). Likewise, “Lami is facing a shortage of industrial land. The development of more land for industrial purposes in Lami would mean that there is room for expansion of industrial activities and that the industries would cater for the employment demand for the people from within Lami and its peripheries” (DTCP 1998:10).





Figure XXVII Industrial Development, Wailada Estate, Lami, 1967 and 1998

These intentions highlight the need for appropriate urban and peri-urban planning for the Greater Suva-Nausori area (Whitelaw 1964:6), particularly as

the problems of urban development in the Greater Suva Urban Area are day-to-day growing in scale and becoming more complex (DTCP 1975:84).

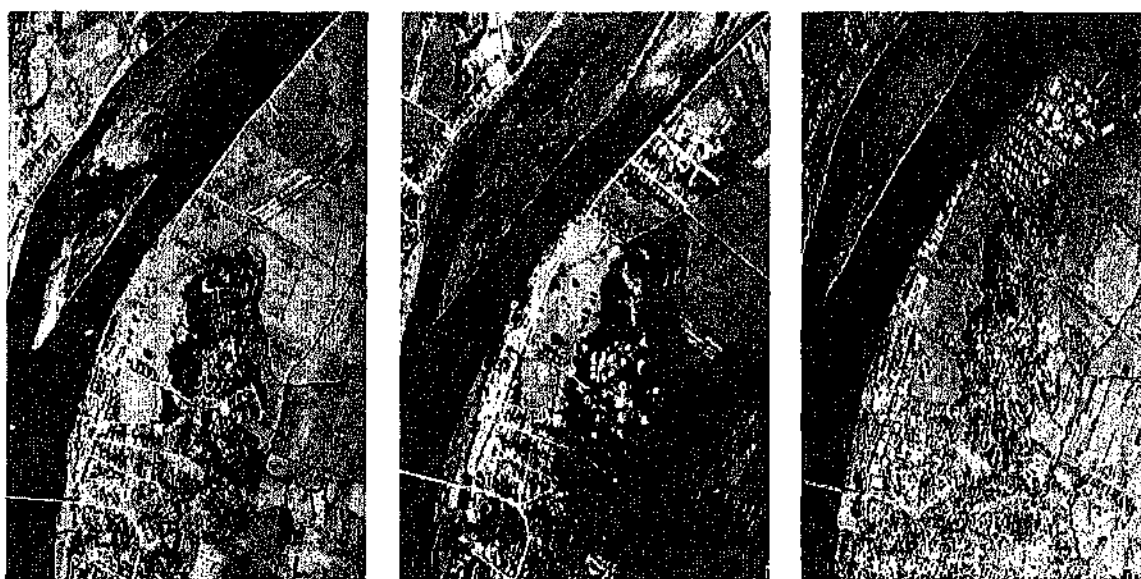


Figure XXVIII Encroachment of Urban Residential Development onto Agricultural Land, Nausori, 1967, 1978 and 1998

As cities grow, they often expand onto farmland<sup>45</sup>, forests, grasslands or wetlands, thus leading to the degradation of land resources and the gradual deterioration of the urban environment (Figures XXVIII and XXIX). "Urban growth will tend to generate its own pace of hinterland agricultural expansion, irrespective of the land capability" (Watling and Chape 1992:21). Hence, localised land degradation resulting from the expansion of agriculture onto marginal lands is accentuated in the proximity of the fast growing urban areas of Fiji, particularly Suva. In fact, to supply urban needs, agricultural developments in the peri-urban areas have produced some of Fiji's worst examples of land degradation (Watling and Chape 1992:21,146-147). "The strip settlement of farming along Kings Road was initiated by the Government several years ago as small economic farms. Due to fragmentation and squatting the land is no longer intensively used for agriculture" (DTCP 1975:12). Efforts, however, have been made in the selection of Suva's urban development areas so as to avoid the fragmentation of valuable agricultural lands and to protect forest

<sup>45</sup> The loss of agricultural land is indeed a serious environmental problem arising from uncontrolled urban growth, as cities often expand over the nation's most productive farmland since many cities grew up within highly fertile areas (Hardoy and Satterthwaite 1989:208), as has occurred in Nausori, for example.

areas and water catchment areas. For instance, the upland forest areas and lands in Rewa Delta have been proposed for conservation and have thus been excluded from potential development sites (DTCP 1975:1-2) (Figure XXIX).

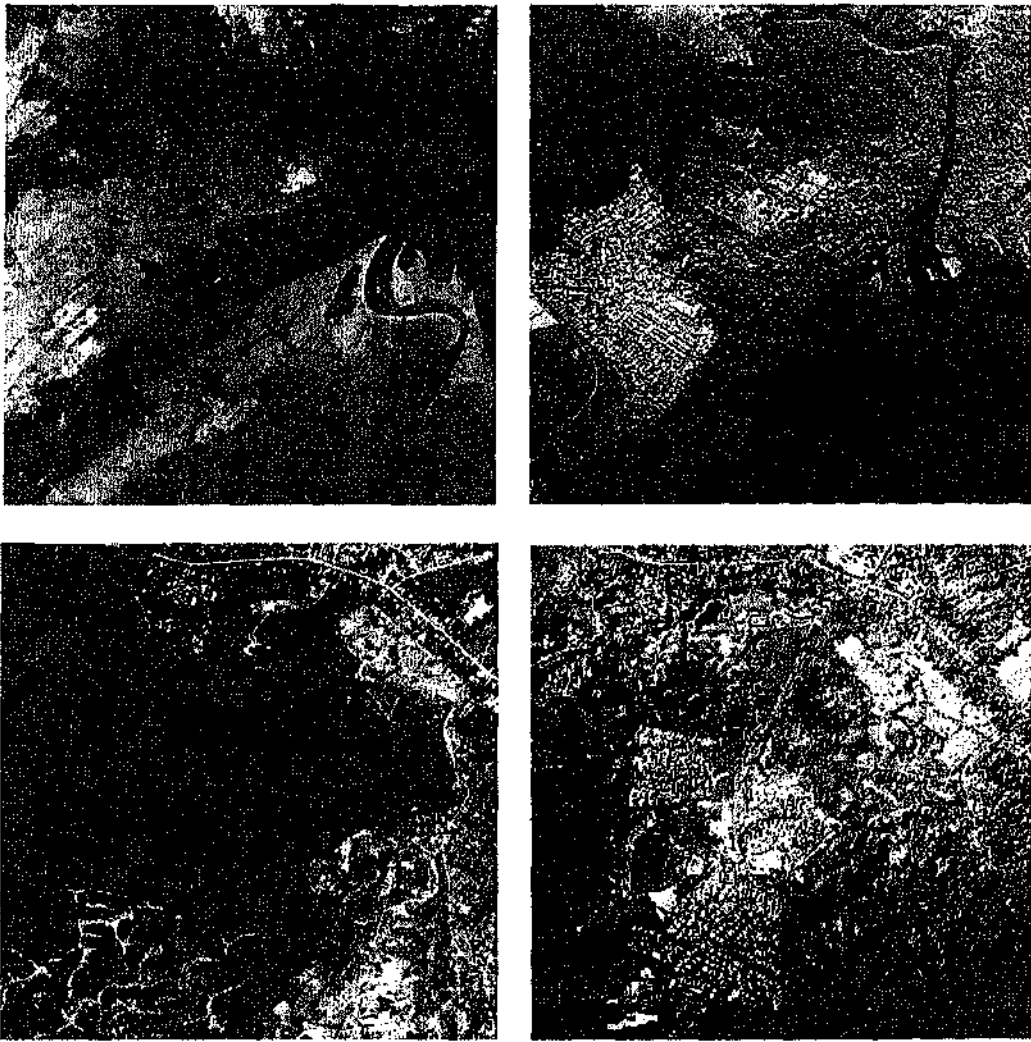


Figure XXIX Encroachment of Urban Residential Development onto Forested Land – Nadawa, 1978 and 1998 (top); Lady Davila Ganilau Road, 1978 and 1998 (bottom)

The *Nausori Town Planning Scheme* also professes that “the fertile land of the Rewa Delta is of national importance in the production of Fiji’s food supply and consideration has therefore been given to the quality of existing agricultural land before a zoning has been made for urban development” (DTCP 1988:4) (Figure XXX). Given the continuing population growth of the Greater Suva-Nausori area and its relatively low density character, the future land demand will be substantial; the key is to shape and direct that expansion in the least damaging directions.

Just as protection of the natural resources that support urban growth is critical to sustaining that growth, investment in environmentally sensitive urban management must be made at the earliest possible stages of urban development. Because cities are the physical setting for the largest proportion of a nation's capital investment, they must be shaped and developed to maximum advantage from the outset (USAID 1990:44).

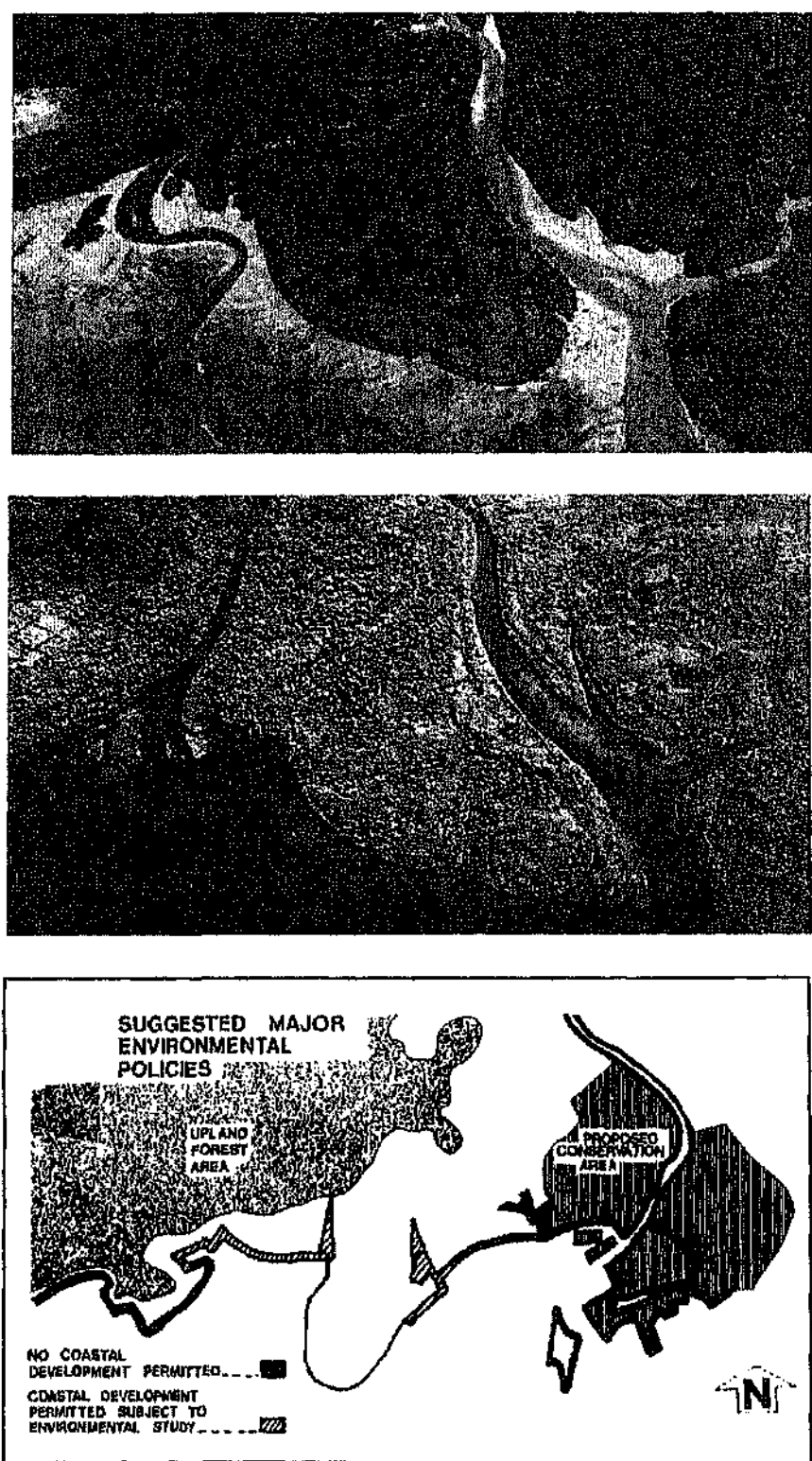


Figure XXX Rewa Delta – Intact Mangrove Habitat, 1978 and 1998 (top); Proposed Mangrove Conservation Area, 1975 (bottom)

## **CHAPTER 4: LIVING CONDITIONS IN THE GREATER SUVA-NAUSORI AREA: PRESENTATION OF HOUSEHOLD QUESTIONNAIRE DATA**

### **4.0 Urban and Peri-Urban Living Conditions**

Environmental quality and living conditions vary spatially both between human settlements and within them. Factors such as access to land and other natural resources, housing adequacy, provision of physical infrastructure and social services such as water, sewerage, solid waste disposal, drainage, electricity, transport, availability of local employment opportunities and of educational, health, religious and retail services all contribute to the quality of life in human settlements. Although there may in fact be somewhat of an urban bias, particularly a large city bias, in investments by governments and aid agencies in public housing, infrastructure and services, few true low-income inhabitants benefit from this. Hence,

urban poverty is not simply a matter of individual income; it is part of the spatial and physical organization of the cities....Many city roads, especially on the outskirts, are unpaved; public water supply reaches low-income areas of the city through public hydrants serving a large number of families; and adequate sewage disposal systems serve only a small proportion of the urban population. Health facilities are unevenly concentrated in the richer areas (Roberts 1978:137).

Although official figures suggest that residents in urban areas are better served than in rural areas, public provision of basic services and infrastructure is frequently no better in the urban informal settlements and peri-urban communities than it is in the rural areas, and the resultant health and social problems are often greater due to higher population densities and greater expectations. There are great discrepancies within urban areas; in fact, while 80% of high-income urban residents in the Third World have a piped water supply connection, only 18% of low-income residents do, though some share communal water taps with neighbours (World Bank 2000:146). These trends also exist in the Pacific Island region, where basic urban services and infrastructure often do not reach newly settled areas (Overton and Storey 1999:245), and where "pressure on infrastructure and the competition for land most often adversely affects the lower-income earners" (Bryant 1993b:26). In the case of Fiji,

the development around Suva and Nausori has, not surprisingly, followed the road structure; development being centred on the Kings Road between Suva and Nausori and settlements such as Tamavua on Princes Road and Lami on Queens Road. Areas near these roads tend to be in residential subdivisions whilst further from the road beyond the periphery of existing infrastructure the area is partially settled by mainly substandard housing development. Many of the residents of this peri-urban area rely frequently on a combination of part-time subsistence agriculture and employment in the City Area (DTCP 1975:7).

Livelihood systems may differ in various ecological settings with unique resource bases and institutional arrangements. Whilst urban housing locations within the Greater Suva-Nausori area are favoured due to the relative proximity to infrastructure and social services<sup>1</sup>, they also make life more costly for their residents due to their lack of local natural resources, particularly land for cultivation<sup>2</sup>. In a relative ranking of 1 (worst) to 5 (best), 2% of the households in the urban squatter settlement of Wailea (within Suva City) gave a rank of 3, 43% gave a rank of 4, and 55% gave a rank of 5 for their community (Appendix 4A) (Figure XXXI). Residents praised their settlement for its friendliness, it being inexpensive and easy/convenient to live there, it being within the Suva City area and close to workplaces, schools and markets, and the availability of low-priced transport. In fact, 100% of Wailea households surveyed considered the living conditions in their settlement to be better than those in the rest of the Greater Suva-Nausori area, and 96% intended to continue living in Wailea for a long time to come (Appendices 4B and 4C). Likewise, it had been found that, in 1976, most Suva squatters were satisfied with their area of residence, with 56% intending to remain in the area. Nevertheless, the squatters did not like everything about their living conditions and desired amenities available in more affluent areas; hence, satisfaction is only relative to the rather limited range of choices which are available to squatters (Walsh 1978:417-418).

Many of the older Suva City [squatter] settlements are apparently well established, having been in existence for more than twenty years and have taken on an aura of permanency with gardens, playing fields, stores, backyard industries and sometimes service connections. Not all have the air of stability, however, and both the new and the old settlements are showing increasing overcrowding, demonstrated in the

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<sup>1</sup> Proximity lowers transport expenditures due to the prevalence of walking and the lower fares charged; urban Wailea households spent an average of F\$3.86 less per week on transport than did peri-urban Veisari and Veratawailevu households.

<sup>2</sup> Urban Wailea households consequently spent an average of F\$10.70 more per week on food than did peri-urban Veisari and Veratawailevu households.

expansion of subletting of rooms within the dwellings and the construction of additional buildings (Bryant 1993b:68).

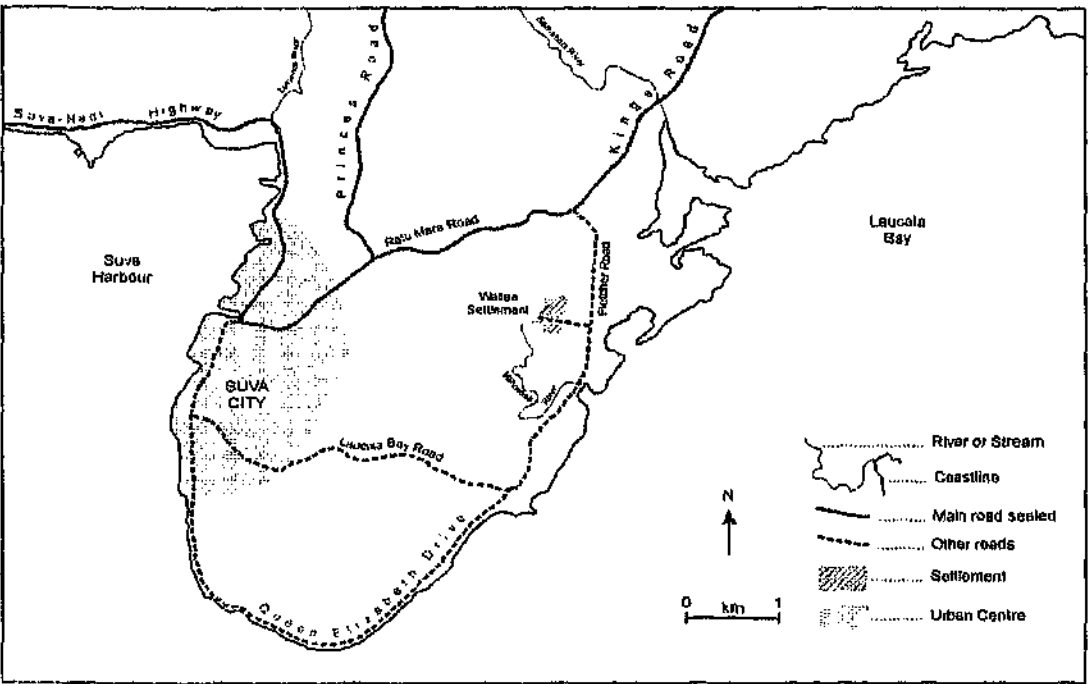


Figure XXXI Location of Wailea Settlement, Suva

Whilst peripheral housing locations are favoured due to the relative abundance of natural resources, particularly land<sup>3</sup>, and the relative lack of social disturbances such as noise and crime, they also make life more difficult for their residents due to their relative distance from many social services and their inferior infrastructural provision. A lack of proximity to other developed areas increases the costs of developing outlying areas because separate water supply and sewerage reticulation has to be provided, and connecting roads and electricity cables have to be extended; costs incurred by residents in travelling to schools, work and shops are also greater (DTCP 1975:35)<sup>4</sup>. In a relative ranking of 1 (worst) to 5 (best), 10% of the households in the peri-urban settlement of Veisari (outside Lami Town) gave a rank of 3, 54% gave a rank of 4, and 36% gave a rank of 5 for their community (Appendix 4A) (Figure XXXII). Residents praised their settlement for its lack of violence and crime, it being a friendly, peaceful and quiet community which was located outside the downtown Suva City area, and for it providing

<sup>3</sup> Access to land for cultivation serves to lower food expenditures; peri-urban Veisari and Veratawailevu households spent an average of 34.3% less per week on food than did urban Wailea households.

<sup>4</sup> Peri-urban Veisari and Veratawailevu households spent an average of 31.2 % more per week on transport than did urban Wailea households.

a good standard of living with most basic needs being met as there are plentiful natural resources and enough land for residents to plant much of their own food. In fact, a full 100% of Veisari households surveyed considered the living conditions in their settlement to be better than those in the rest of the Greater Suva-Nausori area, and 90% intended to continue living in Veisari for a long time to come (Appendices 4B and 4C), primarily since they had permanent dwellings and sufficient land to cultivate, the community is good (friendly, quiet and safe), and it is inexpensive to live there.

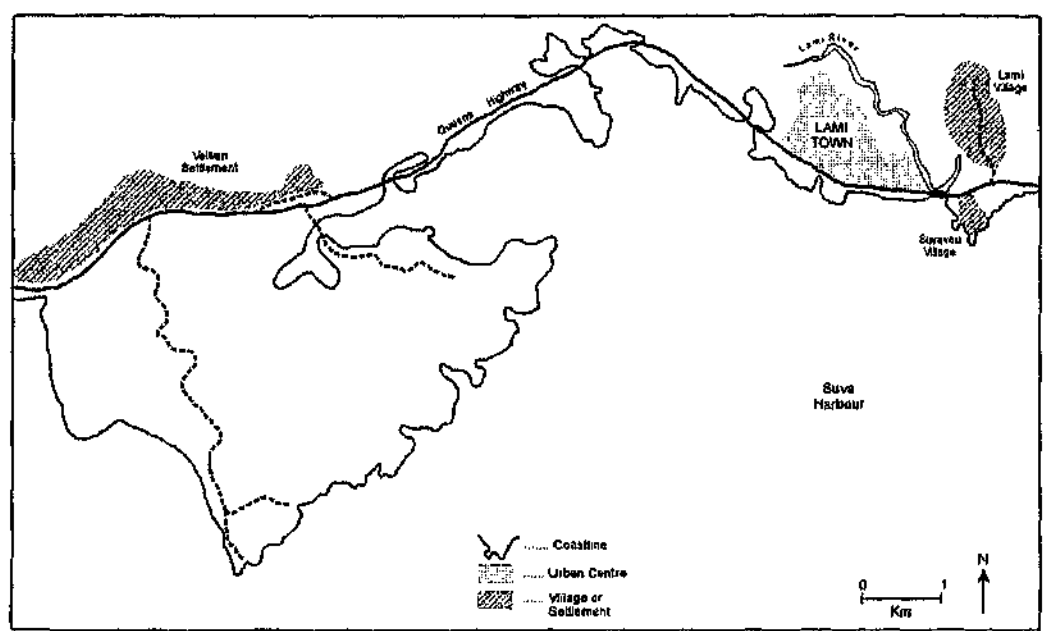


Figure XXXII Location of Veisari Settlement, Lami

In a relative ranking of 1 (worst) to 5 (best), 50% of the households in the peri-urban settlement-village of Veratawailevu gave a rank of 4, and 50% gave a rank of 5 for their community (Appendix 4A) (Figure XXXIII). Residents praised their settlement-village because it is a fair distance from downtown Suva City and therefore has less noise, disturbances and crime, and more land to cultivate, community involvement, and friendlier residents whom all know each other. In fact, a full 100% of Veratawailevu households surveyed considered the living conditions in their settlement-village to be better than those in the rest of the Greater Suva-Nausori area, and 96% of respondent households intended to continue living in Veratawailevu for a long time to come (Appendices 4B and 4C).



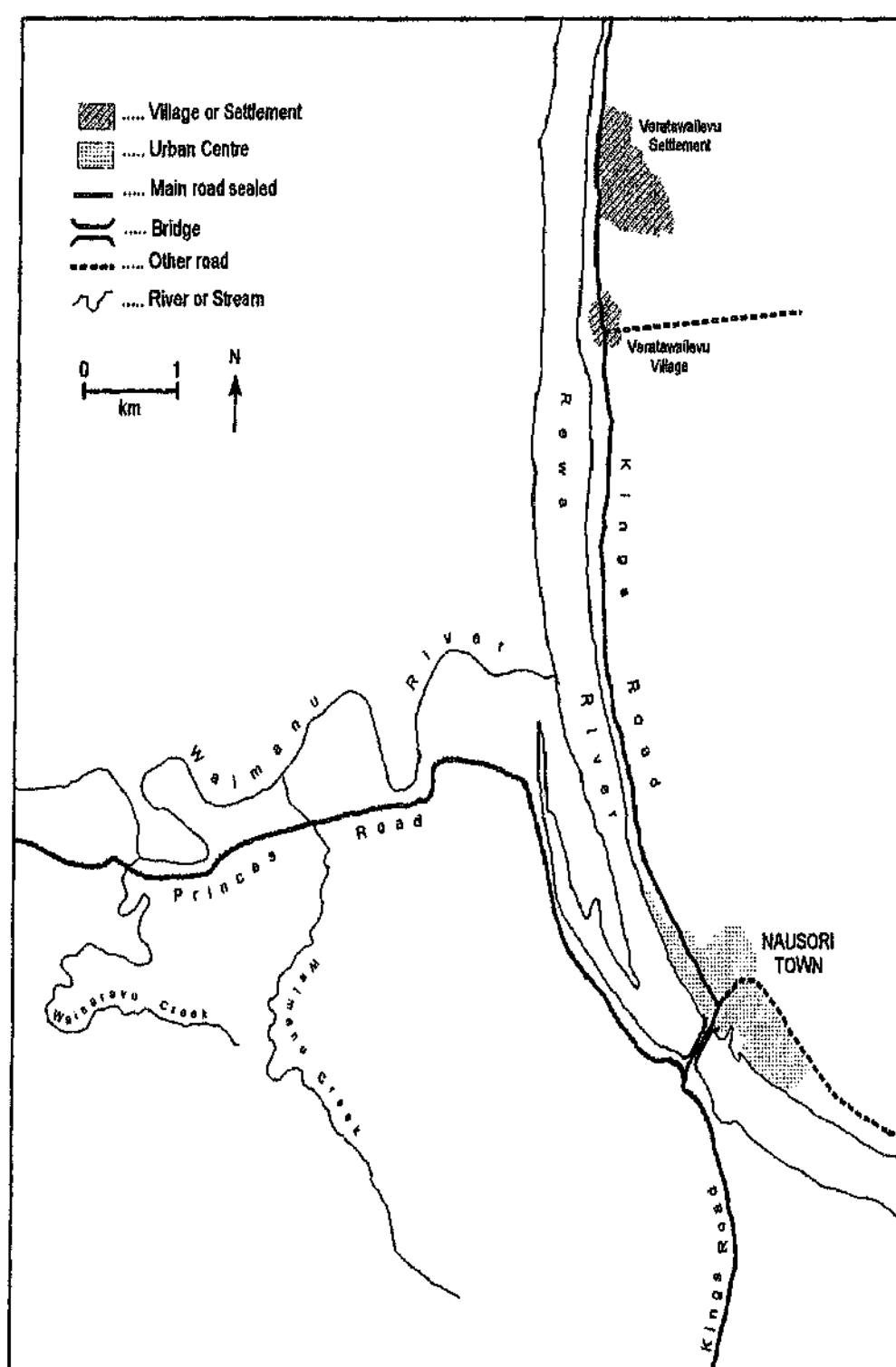


Figure XXXIII Location of Veratawailevu Settlement, Nausori

#### 4.1 Migration

Mobility is an important form of coping strategy to adverse conditions. Hence, migration may not only be understood as a response to various 'push' or 'pull' factors but may also be understood as a conscious action reflecting people's needs, aspirations and hopes for the future. Migration may therefore be seen to be a normal aspect of economic and social life, and as one potential route to a sustainable livelihood (de Haan et al. 2000; Hussein 1998:1).

Of the households surveyed in the urban squatter settlement of Wailea, 75% had moved from rural areas and 25% from peri-urban areas (Appendix 4D). The most common reasons for the migration of the households' were because they wanted to live on their own plot of land and in their own dwelling, and they chose their destination because it was inexpensive to live there, they liked the prospective community, housing was available there, it was close to Suva and close to their relatives, and there was access to better schools. Indeed, most Suva squatter households indicated a strong preference for proximity to Suva and secure tenure, and expressed a strong desire to live in close proximity to kin, which relates to the frequent process of chain migration (Walsh 1978:417; Walsh 1998:3). The tenure of land in their previous place of residence was freehold for 17% of Wailea households, crown lease for 10%, mataqali land for 67%, and 6% had been squatting on native land (Appendix 4E). Their previous dwellings' tenure was a rental arrangement for 2% of households while 98% of households had owned their dwelling (Appendix 4F). It had been found that, in 1976, 80% of Suva squatters considered their settlement to be an improvement on their previous place of residence, and 80% also reported a strong dislike for Housing Authority accommodation, as many wished to own their dwelling while others found the Authority accommodation to be too expensive (Walsh 1978:417).

Of the households surveyed in the peri-urban settlement of Veisari, 80% had moved from rural areas, 6% from peri-urban areas, and 14% from urban areas (Appendix 4D). The most common reasons for the migration of the households' were because they wanted to live on their own plot of land and in their own dwelling, and they chose their destination because it was inexpensive to live there, they liked the prospective community, land and housing were available there, it was close to their relatives, there was access to better schools and employment, the quality of life was better there, and their former residence was too far from employment, and their former land was of poor

quality. The tenure of land in their previous place of residence was freehold for 18% of households, crown lease for 48%, native lease for 6%, mataqali land for 8%, informal arrangement with the native landowners for 18%, and 2% of households had been squatting on native land (Appendix 4E). Their previous dwellings' tenure was a rental arrangement for 60% of households, while 10% of households had owned their dwelling, 28% had been living with relatives, and 2% of households had other arrangements (Appendix 4F).

Of the households surveyed in the peri-urban settlement-village of Veratawailevu, 22% had moved from rural areas, 50% from peri-urban areas, and 28% from urban areas (Appendix 4D). The most common reasons for the migration of the households' were because they wanted to live on their own plot of land and in their own dwelling, and they chose their destination because it was inexpensive to live there, they liked the prospective community, land and housing were available there, and it was close to their relatives. The tenure of land in their previous place of residence was freehold for 26% of households, crown lease for 46%, native lease for 4%, mataqali land for 18%, and 2% and 4% of households had been squatting on native land and crown land, respectively (Appendix 4E). Their previous dwellings' tenure was a rental arrangement for 80% of households, while 6% of households had owned their dwelling, 10% had been living with relatives, and 4% of households had other arrangements (Appendix 4F).

## **4.2 Poverty**

### **4.2.0 The Extent of Poverty**

Poverty is a matter of capability deprivation, with capability referring to freedom in terms of the range of options an individual has in deciding what kind of life to lead and in meeting needs. The main characteristics shared by most poor are a lack of assets, a lack of access to income-generating opportunities, and a lack of access to participate in and influence decision-making (Dreze and Sen 1995; Farrington et al. 1999:2; UNDP 1999; van Dillen, forthcoming 2001). Poverty has been steadily increasing throughout the Pacific Island region and has become visible in most urban centres, including those within Fiji.

The incidence of school dropouts, rising unemployment, increasing levels of malnutrition and other preventable diseases, lack of gardening land, declining real level of income, limited access to safe water and sanitation for those in

the squatter settlements and deteriorating housing standards, can be found almost everywhere in the Pacific and provide ample evidence of growing levels of poverty (Bryant 1993b:60).

Based on the income needed for basic living costs, the national poverty line in Fiji in 1991 for a household of five people was estimated to be F\$83 per week (F\$100 in urban areas), with approximately one-quarter of households (27.6% in urban areas) having incomes which fell below that line and many more (often financially insecure) having incomes which were very close to the line (UNDP 1997:2,34). Approximately one-quarter of households in Fiji had weekly incomes of less than F\$80, another one-quarter had incomes of F\$80 to F\$120, another one-quarter had incomes of F\$120 to F\$200, and one-quarter had incomes of more than F\$200. In 1991, the top decile of households averaged a weekly income of F\$760 whilst the bottom decile averaged F\$34 weekly (UNDP 1997:17).

A significant form of livelihood assets are financial resources, whether savings, credit, incomes, pensions, and/or remittances. There are high levels of cash poverty in Fiji, particularly among low-income urban residents centred in the traditional villages and informal settlements in Suva's peri-urban area (Bryant 1993a:19; UNDP 1997:37). Of the 1,085 new applicants for Housing Authority accommodation in 1982, 10% earned less than \$40, 36% earned less than F\$60, 72% earned less than F\$80, and 93% earned less than F\$120 per week (Bryant and Khan 1990:197). In 1976, the mean weekly income of Suva squatter households was F\$48.60 (Walsh 1978:267). In the Greater Suva-Nausori area in 2000, the average weekly household expenditure was F\$47.35<sup>5</sup>, with 19% of households spending F\$60.00 or more per week, and 10% spending F\$30.00 or less. In Wailea, 3% of households considered themselves to be low-income and 97% middle-income<sup>6</sup> (Appendix 4G). In Veisari, 10% of households considered themselves to be low-income, 88% middle-income and 2% high-income. In Veratawailevu, 71% of households considered themselves to be middle-income and 29% high-income.

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<sup>5</sup> In Wailea, the average weekly expenditure was F\$47.15 per household, was F\$42.50 per household in Veisari, and was F\$52.40 per household in Veratawailevu.

<sup>6</sup> It has been estimated that the average household income in Wailea ranges between F\$80-100 per week (Ali 2000:pers. comm.).

#### 4.2.1 Poverty, and Household and Community Structure

Different human settlements will have different demographic structures. The average size of low-income households in Fiji in 1991 was 4.1 people (4.0 people in low-income urban households) as compared to 6.0 for high-income households (UNDP 1997:49-50). However, although smaller, poor households had higher dependency rates (0.94 as compared to 0.65 for high-income households) since they typically have fewer working-age adults to contribute to the support of children or old people (UNDP 1997:48-49). Moreover, poor households typically have a male as head – 84% of the poorest two deciles of surveyed households in Fiji in 1991 (UNDP 1997:54), and 98.7% of surveyed households in the Greater Suva-Nausori area in 2000 were male headed. Although women headed households are a minority, they are often among the poorest of the poor (UNDP 1997:118).

In 2000, the average household size in urban Wailea Settlement was 4.5 persons per dwelling (56% of dwellings containing 4 or less household members, 42% containing 5 to 7 members, and 2% containing 8 or more members), and 81% of households were nuclear households and 19% were extended households<sup>7</sup>. There were an average of 3.0 adults and 1.4 children per household. A full 94% of surveyed Wailea residents were Fijian, while the remaining 6% were Indian. Squatter settlements have been found to be more ethnically homogeneous than other low-income settlements, and with Fijian squatter settlements, in particular, also displaying marked homogeneity with respect to place of birth and religious affiliation (Walsh 1978:417).

In peri-urban Veisari Settlement in 2000, the average household size was 5.2 persons per dwelling (40% of dwellings containing 4 or less household members, 38% containing 5 to 7 members, and 22% containing 8 or more members), and 72% of households were nuclear households and 28% were extended households. There were an average of 3.2 adults and 2.0 children per household. In Veisari, 74% of surveyed residents were Fijian, 14% were Indian and 12% were Others (primarily Polynesians of Wallis and Futunan descent or Tuvaluan descent). In comparison, in 1946, the population of Veisari Settlement was 6% Fijian, 43% Indian and 52% Others (Gittins 1947:91). In 1956, the average household size in Veisari Settlement was 6.3 persons per dwelling and the population was 12% Fijian, 53% Indian and 35% Others (McArthur 1958:120).

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<sup>7</sup> Among Indian squatters in Suva in 1976, extended households were more typical of households with older household heads, whereas for Fijian households this was not necessarily so (Walsh 1978:424).

In peri-urban Veratawailevu in 2000, the average household size was 5.1 persons per dwelling (50% of dwellings containing 4 or less household members, 34% containing 5 to 7 members, and 16% containing 8 or more members), and 76% of households were nuclear households and 24% were extended households. There were an average of 4.0 adults and 1.1 children per household. In Veratawailevu, 64% of surveyed residents were Fijian (living on native village land in Veratawailevu Village) and 36% were Indian (living on adjacent crown land in Veratawailevu Settlement). In comparison, in 1956, the average household size in Veratawailevu was 5.9 persons per dwelling; the average household size in Veratawailevu Village was 5.0 persons per dwelling and the population was 100% Fijian, while the average household size in Veratawailevu Settlement was 6.4 persons per dwelling and the population was 98% Indian and 2% Others (McArthur 1958:123). In 1995, the average household size in Veratawailevu Village was 5.3 persons per dwelling and the population was 100% Fijian (Ministry of Fijian Affairs 1995).

#### 4.2.2 Poverty and Living Conditions

The trend of unequal development in Fiji is evident in the widening income gaps both within its urban and rural areas (UNDP 1997:27). In Fiji, as throughout Melanesia, “current policies are largely aimed at economic growth, rather than more broadly-based economic development, and are unlikely to reduce problems associated with equity and the distribution of urban and other services” (Connell and Lea 1993a:13). In urban areas, in particular, the unmet need for affordable housing and deficiencies in low-income housing programmes have contributed to many households becoming impoverished from either paying unaffordably high rentals (economising on other necessary costs) or living in substandard conditions often in squatter and other informal settlements (UNDP 1997:89; Whitehead et al. 1994:32). For instance, the Suva City Council’s Health Officer found 76% of rents charged in 1961 to be in excess of the terms of the *Fair Rents Ordinance* 1954, observing that even a fair rental price was more than many tenants could afford to pay, while only 31% of Suva squatter dwellings in 1976 were deemed to provide adequate shelter and size for their household (Walsh 1978:142,427). Of the households surveyed in the Greater Suva-Nausori area in 2000, 42% predicted that the living conditions in their respective local communities will be worse in the future while a further 42% predicted that conditions will remain the same (Appendix 4H).

conditions, the challenge of sustainable development includes a shift away from narrow sectoral programmes towards holistic approaches which address these interdependent concerns (Elliott 1999:174; McGranahan 1993:105,108; Wichmann 1995:1).

In most Third World cities, the largest and most pressing environmental issue is to improve the housing and living of the poor majority of citizens (Hardoy and Satterthwaite 1989:162).

If an individual or household finds minimum standard accommodation too costly, they have to make certain sacrifices in the accommodation they chose to bring down the price to what they can afford. And they usually make sacrifices in environmental quality. Although this means health risks and considerable inconvenience, these are less important for their survival than other items....Each low-income individual or household will choose their own sacrifices in terms of size of accommodation, terms under which it is occupied, suitability of site, housing quality, location, and access to infrastructure and services (Hardoy and Satterthwaite 1989:157).

There is a clear link between poor housing and poverty, with many of Fiji's poorest households living in informal settlements in substandard houses that lack basic amenities and with approximately 80% of squatter households earning less than F\$90 per week in 1996 (UNDP 1997:58). In the Pacific, "of major concern is the nature of human settlements and the situation of lower income earners, not only in gaining access to shelter, but also in their living conditions" and the impact on the natural environment in the urban and peri-urban areas (Bryant 1993a:18). Squatters in the Suva area in 1976 were shown to participate in self-help activities which led to increasing adequacy in housing, although the levels of improvement were generally insignificant and involved few households (Walsh 1978:iii)<sup>8</sup>. Household income was found to be the most critical variable affecting housing improvement (along with dwelling ownership and security of tenure), and thus, without major changes in the economic position of the urban poor and a more realistic policy by the authorities, little amelioration of informal settlers' living conditions can be expected (Walsh 1978:426; Walsh 1984:193).

The majority of squatter households seemed unlikely to be able to improve their houses to minimally adequate standards (even if they obtained security of tenure) because they lacked the income needed for such improvements (Walsh 1978:427).

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<sup>8</sup> Vunivau settlement in Suva is a self-help church settlement where occupance is dependent upon tenants improving their dwellings (Walsh 1978:440).

Many municipalities in developing countries incorrectly assume that their resident's willingness to pay for basic infrastructure and services is low; in reality, there is often a high willingness to pay, although sometimes varying among residents of different incomes. In Fiji, an emphasis on community action has been a central theme in many government programmes, fostered through self-help projects to develop local infrastructure like feeder roads, water supply and drainage systems, community-run schools and enterprises owned by local cooperatives. Most squatters have been found to be willing to contribute in cash or labour for settlement upgrading and secure tenure (Coolidge et al. 1993:25; UNDP 1997:105; Walsh 1998:3). In Greater Suva-Nausori in 2000, 72% of households surveyed expressed willingness to contribute money so as to help improve the provision of social infrastructure (such as transport services, health services, education services, religious houses, local shops and markets, recreational areas, security, and employment opportunities) in their respective communities, while 77% expressed willingness to contribute labour (Appendices 4I and 4J)<sup>9</sup>. Nevertheless, 57% of households in Greater Suva-Nausori held that it was the responsibility of the central government to provide social infrastructure, 7% held that the responsibility lay with local government, 6% with a combination of central and local government, 1% with NGOs, 16% with both government and NGOs, 9% with both government and landowners, and 4% with landowners/community (Appendix 4K). Thus, as amongst many Pacific Island communities, there was a perception that it was primarily the responsibility of Government to provide improved infrastructure and services (UNDP 1993, in Schoeffel 1996:129). It has been noted that most of the poverty alleviation-oriented NGO recipients in Fiji expect Government and other agencies to take the initiative and develop them, and most are unaware of the services available to them from the various NGOs (Fernando 1996:184). Thus, as has eventuated in other developing countries, there may be barriers to the self-generated community development process, including: (a) a psychological barrier created by the expectation that the government should provide all services; (b) an economic barrier created by the high costs of conventional infrastructure provision; (c) a technical barrier that hampers the initiation of self-help activities; and (d) a sociological barrier stemming from a lack of trust that mitigates against collective action (World Bank

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<sup>9</sup> Willingness varied across the three settlements, however, with a much higher proportion of residents of urban Wailea willing to contribute money and labour (92% and 94%, respectively) than in peri-urban Veisari or Veratawailevu.



2000:153). A passive, recipient attitude is characteristic of many Pacific Island communities (UNDP 1993, in Schoeffel 1996:129).

#### 4.2.3 Poverty and Employment

“It is apparent that many of the problems of urban service provision in the cities are a function of urban poverty and this, in turn, is a result of limited employment opportunities” (Connell and Lea 1993b:6). Throughout the Pacific Island region, there is a substantial degree of overt unemployment and underemployment in urban areas, with the extent of unemployment increasing (particularly among the urban youth). Such unemployment is, however, tempered by the significance of informal activities and the continued importance of semi-subsistence activities (Bryant 1993b:87; Connell and Lea 1993b:51). Approximately 13,500 youths successfully complete secondary or tertiary education each year in Fiji, although only 1,000 of these find paid employment (Adinkrah 1995:162). Thus, these people were not able to convert their human assets into a secure and sustainable livelihood. Their inability to do so may be connected, in part, to external circumstances such as policy or market failure which are, in turn, related to Fiji’s political and economic situation. Mirroring the unemployment consequences of the reduced investor confidence and economic decline which followed the military coups of 1987, economic conditions again deteriorated substantially in Fiji subsequent to the civilian coup on 19 May 2000, resulting in many workers being made redundant, working fewer hours, being forced to take leave or suffering pay cuts; as of 26 July, a total of 6,068 people had lost their jobs and another approximately 7,000 employees had been working reduced hours (*Fiji Times*, 29 July 2000; *Fiji Times*, 7 August 2000; *Fiji Times*, 16 September 2000). Those suffering most have been the urban poor, as for example, many of the Wailea workers who had insecure casual employment or who were employed at the nearby export-oriented garment factories (Singh 2000:pers. comm.). In the one month following the coup, 1,440 jobs were lost nation-wide in the garment industry alone, reaching 1,617 within two months after the coup (*Fiji Sun*, 24 June 2000; *Fiji Times*, 27 July 2000).

There are three categories of workers in Fiji who are particularly disadvantaged: (a) unemployed and disadvantaged people, such as youth, women, disabled and unskilled; (b) people who are employed in the formal sector but remain poor, such as garment workers and security workers; and (c) people who are employed in the informal sector but

remain poor, such as labourers, domestic workers (housegirls, gardeners), hawkers (shoeshine boys), and the seasonally employed (UNDP 1997:112-113). In 1991, 80% of surveyed urban households had members which were employed in the formal sector, and yet more than one-third were living below the poverty line (Bryant 1993a:19). Likewise, 86% of the heads of the poorest two deciles of households in Fiji in 1991 were currently working; hence, their low income does not typically reflect their employment status but rather the types of jobs they are employed in (UNDP 1997:60) (Appendix 4L). In urban areas, poverty is apparent in a variety of sectors, particularly trade and production work, and employed members of poor households typically work as menial labourers and at low-skill jobs (Ali 2000:pers. comm.; Singh 2000:pers. comm.; UNDP 1997:112). Most of the employed members of surveyed households in Greater Suva-Nausori in 2000 worked as labourers (e.g. factories, fishing boats, docks, airports), technicians (e.g. mechanics, machinists, electricians, plumbers, carpenters), teachers, nurses, bank tellers, security workers, police/fire/military forces officers, public sector workers (e.g. FEA, PWD, Printing Department, Fisheries Department, Lands Department), agriculture workers, taxi drivers, market vendors, sales clerks, cleaners/housegirls, self-employed, or were pensioners. One household livelihood strategy is the reliance on multiple sources of income, especially important when wages are of a low level (UNDP 1999). Poor households generally have few employed adults, and there were an average of 1.4 workers per poor household in Fiji's urban areas in 1991 (UNDP 1997:56). In 2000, there were an average of 2.2 employed workers per household in Wailea, an average of 1.9 employed workers per household in Veisari, and an average of 2.7 employed workers per household in Veratawailevu.

The Public Rental Board has estimated that 60% of the employable residents in its housing units are unemployed (Finseth and Barr 1991:15). Of 120 urban households in Fiji in 1989, 49% had experienced unemployment by one or more of their members in the previous two years (Bryant 1993b:75). Of 39 households surveyed in the Kai Solomoni urban fringe settlement of Wailoku in the Greater Suva area, 41% had no members which were employed (Bloomfield 1999:120). In 2000, unemployment remains high in the Greater Suva-Nausori area, with 56% of the respondent households in Wailea, 82% of the respondent households in Veisari, and 86% of the respondent households in Veratawailevu experiencing unemployment by one or more of their members. There were an average of 0.6 unemployed workers per household in Wailea, an average of 1.3 unemployed workers per household in Veisari, and an average of 1.1 unemployed

workers per household in Veratawailevu. Together, 29% of households claimed that there was an inadequate provision of employment opportunities in their respective communities (Appendix 4M)<sup>10</sup>. Although unemployment was highest among peri-urban residents, its consequences may be tempered by considerable subsistence activities which are limited in the urban areas where employment is therefore more imperative as a livelihood strategy. Hence, the scarcity of local employment opportunities was seen as a major community-level problem for the urban residents especially – 81% of the respondent households in Wailea complained of a lack of jobs available generally, whereas only 16% of peri-urban households did in Veisari and none did in Veratawailevu.

#### 4.2.4 Poverty and Social Problems

“Over and above economic hardship, poverty entails a variety of individual, family and community problems” (UNDP 1997:47)<sup>11</sup>. It was estimated that in the Greater Suva-Nausori area in 1973, 83% of all school age children were attending school, with 98% of children attending primary school and 53% attending secondary school (DTCP 1975:63). In 1976 and 1986, 70% and 68%, respectively, of children aged 5 to 19 years were attending school (Fiji Bureau of Statistics 1989:111). Low-income households, however, often face difficulties in sending their children to school (Bryant-Tokalau 1995:109), and, in the urban fringe villages, “many of the children just don’t go to school because parents can’t afford it” (Marama, in Connell and Lea 1993b:132). A number of children in Wailea apparently do not attend school due to financial constraints, rather simply staying at home or working in informal jobs such as glass bottle collectors, fresh milk deliverers, or baggers in grocery shops (Singh 2000:pers.comm.).

The average cost of school fees for households with school aged members in the Greater Suva-Nausori area in 2000 was F\$7.80 per fortnight, and accounted for an average of 8% of household fortnightly expenditure. The direct and indirect costs of education in Fiji (averaging F\$150-200 per primary student and F\$300-450 per secondary

<sup>10</sup> The centrality of wage employment opportunities in the greater Suva area is high. For instance, in 1972, the proportion of employees in the distribution and catering sector working in Suva’s Central Area was 73% and in business and other services was 94% (DTCP 1975:52). Consequently, an employment objective of the *Greater Suva Urban Structure Plan* has been “to locate development so that there is the maximum choice of jobs available and accessible to workers” (DTCP 1975:17).

<sup>11</sup> In Wailea, for instance, there are various social problems including an elevated incidence of domestic disputes, and, consequently, a high proportion of couples seeking marriage counselling from the Department of Social Welfare (Singh 2000:pers. comm.).

student per annum) can be a barrier to schooling for children from poor families and financial pressures are thus a principal factor in the school drop-out rate, with a resultant link between low education, insecure employment status and low incomes (UNDP 1997:4,63). The proportion of people who are economically active as well as the proportion which earn a wage or salary (predominating the higher income groups) increases with each level of formal education, with the education level of a household head typically linked to a household's economic level (Moser 1996:40; UNDP 1997:83). In Wailea, 2% of household heads had only completed class 8, 4% completed form 3, 17% completed form 4, 44% completed form 5, and 33% completed form 6 (Appendix 4N). In Veisari, 2% of household heads had only completed class 4 and another 2% had completed class 8 (female heads), while 2% completed form 2, 10% completed form 3, 19% completed form 4, 33% completed form 5, 29% completed form 6, and 2% received tertiary education. In Veratawailevu, 2% of household heads had only completed class 8, 6% completed form 3, 24% completed form 4, 37% completed form 5, 29% completed form 6, and 2% received tertiary education. Furthermore, one of the notable changes within the Veratawailevu community, as reported by 10% of households in their (open-ended) lists of changes in their community over the past 10 years, has been the increase in the level of education of the residents and/or an increase in the proportion of residents with professional-level jobs.

Mirroring the consequences of the economic hardships which followed the military coups of 1987, school attendance rates again declined substantially in parts of Fiji subsequent to the attempted civilian coup on 19 May 2000, particularly in the Suva-Nasinu-Nausori area, Lautoka area, and Labasa-Seaqaqa area. Children from the most vulnerable groups in society have been those most affected. Of 148 schools visited throughout Fiji in late June, more than 5,000 students were found to be unable to attend school on a regular basis as a result of the crisis, many without money for bus fares or lunches and others feeling insecure or scared in the uncertain sociopolitical environment. Some such uneducated children may become menial labourers but others may become street children, even resorting to criminal activities (*Fiji Times*, 9 September 2000; *Fiji Times*, 1 December 2000).

Social problems, in general, are increasing in low-income areas, and relate to the pressures of life in high density areas, as many are characterised by overcrowded, substandard and often informal housing, a concentration in diseases related to poor and insanitary living conditions, polluted water supply and difficulty of waste disposal. In

areas of Suva, property crime and break-ins are frequent, and social anomie is widespread (Adinkrah 1995:164; Bryant 1993b:17,85; Bryant-Tokalanu 1994:81; Overton and Storey 1999:249). Likewise, factors which have forced children to leave home and onto the streets include poverty, unemployment and a poor living environment; 90% of street children were from families living in extremely poor housing conditions in low-cost housing and squatter areas (*Sunday Times*, 12 March 2000). Particularly in Fiji's urban areas, inadequate primary education is a contributing factor in unemployment, poverty, crime, substance abuse, violence and other anti-social behaviour, especially among young men. There is typically a higher prevalence of psychosocial diseases and trauma (particularly violence) in low-income, physically deteriorated areas of urban centres. Urban violence and crime are generally the product of inequality and social exclusion, and are related to poverty, rapid urbanisation, the economic and political climate, tenure insecurity, local traditions and values, and the degree of social cohesion among urban communities; they are frequently an expression of alienation and uprootedness. There is a recognised correlation between the increased incidence of poverty and the increase in crime (particularly offences against property) in Fiji, with economic influences such as income inequality, relative deprivation, and economic insecurity major contributing factors for lawbreaking (Adinkrah 1995:162; Brennan 1999:16-17; Schrader 1998:18; UNDP 1997: 63-65,110). For instance, 80% of the inmate population of Natabua Prison in Lautoka City were illiterate or had low levels of education, and acknowledged the link between their lack of education, inability to find employment and criminal activities; an average of 50% of prison inmates between 1980 and 1984 were unemployed at the time they committed the offence (Adinkrah 1995:163-164). In addition, a high proportion of the inmate population (74% in 1974 and 77% in 1979) tended to be either recent urban migrants or established urban dwellers as opposed to rural villagers (Sukhdeo and Griffin 1982:177,206). These social problems are articulated as a major concern of urban residents. Local incidences of crime were seen to be a major community-level problem for urban rather than peri-urban residents surveyed – 85% of the respondent households in Wailea complained of crime, whereas none did in either Veisari or Veratawailevu. Moreover, 42% of the households surveyed in the Greater Suva-Nausori area in 2000 claimed that there was an inadequate provision of security services in their respective communities (Appendix 4M). Likewise, 9% of complaints of Indian squatters in Suva in 1976 were with a lack of security while 32% of complaints of Fijian squatters were with poor social behaviour (Walsh 1978:418).

Factors related to a decrease in the general health of Pacific urban dwellers include the changing role of women, poverty, problems of hygiene, ignorance of adequate nutrition, deteriorating diet, insufficient gardening land, and an actual shortage of food. In particular, the increasing cost of food is having a deleterious effect on the health of the urban poor. The diets of low-income households residing in Housing Authority flats in Suva in 1991 were found to be determined by low cost rather than the quality of the food, and, as a result, household members experienced many illnesses related to poor diet. As is common in the Pacific Island region, domestic fresh produce is often more expensive to buy than imported processed foods, especially in the urban areas. Compared to elsewhere in the country, the relative prices of food items in Suva tend to be higher for local produce and lower for nutritionally inferior store-bought items (Bryant 1993b:63; Bryant-Tokalau 1995:119; Schoeffel 1996:32; UNDP 1996:10; UNDP 1997:33-34). The price of basic food items in Fiji increased from between 30% and 200% between 1986 and 1990, while wages increased by only 18% (Schoeffel 1993:22); in 1986 the consumer price index for food was 66.8, increasing to 108.1 in 1993 (ESCAP 1998:141). In 1991, approximately 9% of urban households in Fiji were suffering from food poverty, being unable to afford a basic, nutritionally adequate diet (UNDP 1997:32-33). In 1989, low-income households spent an average of 56% of their income on food<sup>12</sup>; in 1991, 57% of weekly cash expenditure of the lowest decile income group in urban areas was on food, beverages and tobacco (Bryant 1993b:67,76). Households surveyed in the Greater Suva-Nausori area in 2000 spent an average of 53% of their fortnightly cash expenditure on food, while for 49% of households food represented more than one-half of their total fortnightly cash expenditure, and for 26% of households food represented more than two-thirds of their expenditure. An average of F\$48.13 was spent on food per fortnight per household in 2000.

As the 'industrialisation' of urban food systems and the 'Westernisation' of urban diets progresses, with many local products being increasingly replaced by imported foodstuffs, new health problems are created. Malnutrition, which severely affected 6% of children and moderately affected a further 21% in 1980, remains a significant problem in Fiji, especially amongst socioeconomically deprived households, women and children

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<sup>12</sup> This amounted to approximately F\$40 per week per household, of which 25% was spent on carbohydrates such as rice flour, bread and biscuits (Bryant 1993b:67). Similarly, in Vanuatu, the average expenditure on rice accounted for 22% of total annual household expenditure in 1990 (Schoeffel 1993:24).

(UNDP 1997:33,115). In Suva, there were a reported 51 marasmus cases, 4 kwashiorkor cases and 60 anaemia cases in 1987, and in the first half of 1988, there were a reported 51 marasmus cases, 9 kwashiorkor cases and 61 anaemia cases (Bryant 1993b:63). In 1993, 27% of the national population was anaemic, and 40% of children under 5 years were anaemic, with diets deficient in iron and protein, infections and worm infestations as the main causes (UNDP 1997:62,115). In addition to malnutrition, acute respiratory diseases, tuberculosis, intestinal parasites, diarrhoea, dysentery and hepatitis are all health problems linked to conditions in the urban environment, with the incidence of such diseases as well as infant mortality rates significantly higher in poor settlements when compared to city averages or to richer settlements. Furthermore, chronic illnesses such as diabetes and heart disease have become more common in Fiji, with poor diets and unhealthy living conditions contributing to their rising prevalence, particularly in urban centres such as Suva (Drakakis-Smith 1997:811; Goldstein 1992:67; Lowe 1991:87; Sukhdeo and Griffin 1982:164-165; UNDP 1997:115). The prevalence of diabetes among native Fijians in 1992 was 2.1% for rural dwellers and 8.1% for urban dwellers, and among Indians was 14.7% for rural dwellers and 16.8% for urban dwellers (Schoeffel 1996:31). Health problems which adults surveyed in Wailea, Veisari and Veratawailevu settlements in the Greater Suva-Nausori area reportedly frequently suffer from include diarrhoea, intestinal infections, dengue fever, eye infections, diabetes, high blood pressure and gout; health problems which their children frequently suffer from include diarrhoea, dengue fever, skin sores, eye infections, ear infections, respiratory problems and lice. Of the respondent households in the Greater Suva-Nausori area in 2000, 25% claimed that there was an inadequate provision of health services in their respective communities (Appendix 4M).

Throughout the Pacific Island region, there is a general persistence in growing and/or collecting at least part of one's food even while residing in the city, both in home gardens adjacent to residences and on idle undeveloped urban land at a distance from the residence. Urban gardens are an ubiquitous feature and critical part of the urban landscape and household economies of many urban areas in the Pacific. Thus, despite the industrialisation and Westernisation of urban food systems throughout much of the Pacific Island region and in Fiji, there has been the continuance of urban agriculture, its importance heightened by the capitalisation of retail outlets, the rise in the real cost of retailed foods, and the fall in wage levels and employment (Drakakis-Smith 1997:811; Overton and Storey 1999:250-251; Thaman 1993:145; Walsh 1987:180). Urban agriculture helps to enhance households' economic security, food security and self-

sufficiency, and can contribute to the income and the nutritional and health status of the urban poor. The absorptive capacity of the subsistence sector has also dampened the degree of urban unemployment in Fiji in recent decades. It has been estimated that only one-half of the consumption of poor households in Fiji is based on cash, the rest coming mainly from subsistence production and savings on rent from informal housing. Crops can be grown to be sold or for home consumption, and since low-income households typically spend more than one-half of their weekly cash income on food, "production of food and earning money is substantially the same thing for the very poor" (Smit 1995:23). Urban agriculture is thus an important means of overcoming problems caused by inequality, poverty, unemployment, falling real wages, malnutrition and nutrition-related degenerative diseases (Thaman 1995:209,216-217), and serves as a significant survival strategy for low-income urban households.

The importance of the subsistence sector in Fiji is evident in that it contributed one-quarter of total agricultural production in 1994, and in that more than two-thirds of urban residents in 1991 found their cash incomes to be too small for their current standard of living (UNDP 1997:36,38,82). In 1996, 22% of the employed population residing in urban areas was involved in subsistence activities (Fiji Bureau of Statistics 1998:151). The economic importance of urban agriculture is especially great for unskilled workers and recent urban immigrants and, in fact, many households residing in public housing in Suva would not be able to pay their rents if it were not for the estimated F\$10-30 per week they save by growing their own crops and firewood in home gardens and on idle urban land (Thaman 1995:209).

Pacific urban gardens typically contain a wide diversity of food trees, staple root plants, supplementary food plants, and non-food plants; in Suva, for instance, there were 114 species and distinct varieties of food crops cultivated in urban home gardens. In addition, the cultivation or protection of trees and plants on idle undeveloped urban and peri-urban land is widespread and provides an important source of other produce, including limited commercial production (Thaman 1993:145-146). It has been estimated that 20% of all households in Suva cultivate 'unused' open land and 20% also plant along road frontages; on the 30 km<sup>2</sup> Suva peninsula, approximately 5 km<sup>2</sup> (over 70%) of the undeveloped land (not including the area under swamp or mangrove) is under cultivation (Thaman 1995:213). The majority of this cultivation consists of root crops intercropped with supplementary food crops and food trees. This practice is most common in areas where there is a high proportion of Fijian residents, and where there is a high proportion of



In contrast, there is generally insufficient land available for such subsistence activities in most densely settled urban areas. Insufficient land and insecure tenure are major problems which provide a strong disincentive to urban gardening and the planting and protection of trees and other long-term crops (Thaman 1995:215). For example, in the squatter settlement of Wailea in Suva City, the average size of each household's plot of land was estimated to be a mere 50 m<sup>2</sup> (0.005 ha), and only 18% of the households surveyed claimed to have sufficient land for gardening (Appendix 4O) in terms of land area and quality (Figure XXXVIII). Similarly, only 23% of households claimed to have adequate local access to fish, shellfish and aquatic plants to collect. Urban Wailea households therefore had fewer natural assets such as land, water, flora and fauna from which livelihoods could be derived than did peri-urban Veisari and Veratawailevu households.

## **4.3 Housing**

### **4.3.0 Poor Living Conditions**

Overcrowded and poor living conditions (Appendix 4P), and a lack of adequate services and infrastructure contribute to issues of environmental health and quality of life. Thus, the incorporation of housing into broader pursuits of urban sustainability generally relates to infrastructural and environmental issues, which vary from the domestic to the city-wide in scale (Drakakis-Smith 1997:804). Indeed, "there is a very strong correlation between access to formal housing and access to other urban services", with residents of informal settlements often suffering not only from insecurity of tenure but also from limited access to public services (Connell and Lea 1993b:118,134). Housing insecurity increases vulnerability because housing (the house and its plot) are a productive asset. Consequently, problems facing often densely settled and informal urban communities include not only insecure tenure, overcrowding and substandard housing, but also the prevalence of diseases related to poor and insanitary living conditions, contaminated water supplies, and industrial pollution, as well as to deteriorating nutrition as a result of insufficient land for gardening and an increasing dependence on store bought refined foods. Thus, health, population, and the environment of urban habitats are inextricably linked, with the diseases most prevalent being related to living conditions – respiratory, gastrointestinal, and mosquito borne infections, communicable diseases, and nutritional diseases. The rise in nutritionally-linked diseases and other non-communicable diseases experienced throughout much of the urban

Pacific must be understood within the context of the significant contribution of environmental and economic conditions made to disease patterns (Bryant 1993b:48,53; Moser 1996:44; Schoeffel 1993:22-23).

#### 4.3.1 Urban Squatter and Peri-Urban Informal Housing

In areas close to the city centre, housing prices and the price of land on which housing can be built are frequently beyond the means of many households. The only land which they may be able to afford or on which they may be allowed to stay (as squatters or under an informal arrangement) is often land which is unsuitable for other purposes because of being too steep, low-lying or marshy (Cairncross and Ouano 1990:158). Many of Fiji's urban dwellers live in informal settlements characterised by inadequate construction materials and limited access to basic services. Yet, in the Wailea squatter settlement in Suva City in 2000, residents were generally happy (79%) with their housing situation as they owned their own dwellings which they had built to their own specifications. Freedom of dwelling design has been identified as an influential factor causing some people to prefer squatting to other alternatives available to them (Walsh 1978:131). Wailea residents were also satisfied with their housing in that it did not require that they take out a loan or pay rent, and it was therefore affordable (inexpensive) living. The low overhead costs involved were one of the primary attractions for the Wailea settlers. In fact, 76% of the households had physically built their own dwelling and 98% had used their personal funds to do so (Appendices 4Q and 4R), with an average cost of F\$2,744 per dwelling built an average of 13 years ago. Of the 50 Wailea dwellings surveyed, 1 contained one bedroom, 23 contained two bedrooms, 23 contained three bedrooms, and 3 contained four bedrooms (Appendix 4S). Dwelling construction materials were of a combination of wood with corrugated metal (Appendix 4T), as more permanent construction materials such as concrete and cement blocks are not permitted by the Department of Lands (which controls the crown tiri land upon which the settlement is located) (Figure XXXIX). In comparison, the mean cost of Suva squatter dwellings in 1976 was F\$464 (Walsh 1978:266), with 68% of squatters having built their own dwelling and 64% having made improvements since construction or occupation of the dwelling (Walsh 1984:193). Nevertheless, "there are severe limitations to the degree of housing improvement which can be expected by the poor", and of the squatter dwellings surveyed in 1976, only 7% were considered adequate on all five criteria of adequacy (minimum standards of shelter, size, density, water supply, and sanitation) (Walsh 1984:193).

In 1991, many urban households still had housing that was judged to be inadequate in some respect for an acceptable standard of housing (UNDP 1997:35) (Appendix 4U). For example, in 2000, there were an estimated 500 households living on 30 hectares in Wailea, giving a population density of 75 persons per hectare (Ali 2000:pers. comm.). A full 81% of respondent Wailea households identified the incidence of crowded housing as a major community-level problem, and notable community-level changes experienced by residents over the past few years include an increase in the population, increase in the number of households, increase in pollution, increase in rubbish problems, and depletion of resources (Figure XL). Poor households in Wailea, however, are not eligible to receive housing assistance allowances from the Government since they do not have legal tenure over the land on which their dwellings are built (Singh 2000:pers. comm.).

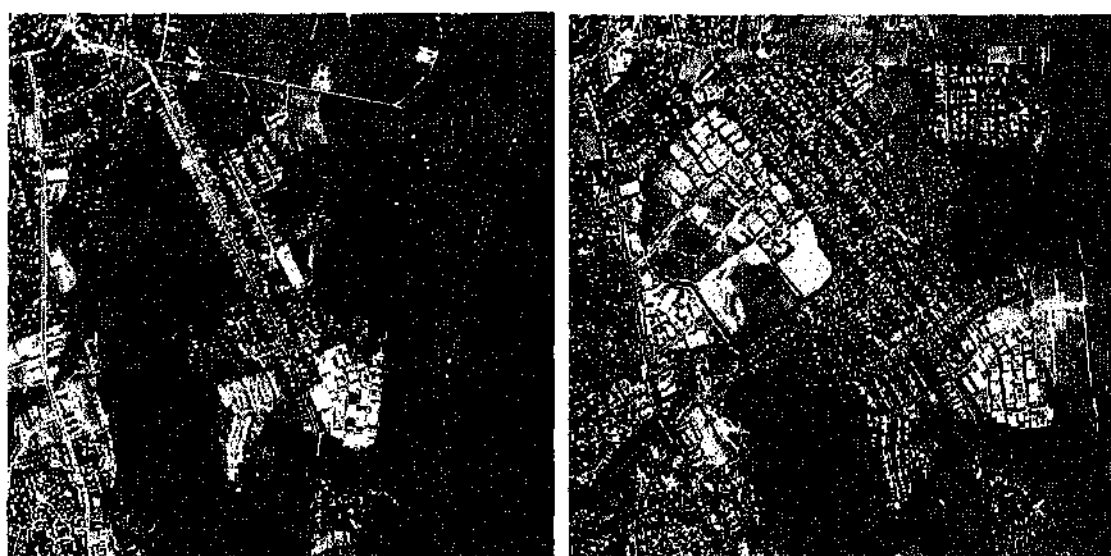


Figure XL Wailea Settlement, 1978 and 1998

In the peri-urban settlement of Veisari outside Lami Town, 56% of the households surveyed in 2000 had physically built their own dwelling and a further 8% built their own dwelling along with the help of friends, while 6% had friends build their dwelling and 30% had a carpenter build their dwelling (Appendix 4Q). To finance the dwelling's construction, 92% of households in Veisari used their own personal funds (while 8% had used loans) (Appendix 4R), with an average cost of F\$4,174 at an average of 12 years ago. Of the 50 Veisari dwellings surveyed, 0 contained one bedroom, 15 contained two bedrooms, 20 contained three bedrooms, and 15 contained four bedrooms (Appendix 4S). Dwelling construction materials were of a combination of wood and

corrugated metal (100%), and also included concrete and cement in some (23%) cases (Appendix 4T) (Figure XXXIX). Veisari residents were generally happy (56%) with their housing situation on account that they had their own home and most felt that their dwellings were strong and in good condition, and some (10%) were very happy as they stated that their dwellings were in very good condition and large, although a few residents were unhappy (12%) claiming that either their dwellings leaked when it rained or that it was too small for the number of occupants, while others were neutral (22%) stating that their dwelling quality reflected what their household was able to afford.

In the peri-urban settlement-village of Veratawailevu outside Nausori Town, 12% of the households surveyed in 2000 had physically built their own dwelling and a further 6% built their own dwelling along with the help of friends, while 40% built their own dwelling along with a carpenter and 42% had a carpenter build their dwelling (Appendix 4Q). To finance the dwelling's construction, 86% of households in Veratawailevu used their own personal funds (while 12% had at least partially used loans) (Appendix 4R), with an average cost of F\$8,074 at an average of 23 years ago. Of the 50 Veratawailevu dwellings surveyed, 0 contained one room, 13 contained two rooms, 19 contained three rooms, and 18 contained four rooms (Appendix 4S). Dwelling construction materials were of a combination of wood and corrugated metal (100%), and also included concrete and cement in most (80%) cases (Appendix 4T) (Figure XXXIX)<sup>13</sup>. Veratawailevu residents were generally happy (48%) with their housing situation on account that they had their own home and most felt that their dwellings were strong and in good condition and some (44%) were very happy as they stated that their dwellings were in very good condition, large, sturdy and built on piles to avoid inundation when the area floods, although a few residents were unhappy (4%) claiming that either their dwellings leaked when it rained, while others were neutral (4%) stating that their dwelling quality reflected what their household was able to afford.

#### **4.4 Urban Services**

##### **4.4.0 Level of and Responsibility for Basic Service Provision**

Critical to people's survival strategies are physical assets which include the basic infrastructure and services needed to support livelihoods. Physical assets such as shelter,

water supply, energy, transportation and communications help ensure that people are able to utilise their human assets productively and thus reduce their vulnerability. The extent and quality of basic services, however, vary greatly across and within urban centres, with excellent provision for some residents and minimal provision for others. In Fiji, "the urban poor are gravitating to informal and squatter settlements and are effectively denied access to basic urban services" (Whitehead et al. 1994:30). A significant proportion of Fiji's urban dwellers are living in marginal locations with inadequate service provision. This situation in Fiji is exacerbated by sector policies which target the limited available investment funds at new development areas ahead of the increasing backlog of unserved communities, which include most informal and squatter settlements. Thus, there is a need for the provision of urban goods that better meet the needs of both economic growth and equity than the current situation. The living environments of low-income settlements could be substantially improved through increased access to basic infrastructure and services (Bryant 1993b:25; Connell and Lea 1993b:10; Coolidge et al. 1993:3; Lee 1998:993; Moser 1996:38; UNDP 1999; van Dillen, forthcoming 2001; Whitehead et al. 1994:32).

Many residents of the Greater Suva-Nausori area surveyed claimed that there was inadequate provision of physical infrastructural services in their respective communities (Appendix 4V). Of the respondent households, 12% felt that there was an inadequate provision of piped water supply, and 45% felt that way for sewerage, 66% for rubbish collection, 31% for drainage ditches, 26% for electricity, 58% for paved roads, 88% for footpaths, and 98% for street lights. In Greater Suva-Nausori, 65% of households surveyed expressed willingness to contribute money so as to improve the provision of physical infrastructure in their respective communities, while 80% expressed willingness to contribute labour (Appendices 4W and 4X). Of the respondent households in Greater Suva-Nausori, 65% held that the responsibility to provide such physical infrastructural services lay with the central government, 8% with the local government, 6% with a combination of central and local government, 1% with NGOs, 9% with both government and NGOs, 8% with both government and landowners, 1% with landowners, 1% with both government and homeowners, and 1% with the homeowners themselves (Appendix 4Y). Among Suva squatters in 1976, it was observed that many otherwise adequate

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<sup>13</sup> Of the 44 dwellings located in Veratawailevu Village in 1995, 9 were primarily constructed of corrugated metal, 23 of wood, and 12 of concrete (Ministry of Fijian Affairs 1995).

dwellings lacked basic facilities such as piped water supply or sanitation whose provision required the support of landowners and the authorities (Walsh 1978:427). In a related vein, rural water supply schemes in Samoa that have been most successful have been those in which local reluctance to participate in self-help activities forced Government to manage them (Schoeffel 1996:129). Communities' capacity to install or improve infrastructure and services is often limited, particularly without appropriate technical advice, equipment, materials and funding (Cairncross et al. 1990a:253).

#### 4.4.1 Water and Sewerage

In Fiji, most squatter and informal settlements both within urban boundaries and in peri-urban areas are not connected to the reticulated water supply and sewerage systems and do not receive rubbish collection services, thus impairing the functioning of on-site sanitation arrangements to dispose of human waste and sullage wastewater and consequently increasing health risks. In those squatter and informal squatter settlements where environmental conditions are poor, the incidence of water-borne diseases remains relatively high, particularly among children (Whitehead et al. 1994:13,32)<sup>14</sup>.

Of the 150 households surveyed in the Greater Suva-Nausori area in 2000, 91% had piped water supply (Appendix 4Z). Of the 9% of households that did not have piped water supply (14 households, all residing in Veisari), 100% (14 households) used rainwater, 7% (1 household) used wells/boreholes, and 86% (12 households) used local rivers and creeks. These proportions varied across the three settlements, however. In Wailea and Veratawailevu, 100% of households surveyed had their own metred piped water supply, whereas 28% of Veisari households had no piped water supply. In Wailea, 90% of households were happy and 2% were very happy with their current water supply since each dwelling had its own individual connection. In Veisari, 44% of households were happy with their current water supply because they had individual connections and because the water rates were inexpensive, while 32% were unhappy because, for those who had piped water, the supply suffered from low pressure and low volume and was sometimes dirty, and because, for those who did not have piped water, they were dependent upon rain for their drinking water and found it difficult to fetch water from local creeks. In Veratawailevu,

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<sup>14</sup> Thus, "the provision of clean water and sanitation are fundamental to improved urban health and productivity" (Bryant 1993b:25). The WHO has estimated that the median reduction in diarrhoeal morbidity as a result of improved water quality is 16%, of improved water availability is 25%, of improved water quality and availability is 37%, and of improved excreta disposal is 22% (Hardoy and Satterthwaite 1989:153).

69% of households were happy and 31% were very happy with their current water supply because they had individual connections and because the water had been treated (clean) and had sufficient pressure.

Of the 150 households surveyed in the Greater Suva-Nausori area in 2000, 64% had flush toilets, 16% had water-seal toilets, and 20% had pit toilets; 0% of households had sewer connections, 64% had septic tanks, and 36% had no wastewater sanitation facilities (Appendices 4AA and 4BB). These proportions varied across the three settlements, however. In Wailea, 19% of households surveyed had water-seal toilets and 45% had septic tanks, whereas 58% of Veisari households had pit toilets and 53% had no wastewater sanitation facilities, and in Veratawailevu, 84% of households had flush toilets and 100% had septic tanks<sup>15</sup>. Of the respondent Greater Suva-Nausori households, 12% were very happy, 64% were happy, 10% were neutral, and 14% were unhappy with their current sanitation facilities. Those who were happy with their toilet and sanitation facilities were so because they did not have to share them with other households, and because they were easy to use, and because they believed them to be healthy and clean. The most common concerns expressed by Veisari households with pit toilets were that they were unhealthy, inconvenient due to their outside location, and difficult for children and elderly to use. Some of the Veratawailevu households complained of difficulty in digging septic tanks, of having occasionally experienced seepage leaks, and that when the area floods the wastewater contents can rise up out of the toilet. Likewise, 44% of complaints of Indian squatters in Suva in 1976 concerned inadequate sanitation (Walsh 1978:418).

#### 4.4.2 Solid Waste

It is generally in the poorer sections of an urban centre which have either no or very inadequate provision of solid waste collection services. Inadequate solid waste collection service to low-income households relates, in part, to the fact that many live in settlements regarded as illegal by the public authorities which consequently do not recognise their right to public services. Furthermore, there are also often major obstacles for municipalities to providing solid waste collection services to informal settlements which are commonly poorer, more inaccessible, more distant and more expensive to service. Yet, it is frequently the inhabitants which have the least capacity to pay which are those in most need of better services (Cuentro and Gadgi 1990:169-171).

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<sup>15</sup> In Veratawailevu Village in 1995, there were a total of 36 toilets serving a total of 44 households; of these, 9 were flush toilets, 22 were water-seal toilets and 6 were pit toilets (Ministry of Fijian Affairs 1995).

in peri-urban areas. There is a lack of community appreciation of health and environmental problems caused by disposal of garbage into mangrove ecosystems. Rather, dumping is seen as a means of reducing flooding problems in low-lying areas” (Whitehead et al. 1994:13) (Figure XLI). In Lami, for instance, although the Town Council collects garbage from developed areas with proper roads, “garbage is not collected from unsubdivided lots, and in high density areas like Nadonumai, rubbish is dumped into the tiri [mangroves] or in open pits which is unsightly and unhygienic” (DTCP 1998:18). Where rubbish is not collected by the municipal authority, it is commonly left in heaps, buried in pits, burned, or dumped into water bodies (Appendix 4CC). Dangers to human health stemming from rubbish disposal problems arise from pathogens in the refuse itself, from disease vectors (such as rats, flies and mosquitoes) which feed or breed there, and from hazardous materials in the refuse.

There has been a single rubbish bin provided at the eastern boundary of the Wailea squatter settlement (accommodating approximately 500 hundred households), although the Suva City Council reportedly collects the rubbish only once a week. Consequently, many residents decline to walk to the end of the settlement to deposit their rubbish onto the overflowing bin, rather choosing to dispose of their solid waste by throwing it into the nearby river, burning it, burying it, or forming it into heaps (Appendix 4DD) (Figure XLII). All but one of the 50 Wailea households surveyed cited problems with the current waste disposal situation in their community. Indeed, 23% of the respondent households were unhappy (and 37% were neutral) with their current rubbish disposal options, claiming that the City Council’s collection is too infrequent and that the situation is unhealthy, malodourous and dangerous as rubbish (including broken glass bottles and sharp metal tins) is scattered everywhere, dirtying and polluting the area, attracting flies and rats, and providing breeding sites for mosquitoes. In fact, 58% of the respondent households in Wailea identified the incidence of local rubbish heaps and 77% identified local air pollution (due to both the burning of rubbish and nearby industry) as major community-level problems, and 48% of the respondent households included either the need for improved rubbish disposal, clean-up campaigns and/or waste management workshops in their (open-ended) list of suggestions for their community. It has commonly been found that urban dwellers nevertheless remain relatively indifferent to solid waste problems, simply blaming the municipal authorities while the problems continue unresolved (Rosario 1994:196).



provision of rubbish collection services in their community, and 83% included either the need for improved rubbish disposal and/or waste management workshops in their (open-ended) list of suggestions for their community. In Veratawailevu, 74% of households stated that there was an inadequate provision of rubbish collection services in their community, and 70% included either the need for improved rubbish disposal (both in terms of method and site) and/or waste management workshops in their (open-ended) list of suggestions for their community. A further 16% of Veratawailevu households suggested that there was a need to stop the disposal of rubbish into the local river.

#### 4.4.3 Drainage

For many low-income urban settlements in developing countries, especially for those built on unsuitable land, drainage is the most urgent infrastructure need. This is particularly so in urban centres which are located on coasts and on river estuaries which experience high rainfall and whose impermeable soils make drainage difficult. Flooding, water-logged sites, damp housing, and lack of footpaths or paved roads can all take a toll on inhabitants' health. Rainwater, leaking water mains, wastewater sullage, and sewage from overflowing septic tanks and blocked sewers can all cause flooding, damaging buildings and posing a considerable health hazard. An increase in residential development can contribute to an increase in drainage problems because the increasing area covered with roofs and road surfaces decreases the area of ground into which water can infiltrate (leaving a greater amount of water to be removed by drainage) and because the removal of vegetation for housing sites reduces the capacity of the ground to retain water and resist erosion. Furthermore, the filling in of low-lying areas subject to flooding for housing diminishes their role in storing water from sudden rainstorms, allowing flooding in other areas (Cairncross and Ouano 1990:158,163; Cairncross et al. 1990b:8).

Of the 150 households surveyed in the Greater Suva-Nausori area in 2000, 89% had local drainage ditches, although many residents were dissatisfied with their quality (Appendix 4EE). In Wailea Settlement, which is situated on crown tiri land in a low-lying wetland area of reclaimed mangrove habitat and where the drainage situation is consequently very poor, 54% of the households surveyed were unhappy and 36% were neutral (while only 10% were happy) with the current drainage system, claiming that the

households of different income brackets varied considerably (Lloyd et al. 1982:111). Firewood and kerosene were the main energy sources for lower income households, while electricity and liquified petroleum gas (LPG) were the main energy sources for higher income households in Lautoka-Nadi (Appendix 4FF). Whereas electricity was the primary source of lighting for most urban households in Fiji in 1986, kerosene lamps were the primary source for squatter households (Fiji Bureau of Statistics 1989:147) (Appendix 4GG), while wood and kerosene were the dominant forms of fuel used for cooking in urban squatter households in 1986 (Fiji Bureau of Statistics 1988b:52) (Appendix 3Y). Likewise, for Suva households in 1981, the lower the income level, the higher the incidence of reliance on firewood for cooking fuel needs (Siwatibau 1987:iii). Of the 150 households surveyed in the Greater Suva-Nausori area in 2000, 79% received an electricity supply from the FEA (Appendix 4HH). The energy fuels and method employed by surveyed households for cooking included the use of kerosene (93%), LPG (55%), wood stove (30%), and open wood fire (35%) (Appendix 4II). Of the 150 households, 17% were very happy with their current electricity supply, 64% were happy, 11% were neutral, and 5% were unhappy. Households with electricity were happy to have their own metered supply and found electricity to be convenient in that there was a constant supply for all their household needs (light bulb, iron, refrigerator, freezer, etc.) and for which they simply paid a monthly bill to FEA rather than having to regularly buy fuel. Households that did not cook with electricity stated that their energy needs were satisfactorily met because it was easy to find firewood and wood was always available and free, and it was easy to buy other fuels such as kerosene and LPG.

#### 4.4.5 Transportation

The majority of Fiji's urban population depends to a great extent on public transport, especially buses. In Wailea, none of the respondent households owned their own vehicle, whereas in Veisari only 4 households (8%) owned their own car (one of which was headed by a taxi driver), although in Veratawailevu, 33% of households owned their own car and a further 4% owned a truck (Appendix 4JJ)<sup>16</sup>. Hence, of the respondent households surveyed in the Greater Suva-Nausori area in 2000, 61% had members which rode the bus to work, averaging 21 minutes to do so, and 44% had

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<sup>16</sup> Of the 44 households living in Veratawailevu Village in 1995, 4 owned their own car (Ministry of Fijian Affairs 1995).

members which rode the bus to school, averaging 13 minutes to do so<sup>17</sup> (Appendix 4KK). Bus fares for working adults ranged from F\$0.50 to F\$1.00 each way, while fares for school children ranged from F\$0.30 to F\$0.80 each way. In 1981, 71% of children in Suva travelled to school by bus, averaging 4.9 km, and 78% of Suva households used bus services regularly at a cost of F\$4.47 weekly (Siwatibau 1987:23). Similarly, in Lautoka-Nadi in 1982, approximately 43% of urban households used bus services regularly at a cost of F\$2.80 weekly, and 64% of peri-urban households used buses at a cost of F\$2.90 weekly (Lloyd et al. 1982:101). For low-income households, approximately one-quarter (23.5% in Greater Suva-Nausori in 2000) of their fortnightly expenditure may be on transport. Transport fares, averaging F\$11.09 per week per household in 2000, although seen to be reasonable by most residents, may actually be cost prohibitive for many low-income households (*Fiji Times*, 9 September 2000), as not only are high-income households more likely to own private vehicles but also tend to use bus and taxi services more than low-income households (Appendix 4LL), which were consequently less mobile (Siwatibau 1987:25-26)<sup>18</sup>.

Only 2% of the Greater Suva-Nausori households surveyed claimed that there was an inadequate provision of transport services in their respective communities (Appendix 4M). In Wailea, 4% of the households surveyed were very happy and 96% were happy with the current transportation options available to them, claiming that bus fares were inexpensive or that they could walk to their destinations. In Veisari, 77% of the households surveyed were happy with the current transportation options available to them, claiming that fares were inexpensive, while 21% were unhappy or very unhappy, claiming that the buses provided infrequent service and that there were not enough buses (only one bus serves part of the area in the morning) and consequently the buses are slow and often too full to accept additional passengers. In Veratawailevu, 37% of households were very happy and 61% were happy with the current transportation options available to them, claiming that transportation was available throughout the day

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<sup>17</sup> In Wailea, 77% of the respondent households had members which rode the bus to work, while 32% had members which rode the bus to school. In Veisari, 85% of the respondent households had members which rode the bus to work, while 38% had members which rode the bus to school. In Veratawailevu, 30% of the respondent households had members which rode the bus (and a further 30% either took a bus, carrier or taxi) to work, while 70% had members which rode the bus to school.

<sup>18</sup> The 1996 Fiji Budget has been criticised for disregarding the transportation needs of the poor, as bus fares were increased due to the rise in cost of motor spirits and the lifting of the zero-rating for buses, which were made standard-rated (Fernando 1996:105), increasing again on 1 June 2000. School attendance rates have been affected by the increase in bus fares, which rose by up to 30%, thus becoming cost-prohibitive for many children (*Fiji Times*, 9 September 2000).

and that fares were reasonable for the distance traveled, whereas only 2% were unhappy. Likewise, 45% of complaints of Fijian squatters in Suva in 1976 concerned inadequate transport and a lack of pathways (Walsh 1978:418).

Accessibility objectives of the *Greater Suva Urban Structure Plan* include “to provide sites for schools in locations in and near to residential areas so that children can walk to school; to provide sites for other educational establishments and social services in sites accessible to residential locations” (DTCP 1975:19). In the Greater Suva-Nausori area, walking is a common means of transport, particularly for low-income people. In 1981, 15% of Suva households had members which walked to work daily (Siwatibau 1987:27) (Appendix 4MM). Of the respondent households surveyed in the Greater Suva-Nausori area in 2000, 6% had members which walked to work, averaging 7 minutes to do so, and 44% had members which walked to school, averaging 7 minutes to do so (Appendix 4NN). Wailea households were most likely to have members which walked to work and school (and averaged the shortest travel time and hence the lowest overall transport expenditures), while none of the Veratawailevu households had members which did so<sup>19</sup>. However, 96% of respondent households in Wailea, 100% in Veisari, and 98% in Veratawailevu stated that there was inadequate provision of street lights in their respective communities (Appendix 4V). Consequently, the need for street lights was included in 88% of respondent Wailea households’, 30% of respondent Veisari households’ and 32% of respondent Veratawailevu households’ (open-ended) lists of suggestions for their respective communities. The need for a local road speed hump was the first of four (open-ended) suggestions for their community made by Veratawailevu Village households in 1995 (Ministry of Fijian Affairs 1995).

#### **4.5 Urban and Peri-Urban Environments**

Of the households surveyed in the Greater Suva-Nausori area in 2000, 46% predicted that the environmental conditions in their local community will be worse in the future and a further 32% predicted that they would remain the same (Appendix 4OO). Environmental problems experienced by residents varied according to location, with considerable differences between those in high-density central urban areas and those in

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<sup>19</sup> In Wailea, 68% of respondent households had members which walked to school, as did 55% of respondent households in Veisari, and 0% in Veratawailevu. In addition, 14% of respondent Wailea households had members which walked to work, as did 7% of respondent households in Veisari, and 0% in Veratawailevu.

These pollution problems, in turn, are associated with rubbish disposal methods, as local air pollution results from the burning of rubbish, and freshwater and marine pollution result from the discarding of rubbish into local creeks and mangrove forests. Moreover, 50% of households identified the presence of rubbish heaps as a major community-level problem. In addition, 60% of respondent Veisari households identified deforestation as a major community-level problem, and deforestation (attributed both to the collection of firewood and the increased harvesting undertaken to supply construction materials for new dwellings in the settlement) was one of the main changes observed by residents in their community over the past few years (Figure XLVIII). Other related changes include the increase in population and number of households, increase in the cultivation of land, and increase in rubbish (Figure XLIX). In fact, in 1946, the population of Veisari Settlement was 228, increasing to 350 by 1956 (Gittins 1947:91; McArthur 1958:120).

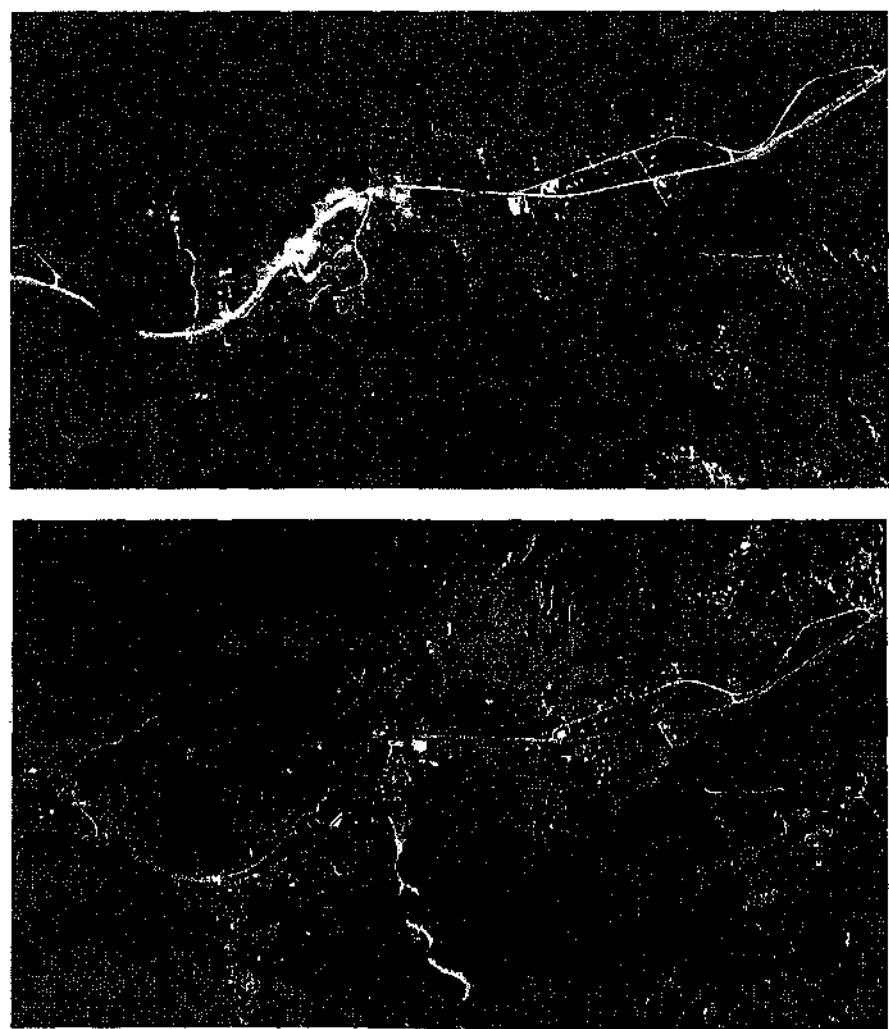


Figure XLIX      Veisari Settlement, 1978 and 1994

Similarly, 76% of respondent Veratawailevu households identified air pollution (from the burning of rubbish) and 20% identified the presence of rubbish heaps as major community-level problems, while a full 90% identified freshwater pollution and 20% identified marine pollution as major problems. Changes noted by Veratawailevu residents within their community include the increase in population and number of households, increase in the cultivation of land, increase in rubbish, increase in pollution, and increase in resource depletion (Figure L). In fact, in 1956, the population of Veratawailevu Village was 105 persons and of Veratawailevu Settlement was 248 persons (McArthur 1958:123). By 1995, the population of Veratawailevu Village had more than doubled, having increased to 231 persons (Ministry of Fijian Affairs).

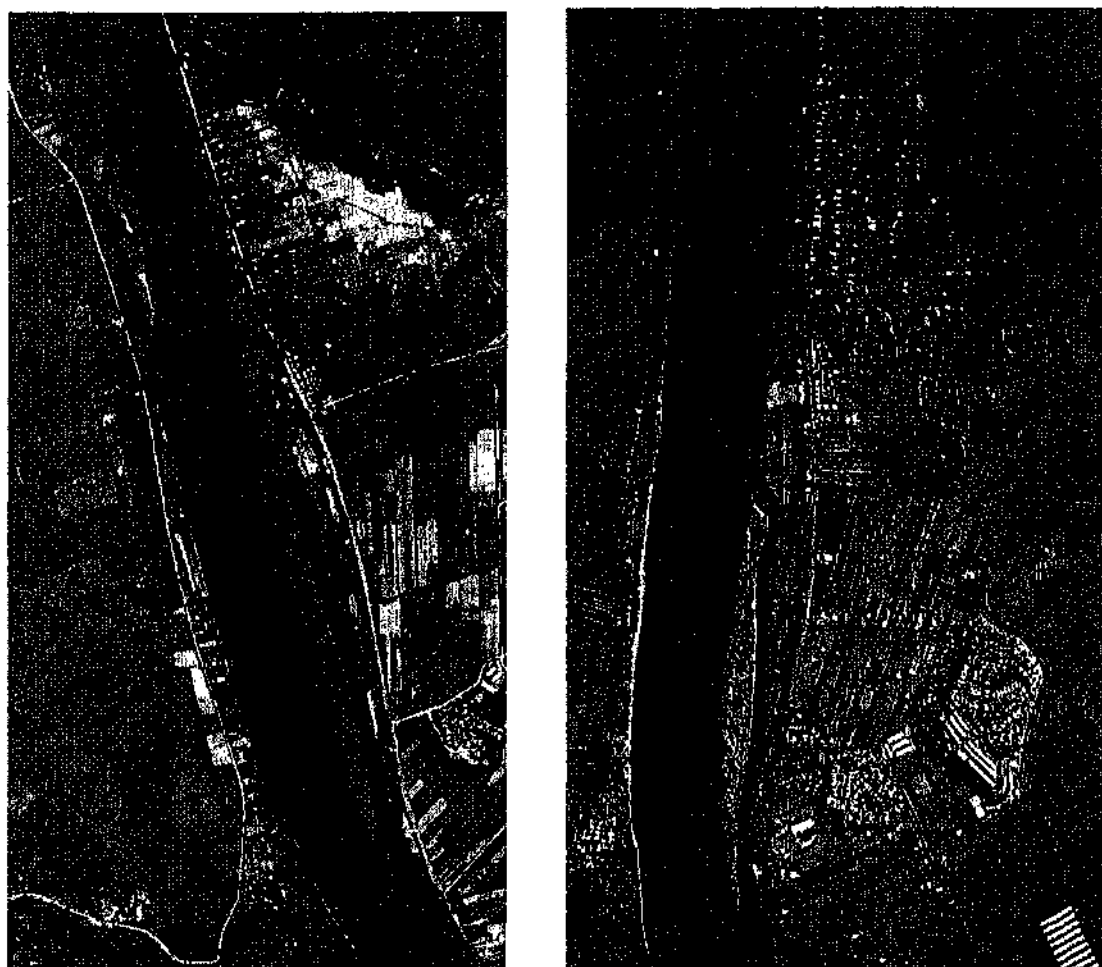


Figure L Veratawailevu Settlement, 1978 and 1998

In the urban squatter settlement of Wailea, many households used firewood as one of their fuel sources, with 25% of the respondent households cooking on an open wood fire. Yet, only 25% of the Wailea households had adequate local access to

firewood, while 44% had adequate local access to medicinal plants<sup>20</sup> and 8% had adequate local access to other useful plants (such as those used in handicrafts) (Appendix 4N). In fact, 27% of the respondent households in Wailea identified deforestation as a major community-level problem. It is the areas of undeveloped urban and peri-urban land (including road frontages, empty allotments, river banks and valleys, right-of-ways for proposed or existing paths and roads, and open land such as hillsides and swamp land) that are most affected by deforestation because of insecure tenure and undefined ownership. In a related vein, it has been reported that in Fiji, insecurity of tenure, especially in Suva where many residents have short-term leases or are squatters, is a strong disincentive to urban agroforestry, as are boundary problems with respect to ownership of crops and the incidence of theft of produce and predation of firewood (Thaman 1993:151,153-155).

#### 4.6 Urban Participatory Planning

Participatory planning, which incorporates input from local communities and other stakeholders, is vital to the process of making urban development more people-centred and to making improvements in the living conditions of urban and peri-urban dwellers. One purpose of an urban planning scheme should be to “ensure that the resources are developed in a way which respects the wishes which the whole community might have concerning the sort of place they wish to live in” (Stewart 1983:6). As the situation of the poor in relation to their physical environment is largely structural, improvements in environmental quality and living conditions also are possible only if community based approaches to their income, housing, services and infrastructure needs are addressed (Bryant 1993b:83). In sum,

the role of the inhabitants as participants in the urban environment and in trying to deal with the increasing stresses, is crucial to the future of the towns and cities of the Pacific (Bryant-Tokalau 1994:82).

Participation can take any number of forms ranging from the institutionalised (e.g. members on planning boards) to the spontaneous (e.g. people’s movements, interest groups, demonstrations). The two decision-making processes which relate to

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<sup>20</sup> The higher figure for access to medicinal plants may be attributable to the fact that 40% of the 183 plant species reportedly used medicinally by indigenous Fijians are found in home gardens in a cultivated, protected, or weedy state (Thaman 1993:148-149).

participatory planning are legislative and interest group decision-making. Legislative decision-making is assumed to serve the public interest, with citizens or their representatives sharing in the decision-making process. Interest group decision-making relates to public interest orientation and consensus, with groups formed by either geographical communities or functional communities. Groups may include everything from grassroots popular organisations and self-help associations to cooperative enterprises and labour unions, and may aim to either pursue or prevent something (Schrader 1998:5-6,9).

Community groups are common phenomena in Fiji. For instance, across the 55 villages of Rewa Province, there are a total of 53 church groups, 39 sports groups, 43 women's groups, and 39 youth groups. In the 146 villages of Naitasiri Province, there are 140 church groups, 103 sports groups, 116 women's groups, and 105 youth groups. In the 143 villages of Tailevu Province, there are 142 church groups, 81 sports groups, 120 women's groups, and 78 youth groups (Ministry of Fijian Affairs 1995:69-71). In Suva in 1978, membership in different voluntary organisations (special purpose groupings based on the mutual interests of certain individuals) varied according to ethnicity, with Fijians particularly well represented in neighbourhood associations and political organisations, while Indians were most active in trade union organisations (Appendix 4PP). Neighbourhood associations were found to be less formally structured and less sustained in Indian and mixed Indian-Fijian neighbourhoods than in Fijian neighbourhoods (Sukhdeo and Griffin 1982:201).

For ethnic Fijians, the most effective agents of change in community health practices and environmental sanitation are likely to be the women's and church groups of all denominations which are already active in most communities. For the Indo-Fijian communities, religious groups as well as both men's and women's groups are active (Whitehead et al. 1994:14).

Of the respondent households surveyed in the Greater Suva-Nausori area in 2000, 71% had members which belonged to local community groups such as religious, sports, women's, men's and youth groups (Appendix 4QQ). The levels of membership varied, however, with households in urban Wailea having a higher proportion of membership in community groups than those in peri-urban Veisari or Veratawailevu, and with Fijian households having a higher proportion of membership than Indian or Others households. Indeed, local initiatives such as community groups' actions have been found to relate, in part, to the density of urban living (Elliott 1999:161). Levels of community participation



also varied, with 37% of member households participating a few times per year, 7% participating a few times per month, and 56% participating a few times per week (Appendix 4RR).

The actions an individual household can take to improve its environment are limited, and are more likely to be palliative than preventative. Collective action within neighbourhoods or settlements, nonetheless, can do much to resolve household environmental problems. Although in the Pacific Island region there exists "the belief by most of the populations that they will find their own solutions to the burgeoning urban problems" (Bryant-Tokalau 1994:82), and although there is a tradition of self-help in Fiji (fundraising, clean-up campaigns, septic tank digging, etc.), there appears to be comparatively little in the way of sustained, grassroots organisations within informal communities. Generally, the scope of community organisations is severely restricted, particularly in low-income settlements which may also face difficulties in working collectively (McGranahan 1993:106-107). In Fiji, "community participation is likely to be sporadic at best where secure tenure is lacking" (Whitehead et al. 1994:14). It has been noted that most squatters typically doubt their capacity for sustained group protest, with most Fijians claiming that they are not 'true' squatters and will be protected by Fijian tradition and the goodwill of Government, while most Indians expected little sympathy from politicians. Action, when it occurred, generally took the form of individual protest, was limited to individual settlements (usually concerning a single ethnic group), and was instigated and led from outside (mainly by church activists). Obstacles to participation may include passiveness, a lack of self-reliance or education, or a sense of helplessness (Schrader 1998:19; Walsh 1978:435-436). Recently, however, in a formal attempt at participation, more than 1,500 Lautoka residents signed a petition (organised by the National Federation Party) calling on Government to solve water supply problems in the City (*Sunday Times*, 12 March 2000a). In an informal attempt at participation, a native landowning unit has recently threatened to shut down a local water pump station which feeds a major portion of the Suva peninsula stands unless their long-standing compensation claims (over the land on which the pump is situated, and a pipeline easement and an access road cross) are immediately met by Government (*Fiji Times*, 1 December 2000).

In the Greater Suva-Nausori area in 2000, only 1% of surveyed households had ever approached any outside organisations for assistance in improving the living conditions in their respective communities (Appendix 4SS). In addition, only 6% of

households believed that a local settlement association would have the potential to improve the living conditions in their respective communities, while 54% did not, and the remaining 40% were undecided (Appendix 4TT). Nevertheless, there are examples of accomplishments achieved by local associations in Fiji, such as those of the Raiwaqa Tenants' Association in Suva.

In my opinion Raiwaqa has become a better place because of self-help projects and activities....We have a Raiwaqa Tenants' Association which helps members by taking their views to the City Council. The Council does take notice. Recently, the Association succeeded in having the Council reduce the bus fares out here, and it was the Association that kept asking until we got a new market. Here at Raiwaqa we have proved that all the voluntary work people do in their community pays off. Raiwaqa would never have improved as a place to live without all those hours of unpaid community service (Ratu Apakuki Nanovo 1996, in Bloomfield 1999:94).

The persistence of cynicism within many communities, however, may potentially undermine local development efforts. While it is important to involve community members in identifying their own development needs, and in designing and managing the provision of services and infrastructure, there is, however, little evidence in the Pacific Island region to suggest that community-managed development projects are more efficacious than those managed by the state. For example, in Papua New Guinea, primary health and educational services run by local communities assisted by provincial governments had been "so poorly administered that they are in a situation of near collapse" (Schoeffel 1996:129).

## CHAPTER 5: STRATEGIES USED IN ADDRESSING FIJI'S URBAN ISSUES

### 5.0 Urban Investment and Focus

#### 5.0.0 Addressing Urban-Rural Disparities

The Fiji Government has regularly proclaimed equal development to be a primary objective of its development policies, with each of its five-year national development plans having emphasised the provision of basic needs, improving the spatial distribution of opportunities and investments, and promoting local participation in economic projects (UNDP 1997:104). Public policy, however, did not focus specifically on urbanisation until the *Sixth Development Plan* (1971 to 1975), when there was a declaration of an attack on the problems of urbanisation and rural-urban drift, through the provision of adequate employment in urban areas and an improvement in the economic base and social environment of rural areas. Similarly, the *Seventh Development Plan* (1976 to 1980) saw increasing urbanisation as a problem, and aimed to address the inadequacy of urban employment opportunities and promote regional planning, with an emphasis on rural growth centres<sup>1</sup>. The *Eighth Development Plan* (1981 to 1985) addressed urban issues more broadly, and recognised not only urban-rural inequalities, but also intra-urban, intra-regional, inter-regional, and ethnic inequalities, thus placing a high priority on equity and distribution issues (Chandra 1990:171-172). Hence, one of the major national development objectives stated in the *Ninth Development Plan* (1986 to 1990) was to "promote a more equitable distribution of the benefits of development and improve social conditions, especially in rural areas" (Fiji Central Planning Office 1985:8).

The problem of geographical concentration versus dispersion of growth, and more widely of economic development as a whole, remains a critical issue for development planners. Planning the balance which is to be established between urban and rural initiatives is central to the whole issue of development planning. Reduction of disparities between rural and urban areas in terms of income-earning opportunities and service availability is a long-standing objective of the Fiji Government addressed through its regional development programmes, with a reduction in urban migration the intended outcome (Hoyle 1996:176; Potter 1989b:14; UNDP 1997:10). In general, there has been

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<sup>1</sup> "A major Plan objective is to reduce the level of [rural-urban] movement, primarily through programs to improve the quality of life, increase real rural incomes, and expand employment opportunities in the rural areas" (Fiji Central Planning Office 1975:20).

a rural bias in public and private aid in contrast to the urban bias in public investment and private business. The proportion of Government expenditure spent on social priorities such as primary education, rural and public health, and rural water supplies has increased approximately 50% over the past decade, with Government expenditure on rural services having increased from F\$1.6 million in 1985 to F\$2.3 million in 1993 (UNDP 1997:108-109) (Appendix 5A). The trend in rural development expenditure indicates that the Fiji Government has increasingly focused on rural investment. For example, the Rural Telephone Penetration Programme, costing F\$17 million, has resulted in the penetration figure increasing from one telephone for every 300 rural dwellers in 1993, to one telephone for every 132 rural dwellers in 1997, and aims to increase to one telephone for every 25 rural dwellers by 2000 (*The Nation* 1999c:7). The amount spent on the Rural Roads Programme increased from F\$220,315 in 1971 to F\$989,359 in 1984, and the amount spent on the Local Self-Help Programme increased from F\$83,109 in 1971 to F\$387,257 in 1984 plus an additional F\$773,079 from overseas funding (Fiji Department of Information 1985:27). Yet, in actuality, funding and development strategies are most needed in the rapidly growing urban and peri-urban areas, particularly in the Greater Suva-Nausori corridor and the Lautoka-Nadi corridor (Whitehead et al. 1994:30).

## 5.1 Decentralisation Efforts and Rural Development

### 5.1.0 Regional Development

Throughout much of the Pacific, primacy and centralisation have hindered the development of regional centres and a true urban hierarchy, led to the poor integration of capital cities with the small towns and villages, and generally made decentralisation in any form extremely difficult. Nevertheless, decentralisation in various forms has been a high priority for the governments of many Pacific island nations, with some attempting to reverse the levels and concentration of urbanisation by developing decentralisation schemes (e.g. American Samoa, Kiribati, Papua New Guinea, Samoa, Solomon Islands, Vanuatu) and new growth centres (e.g. Fiji, Solomon Islands), by transmigration (e.g. Kiribati), and by placing emphasis on rural development with the provision of rural services and infrastructure (French Polynesia, New Caledonia) and with village improvement schemes (e.g. Fiji, Solomon Islands) (Bryant 1993b:51,91; Connell and Lea 1993b:43; Field 1999:9; Jost 1998:73; King 1984:198; Minerbi 1989:22,29,32; PACNEWS/SIBC 1998).

The Fiji Government has demonstrated interest in general issues of equity in development and has believed in intervening in the economy to promote social justice, and has been concerned with urbanisation both in terms of urban management and of spatially equitable development. In pursuing equitable development, the Government has aimed for basic services to be available to all, attempted to lessen ethnic disparities in wealth and opportunities, promoted rural development in order to slow internal migration and decrease the differences in standards of living between urban and rural areas, and encouraged development activities in low-income regions (Chandra 1990:167; Chandra 1996:23; UNDP 1997:7). Hence, the Government has supplemented sectoral planning with regional planning so as to "balance the development of regions and to ensure that rural development is not neglected, particularly at the expense of urban development" (Fiji Social Science Committee 1981:22). The single most important objective of Fiji's policy of regional development has been to reduce income disparities between urban and rural areas, while basic policies with regard to population, employment and manpower include those aimed at containing national population growth at under 2% per annum and reducing the rate of rural to urban migration (Walsh 1982:34). In particular, a general planning objectives for Greater Suva has been "to introduce policies wherever feasible to limit the inward migration to the Greater Suva urban area" (DTCP 1975:17).

The five major objectives of Fiji's regional planning are: (a) to aim for the total possible development of each region according to its human and natural resources; (b) to spread the benefits of development as between regions; (c) to reduce the level of concentration of urban activities in the Greater Suva-Nausori area; (d) to promote a better balance between the growth of town and country; and (e) to integrate regional planning so as to fulfil national aims of development. (The Government has therefore made attempts to develop a system of regional development planning to achieve a more equitable distribution of the benefits of social and economic development and to counter the increasing concentration of economic activities in a few centres only, by attempting to strengthen the smaller urban centres, to build new urban centres in presently non-urbanised areas, and through systems of rural centres and village improvement schemes (Chandra 1990:174; Fiji Social Science Committee 1981:30; Minerbi 1989:29).

National development objectives have, hitherto, placed emphasis on smaller urban centers and rural areas as a means to provide a more equitable distribution of the benefits of development (Whitehead et al. 1994:30).

Thus, it is recognised that diffusion of urban growth is essential for equitable development. Programmes which aim to create a more diffuse pattern of urban development include those which stimulate the growth of secondary intermediate cities and market towns, strengthen the economic relationships between urban and rural areas, depopulate large cities, and decentralise production centres by offering incentives and/or imposing sanctions to induce businesses and people to set up and/or move away from certain centres (Rondinelli 1991:791) (Table 5.0). Although, as has been acknowledged, “at present there does not appear to be any diminution in the importance of Suva as an employment centre despite current decentralisation policies” (DTCP 1975:22), and, thus, such strategies have not been very effective in reducing Suva’s primacy or in developing secondary urban centres.

Table 5.0. Policies to Influence Rural-Urban Migration

Policy	Direct Intervention	Indirect Intervention
Urban area policies:	Transfer of urban population to rural and other smaller urban areas Reverse the flow of migrants Close the city to new migrants	Elimination of urban bias Economic pricing of urban services and infrastructure Promotion of middle- and small-sized cities Growth pole strategies
Rural area policies:	Restrict rural out-migration Encourage migration to other areas	Rural development programmes Better service provision in rural areas More non-agricultural employment in rural areas

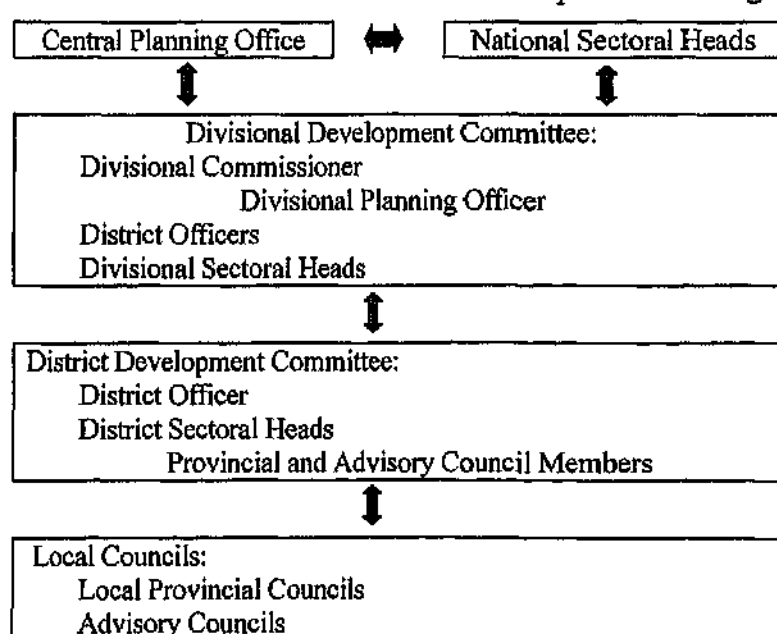
Source: Adapted from Salas 1986:19.

There has, however, been a slight closure of the gap between rural and urban incomes over the past two decades, suggesting that Government policies of regional and rural development have had some positive impact (Chandra 1996:36; UNDP 1997:2; Walsh 1978:120).

Fiji’s *Seventh Development Plan* was the first to highlight the need for regional planning and emphasised continued redistribution in favour of the outer islands; as a corollary, it emphasised the aim to reduce the gap between the earnings of rural dwellers and urban dwellers. Thus, economic growth was to be balanced with a more equitable distribution of income and wealth (Connell and Lea 1993b:45; Fiji Central Planning Office 1985:163; Fiji Social Science Committee 1981:20; UNDP 1997:104). Fiji’s *Eighth*

*Development Plan* states that the specific objectives for regional development are: “(a) to exploit the development potential of each region according to its human and natural resource base to the maximum extent feasible; (b) to promote the location of development activity outside the Suva-Nausori urban corridor as far as possible; (c) to promote the harmonious and mutually dependent growth of urban and rural sectors through development of agro-industrial linkages; and (d) to promote the increased integration of all regions into the nation’s socioeconomic system” (Fiji Central Planning Office 1980:335). These decentralisation objectives were assumed to entail positively developing and promoting other urban centres so as to increase their rates of employment creation and population growth, and were situated within a framework of increased local level participation so as to involve people in the process of planning and development of their areas. It was further recognised in Fiji’s *Ninth Development Plan* that what was required was more economic growth, equitable development and a diffused provision of basic needs, and that decentralisation was to be strengthened and coordinated at the divisional, provincial and district levels, and the Government’s original rural growth centres strategy was to be modified into a subregional integrated development scheme. However, despite such policies promoting regional equality, the actual patterns of Government spending and other investment has increased rather than decreased regional disparities (Fiji Central Planning Office 1980:335; Fiji Central Planning Office 1985:163-164; Fiji Social Science Committee 1981:29; UNDP 1997:105-106).

Table 5.1. Levels of Consultation in Development Planning



Source: Adapted from Fiji Social Science Committee 1981:29.

## 5.2 Urban Poverty

### 5.2.0 Groups Involved in Poverty Alleviation in Fiji

Responses to poverty in Fiji are shared among government departments, NGOs (both local organisations and branches of international organisations), including religious organisations, trade unions, private individuals, international donors<sup>2</sup>, community groups, as well as the poor themselves. Safety nets (which protect poor people during hard times from complete destitution) fall into four categories in Fiji: Government welfare institutions; NGO welfare services; family support systems; and financial institutions. Some legislated welfare provisions exist for the destitute and there is also a considerable body of public sympathy for the poor. While Fiji's development plans have aimed to target poverty and basic needs, they have tended to rely on national economic growth as the means to alleviate such problems without ensuring distributional equity, although the Government in 1991 did establish a Task Force to combat poverty, aimed at identifying the contributing factors towards and extent of poverty, as well as the most effective means for Government and NGOs assistance, and also increased the budget for social welfare payments (Bryant 1993b:66; Connell and Lea 1993b:5; UNDP 1997:8,69; Walsh 1978:431). In fact, expenditure on social security and welfare has increased from F\$21.99 million in 1986 to F\$36.42 million in 1996 (ESCAP 1998:143), while the provision of budgetary funds for family assistance has risen from F\$2.5 million in 1992 to F\$3.5 million in 1994 (Chand et al. 1993:49). Allocation for the Department of Social Welfare, through which most poverty alleviation funds were channelled, rose from 0.47% of the national budget in 1991 to 0.76% in 1996. Government agencies such as the Department of Social Welfare and the Housing Authority use primarily financial criteria to define the beneficiaries of their assistance (UNDP 1997:2,37).

While the Fiji Government has always designated funds for social welfare, it has only represented a small proportion of the total budget, justified on the basis that the Government can not afford a welfare state nor wants to create a 'handout' mentality, and that 'traditional' forms of support through the extended family must remain the major source of assistance to the poor. The Government maintains a developmental rather than

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<sup>2</sup> However, it may be concluded that "even though donor policies have outlined a poverty focus for their aid to Fiji, it does not appear to have been targeted at the poor" (Fernando 1996:159). In general, funding from international agencies for urban development, including housing and infrastructure, is small in relation to need throughout the Third World (Hardoy and Satterthwaite 1990:232).



welfarist stance, identifying employment generation as the key to eradicating poverty and that the poor, primarily the urban poor, the Indian landless sugarcane farmers and those in settlements, need direct assistance to improve their situation. Since 1991, the Government's strategy to reduce poverty has been to provide jobs, to ensure that the poor have the means to take advantage of job opportunities, and to provide a safety net for those whose severe deprivation persists. Economic and social well-being for all of Fiji's people is to be achieved both through a well functioning economy that is growing sustainably and through Government providing core services that benefit all citizens and assist those who are least able to help themselves. Thus, raising the economic growth rate and increasing income-earning opportunities are the Government's principal strategies to reduce poverty, with their role being to ensure that the maximum job opportunities are available and, to this end, to provide various concessions to attract investors. However, in an effort to enhance Fiji's competitiveness in the world economy, increase its exports, and attract both local and foreign investors, there have been generous taxation concessions, deregulation, constraints on the activities on labour unions, labour law reforms and wage cuts, all of which have effectively aggravated and increased the degree of poverty in Fiji (Fernando 1996:101,107; Ram 1993:4,6; UNDP 1997:3,8-10,105,111). The value of mean daily real wages has consequently declined, with the real wage in 1990 estimated to be only 62% of its 1975 value, for example (UNDP 1997:21). Furthermore, Fiji's recent economic growth is not necessarily sustainable in the long-term as it has encouraged foreign investment which generally relocates when local conditions become unfavourable.

The Fiji Government has addressed poverty through three main programmes – the Family Alleviation Scheme (FAS), the Poverty Alleviation Fund (PAF), and the Housing Authority/Public Rental Housing Programme. The Government, through the Department of Social Welfare, additionally provides capital and recurrent grants to NGOs. Other aspects of the Government's overall approach to poverty alleviation involve long-term sustainable measures and the provision of support for self-sustaining income generation and self-help programmes. The FAS, begun in 1975 and administered by the Department of Social Welfare, was established as a safety net, assisting only those with little or no income who are undergoing extreme deprivation. As the Government allocation of funds to the FAS has increased from F\$2.0 million in 1991 to F\$3.5 million in 1994 to F\$4.5 million in 1995, so too has the total number of FAS recipients (grouped into the six categories of: chronically ill, deserted wives, widows with dependants, dependants of

prisoners, over 60 years of age with no support, and physically handicapped) increased from 4,604 in 1976 to 9,245 in 1995 (Fernando 1996:92-95; UNDP 1997:92-94,111) (Appendix 5B). The monthly amount given to recipients ranges from a minimum of F\$15 in rural areas to a maximum of F\$80 in urban areas, and varies according to the number of dependants in a household (Fernando 1996:94). Nevertheless, the FAS has been unable to meet current demand and is inadequate to meet the basic needs of the poorest of the poor for whom it aims to provide for (UNDP 1997:4).

The PAF, begun in 1992 and administered by the Department of Social Welfare, was established to allay concerns that the introduction of Value Added Tax (VAT) would adversely affect low-income households, and focused on training programmes, generating employment oriented projects and on providing low-income housing. The disbursement of PAF funds (totalling F\$2 million in 1994) was to be carried out by a Poverty Alleviation Committee (PAC), comprised of four government officials and seven NGO representatives, and a Poverty Alleviation Unit (PAU) was to consider applications for assistance. The PAC and PAU, however, failed to cope with the administrative tasks of processing applications and disbursing funds, and failed to coordinate and cooperate with NGOs. The PAC and PAU were consequently wound up in 1994, with the Government disbursing the funds already allocated for poverty through the FAS, basic health and education programmes, and through NGOs involved in poverty alleviation. Subsequently, a Poverty Grants Committee (consisting of government officials and NGO representatives) was formed to consider and endorse NGO projects in the area of poverty alleviation. In addition, the Government also has a long-standing policy to provide affordable housing for low-income earners, particularly in the urban areas. It has been providing housing for low-income earners on a subsidised rental basis through the Housing Authority since 1964, succeeded by the Public Rental Board in 1987 (Fernando 1996:99-103,118; UNDP 1997:10,96,98). Lastly, primary education is tuition fee free in Fiji<sup>3</sup>, and the Government provides remission of tuition fees for secondary students whose parents jointly earn less than F\$5,000 per annum, while recipients of FAS allowances and orphans are exempt from school fees. The Ministry of Health provides health services for everyone at minimal cost at hospitals and health clinics (UNDP 1997:62-63,93).

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<sup>3</sup> Government provision of funds for free primary education for classes 1 to 8 totaled F\$5.2 million in 1995 (UNDP 1997:114).

Much of the direct assistance to the poor and disadvantaged in Fiji comes not from Government but rather is provided by families, community groups and NGOs (UNDP 1997:8,119). NGOs provide a large share of material and other assistance to the poor and to people in special need in Fiji (F\$6.5 million in 1994), and although most are foremost welfare organisations (providing basic needs such as money, food rations and clothes) many also promote empowerment, providing beneficiaries with skills (via training and workshops) to build their self-reliance. The wide distribution of NGOs' services in Fiji is evident in that their beneficiaries included 316,000 people; NGOs and local communities manage 76% of all primary schools, 51% of all secondary schools and 59% of all vocational and technical colleges across the country (UNDP 1996:19; UNDP 1997:4,96-97). NGOs in Fiji whose main area of specialisation is poverty and the needy include: J.P. Bayly Trust, Chevalier Youth Trust Board, Dilkusha Girls Home, Dorcus Welfare Federation, Fiji Methodist Social Services, Habitat for Humanity International-Fiji (HHIF), Housing Assistance and Relief Fund (HART), Monfort Boys Town, Poor Relief Society, Fiji Rotahomes Project, Soroptimist International of Fiji, St. Vincent de Paul Society, Stri Sewa Sabha, and World Vision International Fiji; these 14 poverty-oriented NGOs represent 8% of the total number of NGOs in Fiji (Fernando 1996:42,247). NGOs involved in assisting the poor usually define poverty through an holistic examination of a family's situation, including living conditions, employment status, children's schooling situation, and the extent of assistance already being received. For instance, the South Pacific Action Committee for Human Ecology & the Environment (SPACHEE) has implemented projects focusing on low-income urban communities in the Greater Suva area to improve water supply, sanitation, waste management and basic human needs. The sources of funds for NGO programmes include the Fiji Government, international NGOs, local donations and foreign aid (UNDP 1996:19; UNDP 1997:37,97).

Some of the NGOs in Fiji have made significant progress towards alleviating certain aspects of poverty among their recipients. For instance, HHIF and Fiji Rotahomes Project have alleviated poverty housing among their beneficiaries, although many continued to suffer from a lack of sufficient water supply, income and food, as the NGOs failed to create mechanisms of savings and credits among their beneficiaries. The J.P. Bayly Trust, which funds Bayly Welfare, Bayly Clinic, Bayly Education Fund and Bayly Prize, was established in 1954 to offer support to the poor of Fiji. Bayly Trust welfare activities include the provision of food rations, medical supplies, soap, blankets, school

books and uniforms, used clothing, advice and counselling. Bayly Welfare distributes food rations to destitute families through its depots in Suva and Lautoka; approximately 500 beneficiaries receive weekly, fortnightly or monthly food rations (valued at F\$5) from the welfare depot in Suva, with additional items distributed when finances permit and on holidays. The Fiji Muslim League, established in 1926, provides welfare and educational assistance to the poor, especially low-income Muslim women. The Fiji Muslim League has 17 primary schools and 5 secondary schools providing 8,804 students (80% Muslim Indian, 13% Fijian and 7% Others) with education in 1992, while its welfare activities entail a food rations programme, housing assistance, medical assistance, education expenses, support for income-generating activities, and the Sabeto orphanage. Approximately 200 low-income beneficiaries receive food rations from the Fiji Muslim League on a fortnightly or monthly basis, and are also sometimes given clothing and shoes as well as F\$5 during Muslim festivals. The St. Vincent de Paul Society, established in 1954, is involved in welfare programmes such as the sheltered workshop, family centres, emergency relief, family support programmes and Father Law Home for the aged, and also supports numerous local subchapters across Fiji which are involved in distribution of F\$10 vouchers for monthly food rations, expenses for school fees and books, care of the aged, hospital visitation, prison visitation and home visitation (Fernando 1996:160-167,239-240).

Financial institutions providing savings, credit and security for people in Fiji include the National Provident Fund (FNPF), pension schemes, credit union schemes and private insurance companies; few such institutions, however, cater for the very poor (who have no assets or savings) or for those outside the formal economy (who are ineligible to join most schemes). The FNPF, established by Government in 1966, is a compulsory savings scheme for all people aged 15 to 55 years who are in paid employment for 12 or more days a month. On retirement, the member can either withdraw a lump sum or receive an annual pension; the scheme also provides credit (interest free) for home ownership or improvements. Government provides pensions for civil servants who were employed before the establishment of FNPF, while members of the police, army and prison service receive gratuities; pensions, gratuities and compassionate allowances amounted to F\$26.6 million in the 1993 Budget. Some private sector businesses also have pension schemes (UNDP 1997:91-92).

### 5.2.1 Health and Nutrition

Although there are complex linkages between environment, health and development in the Pacific, there is a general lack of effective policy that addresses food, health and nutrition issues in the context of urbanisation, food production and national development strategies. Many Pacific governments, including Fiji's, generally either discourage or prohibit urban agriculture, or give the practice little official recognition or encouragement (Schoeffel 1993:24; Thaman 1993:145). For instance, Suva City Council regulations, although not strictly upheld, forbid the planting of crops along road frontages as well as the keeping of horses, cows, goats and pigs within the city boundary (Figure LJ).

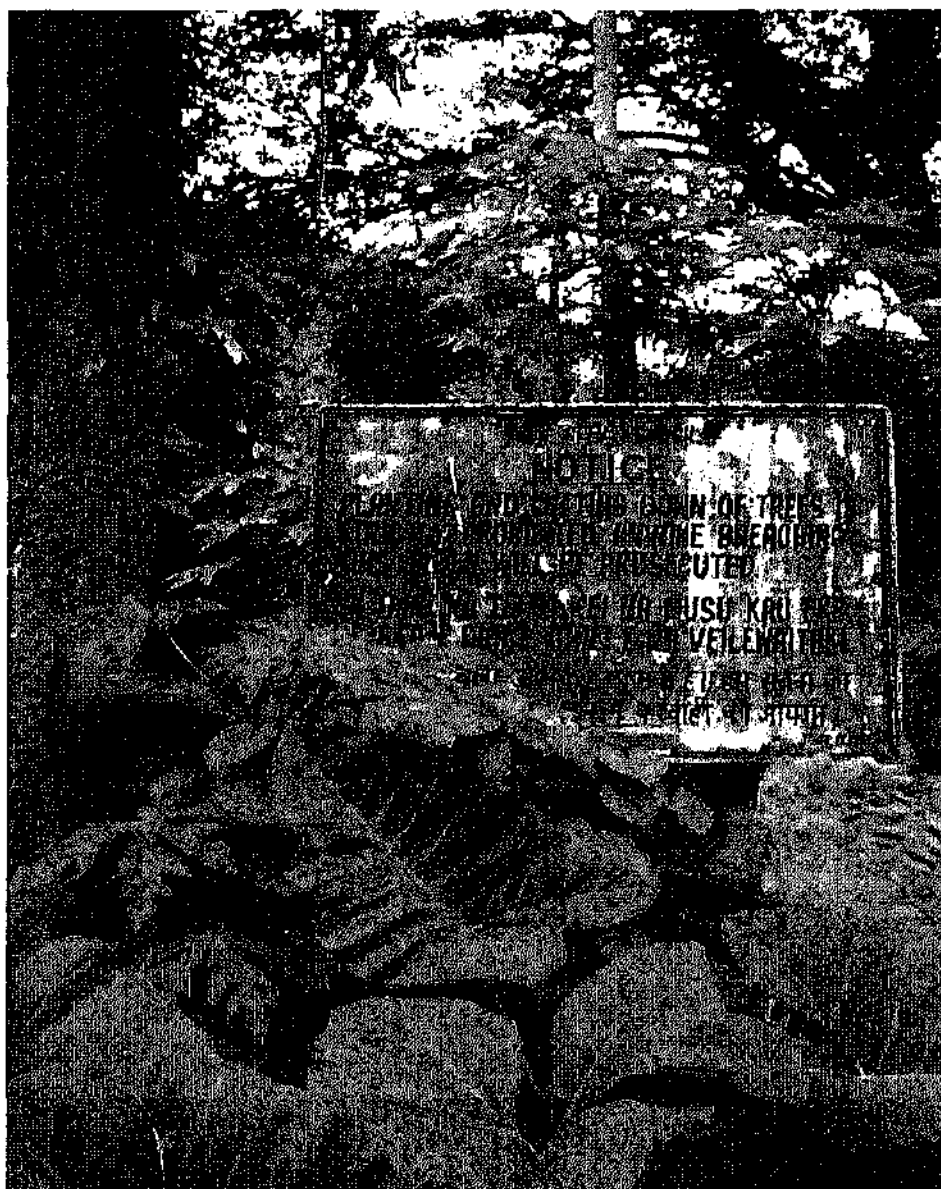


Figure LI Suva City Council Notice Indicating Prohibition of Planting of Food Trees and Crops Along Urban Roadsides, Suva, 2000

However, the National Food and Nutrition Committee and *The Fiji Times*, through their “Feed Fiji First” campaign and Home Food Production Subcommittee, have emphasised urban cultivation and have sponsored competitions in schools, government housing areas, and in HART housing sites (Thaman 1993:155; Thaman 1995:215). Moreover, a UNICEF-sponsored Pacific Island Regional Family Food Production and Nutrition Project, with the objective of “improving the nutritional intakes of families through the consumption of home grown foods”, funds regional and country-level workshops as well as publishes a quarterly newsletter, and, in Fiji, has helped establish a planned houseyard food garden at the National Food and Nutrition Committee headquarters in Suva, open the Food Garden and Nutrition Service Centre in Labasa, fund periodic divisional and community workshops, and provide assistance to encourage improved household food gardening in HART housing sites (Thaman 1995:221). In HART housing sites, tenants are encouraged to be involved in home gardening to supplement their cash income, and are provided with seeds, manure and gardening tools by the National Food and Nutrition Committee (Fernando 1996:170). Thus, similar approaches need to be developed which work in participatory ways with low-income communities, in particular, so that health, livelihoods, living conditions and environmental management can be improved.

### **5.3 Urban Housing**

#### **5.3.0 Groups Involved in Housing Provision**

Urban growth has given rise to a variety of models for producing the housing needed to shelter the population. These models fall into two general categories: (a) the formal, which refers to housing built by an organised system of institutions, and governed by regulations and legal contracts, and (b) the informal, which produces housing on land where tenure is not officially recognised, and so the resultant settlements are at least initially outside the system of rules and laws imposed by the government and thus the tenants are usually without services and infrastructure. It is also possible to distinguish between two different approaches to the housing delivery system: (a) the provider approach, which promotes the building of housing stock by government agencies or by private developers, and in which the key actors are government agencies, consultants, financiers, large contractors and developers, and (b) the self-help approach, which

promotes the building of housing stock by the people themselves, and in which the key actors are the families, local developers, community groups, NGOs, small contractors, money-lenders and local government agencies. Thus, the 'central provision' of mass housing is contrasted to the 'local enablement' of self-help strategies which see squatter and informal settlements as part of the solution to housing problems due to the self-sufficiency, autonomy and decentralisation that they represent. This debate relates to the issue of which level, from the national state downwards to the citizens themselves, housing programmes and projects should occur, and how the various agencies involved in shelter provision can best be combined within the delivery system to improve accessibility by the urban and peri-urban poor to better housing (Badshah 1996:7,11; Drakakis-Smith 1997:799-801). In Fiji, "apart from self-help, there is also the private sector, the government Housing Authority, and the church and other voluntary agencies which attempt to care for the poorest group of society's housing" (Bryant and Khan 1990:197).

While the private informal sector provides approximately 90% of the housing supply for the poor in Fiji (although with substandard housing and services), it was estimated that during the 1980s, 60-65% of the total urban formal housing supply was met by the public sector (Bryant and Khan 1990:199; Finseth and Barr 1991:15).

Officialdom has vacillated in its policies towards squatters. It has introduced subsidies for certain Housing Authority accommodation, and it has relied on the voluntary efforts of the churches and humanitarian groups to ameliorate the worst problems of the destitute (Walsh 1978:430).

While accepting some responsibility, Government has not felt itself to be totally responsible for housing the poor. It has encouraged voluntary groups, particularly HART and the churches, to cater for the destitute and, with respect to public housing, has adopted a 'user-must-pay' policy, even for basic infrastructural costs such as roads and sewerage (Walsh 1978:136).

The Fiji Government has recently stated a goal of "affordable accommodation for all" (Fiji Central Planning Office 1999:37) (Table 5.2), while a housing objective of the *Greater Suva Urban Structure Plan* is "to locate housing development in areas of good residential environment" (DTCP 1975:19). So that land could be developed at affordable rates for housing the poor, the Government has considered relaxing subdivision standards to more appropriate levels. In addition, the Government has considered helping low-income people to build their own dwellings on their own land, encouraging landowners to make more land available for housing and to charge reasonable rents, schemes to help

low-income people pay rent, and protection from rent increases (*Fiji Times*, 3 December 1992; UNDP 2000d).

Another primary means for meeting housing needs has been through the Housing Authority, whose objective has been “to enable workers and their families to obtain accommodation suitable to their needs at a minimum cost” (Fernando 1996:100). The Housing Authority and Public Rental Board offer housing assistance through the provision of housing units (house purchases and flat rentals), loans and serviced residential sites<sup>4</sup>. Between 1966 and 1970, the Housing Authority’s target was to provide 4,621 housing units and loans but only 1,266 were actually provided, for an achievement rate of 27% (Fiji Central Planning Office 1980:232). Between 1971 and 1975, the Housing Authority’s target was to provide 4,621 housing units but only 1,893 were actually provided, for an achievement rate of 41% (Fiji Central Planning Office 1975:129). Between 1976 and 1980, the programme was extended to all urban centres with a target of providing 6,570 housing units and loans but only 5,890 were actually provided – 17% of its Home Purchase Plan, Flats and Loan Scheme, 6% of its Rural Housing Scheme, and 259% of its Services Sites Provision Scheme – for a total achievement rate of 90% (Fiji Central Planning Office 1980:232). Between 1980 to 1985, the Housing Authority’s target was to provide 15,225 housing units and loans but only 9,041 were actually provided – 28% of its Rental Scheme target, 49% of its Home Purchase Plan/Loan Scheme, 35% of its Rural Housing Scheme, and 86% of its Services Sites Provision Scheme – for a total achievement rate of 59% (Fiji Central Planning Office 1985:128).

The Housing Authority, however, has not been able to meet the housing needs of the low-income groups in Fiji, with their rates being unaffordable for many and whose repayment schemes have actually placed numerous tenants in debt. Despite the substantial subsidies to the Housing Authority over this period in the form of free use of crown land, grants to cover operating and maintenance costs<sup>5</sup>, and provision of electricity, water and sewerage services, the Authority has provided homes affordable only by

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<sup>4</sup> “Realising the enormity of the housing problem, the Government is proposing to increase the pace of housing provision by a concerted programme to establish housing sites for the lower income levels. It is proposed that some areas will be developed initially under a ‘Sites Provision Scheme’ with unsealed roads and without sewerage reticulation. Eventually, the development will be upgraded over a ten year period or so to the subdivisional standards required in the private sector” (DTCP 1975:68).

<sup>5</sup> The *Fiji Budget Estimates 2000* indicated a grant of F\$2,000,000 to the Housing Authority (Fiji Ministry of Finance 1999:173). Additional sources of funding for Housing Authority projects include the World Bank, ADB and the local capital market (Fiji Ministry of Finance 1994a:163; Fiji Ministry of Finance 1994b:167; Fiji Ministry of Finance 1995:163).



middle-income rather than the low-income urban target group, with even 'site and services' costs no longer affordable to the low-income earners (Fernando 1996:101; Fiji Central Planning Office 1980:232; Finseth and Barr 1991:14; UNDP 1997:89). For example, the Authority's Caubati houses (in Greater Suva), which sold for approximately F\$44,000 in 1995, proved to be affordable only for those earning in excess of F\$16,350 per annum – stretching Housing Authority policy which states that housing provision is to be targeted to those who earn between F\$3,500 and F\$16,500 per annum (Fernando 1996:100)<sup>6</sup>. Hence, the Government has given greater recognition and support (in the form of government grants and subsidised developed land) to other housing organisations such as HART which seek to address the housing demand of Fiji's poorest households.

Table 5.2. Government Policy Objectives and Indicators for Housing in Fiji

Policy Objectives and Indicators
<p>Policy Objectives:</p> <ul style="list-style-type: none"> <li>• To provide rental accommodation of reasonable quality to low- and middle-income households</li> <li>• To increase home ownership</li> <li>• To expand private sector involvement in the provision of affordable housing</li> <li>• To efficiently expand the capital market for housing finance</li> <li>• To facilitate the provision of suitable residential land</li> <li>• To ensure that housing developments meet acceptable environmental and community development standards</li> <li>• To reduce squatter settlements</li> <li>• To improve coordination between national and local governments in resolving squatter problems</li> </ul>
<p>Performance and Accountability Indicators:</p> <ul style="list-style-type: none"> <li>• 2,900 approvals of Housing Authority applications (2000)</li> <li>• 1,550 residential lots developed by Housing Authority (2000)</li> <li>• 50 dwelling units built by HART (2000)</li> <li>• 1,000 squatter households resettled (2000)</li> <li>• 3,000 approvals equivalent to F\$20 million of FNPF allocations for member housing (2000)</li> </ul>

Source: Adapted from Fiji Central Planning Office 1999:37.

Funding allocation to HART, the only NGO that has been assisted directly by the Fiji Government, has substantially increased from F\$50,000 in 1989, to F\$100,000 in 1990, to F\$200,000 in 1991, to F\$1,000,000 in 1994 and 1995, but decreased to

<sup>6</sup> The current situation is, in fact, one in which the Housing Authority can only properly service households that have an annual income of F\$6,605 to F\$16,433 – an income group which ranges from 48% to 87% up the national income distribution (UNDP 1997:88,100).

F\$500,000 in 1996 and an anticipated F\$492,500 in 2000 (Fernando 1996:168; Fiji Ministry of Finance 1995:165; Fiji Ministry of Finance 1999:173)<sup>7</sup>.

In addition, the Fiji Government also provides housing subsidies, especially for low-income earners. Households in which the head earns less than F\$75 per week and live in Public Rental Board flats receive a rental subsidy whereby the occupants pay a rent of 15% of their income with the rest subsidised by the Government. The Public Rental Board determines in its periodic surveys those occupants who are unable to pay the full rent, thus being eligible for rental subsidy; 35% of tenant households in 1992 were identified as being unable to pay the full rent. Household heads who earn less than F\$140 per week receive a number of housing subsidies whereby Housing Authority sites are offered at development costs only, including the cost of all services except water reticulation which is met by the Government; in return, it is stipulated that 25% of the purchaser's wages are to go to the Housing Authority. Most of the housing sites and loans supplied by the Housing Authority have, in fact, gone to those who earn approximately F\$125 per week. Household heads who earn more than F\$140 per week receive no housing subsidy except as an income tax exemption on F\$500 interest paid on a first home mortgage (Bryant and Khan 1990:199-200; Fernando 1996:99-100).

In addition to the Housing Authority and the Public Rental Board<sup>8</sup>, the two other agencies involved in Fiji's public housing programme are the Home Finance Company, which caters mostly for middle- and high-income groups (i.e. those earning over F\$140 per week) by providing housing loans to enable borrowers to either purchase or build homes, and the Department of Relief, Rehabilitation and Rural Housing, which caters for those whose houses have been destroyed or damaged by natural disasters such as hurricanes or cyclones (Fiji Central Planning Office 1985:129; Fiji Department of Information 1985:25). In addition, church and non-governmental organisations such as HART, HHIF, and Fiji Rotahomes Project provide housing for the poor in Fiji. In Fiji, "the community sector (non-profit NGOs and cooperatives) is best suited to reach out to the varied needs of the urban poor but needs strengthening" (Finseth and Barr 1991:1).

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<sup>7</sup> Additional sources of funding for HART include local and overseas donations (such as from church organisations) as well as income from rent and the HART handicraft shop (Fernando 1996:168).

<sup>8</sup> The Fiji Budget indicated Public Rental Board subsidies amounting to F\$460,000 in 1994, F\$460,000 in 1995, F\$460,000 in 1996, and F\$360,000 in 2000, as well as assistance amounting to F\$150,000 in 1994, F\$150,000 in 1995, and F\$350,000 in 1996 (Fiji Ministry of Finance 1994a:171; Fiji Ministry of Finance 1994b:165; Fiji Ministry of Finance 1995:165; Fiji Ministry of Finance 1999:173).

Indeed, NGOs in Fiji typically suffer from resources, funds, skills, accountability and follow-up constraints (Fernando 1996:241).

HART, a voluntary NGO, has, since 1970, been providing housing to the destitute and those not having regular incomes (until they can advance to a better housing situation), and has constructed 391 homes in urban areas (Suva, Nasinu, Nausori, Lautoka, Ba and Labasa) between 1971 and 1985 (Bryant and Khan 1990:199), having a total of 394 tenant families (314 of which were in Suva) in September 1994 (Fernando 1996:308) (Appendices 5C and 5D). In 1995, HART aimed to construct 60 new housing units, and 28 units in 1996 (Fiji Ministry of Finance 1994b:163; Fiji Ministry of Finance 1995:163). HART has 10 housing sites in the Suva area, 1 in Nasinu/Nausori, 2 in Lautoka, 1 in Ba and 1 in Labasa (Fernando 1996:168). HART is involved in not only providing shelter but also community development for its tenants, and has either kindergartens or play centres in its housing sites. In addition, home gardening is encouraged, as are other income-generating activities such as fishing, weaving, woodworking, typing and sewing, and tenants which are unable to find paid employment are encouraged to make homemade crafts to be sold at the HART handicraft shop. There are monthly meetings for HART tenants where they are given the opportunity to voice their grievances (Fernando 1996:170).

HHIF is involved in assisting poor families in building durable low-cost houses, with houses built mainly in a community setting. HHIF has, along with its affiliates, built 178 houses in the five years since beginning operations in Fiji in 1993, and areas which have been particularly targeted include Naitasiri and the Sigatoka valley (Fernando 1996:173; Walker 1998:15). Their mission focus is to "construct simple, decent and affordable houses together" and to "sell houses at no profit, no interest, and use payments to build more houses" (Habitat for Humanity, in Fernando 1996:174). To be eligible, recipients must live in inadequate housing and must not be able to afford or obtain better housing through conventional means, must be able to repay the full cost of the house within a period of 10 years, must pay an initial deposit of F\$140, and must be willing to assist in the building of the house. The construction materials for each house are supplied by HHIF while the construction labour is provided jointly by HHIF and the beneficiary community. The total cost of a house varies from F\$1,500 to F\$4,000 according to size, while the repayments (which go into a community fund) vary from F\$15 to F\$25 per month (Fernando 1996:174-175).

Since being established in 1985 by the Rotary Club of Lautoka, the Fiji Rotahomes Project has built more than 400 Rotahomes primarily in Lautoka and Ba, and also in Nadi, Sigatoka and Suva. In 1994, there were 127 Fiji Rotahomes Project recipients in Ba, of which over 90% were Indian (Fernando 1996:171). The stated objective of Fiji Rotahomes Project is to provide “a basic shelter and living essentials for the poor of Fiji”, and the low-income (mainly former squatter) beneficiaries receive cyclone-proof houses, each worth F\$1,600, at no cost (Fernando 1996:172).

### 5.3.1 Responses to Squatters

In the early 1950s, when many urban poor lived in substandard and overcrowded rented rooms, a rigorous policy of demolition and eviction was practised, although with the unintended consequence of intensifying squatting (Walsh 1978:128). “Marginal housing reflects the status of its occupants: illegal or barely tolerated and hence somewhat insecure” (Connell and Lea 1993b:103). Urban squatting has increased in Fiji despite legislation, evictions and the provision of subsidised public housing. There have been attempts to limit the informal settlements within Suva and to rehouse their inhabitants (Overton and Storey 1999:246; Walsh 1978:429). Of Suva’s squatters, 13% have been asked to move, and 30% think that they may be evicted or asked to move in the near future. In many cases, however, attempts are made to provide alternative accommodation for squatters who are to be evicted (Walsh 1978:431; Walsh 1998:3).

Suva must at all costs avoid the situation where the proportion of people housed by the Housing Authority or by the formal housing market is decreased whilst the larger proportion of households have been forced to seek a solution to their housing problem by the illegal settlement of land (DTCP 1975:67-68).

Recent official policies towards squatters have become more tolerant, with resettlement preferred over eviction and recognition given to long-standing tenants. Under the Government subsidised Narere scheme, completed in 1994 at a cost of F\$2 million, the Narere subdivision with 380 fully serviced lots (each costing F\$5,300) were developed to resettle Suva squatter households which pay F\$500 per lot (*Fiji Times*, 3 December 1992). In their 1995 Budget, the Fiji Government allocated F\$500,000 to the Lands Department to resettle squatters (Fernando 1996:119). In 1999, the Fiji Government aimed to resettle 1,000 squatter households by 2000 (Table 5.2). In Suva,

the Department of Lands has currently been policing some of the squatter settlements to deter new construction and establish settler credentials for resettlement. Although some of the area's squatter settlements are being upgraded, many will likely be relocated outside of the city boundary, and official housing practices are increasingly based on site-and-service provision in the peri-urban areas. Squatter resettlement often occurs when the squatters compete with other land users. For example, most of the former inhabitants of the three Fijian squatter settlements of Tai-o-Lomaiviti, Tai-o-Kadavu, and Tai-o-Noco (collectively known as Raiwai settlement) have been relocated by the Housing Authority as the area has been developed into the Raiwai-Raiwaqa Housing Authority Estate. Official Government policy has nevertheless generally been unable to contain the growth of urban squatting, even within the Suva City boundary (Walsh 1978:129-131,173,176; Walsh 1998:1,4). "With lower real incomes, a rising cost of living, a severe housing shortage, and a major increase in rental and land prices, it is likely that squatting and informal housing will increase in the urban areas" (Bryant 1993b:81).

An alternative strategy considered in the Greater Suva area has been to bring squatter settlements under a form of elementary control so that some housing standards, however low, can be set and services can be provided on the basis of a planned investment programme (DTCP 1975:82). Hence, a specific housing objective of the planning scheme for the Greater Suva area has been "to give special attention to the housing needs of the lower income groups, to the location of such development and to the problems of regularising squatter or other substandard development to comply with standards of public health and other objectives" (DTCP 1975:19)<sup>9</sup>. The authorities have provided most squatters with water supply, some with rubbish collection, and a few with electricity supply, with the services paid for by the squatter (Walsh 1978:267).

Recognising that the residents of informal settlements make an important contribution to the urban and national economy, and that, given the necessary opportunities, informal settlements may over time become 'self-improving suburbs', the Fiji Government is considering policy measures to assist the residential upgrading of existing urban and peri-urban squatter areas (UNDP 1997:116).

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<sup>9</sup> In Suva, "the main 'success' in the years since 1958 seems to have been in the improvement of squatter dwellings and the provision of basic services, both directly attributable to the work of the Council's Health Department. The most obvious sign of such improvement is the disappearance of the semi-traditional bure" (Walsh 1978:179).

The activities planned for 2000 by the Squatter Resettlement Unit of the Ministry of Local Government, Housing and Environment include upgrading projects in Jittu Estate, Wailea, Lakena, Navutu, Cuvu, Clopcott Street, and Waidra. In the *Fiji Budget Estimates 2000*, the Ministry of Local Government, Housing and Environment anticipated an expenditure of F\$2,000,000 on the upgrading of squatter settlements and existing subdivisions (Fiji Ministry of Finance 1999:171,173). In Wailea, for example, there are government plans to temporarily resettle the squatters so that the area can be filled and compacted with suitable materials to appropriate standards under subdivision by-laws and then rehouse them in the upgraded settlement. If this proves too uneconomical, then there is an alternative plan to relocate the squatters to a new settlement outside the city boundary (Ali 2000:pers. comm.).

For many decades, however, “no helpful attention had been given by the authorities to the needs and wishes of urban squatters” (Walsh 1978:430). The civil and private sectors have consequently shown some impatience with the lack of public assistance to the poor and to the large squatter community in Suva in particular (Connell and Lea 1993b:132). Hence, for example, in late 1992 the Methodist Church, in response to continuous requests by the resident squatters, signed an agreement for the purchase of 30 acres of freehold land at Jittu Estate (which comprises a total of 40 acres of urban land located within the Samabula Ward of Suva between Raiwaqa and Nabua), which was to then be subdivided into lots to be sold cheaply to the existing tenants. The Church stepped in to help the squatters after the private landowners had threatened to take legal action against the illegal settlers (*Fiji Times*, 18 November 1992). The Government has, however, made some effort to assist the Methodist Church in its attempts to alleviate the squatter problem through its allocation of land, such as that at Howell Road which is where some 100 squatters were resettled (*Fiji Times*, 3 December 1992).

Even as early as the 1930s, 1940s and 1950s, some of the Pacific Islander squatter settlements in Greater Suva were relocated under the direction of the churches or the District Officer to peripheral sites as a result of church and official concern for living conditions, the land being needed for development, hurricane damage to their bure dwellings, and the extension of the city boundary. This was the origin of Wailoku Settlement (Solomon Islanders), Kalekana Settlement (Solomon Islanders), Kaunikuila Settlement (Solomon Islanders), and Vila Star Settlement (I-Kiribati and ni-Vanuatu) (Walsh 1978:175). For instance, in 1937, some Kai Solomoni squatters from the Greater Suva area, with the help of the Anglican Church, visited Kai Solomoni communities

raising money to set up a new settlement at Wailoku. The Colonial Government then arranged to lease 250 acres of land for 99 years from the local mataqali for the new settlement, which was officially established in 1941 (Bloomfield 1999:119).

## **5.4 Urban Services**

### **5.4.0 Water and Sanitation**

A belief of the Fiji Government is that beyond adequate housing, access to a clean water supply and proper sanitation are also needs for maintaining good health (Bryant and Khan 1990:201). However, in addition to site acquisition problems, major constraints have involved:

first, no clear policy on the overall role of Government vis-à-vis town councils and the private sector in financing, constructing and maintaining sewerage systems; second, increasingly inadequate legislation for control of sewerage systems in general and industrial effluent in particular; and third, the high cost of conventional main sewerage and reticulation systems (Fiji Central Planning Office 1980:222).

The Fiji Government's recently stated goal is "to develop healthy and environmentally sound water and sewerage systems that are efficient, cost-effective and equitable" (Fiji Central Planning Office 1999:32) (Table 5.3). Government expenditure on water supplies has increased from F\$11.7 million in 1985 to F\$22.9 million in 1993; however, there has been a decline in capital investment as operating costs have risen faster than overall government spending (UNDP 1997:108-109). Most of the funding for the development of sewerage systems in Fiji's cities and towns during the 1970s, 1980s and early 1990s was provided by the Fiji Government, with significant aid in kind from the Australian Government and New Zealand Government. The level of funding (approximately F\$1.0 million per annum as of the early 1990s) for the Greater Suva Sewerage Scheme, however, has proved inadequate to embark on and complete a substantial reticulation programme (Fiji Public Works Department 1993:1,6). In June 1998, the Water and Sewerage Section of the Public Works Department was declared a reorganised enterprise, the Fiji Water Corporation, divided into the three divisions of Bulkwater, Distribution and Retail. The Fiji Water Corporation has an authorised capital of F\$5.0 million, is 100% Government-owned, and will operate as a monopoly in its first

five years of operation because of the heavy capital outlay needed to clear the backlog of urgent upgrading works (*The Nation* 1999b:6).

Table 5.3. Government Policy Objectives and Indicators for Water and Sewerage Services in Fiji

Policy Objectives and Indicators
<p>Policy Objectives:</p> <ul style="list-style-type: none"> <li>• To provide access to adequate supplies of clean water for all</li> <li>• To provide access to sanitary and environmentally safe sewerage waste disposal for all</li> <li>• To reduce water wastage and the cost of water supply</li> <li>• To corporatise water and sewerage services for all urban areas</li> <li>• To encourage greater household catchment of water</li> </ul>
<p>Performance and Accountability Indicators:</p> <ul style="list-style-type: none"> <li>• 95% of the population with access to clean piped water (2005)</li> <li>• 70% of the urban population with access to treated sewage (2005)</li> <li>• 80% of the rural population have water-seal toilets or other sanitary waste disposal systems (2005)</li> <li>• 25% reduction in the level of accounted water</li> <li>• 10,000 litres per household of additional household water catchment capacity established (2005)</li> </ul>

Source: Adapted from Fiji Central Planning Office 1999:32.

#### 5.4.1 Solid Waste and Drainage

In an effort to address an element of the rubbish disposal problem in Fiji, the Ministry of Housing, Urban Development and Environment had planned to spend F\$10,000 in the *Fiji Budget Estimates 1994* on litter decree publicity (Fiji Ministry of Finance 1994a:169). One of the major activities planned for 2000 by the Department of Environment (DOE) is to formulate policies on waste management (Fiji Ministry of Finance 1999:171). In addition, several NGOs such as Keep Fiji Beautiful Association (KFBA), Pacific Development Institute (PDI), SPACHEE, and UNDP have programmes which address waste management problems in Fiji, commonly through activities such as community workshops on waste management or urban foreshore clean-up campaigns. In particular, the mission of KFBA is “to promote among the people of Fiji an increased awareness of, and pride in the country and a commitment to maintaining and enhancing Fiji’s scenic beauty and the total environment in which they live and work”. In collaboration with Municipal Councils and Rural Local Authorities, KFBA has promoted their “Fiji Beautiful Town” competition across the country in which committees judge Fiji’s cities and towns according to the overall attractiveness of their urban environment, their cleanliness and the effectiveness of litter control, their landscaping development and



maintenance and effectiveness of tree planting, their development and maintenance of parks and recreation areas, and their development, maintenance and protection of waterways (WWF 1997).

#### 5.4.2 Electricity

In August 1991, the FEA instituted a 10% across-the-board electricity tariff increase such that electricity charges for domestic customers were F22.51¢ per unit (kWh) with a minimum charge of F\$4.51, and for commercial and industrial customers were F23.72¢ per unit with a minimum charge of F\$9.48 (World Bank et al 1992:66). Electricity charges in Fiji (F22.65¢ per unit in 2000) compare relatively favourably within the Pacific Island region as well as with other parts of the world (Appendix 5E). The average cost of running household appliances in Fiji in 2000 have a relatively wide range, from F1.3¢ per hour for a light bulb to F45.0¢ per hour for a solar water heater (FEA 2000a) (Appendix 5F).

In 1990, FEA's average revenue was F17.8¢/kWh, whereas the average cost consisted of F6.2¢/kWh on capital costs, F0.6¢/kWh on fuel costs, and F8.4¢/kWh on other operating costs (World Bank et al. 1992:65). It has been recommended that "a substantial restructuring of the electricity tariff is required if it is to reflect the marginal costs of supply. Further, the average electricity tariff should be sufficiently high to allow FEA to operate in a financially sound manner" (World Bank et al. 1992:30). A recently stated goal of the Fiji Government has been "to facilitate the development of a resource efficient, cost-effective and environmentally sustainable energy sector" (Fiji Central Planning Office 1999:34) (Table 5.4), and there has indeed been some progress made in the promotion of renewable energy sources, particularly biomass energy, including organic residues such as wood chips and bagasse (*Islands Business* 2000:45; *Pacific Islands Monthly* 2000a:19; Watling and Chape 1993:8).

Table 5.4. Government Policy Objectives and Indicators for Energy in Fiji

Policy Objectives and Indicators
<b>Policy Objectives:</b> <ul style="list-style-type: none"> <li>• To ensure access to reliable and affordable energy for all</li> <li>• To develop cost-effective alternatives and renewable energy sources</li> <li>• To promote energy conservation technologies through increased community awareness</li> <li>• To continue the promotion of rural electrification, with an emphasis on informed community choice, sustainability of operations, and the reduction of government subsidies</li> <li>• To continue the process of commercialisation and privatisation of FEA operations</li> <li>• To introduce competition into electricity generation by encouraging IPPs<sup>a</sup></li> </ul>
<b>Performance and Accountability Indicators:</b> <ul style="list-style-type: none"> <li>• 90% of the population to have access to electricity (2001)</li> <li>• 50% reduction of power disruptions (2001)</li> <li>• 300 additional villages and settlements to have access to electricity (2001)</li> <li>• 30% of energy generated from alternative energy sources such as biomass, solar, wind (2003)</li> <li>• 15 megawatts of power produced by IPPs (2001)</li> </ul>

<sup>a</sup> Independent Power Producers.

Source: Adapted from Fiji Central Planning Office 1999:34.

### 5.4.3 Transportation

The improvement of transportation and communication networks centred on large cities has facilitated population movement and increased urbanisation of the large cities. Therefore the development of an integrated transport and land use planning capacity is crucial for urban management. An effective transportation policy can promote economic efficiency by improving accessibility and reducing congestion; guide urban growth to preferred development areas; enhance lifestyles by minimising commuting times, traffic accidents, air and noise pollution; reduce poverty by making employment more accessible; and can decrease economic, social and environmental costs. Primary activities related to transport that generally need to be undertaken at the municipal level include: (a) managing travel demand, (b) promoting public transport, and (c) improving transport management. Issues which deserve particular attention include an emphasis on full cost recovery, equitable and efficient use of road space, environmental protection, and institutional coordination in urban transport development, including cooperation between public transport systems and the individual car, as well as improvements in the management of traffic flows (Dean and Lindfield 1997:35; Kwakye 1995:421; UNCHS 1993:17; Urban 21 2000:18; Wei 1994:60).

As land uses become more dispersed and mobility increases, journeys become longer and more complex; hence, there is a need to improve the quality and efficiency

of urban transport services. An effective transportation policy is central to urban resident's and worker's quality of life (Dean and Lindfield 1997:35; Khan 1994:45; Kwakye 1995:435).

Urban transport is becoming a pivotal development issue in all Third World countries. The ever continuing growth in population and vehicle numbers and the resulting congestion and pollution impinge directly on the daily lives of almost all city dwellers and have a wide national impact through their effects on the economy (Kwakye 1995:437).

In recognition of these challenges, Fiji's *Ninth Development Plan* (1986-1990) proclaimed the main objectives for the overall development of transport as to: (a) provide an efficient and effective network of transport services to all parts of Fiji; (b) coordinate development so as to ensure a coherent and integrated approach; and (c) continue research and development of more cost-effective and energy efficient means of transport (Fiji Central Planning Office 1985:104). Two of the Fiji Government's primary objectives for land transport have been to "improve and upgrade major roads carrying high volume of traffic and to adequately maintain roads and bridges", and to "bring about effective control and regulation of the public transport system and to ensure regular services at minimum cost, and to improve passenger comfort, road safety and quality of service" (Fiji Central Planning Office 1985:105). Furthermore, a transportation objective of the *Greater Suva Urban Structure Plan* has been "to locate population and employment so that there is the greatest potential for public transport services" (DTCP 1975:18). The Fiji Government has recently identified some of the key policy initiatives for the goal of providing a safe and coordinated transport sector that is resource efficient, cost-effective and environmentally sustainable (Fiji Central Planning Office 1999:31) (Table 5.5). Hence, a transportation objective of the *Greater Suva Urban Structure Plan* is "to control the location of major traffic generating land uses to prevent traffic congestion, noise and nuisance" (DTCP 1975:19). Nevertheless, while the general trend of Government expenditure on transportation and communication has been one of increase, there has been some fluctuation (Appendix 5G).

Table 5.5. Government Policy Objectives and Indicators for Transportation in Fiji

Policy Objectives and Indicators
<b>Policy Objectives:</b> <ul style="list-style-type: none"> <li>• Encourage private sector involvement in the provision of transport services</li> <li>• Adopt realistic user charges to significantly defray the cost of infrastructure provided</li> <li>• Provide an adequate return on investment in major upgrading and construction of transport infrastructure</li> <li>• Reduce vehicle emissions to internationally accepted standards</li> <li>• Maintain a high level of safety in public transportation through appropriate legislation</li> <li>• Improve shipping services to the outer islands through the adoption of a franchise system</li> <li>• Corporatise the Marine fleet</li> </ul>
<b>Performance and Accountability Indicators:</b> <ul style="list-style-type: none"> <li>• An increase in the Department of Road Transport revenue by 80% (2000)</li> <li>• Reduction in subsidies by (2000) and elimination by (2003)</li> <li>• An additional 120 km. of road tarsealed (2003)</li> <li>• Cost recovery system implemented for road users (2001)</li> <li>• General reduction in travel time</li> <li>• Vehicle emission levels reduced by 50% (2001)</li> <li>• Reduction in number of accidents by 10% (2001)</li> <li>• Improved facilities for the maritime zone (2001)</li> </ul>

Source: Adapted from Fiji Central Planning Office 1999:31.

The Land Transportation Authority Act, which came into effect in July 2000, replaced the Department of Road Transport, Transport Control Board, Principal Licensing Authority and Central Traffic Authority, and will handle two components of road safety – safe driver mode which covers driver training, education, retraining and road behaviour, and vehicle safety mode which covers quality of vehicles, standards checks of vehicular emission levels, maintaining quality vehicles on the road and regulation of public service vehicles. There have also been some recent road and traffic management improvement schemes, in particular, relating to the need for pedestrian safety in the form of footpaths and street lights, as well as to the need to ease traffic congestion (*Advertiser Weekly* 00(11):1,3; *Advertiser Weekly* 00(14):3; *Advertiser Weekly* 00(29):1; FEA 2000b; John 1969:19; *Sunday Times*, 28 May 2000). For example, for Lami's major residential roads such as Naimawi Street and Delainavesi Road as well as its main commercial street, Marine Drive, "it is considered desirable for safety reasons to provide surfaced footpaths" (DTCP 1998:17). The responsibility for the provision of surfaced footpaths in existing developments lies with the Lami Town Council, and in new subdivisions lies with the developers. Thus, in Lami, the provision of infrastructure, mainly roads, depend on the status of the residential areas. Fully developed subdivisions have tarsealed roads

and streets which are maintained by the [Lami Town] Council. Other unsubdivided settlements have substandard roads and vehicular accesses, the maintenance of which is not the responsibility of the Council (DTCP 1998:5).

## **5.5 Urban Environment**

Governments tend to implement 'solutions' to environmental problems in a top-down fashion, and these are rarely the most appropriate technologically and rarely allow households to participate significantly in environmental management. These 'solutions' do, however, eliminate the more local environmental externalities within the urban area (such as the disincentive to invest in environmental improvement resulting from insecure land tenure), and also transfer the onus of environmental management from urban dwellers to the public sector. Governments nonetheless frequently lack the ability to competently address environmental problems. Hence, one of the principal foci of remedial action for enhancing environmental management is strengthening governance through mobilising public sector support and participation, improving institutional capacity for identifying and addressing environmental problems, and establishing clearly defined institutional arrangements for environmental management (Leitmann 1992:135-136; McGranahan 1993:106-107).

In Fiji, the Government's current capacity for effective environmental management is hindered by a lack of integration of development and environmental policies; the predominance of economic and social goals (isolated from environmental concerns) in national decision-making; an inadequate and highly sectoralised administrative and legislative framework; insufficient expertise and resources; and a lack of political will to confront issues (Watling and Chape 1993:9). Given not only the public but also the private sectors' difficulties in alleviating household environmental problems, emphasis is increasingly being placed on NGOs and CBOs for assistance. Such organisations can help foster a better awareness of environmental problems and place local environmental improvement on the political agenda.

Part of the response to environmental degradation in the Pacific Island region has been via legislation. Although numerous laws regarded as environmental do exist, they generally fail to address the underlying causes of environmental degradation and typically

suffer from lack of enforcement through inadequate staffing, inadequate penalties when they are enforced, and insufficient technical resources and funding.

Rather than placing the entire emphasis on legislation and central government control, it is important both to ascertain just who and what are the main agents in urban environmental degradation and to develop a strategy for involving them in approaching problems in a unified manner (Bryant-Tokalau 1993:162).

Fiji "has significant environmental constraints which are currently compounded by inadequate environmental management legislation and administration" (Thistlethwaite and Votaw 1992:25). Although Fiji is signatory to 21 international conventions relating to the environment (Appendix 5H), the piecemeal system of responsibilities for different areas of the environment has meant that many government Ministries are unaware of their treaty-based responsibilities. Furthermore, some of these conventions have not even been implemented. Likewise, despite environmental policies and objectives having been presented in Fiji's national development plans since 1971, their implementation has been minimal. There is a general shortage of information and awareness, and a lack of a uniform environmental policy. Most of Fiji's environmental laws (Appendix 5I) are old, ineffective, and suffer from a fragmented legislative framework and a insufficient enforcement of regulations through inadequate staffing, lack of resources and funding, and administrative failures (Covey 1993:130-131; Watling and Chape 1993:9-10).

Local and international NGOs such as Foundation for the Peoples of the South Pacific (FSP), KFBA, Pacific Concerns Resource Centre (PCRC), SPACHEE, and World Wide Fund for Nature (WWF) have promoted environmental awareness through environmental education programmes. SPACHEE, in particular, has worked with low-income urban and peri-urban communities (primarily within the Greater Suva area) on environmental protection and income-generating activities. In addition to the governmental DOE, NGOs which have specifically focused on the problems of pollution in Fiji include KFBA, Greenpeace Pacific, PCRC, PDI, SPACHEE, and UNDP (WWF 1997). A recent example of a cooperative attempt to address environmental concerns is the International Human Dimensions Project (IHDP). Sponsored by the International Social Science Council (ISSC) and the International Council for Science (ICSU), the newly established Fiji chapter of the IHDP aims to contribute towards the role that Government plays in ensuring sustainable development, and plans to focus on the major human causes, human consequences and human responses to global, regional and local

environmental change. IHDP is an international, non-governmental interdisciplinary science programme which will collaborate with similar international programmes as well as with the Advisory Group on the Environment (AGE) and the Pacific Centre for the Environment and Sustainable Development (PACENSUD), both of the University of the South Pacific (USP 2000:1-2).

## **CHAPTER 6: CONCLUSION AND POLICY RECOMMENDATIONS FOR FIJI**

### **6.0 Conclusion**

Urban growth has resulted from urban migration, natural population increase and boundary changes. The low-income urban and peri-urban residents of developing countries have largely been responsible for the financing and building of considerable portions of their national urban centres. Cities' urban expansion has been, to a great extent, influenced by where people have been able to obtain land on which to organise the construction of their houses. Cities are more and more becoming places for young people, with women attaining greater economic roles. These cities, however, are typically characterised by high levels of pollution and inadequate controls over industrial wastes, as well as an unplanned pattern of urban expansion. At the same time, there is still much inequality and a high proportion of people in most Third World cities have incomes too low to allow them to meet their basic needs, living in substandard housing with little or no provision of basic services and infrastructure. Yet, most (even poor) urban and peri-urban residents contribute to the growth of the urban economy and should be entitled to reasonable and equitable provision of basic services and infrastructure. In sum, the urban management process must not be dominated by the search for efficiency rather than equity and its objective must not only be one of the role of the city in sustained growth but also in sustainable urbanisation.

When centralised basic service provision and public standards become the principal basis for improving living and environmental conditions, however, the problems of a significant share of urban and peri-urban households are often left unresolved. Due to the excessive demands for basic services, there are generally large operating deficits as well as steadily deteriorating quantity and quality. The implication for equity is that newer, often low-income, neighbourhoods are frequently poorly served, compared with more established, often high-income, neighbourhoods. Even subsidised services and infrastructure can prove to be unaffordable for many low-income households, which may remain marginalised. Therefore, there exists a pressing need to develop new approaches to improve housing, infrastructure and services which reach a higher proportion of urban and peri-urban residents at a cost which is affordable to both the users and the government. Yet, such improvements are likely to require considerable local



management, and, when the municipality faces fiscal problems, government programmes are even less likely to meet the needs of the poor. Hence, the new approaches entail developing the capacity within local government to work in a participatory manner with local populations and community organisations to identify local problems and devise appropriate local solutions. The problems are too important and complex to be treated by sectoral agencies, at single tiers of government, or even by government alone (Cairncross et al. 1990b:11; Connell and Lea 1993b:10; Coolidge et al. 1993:4; Drakakis-Smith 1997:812-813; Hardoy and Satterthwaite 1990:228,232-233; Konvitz 1997:44; McGranahan 1993:107; UNDP 1997:116; Walsh 1978:266-267).

Local government and municipal authorities can work with local communities, NGOs and civil society to improve the management of urban centres, such as through poverty alleviation, environmental conservation and good urban governance. The ideal urban or peri-urban community in which to live would have the following characteristics: (a) satisfying employment which provides an acceptable standard of living and an acceptable diet; (b) clean, decent and safe housing of ample size, together with pleasant surroundings; (c) adequate provision of basic infrastructure and services; (d) an environment where people will not be subject to local chemical hazards (such as air pollution, toxic wastes), physical hazards (such as floods, excessive road traffic) or health hazards (such as communicable diseases, water contamination, poor sanitary conditions); and (e) participatory government arranging essential physical infrastructure and social services, and responding to the desires of citizens (Novick 1990:xvii; UNDP 1999).

## **6.1 Urban and National Development**

### **6.1.0 Multifaceted and Cooperative Approaches to Urban Development**

The wide-ranging set of issues which comprise urban development emphasise the integrative nature of urban sustainability and improving the quality of life for urban dwellers. For instance, environmental concerns of the urban poor are typically linked in the same space and time to socioeconomic aspirations. Hence, the response to urban development should be multifaceted and involve a strategic approach which combines the strengths of governments, markets, civil organisations and communities themselves (Bryant-Tokalau 1994:82; Drakakis-Smith 1997:797; Elliott 1999:164; McGranahan 1993:107). Urban projects and programmes which aim to facilitate “lasting change

towards equitable and liveable human settlements'' and which involve all stakeholders are what is required (Tuts 1995:10). This also depends upon improved local governance and municipal management. Hence,

Pacific governments, regional organizations and community groups have a responsibility to face the stress upon our towns and to recognize that cities are resources needing careful management. Further, they must act rapidly (Bryant-Tokatau 1993:165).

Democratic pressures via well organised citizen campaigns can act as catalysts for government action on urban environmental problems and poor living conditions and can result in more effective and accountable municipal authorities. The goal is to ensure human-centred sustainable development through partnership and enablement. Human-centred development recognises the fundamental duality in that people are both a critical contributing element to and the ultimate beneficiaries of the development process (Badshah 1996:17; Drakakis-Smith 1997:808; Elliott 1999:165; Hardoy and Satterthwaite 1989:217; UNDP 1997:109). In Suva, for instance,

there is a need for an active citizen/ratepayer groups to probe the day-to-day affairs of the Suva City Council and bring the Council and its services nearer to the user clients (Sukhdeo and Griffin 1982:187).

Democratic and decentralised municipal and national governance (with sympathetic and genuinely facilitating government) is essential for enabling local groups to organise. The preconditions which capacitate successful urban environmental management based on community organisations are therefore of great importance. Moreover, partnership between municipal government and local associations of urban residents is likely to make governments take action on the problems of urban and peri-urban living conditions, as issues are identified and plans developed to address them. In addition, such a partnership between local government and community organisations may facilitate decentralisation as more powers and resources are redistributed from the central to the local level, and as national authorities are encouraged to facilitate self-organised action at municipal and community levels and to move away from traditional modes of centralised planning and control. This, in turn, also requires developing trust between local government and communities that is justified through practice and entails overcoming the 'culture of subservience' that often pervades local-central government relations (Atkinson and Vorratnchaipan 1996:235,241,244,246; Elliott 1999:165,173).

Yet,

it is possible to envisage a local government structure which from the outset is designed to respond efficiently to such pressures – to the needs defined by lower income groups through community or neighbourhood organizations (Hardoy and Satterthwaite 1989:141).

#### 6.1.1 Integrative Approaches to Urban, Regional and National Development

Prospects for sustainable urban livelihoods are closely tied to those of securing sustainable rural livelihoods. The challenges and opportunities of national sustainable development therefore lie in providing security for all citizens in meeting their basic needs in both urban and rural areas. In the Pacific Island region, policies which favour the redistribution of opportunities towards rural areas may be especially important given the priority of rural development and the agricultural sector, and the tertiary employment structure of urban centres<sup>1</sup>. “Governments will be better off if they pursue development policies that benefit both urban and rural areas, recognize that the process of development will spur urbanization over time, and plan accordingly” (World Bank 2000:10). Countries can, however, attempt to redirect their populations away from the rapidly growing areas by eliminating the current imbalance in economic and social opportunities in urban versus rural areas. Population redistribution policies can be an integral part of national development planning, and can be linked to urban-rural development policies in order to simultaneously address issues of population concentration and metropolitan area decentralisation, population dispersal throughout the settlement system, and population retention in the rural areas. Indeed, this is particularly important throughout Melanesia, where a major constraint to economic development has been the failure of the urban hierarchy to effectively link with the rural sector (Connell and Lea 1993b:48; Elliott 1999:174; Khan 1994:53; King 1984:212; Minerbi 1989:4; Todaro 1989:230-231).

Some governments in developing countries, including those of the Pacific, have started to explore ways of building the capacities of smaller and secondary cities to contribute to a more diffuse pattern of urbanisation and to rural development. Through the development of such cities, an attempt is therefore made to promote a more

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<sup>1</sup> For instance, “Papua New Guinea has a very strong rural subsistence economy. The size, diversity and natural wealth of the country make rural development a necessity. The towns must play a part in that process of development, complementing and linking with the rural economy and society” (King 1984:212).

deconcentrated or diffuse pattern of urbanisation. The underlying assumption is that a system of functionally efficient intermediate cities linked to larger and smaller urban centres can make an important contribution to achieving widespread economic growth and an equitable distribution of its benefits. Indeed, there is a need to recognise the potentially positive role that more balanced patterns of urbanisation might play in promoting equitable development. Hence, this necessitates the formulation of policies at a national, regional and local level about where urban development should be promoted, and that policies are managed both from a national through regional to local scales and also in the reverse order. Dealing with such issues within a multitiered system of governance requires a more harmonious relationship between the elements of policy necessary for shaping patterns of urban and regional development, and further implies three aspects of coordination: (a) coordination between various tiers of government, (b) coordination between urban development plans at the national level, and (c) coordination between policies for urban development and other national socioeconomic policies (Rondinelli 1983:7,11-12,15; Stewart 1983:19; Stilwell and Troy 2000:925-926).

Rarely have policy changes or institutional strengthening, and, hence, city-wide impacts been achieved. Rather, “government and donor programmes tend to divide a city into projects, improving specific neighbourhoods without the urban policy and institutional framework such as the functioning of city-wide markets for land and housing” (Badshah 1996:7). Any individual urban plan will be more effective if part of an integrated strategy for national development. This will serve to minimise the problems of incompatibility of policies (Connell and Lea 1993b:126-127; Stilwell and Troy 2000:925; Sukhdeo and Griffin 1982:187). Accordingly, it has been recommended that Suva City Council’s policies be better coordinated with the Government’s regional spatial policies.

From a national planning point of view, the current Suva Planning Scheme’s deficiency is that it does not clearly relate to national policies concerning the distribution of activities in Fiji. The Planning Scheme’s focus should be complementary to national policies by providing policies and controls on the distribution of activities between the central and outer areas of Suva and then within the Central Area itself (Stewart 1983:9).

It is also imperative that local planning within a community is linked to higher level planning structures and policy-making, and that municipal officials openly support and actively encourage community capacity to plan local settlements. Focusing on the

relationship between local community problems, aspirations and capacities, and the roles, functions and capacities of local government, urban environmental planning and management procedures can both facilitate local participation and provide a basis for government at various levels to respond in enabling ways. This typically requires an improvement in the capacity of communities and authorities to work together so as to create a 'united front'. Likewise, urban planning needs to be linked to national planning, as although the city is usually the arena in which solutions are implemented, it is not always the arena in which solutions can be found (Atkinson and Vorratnchaiphan 1996:235-236,241; Kearns and Paddison 2000:849).

Noting the crucial relationship between urban environmental issues and urban development, "it has become increasingly important to achieve integration of environmental planning with other forms of planning at all levels of government" (Connell and Lea 1998a:113). It is critical that urban management be tied into national sectoral objectives of economic reform, equity considerations and environmental sustainability. The capacity and responsiveness of local and sectoral institutions are important determinants of the quality of the environment in a urban centre. Government must provide an effective regulatory framework which addresses the problems of poorer citizens and protects the urban and peri-urban environment. While many Pacific island nations now have environmental legislation and strategy plans, "the challenge remains, however, to put sensible recommendations in place under circumstances in which controls over development of any kind are exceedingly difficult to implement" (Connell and Lea 1998a:31). At the 'urban-environmental interface' (Myers and Muhajir 1997:367), the overriding issue is one of sustainable resource management and development. One of the positive adaptations to urbanisation has been urban planning to promote better land utilisation. The task of environmental management and planning requires the involvement of communities, good local government, private enterprise, and governmental and non-governmental bodies. Indeed, environment-friendly land use should include participatory components, and this is particularly true in the Pacific, in view of the population's dependence upon the fragile island environment (Bryant-Tokalau 1993:163; Crocombe 1994:6; Myers and Muhajir 1997:368; Nunn et al. 1999:200; Rallu 1996:43; UNDP 1996:3). Otherwise the result may be "urban growth-without-development" (Storey 1999:167).

### 6.1.2 National Urbanisation Strategies

Debates continue concerning whether governments can effectively influence the pace and pattern of urban development at all; whether governments are more effective in influencing urbanisation patterns by changing sectoral and macroeconomic policies, or by formulating and implementing better spatial development strategies; and whether governments are more effective in influencing settlement patterns through controls on urban physical expansion and incentives for industries and businesses to locate in smaller cities or through strategic location of their own public investments. All public policies have implicit spatial aspects and thus their compatibility with policies for urban development must be continuously monitored (Rondinelli 1991:798; Stilwell and Troy 2000:926). National economic and social policies should reinforce physical and spatial development policies. Hence,

domestic economic, regulatory, international trade, population planning, and agriculture and human resources development policies must be compatible with spatial development programs if the latter are to be effective. National leaders must provide strong and persistent political support for urban development policies in order to produce the desired results (Rondinelli 1991:801).

As economic development has been pursued as the dominant objective of Fiji's national development and the critical component in raising the living standards of the people<sup>2</sup>, urbanisation must be recognised as an unavoidable process associated with increasing industrialisation and modernisation of the country. Thus, a national urbanisation policy, within an enabling context for urban planning, must be adopted as an important measure which can provide an effective guidance for urban development in Fiji. Policies expressed in urban planning schemes should be consistent with national development policies and linked to them in their formulation, implementation and review. Urbanisation policies ought to be assessed in relation to national policy objectives and development goals. What is needed is to combine economic and physical planning, and to achieve sustained economic growth alongside basic needs provision. It is vital that sustainability be made a key criterion in urban growth strategies. Local government

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<sup>2</sup> For instance, Fiji's *Ninth Development Plan* (1986 to 1990) expressed the desire for citizens "create a dynamic, growth-oriented economy" through increased production and productivity, to strengthen and diversify the economic base, to generate more employment, and to also improve the standards of living for the disadvantaged, the unemployed and the poor (who need to be provided for and integrated fully into the development process) (Fiji Central Planning Office 1985:i).

needs to promote coordination between different sectoral agencies, as well as be more activist, representative and decentralised (Brugmann 1995:7; Cairncross et al. 1990a:256; Connell and Lea 1993b:14; Stewart 1983:19; Wei 1994:55). Moreover, “planners should be aware of the undergoing structural changes which shape planning strategies so that it might be possible to exert some influence on sectoral policies and harmonize urban policy with economic policy” (Wei 1994:63). It is essential that the typical situation in which urbanisation planning efforts and policy are uncoordinated in that national planning tends to be economic and urban planning tends to be physical, and disjunction often produces competing policies, be resolved. For instance,

Suva City Council is more than 100 years old, but did not have any ‘economic plans’ nor is an attempt being made to coordinate policies and programmes with that of Government and adjoining local government bodies (Sukhdeo and Griffin 1982:187).

An integration of public policies is important in that government action to address problems of housing and living conditions for lower income groups cannot ultimately be separated from their actions in other sectors. Thus, governments’ orientation on broader social and economic issues, and the extent to which they represent their citizens’ needs and priorities are also pertinent. It is cardinal to coordinate planning at the national, regional, municipal and community levels, for urban governance is a multilevel activity. Thus, both central and local government policies have to be involved if they are to promote a more sustainable living environment. Urban governments exist within overlapping networks and webs of relations involving higher tiers of government as well as lower levels of governance at the locality and neighbourhood levels (Atkinson and Vorratnchaiphan 1996:237; Hardoy and Satterthwaite 1989:145; Kearns and Paddison 2000:848; Konvitz 1997:44).

## **6.2 Urban Management**

### **6.2.0 Urban Management and Good Governance**

Sustainable urban development can only be achieved through good governance based on democratic control. For sustainable development, there is no real substitute for efficiently functioning local-level institutions, especially municipal government. Improved local governance is essential to ensuring that municipal authorities address

specific local needs and are accountable to all citizens within their jurisdiction. Urban centres therefore require sound management and planning to ensure that the appropriate systems of governance, financing, employment, housing, infrastructure, services, environmental resource use, etc. are put into place to cater for the needs of their residents (Chaibva 1995:8; Elliott 1999:174; Schoeffel 1996:132; Urban 21 2000:19). Therefore,

urban management is much more than merely constructing such facilities as roads, houses and water pipes; it is also a question of ensuring that adequate services are available and accessible throughout the city. This requires not just land use plans but the political will to direct public, and stimulate private, resources to areas of deprivation (Connell and Lea 1993b:6).

The legitimacy of urban governments largely rests on their use of tax-payers' resources, the efficient and judicious use of which demonstrates competence in the citizens' eyes. Local governments are capable of changing the fundamental nature of governance by decentralising planning and administrative structures, engaging with community organisations and local businesses in the provision of urban services, and creating new internal procedures for assessing and selecting development options, with the result being the creation of more flexible and inclusive governing processes. Enhancing urban governance in terms of effective administration and open, transparent and accountable policies and institutions can further produce responsive decision-making and raise the quality of local democracy (Brugmann 1995:7; Jenkins 2000:149; Kearns and Paddison 2000:848-849).

Better local practice is dependent upon competent local government. Hence, "good governance implies strong relationships between the governed and those who govern, which, in turn, requires institutional capacity both within government and civil society to permit wide demand management" (Jenkins 2000:152). As the level of governance closest to the people, local authorities can play a vital role in educating, mobilising and responding to the needs of their local communities so as to promote sustainable and equitable development. This, in turn, requires endorsement from the state, as municipal governments are "frequently weak, poorly funded and overwhelmed by the pace of urban growth" (Overton and Storey 1999:243). Municipalities' generally need effective decentralisation policies, increased central government support, empowerment for local revenue mobilisation, and institutional reform (Chaibva 1995:8; Hardoy and Satterthwaite 1989:165; UNCHS 1993:27). Thus,



perhaps a new kind of local government is necessary – less centralized, more open to giving support to group efforts in planning, setting norms and priorities, and evaluating projects. Perhaps many tasks have to be decentralized to district or neighbourhood level offices where community organizations have a better chance of participating in decisions and in influencing resource allocations (Hardoy and Satterthwaite 1989:145).

In light of their increasing urbanisation, the political context and implications of urban growth and management, including issues of urban governance, have become important considerations for Pacific island nations. Governance is a continuing process through which conflicting or diverse interests may be accommodated and cooperative action may be taken. Pacific island nations “exhibit profound determination to maintain the consensus approach to decision-making and to adapt these traditional methods of managing community affairs to the new requirements of national governance” (Thistlewait and Votaw 1992:151). The necessity of an active government role via an effective public administration in Pacific island nations reflects the new kinds of problems these societies must now resolve, particularly as some of the traditional systems of social control have begun to diminish under the influence of modernising forces. Furthermore, while most Pacific island states have wide formal authority, their power is often resisted, as for example, when customary landowners have an effective veto over projects requiring access to land. Programmes to promote sustainable development are therefore most effective when they are sensitive to the needs and traditions of local communities. Good governance is the foundation of participatory development inasmuch as it provides the government functions needed to promote participation and create the environment in which participatory processes take place. This can help contribute to making urban centres in the Pacific Island region more liveable for all the residents by not only improving governance principles, but also by strengthening capacities and enhancing the tools available to municipal administrators and decision-makers (JICA 2000; Oh 1995:10; Thistlewait and Votaw 1992:151,199; TIT 2000; UNDP 1999).

#### 6.2.1 Improved Urban Planning

One of the fundamental principles of planning in a democratic society is that the state government, local governments and community consult with each other. This type of urban planning requires political will. Planners act as agents of government in urban spatial production, but can also create ‘spaces of negotiation’ between the community and

the government, thus empowering citizens to demand certain services, infrastructure, resources and opportunities from the economic and political establishments. Likewise,

community development is more than simply participation; it also requires working with the poorest and most excluded groups, understanding and addressing their priorities in urban environmental management, and bringing together different voices in the community (Elliott 1999:167-168).

In particular, land use plans<sup>3</sup> need to be submitted to public scrutiny in the national language(s), feedback encouraged and objections heard in the public meetings (Kearns and Paddison 2000:848; Myers and Muhajir 1997:379,382). Their "importance lies partly in the process by which the planning scheme is approved, allowing as it does, some opportunity for objection by the public" (Stewart 1983:6). Such a participatory approach to planning is crucial. In sum,

there is no doubt that integrated urban planning and management -- in the context of physical plans and democratic participation -- is the most secure route to successful urbanisation (Connell and Lea 1993b:12).

The complexity and relatively rapid change of Fiji's cities and towns have necessitated the reform and strengthening of urban management and planning. Municipal governments should not only increase their level of self-administration and financial autonomy, but also upgrade their administrative capacity to such an extent that they are capable of exercising their new responsibilities properly. Hence, there exists a need to increase personnel, funding and decision-making power for urban planners and managers. "Consultations between government departments and the planning bodies, in this case Suva City Council and the Directorate of Town and Country Planning, are essential if effective planning is to be practiced" (Floyd 1976:47). Basic requirements for an effective urban development plan for Suva which reflects the interests of the majority of residents include a cooperative approach by the various authorities concerned, the active involvement of the public, and adequate staff (in terms of numbers and competence) to maintain a dynamic programme of plan formulation, review and management. Thus, a popular approach requires not only funds but institutional changes. In particular, change is required in the way municipal administrators relate to and work with local communities. Such an approach puts a premium on local political leadership, and on

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<sup>3</sup> The Suva City Council has its own planning and development control department (as does the Lautoka City Council) which considered 15 applications for subdivisional approval in 1990, amounting to 115 separate plots (Connell and Lea 1993b:67).

local institutions to coordinate, negotiate and implement actions in such critical areas as economic development, environmental management, land use, housing and urban services, as well as to manage this process in an integrated manner with the support and participation of diverse local communities. Possibilities for capacity-building in terms of expertise and technical skills, financial resources, and an institutional and legal framework, exist through local, national, regional and international cooperation (Nunn et al. 1999:200; Stewart 1983:i; Urban 21 2000:18; Wichmann 1995:3).

Successful urban development planning is a cyclical activity of diagnosis, strategy and project development. This calls for a process approach, with a continuous connection between the different steps in the planning cycle: analysis, policy formation, implementation, monitoring and evaluation. The current growth and development of the regions urban centres need to be more closely monitored, with the construction and application of models which meet the specific objectives for particular situations and areas employed. Urban planning and management should be able to adapt flexibly to changing conditions so as to find workable balances between the frequently competing demands of economic development, environmental protection and democratisation. They must therefore make efforts to move beyond a purely economic conception of urban development to one that includes ecological sustainability, political participation and social justice. In recognition of the multisectoral nature of urban activities, planners must look at urban issues in a holistic way. And, by extension, the response to urban development should be multifaceted. Economic, environmental and sociopolitical aspects of the urban system need to be integrated in such a way as to ensure cities' sustainability. This depends upon a long-term genuine commitment to a multisectoral and coordinated planning process, and is crucial if urban livelihoods in the cities and towns of the Third World are to improve. What is needed is a consistent and long-term programme of urban improvement which allows Pacific island nations to achieve coordinated action leading to real improvement for all urban and peri-urban dwellers (Bryant-Tokalau 1994:82; Connell and Lea 1993b:4; Duddy 1993:7; Fazal 2000:137; Haldenwang 1998:46; Harris 1992b:xxi; Myers and Muhajir 1997:382; Post 1997:350,363). In sum,

it is vital that an integrated and participatory approach be undertaken to ensure the successful implementation of appropriate management initiatives (Nunn et al. 1999:200).

### 6.2.2 Coordinated Urban Planning

In most Pacific island nations, there is a need for coordination both across sectors and across agencies within a sector, and also for cooperation amongst municipalities. In Fiji, there is a need for greater progress to be made towards more appropriate municipal frameworks for coordinated urban planning and management, and the Local Government Unit of the Ministry of Local Government, Housing and Environment has aimed to “promote regional cooperation amongst municipalities for better utilisation of resources” during 2000 (Fiji Ministry of Finance 1999:171). Moreover, the Greater Suva-Nausori area “is of considerable size and importance within the national framework and is likely to remain so. It is essential that the complex policies for the development of this region are controlled by a coordinating board or other statutory body” (DTCP 1975:4). With increasing population concentration in the periphery of Greater Suva, a coordinating structure is needed to meet the requirements of the various municipalities, and thus to give a thrust to regional planning. Although the need for a regional planning and decision-making structure for the Greater Suva-Nausori area has been recognised, there has been little action taken in the direction of metropolitan governance promotion. Consequently, the lack of municipal coordination and consultation continues (Dean and Lindfield 1997:32; Sukhdeo and Griffin 1982:223; Whitehead et al. 1994:26).

The task of management is fragmented and complicated in a region where bureaucratic processes are usually relatively slow and inefficient (Connell and Lea 1993b:76).

To move from theory to practice in implementing a metropolitan-level authority (which implies a move to a new system of power-sharing) requires building consensus and a vision of what the new structure can accomplish. It has therefore been recommended that a consultative process (which brings together central and local actors from the public and private sectors) be initiated to develop a metropolitan-wide vision of the future of the Greater Suva-Nausori region and to explore alternatives for metropolitan management. This consultative process should include the Municipalities of Suva, Lami, Nasinu and Nausori. With relatively rapid growth and a multitude of agencies involved in amenity provision, there is a great need for strategic planning aimed at identifying major infrastructure and service, environmental protection, and development requirements. Specific proposed functions of the metropolitan authority might include: land use planning of a regional nature; management of cross-jurisdictional green spaces;

transportation planning and coordination; solid waste disposal; and coordination of all major water, sewerage and drainage works with pre-planned population growth of the region. Moreover, it is imperative that the urban governance, basic service improvement, and local socioeconomic development agendas are compatible with each other. This coordinated integration is what should represent the ultimate aim of urban development planning (Connell and Lea 1993b:126-127; Dean and Lindfield 1997:32; DTCP 1975:86; Kearns and Paddison 2000:849; Whitehead et al. 1994:26,33).

## **6.3 Participation**

### **6.3.0 Shared Decision-Making**

To be efficient and to make optimum use of resources, urban planning and management must involve a multitude of actors in a process of participatory decision-making and concerted action, each playing an effective role in sustainable urban development. Both vertical and horizontal participation are incorporated in the process. Cooperation (whether formally instituted or informally achieved) between the government, private businesses and investment, community groups and their representatives may prove to be an effective approach in procuring land for the urban poor, building dwellings, securing basic services, and creating economic opportunities; this is 'shared' decision-making. The beneficial effects of such participatory involvement, however, are substantially dependent upon the extent to which the authorities are receptive and responsive to the various interests. An overall climate in which people can freely organise themselves into action groups for the announcement of their interests is favourable for participation. Local governments must be able to both support community action and to provide the planning and management framework within which to coordinate it. There are five major roles that local people can take in planning, including (a) review and comment of proposed plans by public hearings; (b) consultation of selected citizens; (c) advisory of selected citizens into planning committees; (d) shared decision-making of planners and participants; and (e) controlled decision-making with citizens exercising final authority over planning decisions (Abbott 1997:428; Badshah 1996:143; Cairncross et al. 1990a:257; Schrader 1998:6,8; Stewart 1983:20; Tuts 1995:10; UNDP 1999; Wichmann 1995:3).

Urban managers and development planners will have to assume a greater role as agents of negotiation within the urban sphere, particularly with respect to land control and use. Thus, the role of development planners should be that of mediators in the development process between community needs and government resources, and there must be sufficient discourse between planners and communities. Urban centres, as the embodiment of intricate social, economic and cultural networks, are constantly in a state of flux and can consequently be subject to planning control and direction. Indeed, controls and guidance over development, together with a suitable urban institutional framework to carry them out, are essential ingredients in the resolution of current urban development problems in the Pacific Island region. Urban managers and planners can therefore guide and encourage this change in certain directions in such a way that everyone has the opportunity to participate in and influence the process (Bollens 1998:742; Connell and Lea 1995:57; Mather 1986:144; Myers and Muhajir 1997:381-382; Schrader 1998:3). "It can only be hoped that governments and other institutions will work more closely with communities, and place urban issues high on the development agenda, before the cities grow out of control" (Bryant-Tokalau 1994:82).

The possibility of improving urban and peri-urban living and environmental conditions with limited resources requires cooperation between local government and community-based citizen groups. Hence, the importance of linkages with the larger administrative networks of municipal infrastructure and services in securing and maintaining effective community-level urban management. A city consultation process, in which stakeholders from civil society, public and private sectors are brought together to discuss and identify possible solutions to the salient problems facing the city, can help to establish micro-meso-macro linkages. This allows the needs of the poor to be articulated, and thus the city consultation process can become a means to strengthen deprived people's participation in the development process and an instrument of advocacy for the underprivileged. In the Pacific Island region, it has been recommended that advisor committees on urban settlements be established which include members of relevant government departments as well as local government representatives, and NGOs, including religious organisations; community committees should also be established in order that the poor participate in the planning process. In light of escalating demand and limited public resources, local self-help programmes and private initiatives will become increasingly important in providing economic opportunities, urban services and infrastructure, and environmental protection. However,

even though much can be done by the low-income communities, certain environmental management activities at the community level definitely require support from the local authorities. There are limits to what can be achieved through grassroots efforts; what is needed is a more direct empowerment of the community as a legitimate level of decision-making in the allocation of public resources (Lee 1998:1009).

Community initiatives can be made more effective and given more continuity with appropriate government support. Government should embrace the community sector movement with a clear framework of institutional support; the efforts of local government can provide a supportive framework for innovative action by communities. Indeed, government can play a crucial 'enabling' role in the development process (Brugmann 1995:7; Bryant 1993b:92; Cairncross et al. 1990a:250; Finseth and Barr 1991:2,15; Hardoy and Satterthwaite 1989:169; Wichmann 1995:4).

Ultimately, community participation is not only having the power to determine how their urban environment is planned, developed, financed, produced and maintained but also about reshaping what is produced – the kind of house, the nature of health services, the form of public transport services provided (Abiodun et al. 1987, in Hardoy and Satterthwaite 1989:140).

Community development has been linked to a process of democratisation and local initiative; neglected sectors of urban society can express their needs and pool their interests to counterbalance the existing unequal power structure. "Participation, if used appropriately, particularly in the decision-making process empowers individuals to initiate action for self-reliant and sustainable development" (UNDP 1999). There is a growing recognition of the importance of civil society participation in terms of encouraging communities' involvement in decision-making processes and influencing how resources are utilised. Beyond sharing in processes and activities, people's participation can entail an active and sustained role in determining how accrued benefits are generated and distributed. Local initiatives are increasingly recognised to be essential for 'healthy' cities and a key resource for sustainable urban development actions. The key arenas of community involvement include: (a) forming community groups; (b) selecting volunteers; (c) prioritising needs; (d) deciding input; (e) setting up and managing the functioning of the groups; and (f) finishing plans, and implementing and monitoring them (Elliott 1999:161; Schrader 1998:3,15,19; UNDP 1999).

An outcome of the community development approach is the self-help and basic needs approach which is a bottom-up strategy that is poverty-oriented. Its major

aims are empowerment and participation, with direct involvement of the population in the decision-making process at various levels. Thus, development and participation become a couplet understood to be 'participatory development'. Related issues include those of equity, capacity building, good governance and sustainability. Agendas are set jointly, and local views and indigenous knowledge are deliberately sought and respected, facilitating easier acceptance of a project, better information, faster implementation and lower costs. Popular participation implies popular influence on political decisions which concern the allocation and utilisation of productive resources; the need for popular involvement in the planning and implementation of activities that engender socioeconomic opportunities for raising productive employment, income levels, and people's well-being; improved access of the poor to key productive assets and essential public services and facilities; as well as a decentralisation of administrative powers and resources to the local level. As decentralised decision-making advances, community voices may effectively be amplified not just in isolated projects but in the urban development process as a whole (Atkinson and Vorratnchaiphan 1996:248; Schrader 1998:5-6). For instance,

some of the benefits of public participation should be the clearer definition of the interests of different groups in the future development of Suva, the articulation of agreed controls and incentives in the planning scheme, a recognition of the scheme as a framework for guiding development, the identification of areas within the city which require specific planning action, and a city more responsive to needs (Stewart 1983:20).

## **6.4 Poverty**

### **6.4.0 Assisting the Urban Poor**

Among other things, the urban agenda for improved liveability entails reducing poverty and inequality, creating a healthful urban environment, and making services more accessible. Poverty elimination entails more than simply supporting local-level initiatives in response to needs and opportunities which the poor perceive. Progress achievable by the poor under inegalitarian structures and processes will be constrained unless both high-level commitment to increase the capacity of the poor to determine their own future exists, and procedures to guarantee this are in place. Two pressing policy issues in Fiji include the development of strategies that truly respond



to the needs of the poor, and the development of a coordinated and integrated delivery of the programmes and services that optimise the use of limited resources (Farrington et al. 1999:10-11; UNDP 1997:110; World Bank 2000:140). More specifically,

a three-pronged strategy for poverty eradication in Fiji would involve improving the productive capacity of the people; improving access to and the performance of social services; and increasing the capacity of community groups to work with and assist the poor (UNDP 1997:4).

It is sometimes argued that poverty alleviation is purely the national government's responsibility. In Fiji, poverty alleviation efforts have generally centred upon employment generation. Yet, many urban poor work at continuous jobs (even in formal sectors) but simply do not earn a living wage, and although the Government's policy has been to encourage employment by deregulating the market, creating low-paid jobs have made little in-road against poverty. Thus, while Fiji's development plans have aimed to target poverty and basic needs, they have tended to rely on national economic growth as the primary means to alleviate such problems without ensuring distributional equity. An expanding economy does not necessarily dissipate poverty, however.

While the central government should play a prominent role in promoting economic growth and providing subsidies to the poor, basic services that affect the living conditions of the poor most are frequently best managed at the local level. Municipal regulations should be made more responsive to the needs of the urban and peri-urban poor, and access to affordable land and housing should be facilitated, basic services and infrastructure provision should be improved, employment creation should be stimulated, and 'safety net' assistance should be better targeted to the most vulnerable (Jenkins 2000:139; UNDP 1997:61,104,109; World Bank 2000:11). In the Pacific Island region,

governments must accept some responsibility for the urban poor or assist those who do. Private enterprise by its very nature cannot provide for the lowest income groups thus the burden will fall on the poor themselves or upon welfare agencies. Government assistance should include technical assistance in the construction of housing units, subsidised building materials, and the provision of land and basic services. The establishment of new settlements must include income-generating projects for the inhabitants in order that they may then take responsibility for the payment of bills and the upgrading and maintenance of the homes (Bryant 1993b:92).

In Fiji, there needs to be more consideration given to community programmes which target those living in disadvantaged urban settlements. The provision of basic social services, along with income-generating and community development projects, and

with additional 'safety nets' and income transfers for those who are particularly vulnerable, are approaches which may contribute towards poverty alleviation. There is a recognised need among welfare organisations to find long-term solutions to alleviate poverty, such as through self-help programmes (Bryant 1993b:60-61; UNDP 1997:37).

One of the obvious deficiencies in planning for the urban poor in the Pacific is the lack of truly long-range planning....Given the rapidly growing urban centres and the shortage of land, as well as the declining ability of the urban poor to fully participate in the urban economy, planning needs to be both medium- and long-term (Bryant 1993b:60-61).

It is only by developing community level programmes, alongside government ones, that the poorest groups may improve their situation. The Pacific has always had a strong tradition of community development and this needs to be built upon if more widespread poverty is to be avoided (Bryant-Tokalau 1995:129).

#### 6.4.1 Participatory Planning for Poverty Alleviation

Since macro-development policies in Fiji have not necessarily benefited low-income groups, NGOs and CBOs which are active in their efforts to assist the poor need to be encouraged by the training of skilled personnel, so as to supplement government programmes as well as to pressure Government to implement development policies which consider the welfare of the entire community, including the poor. For instance, assistance for Bayly Welfare recipients is sought by networking with other NGOs and Government departments such as the FAS, HART and Save the Children Fund. There have also been recommendations for the creation of an inter-agency Poverty Task Force. Moreover, as existing formal organisations can offer only limited assistance, religious groups, housing assistance bodies, and informal networks and cooperatives which are developed within communities themselves may have greater impact on the daily lives of low-income urban dwellers and thus need more support and recognition than they currently receive. Potential partners in poverty eradication in Fiji may include community groups, as well as traditional and provincial councils (Bryant 1993b:59-61; Fernando 1996:137,163; UNDP 1997:119).

Indigenous NGOs in the region, however, generally suffer from many of the problems of Pacific Island national governments in terms of institutional weaknesses, problems of management, and dependence on external funding and technical assistance. Fiji's NGOs' are frequently constrained due to limited resources, finances,

skills, accountability and follow-up. In addition, poor coordination and their often limited outreach prevent them from fully meeting the needs of low-income groups. Moreover, many small organisations are offering the same assistance to the poor, but for their own, isolated and often parochial target groups based mainly on religious, racial and socioeconomic lines. Due to the typically inherent weaknesses of NGOs, they frequently must be assisted by the state and the market in their efforts to alleviate poverty; hence, a complementary role is encouraged between NGOs and other institutions. Government could strengthen its partnership with NGOs by providing them financial and capacity-building assistance, in particular (Fernando 1996:136,241; Schoeffel 1996:134; UNDP 1997:4,97,119). There has been an increasing willingness on the part of Government and NGOs to work together to tackle poverty: "Besides poverty, NGOs are active in many other areas of social service. If partnership with Government in poverty alleviation is successful, the techniques learned may be applied to increasing cooperative activity in other areas" (Fiji Government 1994:7, in Fernando 1996:118). Nevertheless, coordination and networking between NGOs and state welfare services generally remain poor.

Fiji has a strong tradition of voluntary involvement in community and social services. Community empowerment is enhanced with greater trust and cooperation between communities and local government, and between different levels of government. Improvements in the living conditions of the poor are thus facilitated if there is political will, and if the poor have the opportunities and capacity to participate. The communities of the urban poor must be enabled to voice their needs and how to address them – a move from 'recipient' to 'participant'. The poor can initiate efforts to improve their physical, economic, social and natural environments (Badshah 1996:16-17; Bryant 1993b:94; Finseth and Barr 1991:1; UNDP 1997:4).

Unless the local community feels that it has some say over its own local environment, little of note can be achieved. Strong local councils working with both the private sector and community groups representative of their electorate have been shown in many places to be the only effective way of dealing with local environmental issues (Bryant-Tokalau 1993:163).

## 6.5 Land

### 6.5.0 Land Tenure and Land Use Planning

Fiji's land tenure system has served to constrain the availability and potential uses of land, proving especially problematic in the urban centres. This has also resulted in many low-income urban and peri-urban dwellers being excluded from the formal land market. Urban land objectives of the *Greater Suva Urban Structure Plan* include:

to encourage the reservation of land to ensure a proper balance of urban land uses in suitable locations to existing towns and that land will be available to the public and private sector when it is required for development; to initiate a review of the availability of land for development within urban envelopes and to promote ways and means of ensuring land is available for development in the right locations as it is required (DTCP 1975:19).

Land use planning and management considerations include ensuring that land development at the municipal or metropolitan level reflects national objectives, and that the roles and functions of organisations involved in land management are precisely defined and coordinated. It is important to merge spatial planning activities with the wider urban management process to allow effective integration of spatial, economic and institutional strategies, as well as to clearly evaluate urban development expansion and densification options for the urban centre. Specific tasks include enhancing participation in planning and implementation; analysing land development policies in terms of their impact on various groups, especially the poor; and adopting enabling policies and techniques which assist households and enterprises gain access to land, shelter and services. In particular, there exists the need for urban and peri-urban land for low-cost housing to be identified, zoned and procured in a timely manner and in anticipation of future needs. Low-income housing settlements need to be located in areas near employment, or scattered along with dispersed employment locations throughout the greater urban area. Residents of informal settlements without tenure, security or few incentives need simple titles from the Government, and planned settlements with basic services and community facilities provided (Badshah 1996:13; Bryant 1993b:93; Crocombe 1987b:386; Dean and Lindfield 1997:35).

## 6.6 Housing

### 6.6.0 Urban Housing Policies

Understanding the possibilities for improving the housing environment of low-income people requires an understanding of their diverse needs and priorities, including complex issues such as the legality of site or house occupation, the legality of housing structure, and the tenorial terms under which the occupants live there. The approach to housing policies should be one which favours partnership and integration between all the actors involved in housing provision in order to enhance the capacity of urban and peri-urban residents, and low-income households in particular, to improve their dwellings. Furthermore, emphasis needs to be placed on the integration of housing policies into the wider urban economy and management (Drakakis-Smith 1997:801,807; Hardoy and Satterthwaite 1989:157).

Given the prevalence of low-income dwellers, many of which are residents of informal settlements, it is both "appropriate and crucial to focus housing policy on this relatively deprived yet very large proportion of the urban population" (Connell and Lea 1993b:120). As in most Pacific urban areas, Fiji's building codes are generally too expensive for low-income groups and therefore benefit only the middle-income groups<sup>4</sup>. Consideration must therefore be given to low-cost solutions which meet the requirements of low-income urban and peri-urban dwellers. Indeed, the Government needs to ensure that there are cheaper, better serviced, better located, legal alternatives to illegal plots, otherwise the uncontrolled growth of urban areas will continue unabated. Since some of the urban and peri-urban poor are currently constructing and servicing dwellings which do not conform to regulations, there exists a need to adopt appropriate (lower) regulatory standards and enforce them, and to adopt pricing policies which facilitate legitimate access by the poor. In addition to the relaxation of construction and infrastructural standards for housing, and the modification of regulations to more appropriately match Fiji's needs and capabilities, there is a need for the reexamination of bureaucratic structures. Hence, it is necessary to expand the availability of affordable serviced and titled residential land, as well as improve the effectiveness of government programmes

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<sup>4</sup> Several government authorities such as the Subdivision of Lands Board, the Town Planning Board, and the Central Board of Health, as well as the Housing Authority, HART, and the NLTB have all recommended a reduction and a relaxation of the unnecessarily high and 'Australian-styled' standards laid down in Fiji's land development legislation (Walsh 1978:137-138,143).

such as the Fiji Housing Authority. Additionally required is the promotion of enabling and participatory strategies for the provision of urban infrastructure and affordable housing, and the encouragement of community self-help based on secure land tenure arrangements, access to credit, and the relaxation of restrictive legislation (Bryant 1993b:93; Connell and Lea 1993a:13; Devas and Korboe 2000:134; Drakakis-Smith 1997:807; Walsh 1978:438; WCED 1987:9-16; Whitehead et al. 1994:27).

The public, private and civil sectors within Fiji must facilitate the achievement of the goals of the low-income groups. All three working together can create an environment for increasing supply, meeting housing costs, and improving affordability. Meeting the housing needs of Fiji's poor requires the participation, support and cooperation of all stakeholders, including the NLTB, the Housing Authority, Lands Department, PWD, municipal authorities, and NGOs such as HART, HHIF and Rotahomes Project that provide low-cost housing. The power of civil society to influence government policy on housing can be crucial in influencing its orientation, with housing coming to be seen as a means of achieving community development rather than as an end in itself. The poor should be encouraged to participate on bodies such as the Public Rental Board, tenants' associations, community groups, and NGOs concerned with housing (Finseth and Barr 1991:1,48; Hardoy and Satterthwaite 1989:92; UNDP 1997:117).

## **6.7 Urban Infrastructure and Services**

### **6.7.0 Service Delivery**

The increased demand for urban infrastructure and services has accompanied high urban population growth rates, more permanent urban populations, and rising expectations. The inefficiency of urban facilities has become problematic in many of Fiji's cities and towns, and necessitates that more resources are put to improving basic infrastructure and services. In addition to the increasing demand for urban amenities, social considerations (public good) also urge greater provision. Nevertheless, central and municipal governments frequently do not extend piped water, sewers and drains to poorer or peripheral areas, claiming that it is too expensive to do so. Yet, there are options in terms of infrastructure design and provision which can be implemented to match local physical conditions, social preferences and economic resources. For example, the PWD

has estimated that by using a more appropriate (reduced standard, lower cost) sewerage reticulation design, a 40% decrease in the cost of conventional sewerage could be realised. Moreover, by further developing and utilising Greater Suva's sewerage system, the operating and maintenance costs of approximately F\$120 per dwelling per annum could potentially be reduced to F\$90 per dwelling per annum (Fiji Public Works Department 1993:8,13). Efforts to remedy existing deficiencies in urban services "are best framed within an overall urban development plan that targets areas where infrastructure development is likely to be most economical as well as environmentally fragile areas that should be protected" (Whitehead et al. 1994:22). Moreover, 'poverty pockets' (unserved low-income communities) should be accorded high and urgent priority in sector plans. Therefore, while improved services, infrastructure and facilities are needed generally, the actual form in which they are needed and the way in which they should be provided must relate to the particular circumstances of each area and the requirements of its residents. Lastly, an effective urban management system is needed to link the different elements within central and local government with the various public instrumentalities involved in the provision of infrastructure and services for urban development (Cairncross et al. 1990b:18; Connell and Lea 1993b:13; Coolidge et al. 1993:35; Hardoy and Satterthwaite 1989:162-163; Stilwell and Troy 2000:925; UNCHS 1993:16; Whitehead et al. 1994:32).

#### 6.7.1 Ownership and Provision

There are four main options for ownership and provision of infrastructure services: (a) public ownership and operation by enterprise or department; (b) public ownership with operation contracted to the private sector; (c) private ownership and operation; and (d) community and user provision. Public provision is the most common form of infrastructure ownership and operation<sup>5</sup>. The public ownership with private provision option is typically implemented through lease contracts or through concessions<sup>6</sup>. Often accompanied by regulation, private ownership and operation of infrastructure facilities (particularly power and telecommunications) is increasing, both through new

<sup>5</sup> Of the 38 water utilities in the 23 Asian and Pacific developing country members of the Asian Development Bank, 16 are government departments, 18 are government enterprises, and 4 have somewhat more autonomy (Whitehead et al. 1994:24).

<sup>6</sup> For example, in February 1994, UNELCO, a company operating the electric power supply in Vanuatu for over 30 years, took over the management and operation of the water supply system as well (Whitehead et al. 1994:24).

entry by private firms in infrastructure markets and through divestiture of public ownership of entire systems. Community and user provision is most common for local, small-scale infrastructure such as community water supply and sanitation, rural feeder roads, distribution canals for irrigation and local drainage systems, and often complements central or provincial services. For governments, the provision of basic services can pose difficult choices given the interconnected problems created by elements of cost recovery, economic efficiency, externalities and merit services (Coolidge et al. 1993:18; Whitehead et al. 1994:24).

In Fiji, the public sector (through the Ministry of Infrastructure and Public Utilities) currently provides roads, bridges, sewerage and water supplies, although greater private involvement in some of these services is anticipated, and the informal private sector already plays a significant role in the provision of low-income housing, transport and roadside retailing. Many government and development agency initiatives have focused on the role of private initiatives to improve the delivery of urban services, given their potential for lower production costs, enhanced efficiency in service delivery and payment collection, greater capacity to maintain capital equipment, and increased range of choices available to the consumers. Nevertheless, the need to protect the interests of the public, particularly the poor, and incorporate safety and environmental concerns may necessitate a regulatory framework, both in terms of prices charged and quality of the service provided, and in determining policies and priorities, standards and the terms and conditions upon which the private sector competes. Government should ensure that the operation of privatised companies is sustained, an efficient role in service provision is maintained, competition is enhanced, and public sector monopolies are not simply replaced by private sector monopolies (Bolenga 1997:21; Cairncross et al. 1990a:261-262; Cheema 1996:3; Connell and Lea 1993b:78; Hardoy and Satterthwaite 1989:167; Jayaraman 1998:98; Lyneham 1998:13; UNCHS 1993:16).

Urban planners can tap not only into private sector resources but also into community resources. Most aspects of basic service and infrastructure provision can only be addressed with the support of the urban population at large, with support encompassing participation in planning as well as involvement in provision. A 'compact with the consumer' seeks to increase community consultation on, and participation in building and/or maintaining urban infrastructure, targeting infrastructure deficient areas, and gearing choice of urban technologies to a community's willingness to pay for services, and can substantially contribute to improvements in the living standards of



Pacific urban dwellers (Bryant-Tokalau 1995:110; Connell and Lea 1993b:4; Connell and Lea 1998a:203; Myers and Muhajir 1997:382; UNDP 1996:13; Whitehead et al. 1994:25-26). Indeed, "many infrastructure improvement tasks can be contracted out to the communities themselves, thus reducing costs, promoting employment and skill development, fostering participation, and encouraging solutions that are better suited to the needs of specific categories of residents" (UNCHS 1993:12). For instance, Fiji's local governments are seldom able to keep neighbourhood drains clean, whereas solid waste collection from low-income neighbourhoods – a community responsibility in many developing countries – can be linked to recycling efforts, with disposal efforts handled by municipal authorities. Moreover, financial incentives might be effective in Fiji in encouraging the private sector to invest in recycling programmes as a means of minimising solid waste volumes, thereby reducing municipal solid waste management costs as well as lessening the overall environmental impact (Gaye and Dialio 1997:9; Pacheco 1992:77; Whitehead et al. 1994:26,34).

#### 6.7.2 Subsidisation and Cost Recovery Principles

There is a tendency in many developing countries for urban services to be subsidised from government revenue. This tendency is based partly on the evident inadequacy in the provision of basic services such as water supply, sewerage and waste disposal and the fact that many poor people benefit from subsidised services (Jones 1993:4). In the case of Fiji, such services are heavily subsidised by the Government (Fiji Public Works Department 1993:13). For example, the total cost of supplying water increased from F\$0.09 to F\$0.61 per metered cubic metre between 1970 and 1980 whereas revenue only grew from F\$0.07 to F\$0.15 (Fiji Central Planning Office 1980:222). Thus, consumption charges are often subsidised and have not included a capital recovery component (Connell and Lea 1993b:78). During the period 1976 to 1985, provision of infrastructure (transport, water, sewerage, energy, and posts and telecommunications) accounted for approximately 44% of the Fiji Government's capital budget (Fiji Central Planning Office 1985:103). Hence, the traditional supply of urban services by Government has been only partially based on user-pays principles, and consequently, at the national level between 1991 and 1994, the percent of operation and management cost recovery for water supply and sewerage averaged only 35%.

representing an average annual deficit of F\$11.69 million (Whitehead et al. 1994:16)<sup>7</sup>. Throughout the 1970s, in fact, Government subsidy to the urban dweller having access to sewerage mains disposal averaged 70% of total costs (Fiji Central Planning Office 1980:222). In addition to the poor cost recovery from water and sewerage services, high levels of water wastage occur due to inefficient pricing and leakage detection measures (Fiji Central Planning Office 1999:32). The direct cost of emptying septic tanks in Suva, however, is met by a charge levied on users of the service (Whitehead et al. 1994:16). An objective of the *Greater Suva Urban Structure Plan* has been "to locate development so that the costs of water supply, electricity, drainage and other utility services are kept to a minimum" (DTCP 1975:17).

Subsidisation, however, can lead to inefficiencies because resources are squandered on provision which is not cost-effective or because the subsidy benefits all consumers whether they are in need or not. Hence, such subsidisation, it is frequently argued, should be minimised or eliminated through cost recovery approaches (Jones 1993:4; UNCHS 1993:22). "Improving cost recovery – in terms of reducing the proportion of households who do not pay for some service – is one important way to pay for better maintenance of the system and its expansion to reach new households" (Hardoy and Satterthwaite 1989:168), thus allowing continued investment in new facilities as well as adequate operation and maintenance (USAID 1990:45). A number of Pacific island nations have recently considered user-pays principles and/or the corporatisation and eventual privatisation of public enterprises, including Papua New Guinea (Tobia 1999:28), Federated States of Micronesia (Connell and Lea 1998a:31), Kiribati (Connell and Lea 1998b:29), Vanuatu (PACNEWS/Tuqiri 1998b), and Cook Islands (*Cook Island News* 1999). In Fiji, "improved means of cost recovery are likely to be applied to all essential urban services in the future but are also likely to come up against factors which have made this aspect of urban management problematic in Melanesia" (Connell and Lea 1993b:78). Two solutions have typically been proposed: (a) to have the subsidisation apply only to a minimum level of consumption, above which market pricing should apply, or (b) to have reduced charging apply only to certain categories of users such as low-income groups and the elderly, etc. In sum, pricing systems can charge different

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<sup>7</sup> This situation is a result of: (a) tariffs having remained unchanged since 1984; (b) no charges being levied for consumption by the Government (estimated at 20-30% of total national supply); (c) system leakages of approximately 30%; and (d) collection inefficiencies, resulting in a build-up of arrears, which amounted to F\$6 million in the early 1990s (Whitehead et al. 1994:15).

amounts to different people and still cover costs (Coolidge et al. 1993:43; UNCHS 1993:22). The Suva City Council has recently issued a notice to all Suva City residents that, as of 1 October 2000, the Council will only collect garden refuse from inside properties once the subsidised cost of F\$4.46 per cubic metre is paid, so as to "assist your Council in achieving our common goal in regards to the cleanliness and the beauty of our city" (Suva City Council 2000a).

The decision to adopt cost recovery approaches clearly can not be taken solely on the grounds of economics. "There is a widespread lack of recognition that infrastructure is supposed to provide services to society, not make money" (Thomas et al. 1998:4). The concept of charging market prices for basic services such as water may not be universally accepted, while the political imperative of appeasing the urban masses and maintaining a vehicle for legitimisation must not be overlooked. Moreover, the determination to achieve reasonable cost recovery can lead to steeply rising charges. Hence, "at its best, privatisation reduces government costs and offers new possibilities for better service delivery; at its worst, it raises costs and...may threaten such important values as equity, quality and accountability" (Bolenga 1997:19), particularly as it tends to penalise the poor majority and removes from them those aspects of government services which have come to be their social security system. Indeed, "most urban residents are unlikely to welcome the imposition of new charges for basic services unless they are convinced the burden of paying for them is shared equitably and justified by the improvements made" (Connell and Lea 1998a:208). It has even been noted that many Pacific Islanders are actually more inclined to use a polluted water supply which is free than part with cash in the form of water taxes, when they see little of the benefits. Hence, it is imperative that residents be involved in decisions about the level of service they want and the level of payment that they can afford, and thus that the suppliers of services are responsive to consumer demands. The aim should be to seek a compromise between guaranteeing a basic level of service to everyone and maximising cost recovery to allow the services to improve its quality and increase its coverage (Brodie and Morrison 1983:4; Cairncross et al. 1990a:263; Connell and Lea 1993b:140; Connell and Lea 1998a:31; Hardoy and Satterthwaite 1989:165,178; Jones 1993:4-5; Myers and Muhajir 1997:381; Whitehead et al. 1994:13).

## 6.8 Environment

### 6.8.0 Urban Economy and Environment

There is an urgent need to protect the resources which support economic growth at a sustainable level; the management of the natural resource base and the environment that supports urban economies is an integral component in the pursuit of a nation's long-term sustainable development programme. It is possible for the interrelated goals of economic development and environmental protection to be mutually supported. Environmental considerations and institutional frameworks need to be included in the urban management decision-making process. Economic development policy, natural resources management and urban investment decisions must be linked. Responses to urban environmental problems should emphasise enhancing economic growth, encouraging private initiative, strengthening local governments and institutions, creating better systems for guiding urban growth, and improving the delivery and management of urban land, infrastructure and services. Concrete measures to protect the environment can include a focus on supporting prosperity and the revitalisation of growth, along with a commitment to ecological sustainability and good quality living conditions. Adequate management of urban environments is a basic element of most reasonable, sustainable, economic development strategies. The absence of environmental management may reduce the long-term availability of natural resources, create a variety of health problems, decrease the quality of life for urban dwellers, and negate many otherwise positive investment strategies (Dean and Lindfield 1997:37; Santosa 2000:179; UNDP 1996:20; USAID 1990:44,46; Wei 1994:53).

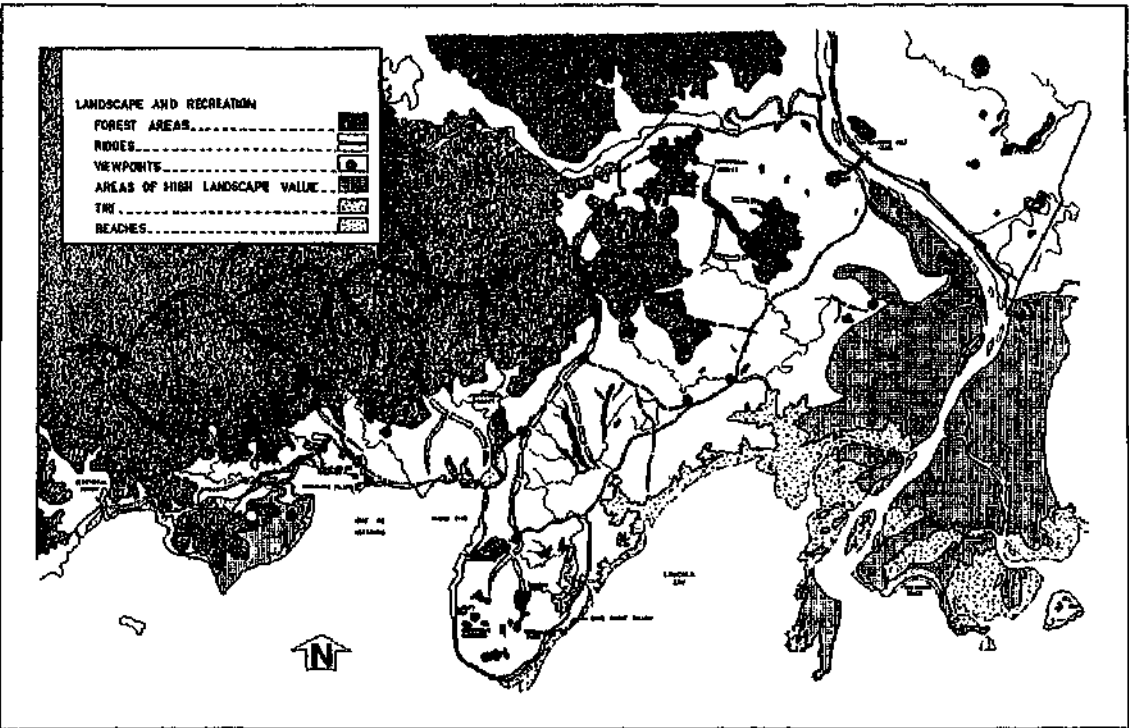
The urban areas in the Pacific are the location of some of the worst environmental degradation especially in the informal and squatter housing areas. Unless some areas are comprehensively managed in the short-term, standards of living and quality of life will continue to decline (UNDP 1996:19).

In Fiji, the Government should put more efforts into harmonising the relationship between urban policy and economic policy (taking environmental concerns into consideration), and generally improving urban facilities, planning and management. For example,

in view of the significant industrial base in and around Suva and the nature of the waste stream; the growth of peri-urban development; the difficulties of coordinating waste disposal between local jurisdictions; and the worsening impact on the environment and public health, the time has come to formulate a regional waste management strategy and establish a regional agency to administer it (Whitehead et al. 1994:33-34).

6.8.1 Environmental Protection

Different land areas are better suited for specific uses than are others. The basic objective of land use planning is to achieve the optimal balance between various competing interests. With proper management and planning, urban expansion can be geographically restricted and directed in a desirable and sustainable way, protecting fertile agricultural lands, fragile habitats and aesthetic areas.



Adapted from DTCP 1975: Illustration 6

Figure LII Natural Areas to be Conserved, Greater Suva-Nausori, 2000

In the Greater Suva-Nausori area, certain natural areas should be conserved rather than developed (Figure LII). For instance, the flat alluvium plains of the Rewa Delta include some of the best agricultural land in Fiji, and thus the reservation of these areas for agricultural use is of considerable importance. The high volcanic lands

of Suva's surrounding forest reserves and water catchment areas are covered by natural rainforest and their vegetation and soil must be preserved. In a similar vein, certain areas which have an ecological and landscape value, such as the Bay of Islands and parts of the Bilo Peninsula, should also be protected (DTCP 1975:34). So as to address these issues, specific environmental objectives of the *Greater Suva Urban Structure Plan* include:

to protect existing areas of high landscape value and landscape features of significance; to protect existing agricultural, forestry and mineral resources;...to encourage the best use of limited land by increasing productivity and prevention of erosion;...to ensure the conservation of fringing forest areas; to prevent development works polluting the coastal environment and to conserve marine areas;...to conserve areas of ecological or historic importance (DTCP 1975:17-18).

#### 6.8.2 Environmental Education

In addressing environmental problems, international agreements, government actions, civil organisations and local initiatives all have a role to play, and a range of strategically targeted preventative and curative actions are to be involved. To address the issues of environmental degradation within the Pacific Island region, more culturally acceptable and effective environmental education will need to be carried out in a more cooperative manner. This will, in turn, depend upon the availability and ability of skilled personnel in relevant departments to monitor and assess the environmental changes taking place, as well as clearly defined responsibility and management. It must further be recognised that

the role of the inhabitants as participants in the urban environment and in trying to deal with the increasing stresses is crucial to the future of the towns and cities of the Pacific....The human resources of Pacific countries, including in the urban areas, have an enormous capacity to work in a participatory manner to maintain the viability of their societies and their physical surroundings (Bryant-Tokalau 1994:82).

The application and implementation of an environmental management strategy depends heavily on both the political will of decision-makers and the involvement of affected communities. An especially critical component in the process of addressing environmental degradation will therefore be to increase environmental awareness among the general population. "Currently, environmental awareness and concern in all

communities in Fiji are at a very low level" (Thistlewaite and Votaw 1992:25). Environmental education has not yet been included as a subject in school curricula. Thus, there is much potential for inexpensive environmental management, based on a large measure of local cooperation and participation in both formal and informal environmental education. This can help to achieve healthier natural and built environments, establish a 'culture of cleanliness', and involve the private sector and civil society (especially local communities) in managing their living environment (Bryant-Tokalau 1993:162; Leitmann et al. 1992:139; McGranahan 1993:120; McGranahan and Songsore 1994:7; Rosario 1994:196; Santosa 2000:180). In fact, two primary foci of the DOE include the development of an environmental awareness programme, and the provision of technical advice on pollution control methods (WWF 1997). Similar activities are also occurring at the municipal level. For instance, the Lami Town Council is planning to conduct a door-to-door campaign against littering so as to educate the public on the disadvantages of littering, especially the environmental damage indiscriminate waste disposal behaviours can cause. Lami Mayor, Jasper Singh, has recently stated: "We will first educate the people but if we see that they are not bothered then we will not have any other option but to impose a fine under the Litter Decree Act" (*Advertiser Weekly* 00(11):3).

## **6.9 Suggestions For Future Research**

As throughout the Pacific Island region, there is a general lack of information on population and on local land markets in Fiji. Hence, there is a need for better (more accurate and current) demographic data, as well as data on land conversion, infrastructure deployment patterns, and land subdivision patterns to be collected. Detailed surveys of Fiji's urban and peri-urban communities, particularly informal settlements, need to be periodically carried out so as to collect information on residents' living conditions, livelihood survival strategies and local environmental conditions. Future research may also focus on residents' perceptions pertaining to the current living and environmental conditions in their respective local areas, as well as their specific aspirations, experienced constraints and suggestions for achieving improvements. In particular, data may be systematically compiled on subsistence activities; employment (both formal and informal) and unemployment; incomes, expenditures and savings; health; access to land, natural resources, housing, and basic services and infrastructure; environmental

degradation; activism and community participation; as well as on the changes in these variables over time. Furthermore, research should be carried out on the types of improvements that are requested and needed, and on the distribution of responsibility and propositions for their procurement.



## APPENDIX 1

### RESIDENTS' QUESTIONNAIRE

No. \_\_\_\_\_ Date \_\_\_\_\_ Interviewers \_\_\_\_\_  
Location \_\_\_\_\_ Respondents (ethnicity) \_\_\_\_\_

#### HOUSEHOLD QUESTIONS:

##### HOUSING

1. What is the tenure of this house (own, renting – private or HA/PB, employer's, informal, other)?
2. Who built it?  
When (what year)?  
How much did it cost to build?  
Where did the funds come from (ex: personal savings, loan, friends)?
3. How many bedrooms are there in this house?
4. Which material is the walls, floor and roof of your house/flat made of (wood, concrete/cement, corrugated tin, traditional bure)?
5. Are you very happy, happy, ok/neutral/indifferent, unhappy, very unhappy with your current housing conditions? Why?
6. Is this household nuclear (head, spouse, kids), or extended (nuclear + others by blood, marriage), or composite (extended + unrelated people)? I.E. who is living in this house?
7. Is the head of this household a male or female?
8. What is the educational attainment of the head of this household?
9. How many people usually live in this house?
10. How many children are living in this house?  
How many of them are in school?  
How many of them are not in school (why not)?
11. Which economic category do you think this household belongs to: low, middle, high?

12. How much of this household's fortnightly income is spent on rent (F\$\_\_\_\_\_), food (F\$\_\_\_\_\_), school fees (F\$\_\_\_\_\_), transportation (F\$\_\_\_\_\_), house bills – water, electricity, telephone (F\$\_\_\_\_\_), other things (F\$\_\_\_\_\_)?
13. How many regularly employed people are living in this house?  
What is their job?  
Where is their job?  
How many unemployed people are living in this household (can't find paid work)?
14. Are you very happy, happy, ok/neutral/indifferent, unhappy, very unhappy with the local employment opportunities currently available to your household? Why?
15. What is the tenure of this land (own freehold, crown lease, native NLTB lease, family's village land, informal arrangement with landowners, squatting on freehold land, squatting on crown land, squatting on native land)?
16. What is the size (acres or square metres) of this land plot?
17. How many years has this household been living on this land?
18. How did this household come to live on this land/ why are you living here (ex: more/better land here, more/better housing available here, inexpensive to live here, new job, better schools, close to relatives, close to Suva, modern/better living conditions here, like the community here, other)?
19. If this household moved from somewhere else, where (rural, peri-urban, urban migrants)?
20. Why did this household leave that place (ex: evicted, economic circumstances, family circumstances, want to live in own house, want to live on own land, bad housing conditions there, bad land there, too far from employment, too far from schools, too far from Suva, other)?
21. If this household moved from somewhere else, what was the tenure of housing there (own, renting – private or HA/PB, employer's, informal arrangement, live with relatives, other)?
22. What was the tenure of land there (own freehold, crown lease, native NLTB lease, family's village land, informal arrangement with landowners, squatting on freehold land, squatting on crown land, squatting on native land)?
23. Does your household plan to continue living in this community for a long time or do you want to move somewhere else (if yes, where and why)?
24. What are the main community-level local problems (ex: no jobs, crime, no transport, no shops, no electricity, deforestation, rubbish heaps, not enough land, bad land – swampy/hilly/dry/infertile, polluted creeks/streams/rivers, polluted marine water, flooding due to no or blocked drainage ditches, traffic congestion, air pollution from vehicles/industry/burning rubbish, crowded housing, other) faced by your household?

25. Does your family have adequate local access to land for gardening (Y N), to firewood to collect (Y N), to fresh fish/shellfish/plants from the rivers or sea to collect (Y N), to medicinal plants to collect (Y N), other useful plants (ex: for handicrafts) to collect (Y N) in your community?
26. Which illnesses do the children/adults of your household regularly suffer from (ex: respiratory problems, dengue fever, intestinal infections, high blood pressure, cardiovascular disease, diabetes, gout, skin sores, eye infections, ear infections, tuberculosis, malnutrition, diarrhoea, lice, other)?

#### WATER SUPPLY & SANITATION

27. Does this house have water pipes?  
If yes, are this house/flat's water pipes its own ( metered) or shared (communal standpipe)?  
If no, where does it get its water from (ex: rainwater rooftop, borehole/well, creek/river/stream, other)?
28. Are you very happy, happy, ok/neutral/indifferent, unhappy, very unhappy with your current water supply facilities? Why?
29. Have you noticed any of these problems due to your access to water supply (ex: too much time to collect water, water buckets heavy to carry, when main pipe breaks then no water for hours or days, creek/stream river or well dries up sometimes, not enough water for household's needs, risk of contamination, mosquitoes in water, other, don't know)?
30. Does this house have a flush toilet, water-seal toilet, pit latrine, or other?
31. Does this house have a sewer or septic tank?  
If no, what does it do with its waste water?
32. Are you very happy, happy, ok/neutral/indifferent, unhappy, very unhappy with your current sanitation facilities? Why?
33. Have you noticed any of these problems from your access to sanitation (ex: inconvenient when toilet is outside house, harder for kids, unhealthy, hard to dig new septic tank, seepage leak, risk of contamination, other, don't know)?
34. Does this house have its rubbish collected by the city/town authorities?  
If no, how does it dispose of its rubbish (ex: rubbish heap, bury in pit, burn, put in sea, put in river, compost, other)?
35. Are you very happy, happy, ok/neutral/indifferent, unhappy, very unhappy with your rubbish disposal options? Why?
36. Have you noticed any of these problems due to your waste disposal methods (ex: smells bad, dirty up the place, dangerous from broken bottles/sharp tins, too much

smoke, pollutes land/sea/river, mosquitoes can breed, attracts flies, attracts rats, hard to dig rubbish pit, other)?

37. Are there any drainage ditches in your community?

38. Are you very happy, happy, ok/neutral/indifferent, unhappy, very unhappy with your current drainage system? Why?

#### ELECTRICITY & COMMUNICATIONS

39. Does this house have its own electricity connection (FEA)?

If no, how does it get its energy supply (ex: none, own generator, shared generator, PWD, other)?

How does it cook (ex: gas, kerosene, wood stove, open wood fire, other)?

40. Are you very happy, happy, ok/neutral/indifferent, unhappy, very unhappy with your current electricity supply? Why?

#### TRANSPORTATION

41. Does this household have its own car, truck, motorcycle, bicycle or none?

42. How do the children in this household normally get to school (walk, bus, carrier, taxi, own car, neighbour's car, etc.)? How long (minutes) does the trip take them? How much does the fare cost (F\$)?

43. How do the employed of this household normally get to work (walk, bus, carrier, taxi, own car, neighbour's car, etc.)? How long (minutes) does the trip take them? How much does the fare cost (F\$)?

44. Are you very satisfied, satisfied, neutral/indifferent, dissatisfied, very dissatisfied with the transportation facilities currently available to your household? Why?

#### NEIGHBOURHOOD QUESTIONS:

45. Rate the living conditions in your community on a scale of 1(worst) 2 3 4 5(best). Do you think the living conditions in your community are better or worse than in the rest of the Greater Suva area? Why?

46. Do you think there is an adequate amount of physical infrastructure – water supply (Y N), sewerage (Y N), electricity (Y N), rubbish collection (Y N), drainage ditches (Y N), paved roads (Y N), footpaths (Y N), street lights (Y N) in your community?

47. Who should supply additional physical infrastructure (house owners, landowners, local government, central government, NGOs, other)?
48. Would your household be willing to contribute money (Y N) and/or labour (Y N) to help supply these things?
49. Do you think there is an adequate amount of social infrastructure – transport service (Y N), health service (Y N), schools (Y N), churches/temples/mosques (Y N), local shops (Y N), markets (Y N), recreational areas (Y N), security (Y N), employment opportunities (Y N) in your community?
50. Who should supply additional social infrastructure (house owners, landowners, local government, central government, NGO, other)?
51. Would your household be willing to contribute money (Y N) and/or labour (Y N) to help supply these things?
52. Have any agencies (central government, local town council, NGOs, CBOs, churches, donors, other) made any effort to improve conditions in your community?  
If yes, who?  
What did they do and when?
53. Have you ever asked any organisations to help improve the living conditions in your community?  
If yes, how did they respond?
54. Is there a local settlement association that actively helps to improve the living conditions in your community?  
If no, do you think that a settlement association could help to improve the living conditions in your community?
55. Do the members of your household belong to any community groups (ex: men's, women's, youth, church, sport, financial club, other) active in your community?
56. Do the members of your household regularly participate in any activities sponsored by the community groups?  
How many times a year?  
Do any of the activities aim to improve the living conditions in your community?  
If yes, give example of which activities?
57. What changes have you seen in your community during the past 10+ years?
58. Do you think that in the future the environmental conditions in your community will be better, worse or the same?  
Do you think that in the future the living conditions in your community will be better, worse or the same?
59. What are some suggestions about things that you would like changed or improved in your community that you have?

Table 1A. Population Living in Informal Settlements in Third World Cities, 1980s

City	Proportion of Population (%)
Addis Ababa, Ethiopia	85
Bombay, India	57
Cairo, Egypt	84
Calcutta, India	40
Dar es Salaam, Tanzania	60
Delhi, India	50
Lagos, Nigeria	58
Manila, Philippines	40
Mexico City, Mexico	40
Nairobi, Kenya	34
Rio de Janeiro, Brazil	34
Sao Paulo, Brazil	32

Source: Adapted from Oberai 1992:64.

Table 1B. Estimated GDP of Urban Areas as a Percentage of National GDP, 1985

Country	Estimated Urban GDP (%)
Bangladesh	32
China	48
Fiji	34
Indonesia	37
Republic of Korea	79
Malaysia	37
Myanmar	54
Philippines	53
Pakistan	47
Sri Lanka	42
Thailand	41

Source: Adapted from ESCAP 1990.

## Appendix 2

Table 2A. Year Cities/Towns were Incorporated and Designated Urban Areas in Fiji

Urban Area	Year Incorporated	Urban Area Since
Incorporated Cities/Towns:		
Suva	1881	1966
Lami	1977	1986
Nasinu	2000	2006
Nausori	1931	1966
Lautoka	1929	1966
Nadi	1946	1966
Ba	1939	1966
Sigatoka	1959	1966
Labasa	1939	1966
Savusavu	1969	1966
Levuka	1878	1966
Tavua	1992	1966
Unincorporated Towns:		
Vatukoula	n.a.	1966
Rakiraki	n.a.	1966
Navua	n.a.	1966
Korovou	n.a.	1966
Pacific Harbour	n.a.	1996
Nabouwalu	n.a.	1996
Seaqqa	n.a.	1996

Source: Adapted from Fiji Bureau of Statistics 1997:136.

Table 2B. Urbanisation and Urban Growth Rate in Fiji, 1966-1996

Year	Urban Population	Urbanisation Rate	Intercensal Growth	Annual Growth Rate
1966	159,259	2.8 %	n.a.	n.a.
1976	218,495	3.8 %	37.2 %	3.2 %
1986	277,025	1.5 %	26.8 %	2.4 %
1996	359,495		29.8 %	2.6%

Source: Adapted from Fiji Bureau of Statistics 1989:107; Fiji Bureau of Statistics 1998a:13.

Table 2C. Population Size and Growth in Fiji by Division and Urban-Rural Sector, 1986 -1996

Division	Population 1986	Population 1996	Change No. 1986-1996	Intercensal Growth (%)	Annual Growth Rate (%)
Western Division:					
Total	283,349	297,184	13,835	4.9	0.5
Urban	79,644	111,070	31,436	39.5	3.3
Rural	203,705	186,114	-17,591	-8.6	-0.9
Central Division:					
Total	260,110	297,607	37,497	14.4	1.3
Urban	175,077	214,628	39,551	22.6	2.0
Rural	85,033	82,979	-2,054	-2.4	-0.2
Northern Division:					
Total	129,154	139,516	10,362	8.0	0.8
Urban	19,409	30,051	10,642	54.8	4.4
Rural	109,745	109,465	-280	-0.3	0.0
Eastern Division:					
Total	42,762	40,770	-1,992	-4.7	-0.5
Urban	2,895	3,746	851	29.4	2.6
Rural	39,867	37,024	-2,843	-7.1	-0.7

Source: Adapted from Fiji Bureau of Statistics 1998a:13.

Table 2D. Urban and Rural Sector Population of Fiji's Urban Centres by Division, 1996

Division	Urban Centre Population	Urban Sector Population	Rural Sector Population
Western Division:	111,070	68,382	42,688
Lautoka	43,274	28,146	15,128
Nadi	30,884	19,353	11,531
Ba	14,716	8,305	6,411
Sigatoka	7,862	3,845	4,017
Other Centres	14,334	8,733	5,601
Central Division:	214,628	145,177	69,451
Suva	167,975	113,475	54,500
Lami	18,928	13,178	5,750
Nausori	21,617	14,260	7,357
Other Centres	6,108	4,264	1,844
Northern Division:	30,051	14,000	16,051
Labasa	24,095	10,798	13,297
Savusavu	4,970	2,681	2,289
Other Centres	986	521	465
Eastern Division:	3,746	2,526	1,220
Levuka	3,746	2,526	1,220
Total Fiji	359,495	230,085	129,410

Source: Adapted from Fiji Bureau of Statistics 1998b:247.



Table 2E. Various Poverty Line Estimates in Fiji, 1991

	% of Households	No. of Households	No. of People
Relative Poverty	33	44,800	246,600
Basic Costs Poverty	26	34,630	190,500
Housing Poverty	23	32,200	174,000
Basic Food Costs Poverty	12	15,600	85,900
Low-Income Lifestyle Poverty <sup>a</sup>	13	17,000	93,400
Minimum Survival Poverty <sup>a</sup>	6	8,150	44,820

<sup>a</sup> These estimates refer only to absolute minimum cash incomes, with the assumptions that incomes are supplemented by non-cash goods and that such households had other forms of assistance as well.

Source: Adapted from UNDP 1997:38.

Table 2F. Percentage Distribution of Population Aged 15 Years and Over in Fiji by Economic Activity, and Gender, 1966-1986

Economic Activity	1966			1976			1986		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Economically Active:	49.5	89.9	7.5	50.9	84.4	17.1	54.6	85.4	23.3
Working	47.5	85.9	7.5	47.5	79.8	14.9	50.5	80.8	19.7
Unemployed	2.0	4.0	0.0	3.4	4.6	2.2	4.1	4.6	3.6
Economically Inactive:	50.5	10.1	92.5	48.5	15.0	82.4	44.7	13.9	75.9
Unpaid Home Duties	41.9	0.0	85.5	34.2	0.3	68.4	30.4	0.4	60.7
Students	4.7	5.5	3.9	8.8	8.9	8.7	6.8	7.1	6.5
Others	3.9	4.6	3.1	5.5	5.8	5.3	7.6	6.4	8.7
Not Stated	0.0	0.0	0.0	0.6	0.6	0.5	0.7	0.7	0.8
Total	100	100	100	100	100	100	100	100	100
	(253,988)	(129,565)	(124,423)	(346,091)	(174,036)	(172,055)	(441,912)	(222,316)	(219,596)

Note: Figures in parentheses denote total numbers.

Source: Adapted from Fiji Bureau of Statistics 1989:122.

Table 2G. Economically Active Population by Age and Gender in Fiji, 1996

Age (years)	Gender	Total Economically Active Population	Total Subsistence Population	Total Money Work Population	Total Unemployed Population
15-19	M	16,503	2,984	11,071	2,448
	F	7,935	2,967	3,114	1,854
	Total	24,438	5,951	14,185	4,302
20-24	M	27,668	3,254	21,882	2,532
	F	14,745	4,139	8,672	1,934
	Total	42,413	7,393	30,554	4,466
25-29	M	28,629	2,794	24,454	1,381
	F	13,833	4,751	8,082	1,000
	Total	42,462	7,545	32,536	2,381
30-34	M	28,987	2,536	25,526	925
	F	13,824	5,046	8,013	765
	Total	42,811	7,582	33,539	1,690
35-39	M	27,057	2,162	24,258	637
	F	13,011	4,488	7,968	555
	Total	40,068	6,650	32,226	1,192
40-44	M	21,295	1,675	19,154	466
	F	10,561	3,658	6,488	415
	Total	31,856	5,333	25,642	881
45-49	M	17,250	1,582	15,316	352
	F	8,097	3,261	4,504	332
	Total	25,347	4,843	19,820	684
50-54	M	12,810	1,573	10,949	288
	F	5,851	2,742	2,875	234
	Total	18,661	4,315	13,824	522
55-59	M	8,660	1,777	6,685	198
	F	4,203	2,368	1,634	201
	Total	12,863	4,145	8,319	399
60-64	M	5,372	1,534	3,684	154
	F	2,661	1,650	870	141
	Total	8,033	3,184	4,554	295
65+	M	5,821	2,280	3,320	221
	F	2,997	1,970	795	232
	Total	8,818	4,250	4,115	453
Total	M	200,052	24,151	166,299	9,602
	F	97,718	37,040	53,015	7,663
	Total	297,770	61,191	219,314	17,265

Source: Adapted from Fiji Bureau of Statistics 1998b:172,176,180.

Table 2H. Population and Employment Trends in Fiji, 1966-1996

	1966	1976	1982	1985	1996
Labour force (thousands)	125.8	175.8	220.4	240.6	297.8
Employed population (thousands)	120.6	164.0	202.8	216.1	280.5
Unemployed population (thousands)	5.2	11.8	17.6	24.5	17.3
Unemployment rate (%)	4.1	6.7	8.0	10.2	5.8

Source: Adapted from Fiji Bureau of Statistics 1998b:172; Fiji Central Planning Office 1985:3.

Table 2I. Percentage of Population aged 15 Years and Over Who Are Economically Active in Fiji by Ethnicity, Gender, Urban-Rural Residence and Working Status, 1976-1986

	1976				1986			
	Urban Male	Urban Female	Rural Male	Rural Female	Urban Male	Urban Female	Rural Male	Rural Female
Total:								
Total	81.7	24.0	85.6	12.6	81.6	30.6	87.9	18.3
Working	73.5	20.5	83.2	11.3	73.5	25.4	85.5	15.8
Unemployed	8.2	3.5	2.4	1.3	8.1	5.2	2.4	2.5
Fijians:								
Total	80.6	30.8	87.6	16.3	79.6	35.7	88.4	23.5
Working	70.6	26.1	85.5	14.9	68.5	28.9	86.7	21.3
Unemployed	10.0	4.7	2.1	1.4	11.1	6.8	1.7	2.2
Indians:								
Total	82.8	16.7	83.8	8.0	84.1	25.3	87.7	12.4
Working	75.5	14.1	81.1	6.6	77.7	21.1	84.6	9.6
Unemployed	7.3	2.6	2.7	1.4	6.4	4.1	3.1	2.8

Source: Adapted from Fiji Bureau of Statistics 1989:128.

Table 2J. Characteristics of Unemployment in Fiji by Age, Gender, Ethnicity and Locality, 1976-1982

Characteristic	Unemployed		% of Total Unemployed		% of Urban Unemployed	
	1976	1982	1976	1982	1976	1982
Age:						
15-19 years	5,598	5,370	47	40	44	40
20-24 years	3,084	3,950	26	30	26	31
25+ years	3,138	3,950	27	30	30	29
Gender:						
Male	8,052	8,300	68	63	68	63
Female	3,768	4,970	32	37	32	37
Ethnicity:						
Fijian	5,394	4,530	46	34	--	--
Indian	5,619	8,180	48	62	--	--
Others	807	560	7	4	--	--
Location:						
Suva-Nausori	5,666	5,580	48	42	64	63
Other Urban	2,193	3,220	19	24	36	37
Rural	3,961	4,470	34	34	n.a.	n.a.
Total Unemployed	11,820	13,270	100	100	100	100

Source: Adapted from Fiji Central Planning Office 1985:30.

Table 2K. Characteristics of Urban Unemployment in Fiji by Urban Centre, 1976

Urban Centre	No. Unemployed			Unemployment Rate (%)	% of Urban Unemployed	% of Total Unemployed
	Total	Male	Female			
Suva	5,036	3,536	1,500	12.5	64.1	42.6
Nausori	630	418	212	15.0	8.0	5.3
Lautoka	784	530	254	8.7	10.0	6.6
Nadi	455	303	152	10.4	5.8	3.8
Ba	137	122	15	5.1	1.7	1.2
Sigatoka	58	32	26	4.6	0.7	0.5
Labasa	212	175	37	5.8	2.7	1.8
Savusavu	32	32	0	4.9	0.4	0.3
Levuka	147	81	66	15.2	1.9	1.2
Vatukoula	230	149	81	11.8	2.9	1.9
Rakiraki	43	31	12	4.0	0.5	0.4
Navua	68	63	5	9.2	0.9	0.6
Tavua	25	21	4	3.8	0.3	0.2
Korovou	2	0	2	2.2	0.1	0.1
Total Urban	7,859	5,489	2,370	11.0	100.0	66.4%

Source: Adapted from Fiji Central Planning Office 1980:315.

Table 2L. Proportion of Total Urban Population in Fiji by Province, 1966-1996

Province	Proportion of Total Urban Population (%)			
	1966	1976	1986	1996
Western Division:	33.2	30.7	28.8	30.9
Ba	30.0	27.3	25.8	27.4
Nadroga/Navosa	1.5	1.7	1.7	2.2
Ra	1.7	1.7	1.2	1.3
Central Division:	57.6	61.1	63.2	59.7
Naitasiri	13.2	20.2	27.1	28.6
Namosi	0.0	0.0	0.0	0.0
Rewa	39.1	35.9	31.7	25.4
Serua	1.0	1.2	1.0	1.6
Tailevu	4.3	3.9	3.3	4.0
Northern Division:	7.3	7.0	7.0	8.4
Bua	0.0	0.0	0.0	0.2
Cakaudrove	1.2	1.1	1.0	1.4
Macuata	6.1	5.9	6.0	6.8
Eastern Division:	1.9	1.3	1.0	1.0
Kadavu	0.0	0.0	0.0	0.0
Lau	0.0	0.0	0.0	0.0
Lomaiviti	1.9	1.3	1.0	1.0
Rotuma	0.0	0.0	0.0	0.0
Total Fiji	100.0	100.0	100.0	100.0

Source: Adapted from Fiji Bureau of Statistics 1998a:34.

Table 2M. Proportion of Provinces' Population that is Urban, 1966-1996

Province	% of Population that is Urban			
	1966	1976	1986	1996
Western Division:	27.0	28.1	28.1	37.4
Ba	35.2	35.7	36.2	46.4
Nadroga/Navosa	6.2	7.9	8.7	14.5
Ra	21.1	14.7	10.7	15.6
Central Division:	59.5	64.5	67.3	72.1
Naitasiri	53.4	67.7	74.9	81.3
Namosi	0.0	0.0	0.0	0.0
Rewa	89.2	89.8	90.2	90.1
Serua	19.5	22.8	20.8	37.4
Tailevu	19.8	21.1	20.9	29.8
Northern Division:	13.7	14.8	15.0	21.5
Bua	0.0	0.0	0.0	4.0
Cakaudrove	6.2	6.7	7.1	11.2
Macuata	21.9	22.6	22.1	30.5
Eastern Division:	7.3	7.0	6.8	9.2
Kadavu	0.0	0.0	0.0	0.0
Lau	0.0	0.0	0.0	0.0
Lomaiviti	22.6	20.4	18.0	23.1
Rotuma	0.0	0.0	0.0	0.0
Total Fiji	33.4	37.2	38.7	46.4

Source: Adapted from Fiji Bureau of Statistics 1998a:34.

Table 2N. Urban and Peri-Urban Population Changes in Fiji, 1966-1976

Urban Centre	Urban					Peri-Urban					Total				
	No.		Change			No.		Change			No.		Change		
	1966	1976	No.	No. (%)	Rate (%)	1966	1976	No.	No. (%)	Rate (%)	1966	1976	No.	No. (%)	Rate (%)
Cities:															
Suva	54,157	63,886	9,729	18.0	1.7	26,112	54,064	27,952	107.1	7.3	80,269	117,827	37,558		
Lautoka	11,287	22,658	11,371	100.7	7.0	9,934	6,385	-3,549	-35.7	-4.4	21,221	28,847	7,622		
Towns (incorporated):															
Nausori	1,944	5,737	3,793	195.1	10.8	7,675	6,212	-1,463	-19.1	-2.1	9,619	11,949	2,330	24.2	2.2
Nadi	2,542	7,757	5,215	205.2	11.2	8,809	5,923	-2,886	-32.8	-4.0	11,351	13,680	2,329	20.5	1.93
Ba	3,849	5,903	2,054	53.4	4.3	4,460	3,256	-1,204	-27.0	-3.15	8,309	9,159	850	10.2	1.0
Sigatoka	1,059	1,813	754	71.2	5.4	1,280	1,816	536	41.9	3.5	2,339	3,629	1,290	55.2	4.4
Labasa	2,182	4,346	2,164	99.2	6.9	7,534	8,605	1,071	14.2	1.3	9,716	12,951	3,235	33.3	2.9
Savusavu															
Levuka	1,685	1,419	-266	-15.8	-1.7	1,315	1,366	51	3.9	0.4	3,000	2,785	-215	-7.2	-0.7
Towns (unincorporated):															
Vanukoula	-	-	-	-	-	-	-	-	-	-	4,993	6,425	1,432	28.7	2.5
Rakiraki	-	-	-	-	-	-	-	-	-	-	2,708	3,755	1,047	38.7	3.3
Navua	-	-	-	-	-	-	-	-	-	-	1,595	2,568	973	60.8	4.8
Tavua	-	-	-	-	-	-	-	-	-	-	1,949	2,144	195	10.0	9.5
Korovou	-	-	-	-	-	-	-	-	-	-	329	290	-39	-12.2	-1.3
Total	78,705	113,519	34,814	44.2	3.7	80,554	103,368	22,814	28.3	2.5	159,259				

Source: Adapted from Bakker and Walsh 1976:19; Fiji Central Planning Office 1980:308.



Table 20. Urban and Peri-Urban Population Changes in Fiji, 1976-1986

Urban Centre	Urban					Peri-Urban					Total				
	No.	Change			Rate (%)	No.	Change			Rate (%)	No.	Change			Rate (%)
	1976	1986	No.	No. (%)		1976	1986	No.	No. (%)		1976	1986	No.	No. (%)	
Cities:															
Suva	63,628	69,665	6,037	9.5	0.9	54,199	71,608	17,409	32.1	2.8	117,827	141,273	23,446	19.9	1.8
Lautoka	22,672	28,728	6,056	26.7	2.4	6,175	10,329	4,154	67.1	5.1	28,874	39,057	10,210	35.4	3.0
Towns (incorporated):															
Nausori	5,262	5,242	-20	-0.4	-0.0	7,559	8,740	1,181	15.6	1.5	12,821	13,982	1,161	9.1	0.9
Lami <sup>a</sup>	n.a.	8,597	n.a.	n.a.	n.a.	n.a.	8,110	n.a.	n.a.	n.a.	n.a.	16,707	n.a.	n.a.	n.a.
Nadi	6,938	7,709	771	11.1	1.0	6,057	7,511	1,454	24.0	2.1	12,995	15,220	2,225	17.1	1.6
Ba	5,917	6,515	598	10.1	1.0	3,256	3,745	489	15.0	1.4	9,173	10,260	1,087	11.8	1.1
Sigatoka	1,816	2,097	281	15.5	1.4	1,819	2,633	814	44.7	3.7	3,635	4,730	1,095	30.1	2.6
Labasa	4,328	4,917	589	13.6	1.3	8,628	11,620	2,992	34.7	3.0	12,956	16,537	3,581	27.7	2.4
Savusavu	1,754	2,179	425	24.2	2.2	541	693	152	28.1	2.5	2,295	2,872	577	25.1	2.2
Levuka	1,397	1,106	-291	-20.8	-2.3	1,367	1,789	422	30.9	2.7	2,764	2,895	131	4.7	0.5
Towns (unincorporated):															
Vatukoula	6,425	4,789	-1,636	-25.5	-2.9	-	-	-	-	-	6,425	4,789	-1,636	-25.5	-2.9
Rakiraki	3,755	3,361	-394	-10.5	-1.1	-	-	-	-	-	3,755	3,361	-394	-10.5	-1.1
Navua	2,568	2,775	207	8.1	0.8	-	-	-	-	-	2,568	2,775	207	8.1	0.8
Tavua	2,144	2,227	83	3.9	0.4	-	-	-	-	-	2,144	2,227	83	3.9	0.4
Korovou	290	340	50	17.2	1.6	-	-	-	-	-	290	340	50	17.2	1.6
Total	128,894	150,247	21,353	16.6	1.5	89,601	126,778	37,177	41.5	3.5	218,495	277,025	58,530	26.8	2.4

<sup>a</sup> Lami has been an urban area for census purposes only since 1986 and was included with Suva prior to this.

Source: Adapted from Fiji Bureau of Statistics 1989:108.

Table 2P. Urban Population Changes in Fiji by Urban Centre, 1966-1996

Urban Area	No. Urban Population				Change in No.		Growth Rate (%)	
	1966	1976	1986	1996	1966-76	1986-96	1966-76	1986-96
<b>Cities:</b>								
Suva	80,269	117,827	141,273	167,975	37,558	26,702	3.9	1.7
Lautoka	21,221	28,847	39,057	43,274	7,626	4,217	3.1	1.0
<b>Incorporated Towns:</b>								
Lami <sup>a</sup>	n.a.	n.a.	16,707	18,928	n.a.	2,221	n.a.	1.3
Nausori	9,619	12,821	13,982	21,617	3,202	7,635	2.9	4.4
Nadi	11,351	12,995	15,220	30,884	1,644	15,664	1.4	7.1
Ba	8,301	9,173	10,260	14,716	872	4,456	1.0	3.6
Sigatoka	2,339	3,635	4,730	7,862	1,296	3,132	4.5	5.1
Labasa	9,716	12,956	16,537	24,095	3,240	7,558	2.9	3.8
Savusavu	1,861	2,295	2,872	4,970	434	2,098	2.1	5.5
Levuka	3,000	2,764	2,895	3,746	-236	851	-0.8	2.6
Tavua	1,949	2,144	2,227	2,419	195	192	1.0	0.8
<b>Unincorporated Towns:</b>								
Vatukoula	4,993	6,425	4,789	7,079	1,432	2,290	2.6	3.9
Rakiraki	2,708	3,755	3,361	4,836	1,047	1,475	3.3	3.6
Navua	1,595	2,568	2,775	4,183	973	1,408	4.9	4.1
Korovou	329	290	340	318	-39	-22	-1.3	-0.7
Pacific Harbour <sup>b</sup>	n.a.	n.a.	n.a.	1,607	n.a.	n.a.	n.a.	n.a.
Nabouwalu <sup>b</sup>	n.a.	n.a.	n.a.	592	n.a.	n.a.	n.a.	n.a.
Seaqqa <sup>b</sup>	n.a.	n.a.	n.a.	394	n.a.	n.a.	n.a.	n.a.

<sup>a</sup> Lami has been an urban area for census purposes only since 1986 and was included with Suva prior to this.<sup>b</sup> Pacific Harbour, Nabouwalu and Seaqqa have been urban areas for census purposes only since 1996.

Source: Adapted from Fiji Bureau of Statistics 1997:136; Fiji Central Planning Office 1980:308.

Table 2Q. Urban Growth in the Pacific Islands, 1960s-1990s

Country/Territory	Early 1990s Total Population Urbanised (%)	Mid-1970s/ Early 1980s Total Population Urbanised (%)	Mid-1960s Total Population Urbanised (%)	Early 1990s Annual Urban Growth Rate (%)	Mid-1970s/ Early 1980s Annual Urban Growth Rate (%)	Mid-1960s Annual Urban Growth Rate (%)
American Samoa	48	34	n.a.	8.2	4.5	n.a.
Cook Islands	27	22	n.a.	2.4	1.2	n.a.
Federated States of Micronesia	26	23	n.a.	2.6	n.a.	n.a.
Fiji	43	38	33	2.6	0.6	5.1
French Polynesia	59	51	n.a.	2.9	0.3	n.a.
Guam	91	38	n.a.	2.1	n.a.	n.a.
Kiribati	37	29	20	3.2	0.8	6.7
Marshall Islands	67	47	n.a.	8.2	4.0	n.a.
Nauru	100	100	n.a.	1.4	n.a.	n.a.
New Caledonia	80	53	n.a.	4.1	0.1	n.a.
Niue	21	n.a.	n.a.	-0.7	n.a.	n.a.
Northern Mariana Islands	94	79	n.a.	3.2	-0.1	n.a.
Palau	68	62	n.a.	3.8	0.5	n.a.
Papua New Guinea	15	13	5	4.4	3.8	12.5
Samoa	21	20	19	1.2	0.1	3.6
Solomon Islands	20	8	9	5.3	2.8	6.2
Tonga	30	26	21	2.5	2.0	6.9
Tuvalu	43	28	n.a.	9.1	3.1	n.a.
Vanuatu	22	12	11	7.3	4.5	7.3

n.a. Data not available.

Source: Adapted from Bryant-Tokalau 1994:81; Bryant-Tokalau 1995:112; Chandra 1996:27; Connell 1984:II-A.4; Connell and Lea 1998:27; King 1984:207; Storey 1998a:32; Storey 1999:156; Thistlethwaite and Votaw 1992:268.

Table 2R. Populations and Population Densities in Pacific Urban Centres, Early 1990s

Urban Centre	Population	Population Density (km <sup>2</sup> )
Cook Islands (Rarotonga)	9,800	154
Fiji (Suva)	141,273	3,418
Kiribati (South Tarawa) <sup>a</sup>	30,000	1,610
Palau (Koror)	10,500	571
Papua New Guinea (National Capital District)	194,295	817
Marshall Islands (Ebeye)	8,324	22,956
(Majuro)	15,000	2,025
Samoa (Apia)	40,000	548
Solomon Islands (Honiara)	35,000	1,394
Tonga (Nuku'alofa)	30,000	3,308
Tuvalu (Funafuti)	3,000	1,071
Vanuatu (Port Vila)	19,311	762

<sup>a</sup> The SPREP report to UNCED claimed a population density figure for urban South Tarawa of 4,167 persons per km<sup>2</sup>.

Source: Adapted from Bryant-Tokalau 1994:81.

Table 2S. Expiration of ALTA Leases in Fiji by Land Area

Expiration Year	Area (ha)	Proportion of Total Area (%)
1997 to 1999	5,139	4.2
2000 to 2005	34,251	27.8
2006 to 2010	23,079	18.7
2011 to 2026	60,929	49.3

Source: Adapted from *Fiji Times*, 9 September 2000:4.

Table 2T. Wage Earners' and Salaried Workers' Income Per Week in Suva and Fiji, 1973

	Fiji		Greater Suva	
	No.	%	No.	%
Under F\$15	17,160	22.3	5,464	15.6
F\$15 to F\$24	32,328	41.9	14,432	40.9
F\$25 to F\$49	20,644	26.8	10,728	30.4
F\$50 to F\$99	4,856	6.3	3,052	8.7
F\$100 and Over	1,988	2.6	1,544	4.4
Not Stated	120	0.1	16	0.1
Total	77,096	100.0	35,236	100.0

Source: Adapted from DTCP 1975:70.

Table 2U. Own Account Workers' Income Per Week in Suva and Fiji, 1973

	Fiji		Greater Suva	
	No.	%	No.	%
Under F\$15	17,608	38.3	1,848	33.2
F\$15 to F\$24	6,660	14.0	1,134	20.4
F\$25 to F\$49	9,660	21.0	1,354	24.3
F\$50 to F\$99	3,535	7.7	568	10.2
F\$100 and Over	1,376	3.0	544	9.8
Paid in Kind	7,076	15.4	116	2.1
Total	45,916	100.0	5,568	100.0

Source: Adapted from DTCP 1975:71.

Table 2V. Primacy of Urban Growth in the Pacific, 1990s

Country/Territory	Main Urban Centre	Proportion of Urbanised Population (%)
American Samoa	Pago Pago	88
Cook Islands	Avarua	100
Fiji	Suva	51
French Polynesia	Papeete	97
Federated States of Micronesia	Kolonia	30
Guam	Agana	100
Kiribati	South Tarawa	100
Marshall Islands	Majuro	61
Nauru	Nauru	100
New Caledonia	Noumea	69
Niue	Alofi	100
Northern Mariana Islands	Saipan	92
Palau	Koror	100
Papua New Guinea	Port Moresby	31
Samoa	Apia	100
Solomon Islands	Honiara	82
Tonga	Nuku'alofa	84
Tuvalu	Funafuti	100
Vanuatu	Port Vila	74

Source: Adapted from Bryant 1993a:16.

Table 2W. Estimated Retail Distribution Activities in Greater Suva, 1970

Type of Sales	No. Establishments	No. Employees	% National Sales in Area
Food, Drink and Tobacco	160	618	45
Household Goods	12	63	74
Pharmacists	10	57	63
Building Materials	7	124	71
Tourists Goods	53	288	61
Textiles	92	418	58
Cars	42	647	73
Office and Industrial Equipment	3	71	89
Miscellaneous	18	2,040	81
Total	395	4,326	66

Source: Adapted from DTCP 1975:56.

Table 2X. Service and Wholesale Distribution Activities in Greater Suva, 1970

Type of Service	No. Establishments	No. Employees	% National Sales in Area
Personal Services	35	140	67
Community and Business Services	19	257	81
Hotels and Restaurants	62	1,275	48
Other Services	85	910	84
Wholesale Distribution	n.a.	74	68
Total	201	2,656	65

Source: Adapted from DTCP 1975:57.

Table 2Y. Estimated Provincial GDP, 1979

Province	GDP Index Per Capita
Western Division:	1.01
Ba	1.07
Nadroga/Navosa	0.91
Ra	0.80
Central Division:	1.16
Naitasiri	1.05
Namosi	0.50
Rewa	1.45
Serua	0.95
Tailevu	0.83
Northern Division:	0.77
Bua	0.48
Cakaudrove	0.67
Macuata	0.90
Eastern Division:	0.64
Kadavu	0.58
Lau	0.54
Lomaiviti	0.74
Rotuma	0.86
Total	1.00

Source: Adapted from Fiji Central Planning Office 1980:316.

Table 2Z. Employment Structure in Greater Suva and Fiji, 1973

Employment Sector	Employment Fiji	Employment Greater Suva	Suva's % of Fiji Employment
Agriculture, Fishing and Forestry	56,668	3,480	6
Mining and Quarrying	1,772	108	6
Manufacturing	9,844	3,632	37
Electricity, Gas and Water	924	372	40
Construction	15,072	7,192	48
Transport and Communication	9,236	5,356	58
Social, Personal and Business Service	24,196	12,888	53
Commerce	17,660	9,180	52

Source: Adapted from DTCP 1975:28.

Table 2AA. Employment Structure in Suva and Fiji, 1984

Employment Sector	Employment Fiji		Employment Suva	
	No.	%	No.	%
Agriculture, Fishing and Forestry	1,963	2.6	302	0.9
Mining and Quarrying	1,239	1.6	96	0.3
Manufacturing	13,705	18.3	5,306	15.7
Electricity, Gas and Water	2,003	2.7	446	1.3
Construction	5,720	7.7	2,671	7.9
Transport, Storage and Communication	7,370	9.9	3,755	11.2
Social, Personal and Community Service	24,105	32.1	12,255	36.4
Wholesale, Retail, Restaurants and Hotels	14,166	19.0	5,938	17.6
Finance, Insurance, Real Estate and Business	4,546	6.1	2,932	8.7

Source: Adapted from DTCP 1986:45.

Table 2BB. Suva's Share of Urban Employment, 1976

Urban Employment	Share of All Urban Areas (%)
Economically Active and Inactive:	
Working population	55.2
Actively engaged	56.2
Unemployed	64.1
Not economically active	53.2
Industry:	
Agriculture, forestry, fisheries	30.8
Community, social, personal services	63.7
Construction	55.1
Electricity, gas, water	52.7
Finance, insurance, real estate	67.9
Manufacturing	48.4
Mining, quarrying	5.9
Transport, communication, storage	60.4
Wholesale, retail, hotels, restaurants	57.3
Occupations:	
Administrative, managerial	68.5
Agricultural	31.3
Clerical, related	65.8
Production, labourers	52.3
Professional, technical, related	59.7
Sales	53.3
Service	61.2
Seeking employment	63.5

Source: Adapted from Walsh 1982:36.



Table 2CC. Percentage Distribution of Urban Population by Major Urban Centres in Fiji, 1946-1996

Year	Suva	Lami <sup>a</sup>	Nausori	Lautoka	Nadi	Ba	Sigatoka	Labasa	Savusavu <sup>b</sup>	Levuka	Vanukoula <sup>b</sup>	Rakiraki <sup>b</sup>	Navua <sup>b</sup>	Tavua <sup>b</sup>
1946	68.2	n.a.	6.2	6.0	3.1	7.1	2.4	3.5	n.a.	4.9	n.a.	n.a.	n.a.	n.a.
1956	69.4	n.a.	3.1	12.5	3.8	5.1	2.3	5.0	n.a.	2.5	n.a.	n.a.	n.a.	n.a.
1966	50.4	n.a.	6.0	13.3	8.6	5.2	1.5	6.1	1.2	1.9	3.1	1.7	1.0	1.2
1976	53.9	n.a.	5.9	13.2	6.0	4.2	1.7	5.9	1.1	1.3	2.9	1.7	1.2	1.0
1986	51.0	6.0	5.1	14.1	5.5	3.7	1.7	6.0	1.0	1.1	1.7	1.2	1.0	0.8
1996	46.7	5.3	6.0	12.0	8.6	4.1	2.2	6.7	1.4	1.0	2.0	1.4	1.2	0.7

<sup>a</sup> Lami has been an urban area for census purposes only since 1986 and was included with Suva prior to this.

<sup>b</sup> Savusavu, Vanukoula, Rakiraki, Navua and Tavua have been urban areas for census purposes only since 1966.

Source: Adapted from Bakker and Walsh 1976:19; Fiji Bureau of Statistics 1977:75; Fiji Bureau of Statistics 1988a:65; Fiji Bureau of Statistics 1997:20; Fiji Bureau of Statistics 1998b:247; Whitehead et al. 1994:35; Whitelaw 1966:20.

Table 2DD. Percentage Distribution of Incorporated Urban Population by Urban Centres in Fiji, 1986-1996

Year	Suva	Lami	Nausori	Lautoka	Nadi	Ba	Sigatoka	Labasa	Savusavu	Levuka	Tavua <sup>a</sup>
1986	50.9	6.3	3.8	21.0	5.6	4.8	1.5	3.6	1.6	0.8	n.a.
1996	48.9	6.7	3.6	22.8	5.8	4.0	1.0	4.1	1.7	0.7	0.8

<sup>a</sup> Tavua has been an incorporated town only since 1992.

Source: Adapted from Fiji Bureau of Statistics 1998a:36.

Table 2EE. Percentage Distribution of Peri-Urban Population by Urban Centres in Fiji, 1986-1996

Year	Suva	Lami	Nausori	Lautoka	Nadi	Ba	Sigatoka	Labasa	Savusavu	Levuka	Varukoula	Rakiraki	Navua	Tavua	Korovou	Pacific Harbour <sup>a</sup>	Nabou-walu <sup>a</sup>	Sea-qaga <sup>a</sup>
1986	51.0	5.8	6.2	7.4	5.4	2.7	1.9	8.3	0.5	1.3	3.4	2.4	2.0	1.6	0.2	n.a.	n.a.	n.a.
1996	45.0	4.2	7.9	3.6	10.8	4.2	3.1	8.8	1.2	1.3	3.5	2.4	2.1	0.6	0.2	0.8	0.3	0.2

<sup>a</sup> Pacific Harbour, Nabouwalu and Seaqaga have been urban areas for census purposes only since 1996.

Source: Adapted from Fiji Bureau of Statistics 1998a:36.

Table 2FF. Characteristics of Good Governance

<b>Good Governance</b>
Assumes Legitimacy:
Accountability
Predictability
Openness
Constitutional/Legal Issues:
Government by consent
Rule of law
Protection of contract
Protection of property rights
Independent judiciary with appropriate appeals
Public participation, usually through regular elections
Formal systems of representation in government
Public Sector Management:
Strong financial and audit systems
Competence/skill level of public service
Capacity for policy formation and implementation
Independent bureaucracy
Accountability of civil servants/levels of corruption
Availability of appropriate technology
Resource Acquisition and Allocation:
Rents versus taxation of productive activity
Consultation/participation for those affected by projects
Transparency of allocation and decision-making
Extent of military spending
Institutional pluralism
Corporatism (linking private organisations to government)
Dispute resolution/conflict resolution
Equity and efficiency
Human Rights:
Freedom from discrimination
Freedom of speech and association
Free media
Universal education
Freedom of movement

Source: Adapted from Macdonald 1995:23-24; TIT 2000.

Table 2GG. Distribution of Urban Population in Fiji by Division and Ethnicity, 1976-1996

Division	Total (%)			Indian (%)			Fijian (%)		
	1976	1986	1996	1976	1986	1996	1976	1986	1996
Western	28.1	28.1	30.9	25.2	26.3	37.2	29.6	28.2	26.1
Central	64.5	67.3	59.7	75.9	79.7	50.3	50.5	54.4	67.4
Northern	14.8	15.0	8.4	22.0	22.5	12.2	6.4	7.2	4.9
Eastern	7.0	6.8	1.0	59.7	48.3	0.2	4.5	4.9	1.7

Source: Adapted from Fiji Bureau of Statistics 1989:13; Fiji Bureau of Statistics 1998b:39-50.

Table 2HH. Population of Rewa, Naitasiri and Tailevu Provinces by Tikina and Ethnicity, 1996

Tikina	Total No.	Fijian		Indian		Others	
		No.	%	No.	%	No.	%
Rewa Province:	101,547	58,893	57.99	28,330	27.90	14,324	14.11
Beqa	1,239	1,226	98.95	2	0.16	11	0.89
Noco	2,472	2,446	98.95	17	0.69	9	0.36
Rewa	5,824	3,944	67.72	1,795	30.82	85	1.46
Suva	92,012	51,277	55.73	26,516	28.82	14,219	15.45
Naitasiri Province:	126,641	70,837	55.94	49,023	38.71	6,781	5.35
Lomaivuna	4,772	4,056	85.00	612	12.82	104	2.18
Matailobau	3,345	3,227	96.47	107	3.20	11	0.33
Naitasiri	111,809	56,925	50.91	48,229	43.14	6,655	5.95
Wainaro	3,313	3,232	97.56	71	2.14	10	0.30
Wainimala	3,402	3,397	99.85	4	0.12	1	0.03
Tailevu Province:	48,216	32,462	67.33	14,893	30.89	861	1.79
Bau	22,627	11,177	49.40	10,999	48.61	451	2.00
Nakelo	8,117	5,803	71.49	2,231	27.49	83	1.02
Sawakasa	5,363	4,770	88.94	479	8.93	114	2.13
Verata	8,746	7,426	84.91	1,133	12.95	187	2.14
Wainibuka	3,363	3,286	97.71	51	1.52	26	0.77

Source: Adapted from Fiji Bureau of Statistics 1998b:87-89.

Table 2II. Structure of Fiji's Economy, 1975-1995

	1975	1985	1994	1995 <sup>a</sup>
Proportion of GDP (%):				
Agriculture	25.6	18.3	22.1	21.3
Industry	22.3	19.5	17.5	17.5
Manufacturing	11.6	9.5	12.5	12.4
Services	52.1	62.2	60.4	61.2
	1975-1984	1985-1995	1994	1995
Average Annual Growth (%):				
Agriculture	4.2	2.0	8.6	-1.7
Industry	3.1	3.2	8.0	2.6
Manufacturing	4.3	3.8	8.0	1.5
Services	2.7	6.2	2.3	3.6

<sup>a</sup> Note: data for 1995 are estimates.

Source: Adapted from World Bank 1996:184.

Table 2JJ. Industrial Production Index (1990 = 100) for Fiji, 1988-1995

	1988	1989	1990	1991	1992	1993	1994	1995
General	85	93	100	103	105	111	116	119
Mining	104	102	100	67	90	92	84	84
Manufacturing	82	92	100	106	103	111	116	119
Electricity and Water	88	94	100	103	112	115	124	129

Source: Adapted from ESCAP 1998:136.

### APPENDIX 3

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#### *Greater Suva Urban Structure Plan*

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##### General Objectives:

- 1) To provide sufficient land to accommodate future urban growth requirements.
- 2) To introduce policies wherever feasible to limit the inward migration to the Greater Suva urban area.

##### Locational Objectives:

- 1) To protect existing areas of high landscape value and landscape features of significance.
- 2) To protect existing agricultural, forestry and mineral resources.
- 3) To locate new development so that the costs of constructing buildings are kept to a minimum.
- 4) To locate new development so that land acquisition costs are kept to a minimum.
- 5) To locate new development in areas of pleasant environment, both scenically and climatically.
- 6) To locate development so that the costs of water supply, electricity, drainage and other utility services are kept to a minimum.
- 7) To locate development so as to offer protection from natural hazards such as flooding and hurricane.
- 8) To locate development so as to minimise the cost of new road works.
- 9) To locate development so that the environmental conflicts between existing and future land uses are minimised.
- 10) To locate all new development to protect flying operations at Nausori Airport and the safety of residents living nearby.
- 11) To locate all new development to protect existing and proposed telecommunication links.
- 12) To conserve sites of historic or ecological significance.
- 13) To control the location of major traffic generating land uses to prevent traffic congestion, noise and nuisance.

**Accessibility and Transportation Objectives:**

- 1) To locate development so that there is the maximum choice of jobs available and accessible to workers.
- 2) To locate development accessible to existing and future service centres.
- 3) To provide the greatest choice of labour supply for all firms.
- 4) To locate development accessible to other residential areas.

**Agriculture and Forestry Land Use Policies:**

- 1) To prevent the undue fragmentation of agricultural land into uneconomic holdings.
- 2) To encourage the best use of limited land by increasing productivity and prevention of erosion.
- 3) To improve communications to surrounding rural areas.
- 4) To ensure the conservation of fringing forest areas.
- 5) To prevent development works polluting the coastal environment and to conserve marine areas.

**Industry Land Use Policies:**

- 1) To provide sufficient land to accommodate sites for future industries.
- 2) To locate industrial development in areas accessible to good communications, population, port facilities, and subsidiary industries and markets.

**Transportation, Communications and Public Utilities Land Use Policies:**

- 1) To locate development to maximise the operational use of existing roads and confirmed road proposals.
- 2) To locate any new road proposals to the greatest benefit to road users.
- 3) To locate population and employment so that there is the greatest potential for public transport services.
- 4) To conserve the importance of Suva as a seaport.
- 5) To provide for the expansion of public utility services by safeguarding potential reticulation routes and sites for generation, treatment and storage.

**Commerce and Shopping Land Use Policies:**

- 1) To reserve sites for future commercial development in areas accessible to residential areas and existing commercial linkages.

**Recreation, Tourism and Environment Land Use Policies:**

- 1) To give the public the greatest opportunity for the recreational use of land particularly suitable and appropriate for that purpose.
- 2) To ensure that sufficient land is provided for the development of open space and playing fields.
- 3) To encourage the development of national parks and other areas for public recreational use and to protect and develop rights of access to the general public.
- 4) To conserve areas of ecological or historic importance.
- 5) To control the growth of tourism within the region.

**Education and Other Social Services Land Use Policies:**

- 1) To provide sites for schools in locations in and near to residential areas so that children can walk to school.
- 2) To provide sites for other educational establishments and social services in sites accessible to residential locations.

**Housing Land Use Policies:**

- 1) To locate new housing development in areas of good residential environment.
- 2) To give special attention to the housing needs of the lower income groups, to the location of such development and to the problems of regularising squatter or other substandard development to comply with standards of public health and other objectives.

**Flexibility Objectives:**

- 1) To retain the adaptability of the plan to change from a preferred strategy to other strategies.
- 2) To ensure that the plan will represent the optimization of resources and the land use pattern at all stages of its phasing.
- 3) To encourage the reservation of land to ensure a proper balance of urban land uses in suitable locations to existing towns and that land will be available to the public and private sector when it is required for development.



- 4) To formulate plans which are adaptable to changes of forecast, which can be amended to cope with sudden unexpected events, and which can respond to future social and economic trends.
- 5) To initiate a review of the availability of land for development within urban envelopes and to promote ways and means of ensuring land is available for development in the right locations as it is required.

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Source: Adapted from DTCP 1975:17-19.

Table 3A. Land Use Zones in the Central Area of Suva City

Zone	Permitted	Conditional	Non-Permissible
Commercial	Retail	Administrative and professional offices Community uses (libraries, houses of worship, community facilities, recreation facilities) Hotels Multi-unit residential Public open space Service stations Storage and warehousing	All other uses
Administrative	Administrative and professional offices	Retail Community uses (libraries, houses of worship, community facilities, recreation facilities) Hotels Private hotels Boarding houses Tourist apartments Multi-unit residential Public open space Warehousing (servicing offices)	All other uses
Light Industry	Storage and warehousing	Manufacturing Residential (as part of warehouse) Administrative offices (as part of warehouse)	All other uses

Source: Adapted from Stewart 1983:13.

Table 3B. Consumer Price Index (1990 = 100) for Fiji, 1986-1993

Item	1986	1987	1988	1989	1990	1991	1992	1993
All items	73.7	77.9	87.1	92.5	100.0	106.5	111.7	117.5
Rent <sup>a</sup>	93.5	95.1	93.6	95.0	100.0	115.6	135.5	146.1
Food	66.8	70.9	84.0	92.4	100.0	101.6	101.2	108.1
Fuel and light	79.1	82.1	90.4	90.3	100.0	111.8	109.7	113.8
Clothing	71.6	73.8	87.2	95.3	100.0	103.0	104.5	103.9

<sup>a</sup> Includes water, expenditure on maintenance and repairs of dwelling.

Source: Adapted from ESCAP 1998:141.

Table 3C. Type of Living Quarters in Fiji by Ethnicity, 1996

Living Quarters	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
One family, detached	116,057	56,730	53,240	6,087	80.3	84.7	77.1	71.0
One family, attached	16,915	6,187	9,576	1,152	11.7	9.2	13.9	13.5
2+ apartments	7,298	2,442	3,843	1,013	5.0	3.5	5.5	11.8
2+ share kitchen/toilet	2,178	779	1,293	106	1.5	1.2	1.9	1.2
Attached to shop	936	167	648	121	0.6	0.3	0.9	1.4
Lodging house	599	300	268	31	0.4	0.4	0.4	0.4
Hotel	47	21	17	9	0.1	0.1	0.1	0.1
More than one	587	372	162	53	0.4	0.6	0.2	0.6

Source: Adapted from Fiji Bureau of Statistics 1998b:255-257.

Table 3D. Percentage Distribution of Households in Fiji by Size, Ethnicity and Urban-Rural Residence, 1986

Number of Occupants	Proportion of Urban Households (%)			Proportion of Rural Households (%)		
	Total	Fijian	Indian	Total	Fijian	Indian
One	3.9	3.9	3.2	2.6	3.3	1.7
Two	8.0	7.5	7.8	6.4	7.3	5.1
Three	11.9	9.7	13.1	10.8	11.0	10.7
Four	16.8	11.9	20.1	14.7	13.1	16.5
Five	16.9	12.7	19.6	16.6	14.0	19.6
Six	13.6	13.2	14.3	14.9	13.4	16.6
Seven	9.7	11.4	8.9	11.1	11.3	11.0
Eight	6.4	8.4	5.3	7.6	8.5	6.8
Nine	4.1	6.1	2.9	5.2	6.1	4.3
Ten or more	8.7	15.2	4.9	10.0	12.0	7.9

Source: Adapted from Fiji Bureau of Statistics 1989:138.

Table 3E. Mean Household Size by Location and Ethnicity, 1956-1986

Location	Total				Fijian				Indian			
	1956	1966	1976	1986	1956	1966	1976	1986	1956	1966	1976	1986
Suva City	5.9	5.8	5.3	5.5	6.0	5.7	5.8	6.8	6.5	6.3	5.2	4.9
Rewa Province <sup>a</sup>	6.1	6.3	6.1	6.3	5.9	6.3	6.2	6.6	6.9	7.2	6.2	5.5
Naitasiri Province	6.5	6.7	6.0	5.8	6.2	6.3	6.2	6.4	6.9	7.2	5.9	5.3
Tailevu Province	6.4	6.4	6.1	5.7	6.1	6.0	5.9	5.8	7.0	7.3	6.6	5.6
Fiji Total	6.3	6.3	6.0	5.8	6.3	6.1	6.0	6.2	6.5	6.7	6.0	5.4

<sup>a</sup> Excluding Suva City.

Source: Adapted from Fiji Bureau of Statistics 1989:137; McArthur 1958:219.

Table 3F. Households and Population in Urban Fiji by Type of Household and Ethnicity, 1986

	Number				Proportion (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Household:								
One Person	1,907	640	911	356	3.9	3.9	3.2	7.4
Nuclear <sup>a</sup>	21,928	4,943	15,201	1,784	44.2	30.0	53.8	37.1
Extended <sup>b</sup>	24,201	10,376	11,530	2,295	48.8	62.9	40.8	47.8
Composite <sup>c</sup>	1,543	536	638	369	3.1	3.2	2.2	7.7
Population:								
One Person	1,907	640	911	356	0.7	0.6	0.6	1.5
Nuclear <sup>a</sup>	94,145	22,444	64,665	7,036	34.5	21.3	45.1	29.5
Extended <sup>b</sup>	167,325	78,327	74,274	14,724	61.4	74.2	51.8	61.8
Composite <sup>c</sup>	9,357	4,112	3,526	1,719	3.4	3.9	2.5	7.2

<sup>a</sup> Consisting of head, spouse and unmarried children.

<sup>b</sup> Nuclear household and including all others related by blood or through marriage.

<sup>c</sup> Extended household and including any unrelated household members.

Source: Adapted from Fiji Bureau of Statistics 1988a:160.

Table 3G. Tenure of Living Quarters in Fiji by Ethnicity, 1986

Tenure Type	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Own/with mortgage	92,390	40,746	47,796	3,848	74.4	76.9	74.7	54.2
Rent, private landlord	10,733	3,333	5,833	1,567	8.6	6.3	9.1	22.1
Rent, Housing Authority	2,821	1,732	715	374	2.3	3.2	1.1	5.3
Government/Institute housing	4,547	2,534	1,453	560	3.7	4.8	2.3	7.9
Occupy employer's	3,242	1,468	1,372	402	2.6	2.8	2.1	5.7
Squatter	4,299	951	3,282	66	3.5	1.8	5.1	0.9
Other living tenure	4,954	1,737	3,009	208	4.0	3.3	4.7	2.9
Not stated	1,112	499	541	72	0.9	0.9	0.9	1.0

Source: Adapted from Fiji Bureau of Statistics 1988b:44.

Table 3H. Tenure of Living Quarters in Urban Fiji by Ethnicity, 1986

Tenure Type	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Own/with mortgage	28,114	8,401	17,695	2,081	56.7	50.9	62.6	42.0
Rent, private landlord	8,660	2,669	4,561	1,430	17.5	16.2	16.1	29.8
Rent, Housing Authority	2,711	1,647	696	368	5.5	10.0	2.5	7.7
Government/Institute housing	2,851	1,372	1,032	447	5.7	8.3	3.6	9.3
Occupy employer's	1,317	606	406	305	2.7	3.7	1.4	6.3
Squatter	3,412	897	2,454	61	6.9	5.4	8.7	1.3
Other living tenure	2,010	726	1,153	131	4.0	4.4	4.1	2.7
Not stated	504	177	283	44	1.0	1.1	1.0	0.9

Source: Adapted from Fiji Bureau of Statistics 1988b:44.

Table 3I. Tenure of Living Quarters in Fiji by Ethnicity, 1996

Tenure Type	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Own/with mortgage	94,300	40,625	49,066	4,609	65.2	60.6	71.1	53.7
Rent, private landlord	14,866	4,667	8,084	2,115	10.2	7.0	11.7	24.6
Rent, Housing Authority	3,442	1,813	1,375	254	2.4	2.7	2.0	2.9
Government/Institute housing	5,282	3,394	1,289	599	3.7	5.1	1.9	7.0
Occupy employer's	2,927	1,431	1,176	320	2.0	2.1	1.7	3.7
No rent, informal	16,301	9,320	6,459	522	11.3	13.9	9.3	6.1
Other living tenure	7,499	5,748	1,598	173	5.2	8.6	2.3	2.0

Source: Adapted from Fiji Bureau of Statistics 1998b:258-260.

Table 3J. Households and Population by Type of Living Quarters in Greater Suva-Nausori, 1986

	Suva		Lami		Nausori	
	City	Peri-Urban	Town	Peri-Urban	Town	Peri-Urban
Household:						
Conventional dwelling*	12,716	12,235	1,342	1,209	891	1,509
Institution	46	28	4	3	6	1
Other collective	15	0	5	1	0	0
Population:						
Conventional dwelling*	67,485	70,674	8,525	7,995	5,090	8,703
Institution	1,810	934	66	109	152	37
Other collective	370	0	6	6	0	0

\* The main independent dwelling of a household.

Source: Adapted from Fiji Bureau of Statistics 1988a:159.

Table 3K. Dwelling Size in Fiji by Ethnicity, 1986

Number of Rooms	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
One	22,991	16,727	5,598	666	18.5	31.6	8.7	9.4
Two	24,629	13,300	10,510	819	19.8	25.1	16.4	11.5
Three	20,466	8,752	10,660	1,054	16.5	16.5	16.7	14.9
Four	21,733	6,674	13,567	1,492	17.5	12.6	21.2	21.0
Five	15,842	3,653	10,829	1,360	12.8	6.9	16.9	19.2
Six	8,784	1,514	6,424	846	7.1	2.9	10.1	11.9
Seven	3,760	519	2,877	364	3.0	1.0	4.5	5.1
Eight +	3,116	386	2,377	353	2.5	0.6	3.7	5.0
Not Stated	2,777	1,475	1,159	143	2.2	2.8	1.8	2.0

Source: Adapted from Fiji Bureau of Statistics 1989:143.

Table 3L. Dwelling Size in Urban Fiji by Ethnicity, 1986

Number of Rooms	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
One	5,740	3,339	2,023	378	11.6	20.3	7.1	7.7
Two	6,489	2,796	3,310	383	13.1	17.0	11.7	7.8
Three	8,013	3,223	4,172	618	16.1	19.5	14.7	12.7
Four	11,290	3,419	6,868	1,003	22.8	20.7	24.3	20.5
Five	9,023	2,031	5,899	1,093	18.2	12.3	20.9	22.4
Six	4,760	846	3,246	668	9.6	5.1	11.5	13.7
Seven	1,890	247	1,260	383	3.6	1.5	4.5	7.8
Eight +	1,473	193	1,003	277	3.0	1.1	3.5	5.7
Not Stated	982	401	499	82	2.0	2.4	1.8	1.7

Source: Adapted from Fiji Bureau of Statistics 1989:143.

Table 3M. Dwelling Construction in Urban Fiji by Ethnicity, 1986

Dwellings' Outer Walls	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Concrete, cement, brick	24,299	7,772	13,253	3,274	49.0	47.1	46.9	68.2
Wood	11,429	3,962	6,416	1,051	23.0	24.0	22.7	21.9
Tin, corrugated iron	12,249	4,015	7,863	371	24.7	24.3	27.8	7.7
Traditional bure material	410	262	116	32	0.8	1.6	0.4	0.7
Makeshift/improvised	614	224	362	28	1.2	1.4	1.3	0.6
Other materials	260	135	116	9	0.5	0.8	0.4	0.2
Not stated	318	125	154	39	0.6	0.8	0.5	0.8

Source: Adapted from Fiji Bureau of Statistics 1989:142.

Table 3N. Dwelling Size in Fiji by Ethnicity, 1996

Number of Rooms	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
One	26,799	21,296	4,620	883	18.5	31.8	6.7	10.3
Two	23,822	12,940	9,938	944	16.5	19.3	14.4	11.0
Three	27,721	12,925	13,127	1,669	19.2	19.3	19.0	19.5
Four	30,437	10,311	18,125	2,001	21.0	15.4	26.3	23.3
Five	19,215	5,548	12,111	1,556	13.3	8.3	17.5	18.2
Six	9,796	2,225	6,784	787	6.8	3.3	9.8	9.2
Seven	3,525	774	2,416	335	2.4	1.1	3.5	3.9
Eight +	3,302	979	1,926	397	2.3	1.5	2.8	4.6

Source: Adapted from Fiji Bureau of Statistics 1998b:255-257.

Table 3O. Dwelling Construction in Fiji by Ethnicity, 1996

Dwellings' Outer Walls	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Concrete, brick	48,760	20,758	22,494	5,508	33.7	31.0	32.5	64.2
Wood (good condition)	29,002	13,417	13,999	1,586	20.1	20.0	20.3	18.5
Tin, corrugated iron	50,342	20,535	28,898	909	34.8	30.6	41.9	10.6
Traditional bure material	5,445	4,809	465	171	3.8	7.2	0.7	2.0
Wood (poor condition)	6,975	4,544	2,141	290	4.8	6.8	3.1	3.4
Makeshift/improvised	2,618	1,800	752	66	1.8	2.7	1.1	0.8
Other materials	1,475	1,135	298	42	1.0	1.7	0.4	0.5

Source: Adapted from Fiji Bureau of Statistics 1998b:255-257.

Table 3P. Dwelling Adequacy in Fiji by Ethnicity, 1996

Dwelling Adequacy	Number of Households				Proportion of Households (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Superior	8,053	2,009	4,453	1,591	5.6	3.0	6.5	18.6
Well above average	16,773	5,862	8,975	1,936	11.6	8.8	13.0	22.5
Average	46,577	19,976	23,877	2,724	32.2	29.8	34.6	31.8
Well below average	35,797	16,834	17,548	1,415	24.8	25.1	25.4	16.5
Inferior	36,479	21,547	14,042	890	25.2	32.2	20.3	10.4
Other	938	770	152	16	0.6	1.1	0.2	0.2

Source: Adapted from Fiji Bureau of Statistics 1998b:258-260.



Table 3Q. Percentage Distribution of Dwelling Size in Urban Fiji by Number of Occupants, 1986

Number of Rooms	Number of Occupants									
	One	Two	Three	Four	Five	Six	Seven	Eight	Nine	Ten +
One	9.1	14.9	16.5	16.2	13.9	10.4	6.8	4.3	2.8	5.2
Two	5.3	9.9	15.1	19.3	15.8	13.6	8.1	5.2	3.0	4.7
Three	3.3	7.7	13.1	17.1	17.7	13.7	9.3	6.5	4.1	7.6
Four	3.2	7.2	11.5	18.0	18.2	15.0	9.7	5.9	3.8	7.5
Five	2.4	5.8	9.8	16.2	18.3	14.6	11.2	7.2	4.7	9.7
Six	2.0	5.5	8.7	15.0	16.6	13.8	11.3	8.7	5.7	12.9
Seven	1.6	5.9	7.4	13.4	15.8	12.2	12.7	8.2	6.4	16.5
Eight +	2.0	5.0	6.7	12.3	12.9	12.1	10.7	9.0	6.4	23.0
Not Stated	5.6	9.9	9.3	16.6	15.4	11.2	9.5	7.3	3.4	11.9
Total	3.9	8.0	11.9	16.8	16.9	13.6	9.7	6.4	4.1	8.7

Source: Adapted from Fiji Bureau of Statistics 1988b:21.

Table 3R. Informal Dwellings in Fiji by Urban Area, 1996

Urban Area	Squatter	Urban Village <sup>a</sup>	Settlement <sup>b</sup>	Peripheral <sup>c</sup>	Total Dwellings
Suva	5,813	1,641	0	210	7,034
Nausori	259	151	0	117	527
Lautoka	1,203	137	515	36	1,891
Nadi	293	561	498	149	1,501
Ba	159	89	186	84	518
Sigatoka	50	436	116	11	613
Labasa	471	86	0	141	698
Savusavu	139	32	0	56	227
Levuka	100	118	0	0	218
Vatukoula	226	30	0	83	339
Rakiraki	138	25	151	0	314
Navua	0	0	52	0	52
Tavua	47	80	0	0	127
Korovou	25	0	0	0	25
Pacific Harbour	0	0	42	0	42
Nabouwalu	6	24	0	0	30
Seqaqa	14	0	0	0	4
Total	8,313	3,410	1,560	887	14,171

<sup>a</sup> Includes officially recognised 'urban villages' (those where the residents have traditional rights to the land).

<sup>b</sup> Includes Fijian urban 'settlements' (those where the residents are not the traditional landowners).

<sup>c</sup> Includes dwellings that could not be classified urban or rural.

Source: Adapted from UNDP 1997:36.

Table 3S. Urban Squatting in Fiji's Urban Centres, 1976

Urban Centre	Total Population	Squatter Population	Proportion (%)
Suva City	63,628	9,289	14.6
Lautoka City	22,688	2,127	9.4
Ba Town	5,903	281	4.8
Labasa Town	4,346	400	9.2
Levuka Town	1,419	273	19.2
Total	97,984	12,370	12.6

Source: Adapted from Fiji Bureau of Statistics 1977:75; Fiji Central Planning Office 1980:232.

Table 3T. Proportion of Informal Population in Fiji by Urban Area, 1996

Urban Area	Proportion Informal Dweller Population (%)	Proportion Urban Villager <sup>a</sup> Population (%)	Proportion Total Informal Population (%)
Suva + Lami	14.1	4.7	18.8
Nausori	8.5	3.7	12.2
Lautoka	19.9	1.9	21.8
Nadi	14.3	10.0	24.3
Ba	14.4	3.2	17.6
Sigatoka	8.6	30.4	39.0
Labasa	12.6	1.9	14.5
Savusavu	19.4	3.4	22.8
Levuka	13.2	15.9	29.1
Vatukoula	21.4	2.5	23.9
Rakiraki	29.9	2.6	32.5
Navua	6.2	0.0	6.2
Tavua	9.4	16.8	26.2
Korovou	39.3	0.0	39.3
Total	14.6	5.1	19.7

<sup>a</sup> Includes officially recognised 'urban villages' (those where the residents have traditional rights to the land) and other Fijian urban 'settlements' (those where the residents are not the traditional landowners).

Source: Adapted from Walsh 1998:2.

Table 3U. Percentage Distribution of Conventional Dwellings by Toilet Facility and Ethnicity in Urban Fiji, 1986

Toilet Facility	Single Housing Unit				Multi Housing Unit				Other Housing Unit			
	Total	Fijian	Indian	Other	Total	Fijian	Indian	Other	Total	Fijian	Indian	Other
Own Flush Toilet	63.9	59.7	66.0	64.9	35.8	39.9	33.8	34.4	0.4	0.4	0.3	0.7
Water-seal Toilet	89.4	91.6	84.3	93.5	10.6	8.4	15.7	6.2	0.1	0.1	0.0	0.3
Pit Latrine	85.2	82.2	86.2	87.8	14.7	17.7	13.7	11.9	0.1	0.1	0.1	0.3
Shared Toilet	68.3	75.7	58.3	72.9	31.6	24.2	41.7	27.1	0.1	0.2	0.0	0.0
None	81.4	83.7	87.5	0.0	18.6	16.3	12.5	100.0	0.0	0.0	0.0	0.0
Other	90.2	92.3	87.0	100.0	9.8	7.7	13.0	0.0	0.0	0.0	0.0	0.0
Not Stated	92.4	94.5	88.9	100.0	7.3	5.5	10.5	0.0	0.3	0.0	0.7	0.0
Total	72.3	71.1	73.6	68.5	27.5	28.6	26.2	30.9	0.3	0.3	0.2	0.6

Source: Adapted from Fiji Bureau of Statistics 1988b:47.

Table 3V. Households' Source of Electricity in Fiji by Ethnicity and Urban-Rural Residence, 1986

	Number				Proportion (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
<b>Urban:</b>								
Electrified dwellings:								
FEA	36,973	10,617	22,121	4,235	74.6	64.4	78.2	88.2
Village plant	35	27	4	4	0.1	0.1	0.0	0.1
PWD	100	30	66	4	0.2	0.2	0.2	0.1
Own plant	166	31	121	14	0.3	0.2	0.4	0.3
Others	67	35	30	2	0.1	0.2	0.1	0.1
Not stated	78	28	43	7	0.2	0.2	0.2	0.2
Nonelectrified dwellings	12,160	5,727	5,895	538	24.5	34.7	20.9	11.2
Total dwellings	49,579	16,495	28,280	4,804	100.0	100.0	100.0	100.0
<b>Rural:</b>								
Electrified dwellings:								
FEA	16,601	3,317	12,892	392	22.3	9.1	36.1	17.1
Village plant	1,812	1,554	42	216	2.4	4.3	0.1	9.4
PWD	960	456	430	74	1.3	1.3	1.2	3.2
Own plant	2,387	577	1,673	137	3.2	1.6	4.7	6.0
Others	735	490	197	48	1.0	1.3	0.6	2.1
Not stated	267	88	171	8	0.4	0.2	0.5	0.4
Nonelectrified dwellings	51,757	30,023	20,316	1,418	69.4	82.2	56.8	61.8
Total dwellings	74,519	36,505	35,721	2,293	100.0	100.0	100.0	100.0
<b>Total:</b>								
Electrified dwellings:								
FEA	53,574	13,934	35,013	4,627	43.2	26.3	54.7	65.2
Village plant	1,847	1,581	46	220	1.5	3.0	0.1	3.1
PWD	1,060	486	496	78	0.8	0.9	0.8	1.1
Own plant	2,553	608	1,794	151	2.1	1.1	2.8	2.1
Others	802	525	227	50	0.6	1.0	0.4	0.7
Not stated	345	116	214	15	0.3	0.2	0.3	0.2
Nonelectrified dwellings	63,917	35,750	26,211	1,956	51.5	67.5	40.9	27.6
Total dwellings	124,098	53,000	64,001	7,097	100.0	100.0	100.0	100.0

Source: Adapted from Fiji Bureau of Statistics 1989:146.

Table 3W. Households' Source of Electricity in Fiji by Ethnicity, 1996

	Number				Proportion (%)			
	Total	Fijian	Indian	Others	Total	Fijian	Indian	Others
Electrified dwellings:								
FEA	83,031	26,707	50,198	6,126	57.4	39.9	72.7	71.5
Village plant	5,178	4,831	89	258	3.6	7.2	0.1	3.0
PWD	534	438	70	26	0.4	0.7	0.1	0.3
Own plant	6,823	3,006	3,362	455	4.7	4.5	4.9	5.3
Vatukoula	639	403	128	108	0.4	0.6	0.2	1.3
FSC <sup>a</sup>	551	277	218	56	0.4	0.4	0.3	0.7
Nonelectrified dwellings	47,861	31,336	14,982	1,543	33.1	46.8	21.7	18.0
Total dwellings	144,617	66,998	69,047	8,572	100.0	100.0	100.0	100.0

<sup>a</sup> The Fiji Sugar Corporation.

Source: Adapted from Fiji Bureau of Statistics 1998b:258-260.

Table 3X. Percentage Distribution of Urban Households' Source of Cooking Fuel by Dwelling Tenure in Fiji, 1986

	Electricity	LPG	Kerosene	Wood	Other	Not Stated	Total
Own	28.8	54.6	50.0	73.1	44.9	9.9	56.7
Rent, Private	17.7	27.5	18.6	5.8	27.1	4.8	17.5
Rent, Public	1.8	2.4	10.0	1.7	11.9	0.4	5.5
Institutional	21.4	8.8	5.3	2.1	8.5	3.2	5.8
Employer	22.3	2.9	1.6	2.5	0.9	0.4	2.7
Squatter	0.5	0.8	9.1	10.1	0.9	0.0	6.9
Other	6.6	2.5	4.8	4.2	4.2	0.2	4.1
Not Stated	1.0	0.5	0.7	0.5	1.7	79.4	1.0

Source: Adapted from Fiji Bureau of Statistics 1988b:52.

Table 3Y. Number of Motorised Vehicles in Fiji by Type of Vehicle, 1970-1974

Vehicle Type	1970	1971	1972	1973	1974
Private cars	8,601	11,161	14,234	15,963	17,347
Motorcycles	574	863	1,000	1,144	1,317
Rental cars	356	612	779	858	921
Taxis	1,025	1,223	1,261	1,298	1,323
Buses	584	617	776	858	921
Goods Vehicles	3,971	3,987	5,571	6,540	7,555
Tractors	1,489	2,010	1,925	2,121	2,339
Total	16,060	20,473	24,770	28,930	31,981

Source: Adapted from Fiji Central Planning Office 1975:142.

Table 3Z. Number (thousands) of Motorised Vehicles in Fiji, 1986-1994

Vehicle Type	1986	1987	1988	1989	1990	1991	1992	1993	1994
Passenger cars <sup>a</sup>	33.6	34.4	34.9	37.5	40.2	42.0	44.0	45.3	47.7
Commercial vehicles <sup>b</sup>	26.7	27.3	27.9	29.1	30.9	32.7	34.5	35.3	36.8
Total	60.3	61.7	62.8	66.6	71.1	74.7	78.5	80.6	84.5

<sup>a</sup> This represents all motor cars seating less than eight people, and includes taxis, jeeps and station wagons.

<sup>b</sup> This represents all lorries, trucks, semi-trailers, buses and tractors, and includes ambulances and fire engine trucks.

Source: Adapted from ESCAP 1998:137.

## Appendix 4

Table 4A. Households' Ranking of Settlement Quality by Location in Greater Suva-Nausori, 2000

Ranking	Wailela		Veisari		Veratawailevu	
	No. (49)	%	No. (50)	%	No. (44)	%
1	0	0	0	0	0	0
2	0	0	0	0	0	0
3	1	2	5	10	0	0
4	21	43	27	54	22	50
5	27	55	18	36	22	50

Table 4B. Households' Opinion on Living Conditions of Settlement Relative to Rest of Greater Suva-Nausori by Location in Greater Suva-Nausori, 2000

	Wailela		Veisari		Veratawailevu	
	No. (49)	%	No. (45)	%	No. (50)	%
Better	49	100	45	100	50	100
Worse	0	0	0	0	0	0

Table 4C. Households' Plans to Continue Living in Settlement by Location in Greater Suva-Nausori, 2000

	Wailela		Veisari		Veratawailevu	
	No. (48)	%	No. (48)	%	No. (50)	%
Yes	46	96	43	90	48	96
No	2	4	5	10	2	4

Table 4D. Households' Previous Area of Residence by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (48)	%	No. (50)	%	No. (50)	%
Rural	36	75	40	80	11	22
Peri-Urban	12	25	3	6	25	50
Urban	0	0	7	14	14	28

Table 4E Households' Previous Land Tenure by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (48)	%	No. (50)	%	No. (50)	%
Freehold Land	8	17	9	18	13	26
Crown Lease	5	10	24	48	23	46
Native Lease	0	0	3	6	2	4
Mataqali Land	32	67	4	8	9	18
Informal Arrangement	0	0	9	18	0	0
Crown Squatting	0	0	0	0	1	2
Native Squatting	3	6	1	2	2	4

Table 4F. Households' Previous Dwelling Tenure by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (48)	%	No. (50)	%	No. (50)	%
Own	47	98	5	10	3	6
Rent	1	2	30	60	40	80
Relative	0	0	14	28	5	10
Other	0	0	1	2	2	4

Table 4G. Household Income Level by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (35)	%	No. (41)	%	No. (48)	%
Low	1	3	4	10	0	0
Middle	34	97	36	88	34	71
High	0	0	1	2	14	29

Table 4H. Household Opinion on Future Living Conditions of Settlement by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (39)	%	No. (31)	%	No. (44)	%
Better	0	0	10	32	8	18
Worse	39	100	1	3	8	18
Same	0	0	20	65	28	64

Table 4I. Households' Willingness to Contribute Money for Social Infrastructure by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (48)	%	No. (50)	%	No. (50)	%
Yes	44	92	33	66	30	60
No	4	8	17	34	20	40

Table 4J. Households' Willingness to Contribute Labour for Social Infrastructure by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (47)	%	No. (49)	%	No. (50)	%
Yes	44	94	32	65	36	72
No	3	6	17	35	14	28



Table 4K. Household Opinion on Responsibility for Social Infrastructure Provision by Location in Greater Suva-Nausori, 2000

	Waileva		Veisari		Veratawailevu	
	No. (49)	%	No. (49)	%	No. (50)	%
Central Government	23	47	36	74	25	50
Local Government	1	2	8	16	1	2
Central/Local Government	0	0	2	4	7	14
Government/NGOs	24	49	0	0	0	0
Government/Landowners	0	0	0	0	13	26
NGOs	1	2	0	0	1	2
Landowners (Community)	0	0	3	6	3	6

Table 4L. Weekly (45 hour) Average Wages by Occupation in Fiji, 1995

Wage Order	Class of Worker	Minimum Gross Weekly Pay
Garment Industry	Unskilled worker	F\$37
	Skilled worker	F\$79
Building, Civil, Electrical Engineering Trades	Unskilled worker (over 18 years of age)	F\$72
	General tradesman or clerk	F\$99
Protective Service Workers	Watchman	F\$110
Hotel and Catering Trades	Barman	F\$96
	Cook	F\$100
	General worker, house worker, laundry hand, waiter, watchman	F\$86
Manufacturing Industry	All workers	F\$119
	Casual workers	F\$81
Wholesale and Retail Trades	Cashier	F\$80
	Clerk, shop assistant, sewing machinist	F\$80
	Driver	F\$88

Source: Adapted from UNDP 1997:80.

Table 4M. Household Opinion on Provision of Social Infrastructure by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No.	%	No.	%	No.	%
Transport:	(50)		(46)		(50)	
Adequate	49	98	44	96	50	100
Inadequate	1	2	2	4	0	0
Health Services:	(50)		(41)		(45)	
Adequate	50	100	34	83	30	67
Inadequate	0	0	7	17	15	33
Educational Services:	(47)		(46)		(45)	
Adequate	46	98	46	100	16	36
Inadequate	1	2	0	0	29	64
Religious Services:	(49)		(50)		(50)	
Adequate	48	98	47	94	45	90
Inadequate	1	2	3	6	5	10
Retail Services:	(45)		(47)		(45)	
Adequate	45	100	45	96	45	100
Inadequate	0	0	2	4	0	0
Markets:	(46)		(47)		(44)	
Adequate	46	100	40	85	12	27
Inadequate	0	0	7	15	32	73
Recreational Areas:	(48)		(49)		(46)	
Adequate	48	100	44	90	26	57
Inadequate	0	0	5	10	20	43
Security Services:	(41)		(42)		(46)	
Adequate	39	95	29	69	4	9
Inadequate	2	5	13	31	42	91
Employment Opportunities:	(42)		(42)		(43)	
Adequate	41	98	30	71	18	42
Inadequate	1	2	12	29	25	58

Note: Figures in parentheses denote total numbers.

Table 4N. Educational Attainment of Household Heads' by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (48)	%	No. (48)	%	No. (49)	%
Class 8 or Less	1	2	2	4	1	2
Form 1	0	0	0	0	0	0
Form 2	0	0	1	2	0	0
Form 3	2	4	5	10	3	6
Form 4	8	17	9	19	12	24
Form 5	21	44	16	33	18	37
Form 6	16	33	14	29	14	29
Tertiary	0	0	1	2	1	2

Table 4O. Households' Access to Local Natural Resources by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (49)	%	No. (50)	%	No. (49)	%
Gardening Land:	(49)		(50)		(49)	
Yes	9	18	50	100	49	100
No	40	82	0	0	0	0
Fish/Shellfish/Aquatic Plants:	(48)		(50)		(48)	
Yes	11	23	48	96	48	100
No	37	77	2	4	0	0
Firewood:	(49)		(50)		(49)	
Yes	12	25	50	100	49	100
No	37	76	0	0	0	0
Medicinal Plants:	(48)		(50)		(47)	
Yes	21	44	50	100	46	98
No	27	56	0	0	1	2
Other Useful Plants:	(48)		(49)		(48)	
Yes	4	8	47	96	43	90
No	44	92	2	4	5	10

Note: Figures in parentheses denote total numbers.

Table 4P. Residential Densities in Selected Socioeconomic Areas of Greater Suva, 1976

Location	Population	Area	Density (per ha)
Upper Income:			
Domain	807	77.8 ha	10.4
Tamavua Heights	432	45.0 ha	9.6
Low Income:			
Nabua	993	12.0 ha	83.0
Toorak	1,115	8.8 ha	126.1
Housing Authority:			
Kinoya	3,881	56.7 ha	68.4
Raiwai-Raiwaqa	8,068	66.4 ha	121.5
Raiwaqa Four-Storey Flats	1,115	4.5 ha	247.7
Informal Settlements:			
Jittu Estate	817	23.5 ha	34.8
Malekula	383	2.1 ha	184.1
Muslim League/Deo Dutt	1,632	25.7 ha	63.5
Nauluvatu	417	2.3 ha	180.5
Qauia	1,519	33.8 ha	83.0
Valenimanumanu	253	3.1 ha	80.6

Source: Adapted from Walsh 1978:262.

Table 4Q. Builder of Household Dwelling by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (50)	%	No. (50)	%	No. (50)	%
Household	38	76	28	56	6	12
Household/Friends	6	12	4	8	3	6
Household/Carpenter	0	0	0	0	20	40
Friends	5	10	3	6	0	0
Carpenter	1	2	15	30	21	42

Table 4R. Source of Funds for Dwelling Construction by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (50)	%	No. (50)	%	No. (49)	%
Household	49	98	46	92	42	86
Friends	1	2	0	0	0	0
Loan	0	0	4	8	1	2
Household/Loan	0	0	0	0	6	12

Table 4S. Dwelling Size by Location in Greater Suva-Nausori, 2000

Number of Bedrooms	Wailea		Veisari		Veratawailevu	
	No. (50)	%	No. (49)	%	No. (49)	%
1	1	2	0	0	0	0
2	23	46	15	31	13	26
3	23	46	19	39	18	37
4	3	6	15	31	18	37

Table 4T. Dwelling Construction Materials by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (48)	%	No. (49)	%	No. (50)	%
Wood	48	100	49	100	50	100
Corrugated Metal	48	100	49	100	49	98
Cement	0	0	11	23	40	80

<sup>a</sup> Households may utilise more than one type of construction material.

Table 4U. Proportions of Poor Households with Unacceptable Housing Characteristics in Fiji by Location, 1991

	No electricity	Use kerosene light	Use firewood to cook	No piped water	Use pit toilet
Urban	18.2	12.8	18.4	2.5	23.3
Rural Village	77.9	67.6	85.6	18.0	41.2
Rural Settlement	64.2	23.5	75.1	35.4	74.3
Total Fiji	44.7	33.4	56.2	16.9	43.7

Source: Adapted from UNDP 1997:35.

Table 4V. Household Opinion on Provision of Physical Infrastructure by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No.	%	No.	%	No.	%
Piped Water:	(50)		(49)		(50)	
Adequate	50	100	31	63	50	100
Inadequate	0	0	18	37	0	0
Sewerage:	(45)		(50)		(49)	
Adequate	44	98	15	30	20	41
Inadequate	1	2	35	70	29	59
Rubbish Collection:	(49)		(50)		(50)	
Adequate	36	73	3	6	12	24
Inadequate	13	26	47	94	38	76
Drainage Ditches:	(50)		(46)		(50)	
Adequate	22	44	30	65	49	98
Inadequate	28	56	16	35	1	2
Electricity:	(49)		(49)		(50)	
Adequate	46	94	15	31	49	98
Inadequate	3	6	34	69	1	2
Paved Roads:	(49)		(48)		(49)	
Adequate	9	18	3	6	49	100
Inadequate	40	82	45	94	0	0
Footpaths:	(44)		(47)		(47)	
Adequate	4	9	1	2	12	25
Inadequate	40	91	46	98	35	75
Street Lights:	(49)		(48)		(49)	
Adequate	2	4	0	0	1	2
Inadequate	47	96	48	100	48	98

Note: Figures in parentheses denote total numbers.

Table 4W. Households' Willingness to Contribute Money for Physical Infrastructure by Location in Greater Suva-Nausori, 2000

	Wailea		Velsari		Veratawailevu	
	No. (50)	%	No. (49)	%	No. (50)	%
Yes	48	96	25	51	24	48
No	2	4	24	49	26	52

Table 4X. Households' Willingness to Contribute Labour for Physical Infrastructure by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (50)	%	No. (50)	%	No. (50)	%
Yes	48	96	36	72	36	72
No	2	4	14	28	14	28

Table 4Y. Household Opinion on Responsibility for Physical Infrastructure Provision by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (50)	%	No. (50)	%	No. (50)	%
Central Government	31	62	38	76	29	58
Local Government	2	4	8	16	2	4
Central/Local Government	2	4	1	2	6	12
Government/NGOs	13	24	0	0	0	0
Government/Landowners	0	0	1	2	11	22
Government/Homeowners	0	0	0	0	1	2
NGOs	2	4	0	0	0	0
Landowners (Community)	0	0	1	2	1	2
Homeowners (Residents)	0	0	1	2	0	0

Table 4Z. Households' Source of Water by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (49)	%	No. (50)	%	No. (50)	%
Piped Water Supply	49	100	36	72	50	50
Roof Tank/Rainwater	0	0	14	28	0	0
River/Creek	0	0	12	24	0	0
Well/Borehole	0	0	1	2	0	0

\* Households may utilise more than one source of water.

Table 4AA. Households' Toilet Facilities by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (37)	%	No. (45)	%	No. (50)	%
Flush Toilet	30	81	13	29	42	84
Water-Seal Toilet	7	19	6	13	8	16
Pit Latrine	0	0	26	58	0	0

Table 4BB. Households' Wastewater Facilities by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (49)	%	No. (49)	%	No. (50)	%
Sewer Connection	0	0	0	0	0	0
Septic Tank	22	45	23	47	50	100
None	27	55	26	53	0	0

Table 4CC. Villages' Primary Waste Disposal Method by Province, 1995

	Rewa		Naitasiri		Tailevu	
	No. (55)	%	No. (146)	%	No. (143)	%
Land Fill	31	56	38	26	87	61
Pit	17	31	108	74	43	30
River	2	4	0	0	3	2
Sea	5	9	0	0	10	7

Source: Adapted from Ministry of Fijian Affairs 1995:69-71.



Table 4DD. Households' Waste Disposal Methods by Location in Greater Suva-Nausori, 2000

	Wailela		Veisari		Veratawailevu	
	No. (49)	%	No. (50)	%	No. (50)	%
Collected by Municipality	42	86	0	0	0	0
Buried in Pit	1	2	32	64	43	86
Burned	5	10	42	84	7	14
Left in Backyard Heap	1	2	5	10	3	6
Put in River/Creek	6	12	12	24	21	42
Put in Sea	1	2	16	32	0	0
Composted	0	0	9	18	0	0

<sup>a</sup> Households may utilise more than one waste disposal method.

Table 4EE. Presence of Local Drainage Ditches by Location in Greater Suva-Nausori, 2000

	Wailela		Veisari		Veratawailevu	
	No. (50)	%	No. (50)	%	No. (50)	%
Yes	50	100	36	72	48	96
No	0	0	14	28	2	4

Table 4FF. Sources of Household Energy in Lautoka-Nadi by Annual Income, 1982

Energy Source	Annual Household Income (F\$)				
	<2,000	2,000-3,000	3,000-5,000	5,000-10,000	>10,000
Firewood	47%	32%	31%	23%	9%
Kerosene	49%	53%	39%	44%	25%
LPG	5%	6%	12%	32%	67%
Electricity	27%	44%	56%	89%	96%

Source: Adapted from Lloyd et al. 1982:112.

Table 4GG. Percentage Distribution of Urban Households' Source of Lighting by Dwelling Tenure in Fiji, 1986

	Electricity	Kerosene Lamp	Benzine Lamp	Solar Power	Other & Not Stated
Own	72.5	19.0	7.8	0.1	0.6
Rent, Private	89.3	8.8	1.5	0.0	0.4
Rent, Public	96.7	2.4	0.8	0.0	0.2
Institutional	94.8	3.6	1.3	0.0	0.3
Employer	93.2	5.3	1.3	0.1	0.2
Squatter	23.6	57.6	17.6	0.1	1.2
Other & Not Stated	59.7	26.9	4.8	0.0	8.6
Total	74.6	18.1	6.3	0.1	1.0

Source: Adapted from Fiji Bureau of Statistics 1989:147.

Table 4HH. Household's Supply of Electricity (FEA) by Location in Greater Suva-Nausori, 2000

	Wallea		Veisari		Veratawailevu	
	No. (50)	%	No. (50)	%	No. (50)	%
Yes	46	94	22	44	50	100
No	4	6	28	56	0	0

Table 4II. Households' Source of Cooking Fuel by Location in Greater Suva-Nausori, 2000

	Wallea		Veisari		Veratawailevu	
	No. (48)	%	No. (45)	%	No. (43)	%
LPG	29	60	13	29	33	77
Kerosene	48	100	36	80	43	100
Wood Stove	0	0	26	58	15	35
Open Fire	12	25	24	53	11	26

\* Households may utilise more than one source of cooking fuel.

Table 4JJ. Households' Ownership of Motorised Vehicles by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (47)	%	No. (43)	%	No. (48)	%
Car	0	0	4	9	16	33
Truck	0	0	0	0	2	4
Motorcycle	0	0	0	0	0	0

Table 4KK. Households' Transport Method by Location in Greater Suva-Nausori, 2000

Destination	Wailea		Veisari		Veratawailevu	
	No.	%	No.	%	No.	%
Work:	(22)		(41)		(44)	
Walk	3	14	3	7	0	0
Own Car	1	5	3	7	18	41
Bus	17	77	35	86	13	30
Bus/Taxi/Carrier	1	5	0	0	13	30
School:	(31)		(29)		(23)	
Walk	21	68	16	55	0	0
Own Car	0	0	1	3	7	30
Bus	10	32	11	38	16	70
Bus/Taxi/Carrier	0	0	1	3	0	0

Note: Figures in parentheses denote total numbers.

Table 4MM. Suva Household Expenditures on Public Transport by Income Group, 1981

Income (F\$/year)	Bus Fares (F\$/week)		Taxi Fares (F\$/week)	
	Nonelectrified HH	Electrified HH	Nonelectrified HH	Electrified HH
<1,500	2.35	2.94	1.03	1.52
1,501-2,000	3.91	3.66	0.44	0.71
2,001-3,000	3.99	4.00	0.84	0.71
3,001-5,000	4.31	4.02	0.89	1.12
5,001-10,000	4.57	3.38	2.07	1.20
>10,000	--	2.29	--	0.96

Source: Adapted from Siwatibau 1987:25.

Table 4NN. Means of Transport Used by Suva Households by Ethnicity, 1981

Means of Transport	Fijian	Indian	Others
Households where at least one member walks to work (%)	15	15	15
Students walking to school (No. per 100 households)	61	54	33
Students riding the bus to school (No. per 100 households)	110	49	46
Mean household bus fares (F\$ per week)	4.82	2.86	1.95
Mean household taxi fares (F\$ per week)	1.83	0.59	1.51
Mean household gasoline cost (F\$ per week)	1.60	6.30	6.20
Private cars (No. per 100 households)	14	55	64
Motorcycles (No. per 100 households)	2	2	7
Taxis owned (No. per 100 households)	3	4.4	3
Bicycles owned (No. per 100 households)	2	6	14
Vehicle owners who share vehicles with neighbours (No. per 100 households)	45	16	23

Source: Adapted from Siwatibau 1987:27.

Table 400. Household Opinion on Future Environmental Conditions of Settlement by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (39)	%	No. (31)	%	No. (44)	%
Better	0	0	13	42	12	27
Worse	39	100	3	10	11	25
Same	0	0	15	48	21	48

Table 4PP. Percentage Distribution of Voluntary Organisation Membership in Suva by Ethnicity, 1978

Voluntary Organisation	Fijian	Indian	European
Economic	76	14	10
Neighbourhood	84	9	7
Political	94	6	0
Professional	38	24	38
Recreational	52	23	25
Social Club	20	18	62
Trade Union	42	58	0
Welfare	53	31	16

Source: Adapted from Sukhdeo and Griffin 1982:200.

Table 4QQ. Membership in Community Groups by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (50)	%	No. (49)	%	No. (50)	%
Yes	42	84	29	59	34	68
No	8	16	20	41	16	32

Table 4RR. Members' Participation in Community Groups by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (40)	%	No. (26)	%	No. (33)	%
Few Times per Week	6	15	20	77	29	88
Few Times per Month	5	13	1	4	1	3
Few Times per Year	29	73	5	19	3	9

Table 4SS. Households Requesting Assistance from Outside Organisations by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (48)	%	No. (49)	%	No. (49)	%
Yes	1	2	0	0	1	2
No	47	98	49	100	48	98

Table 4TT. Household Opinion on Whether a Settlement Association Could Improve Local Living Conditions by Location in Greater Suva-Nausori, 2000

	Wailea		Veisari		Veratawailevu	
	No. (31)	%	No. (42)	%	No. (28)	%
Yes	5	16	1	2	0	0
No	2	7	38	91	15	54
Don't Know	24	77	3	7	13	46

## APPENDIX 5

Table 5A. Fiji Government Social Expenditure (F\$ million), 1976-1993

	1976	1985	1990	1991	1992	1993
Total Government Expenditure	147.1	412.5	597.2	669.4	723.2	815.3
Total Social Priority Expenditure	n.a.	44.2	55.5	59.3	59.3	68.1
Rural Water Supplies	n.a.	0.8	1.8	2.2	2.2	2.4
Rural & Public Health	n.a.	3.9	3.5	3.8	3.8	5.7
Primary Education	n.a.	39.6	50.1	53.3	53.3	60.0
Total Social Expenditure	n.a.	134.3	175.9	197.9	223.8	244.6
Rural Services	n.a.	1.6	1.7	1.6	2.9	2.3
Water Supplies	n.a.	11.7	16.8	19.7	21.6	22.9
Housing	n.a.	2.1	0.6	0.8	1.6	2.3
Health	11.7	33.3	45.3	49.3	59.5	65.6
Education	23.7	83.4	109.1	119.4	130.7	127.4
Social Welfare	n.a.	2.1	2.5	3.2	3.6	4.0
Poverty Alleviation Fund	0.0	0.0	0.0	0.0	0.3	7.0
Government Administration	34.6	n.a.	n.a.	72.2	83.7	90.1
Security	n.a.	n.a.	n.a.	75.8	71.1	75.9
Military	1.9	n.a.	n.a.	47.9	44.1	45.9
Police	n.a.	n.a.	n.a.	22.4	20.8	24.2
Prisons	n.a.	n.a.	n.a.	5.5	6.1	5.8

Source: Adapted from UNDP 1997:109.

Table 5B. Family Assistance Scheme, Receipts and Expenditure, 1987-1995

Year	No. Recipients	F\$ Million Distributed	Average Allowance per Annum
1987	5,166	1.25	F\$242
1988	5,668	1.25	F\$221
1989	5,582	1.25	F\$224
1990	6,011	1.42	F\$237
1991	6,903	1.70	F\$246
1992	7,380	2.16	F\$293
1993	7,972	2.47	F\$310
1994	8,885	3.07	F\$346
1995	9,245	3.50	F\$377

Source: Adapted from UNDP 1997:94.

Table 5C. HART Tenant Families by Ethnicity and Suva Region, September 1994

Suva Region	Total	Fijian	Indian	Others
Anandniwas	21	13	8	0
Delainasole	41	17	23	1
Korovou	10	5	5	0
Makoi	38	26	12	0
Nadera	21	10	9	2
Nakasi	44	25	19	0
Narere	15	10	5	0
Newtown	51	36	12	3
Valelevu	41	20	17	4
Vesida	32	25	6	1

Source: Adapted from Fernando 1996:305.

Table 5D. HART Tenant Families in Fiji by Ethnicity and Region, September 1994

HART Villages	Total	Fijian	Indian	Others
Suva	314	187	116	11
Lakena (Nasinu/Nausori)	18	9	7	2
Lautoka	14	0	14	0
Ba	32	9	23	0
Labasa	16	1	15	0
Total	394	206	175	13

Source: Adapted from Fernando 1996:308.

Table 5E. Comparison of FEA Electricity Charges with Other Country's, 2000

Country/Territory	Electricity Price, Per Unit (F\$)
Fiji	22.7¢
American Samoa	28.8¢
New Caledonia	51.6¢
Papua New Guinea	27.0¢
Samoa	35.3¢
Solomon Islands	21.4¢
Tuvalu	52.2¢
Vanuatu	94.5¢
New Zealand	25.8¢
France	30.0¢
Germany	35.0¢
Italy	31.0¢

Source: Adapted from FEA 2000a.

Table 5F. Average Running Costs for Household Appliances in Fiji, 2000

Appliance	Average Cost, Per Hour (F\$)
Refrigerator	2.8¢
Television	2.3¢
Washing Machine	5.0¢
Microwave	30.0¢
Rice Cooker	13.3¢
Toaster	24.0¢
Electric Kettle	24.0¢
Iron	22.0¢
Ceiling Fan	1.9¢
Pedestal Fan	1.5¢
Solar Water Heater	45.0¢
60 Watt Light Bulb	1.3¢

Source: Adapted from FEA 2000a.

Table 5G. Fiji Government Expenditure on Transportation and Communication, 1988-1996

	1988	1989	1990	1991	1992	1993	1994	1995	1996
Million F\$	37.09	43.98	46.01	56.02	67.34	69.66	16.98	15.83	70.33

Source: Adapted from ESCAP 1998:143.



Table 5H. International Conventions to which Fiji is a Signatory, Early 1990s

<b>International Environmental Conventions</b>
International Plant Protection Convention 1956
Convention on the Continental Shelf 1970
Convention on Fishing and Conservation of the Living Resources of the High Seas 1970
Convention on the High Seas 1970
Convention on Fishing and Conservation of the Living Resources of the High Seas 1971
Plant Protection Agreement for South East Asia 1971
International Convention for the Prevention of Pollution of the Sea by Oil 1972
Treaty Banning Nuclear Weapons Tests in the Atmosphere, Outer Space and Underwater 1972
Treaty on the Non-Proliferation of Nuclear Weapons 1972
Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological and Toxic Weapons and their Destruction 1973
International Convention on Civil Liability for Oil Pollution Damage 1975
International Convention Relating to an Intervention of the High Seas in Cases of Oil Pollution Casualties 1975
South Pacific Forum Fisheries Agency Convention 1979
United Nations Convention on the Law of the Sea 1982
International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage 1983
South Pacific Nuclear Free Zone Treaty and Protocol 1985
Convention for the Protection of Natural Resources and Environment of the South Pacific and their Related Protocols (SPREP Convention) 1989
Convention on the Conservation of Nature in the South Pacific (Apia Convention) 1989
Vienna Convention and Montreal Protocol on Substances that Deplete the Ozone Layer 1989
Convention Concerning the Protection of the World Cultural and National Heritage (World Heritage Convention) 1990
United Nations Framework Convention on Climate Change 1992
Convention on Biological Diversity 1992

Source: Adapted from Watling and Chape 1993:102

Table 5I. Environmental Legislation in Fiji, Early 1990s

<b>Environmental Legislation</b>
Birds and Game Protection Act 1923
Native Land Trust 1940
Fisheries Act 1941
Penal Code 1945
Town Planning Act 1946
Forest Act 1953
Land Conservation and Improvement Act 1953
Public Health Act 1955
Water Supply Act 1955
Drainage Act 1960
Land Development Act 1961
Noxious Weeds, Pests and Disease of Plants Act 1964
Fisheries Regulations 1965
Agricultural Landlord and Tenants Act (ALTA) 1966
Mining Act 1966
Animal Importations Act 1970
Continental Shelf Act 1970
National Trust for Fiji Act 1970
Pesticides Act 1971
Irrigation Act 1973
Traffic Regulations 1974
Marine Species Act 1977
Preservation of Objects of Archaeological and Palaeontological Interest Act 1978
Plant Quarantine Act 1982
River and Streams Act 1982
Ports Authority of Fiji Regulations 1990
Litter Decree 1991

Source: Adapted from Cowey 1993:132.

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