

# **FIJI REPORT TO THE CSD 18/19 SESSION**

- 1. CHEMICALS**
- 2. MINING**
- 3. TEN YEAR FRAMEWORK OF PROGRAMMES  
ON SUSTAINABLE CONSUMPTION AND  
PRODUCTION PATTERNS**
- 4. TRANSPORT**
- 5. WASTE MANAGEMENT**

## 1.0 INTRODUCTION

Sustainable development is a pattern of resource use that aims to meet human needs while preserving the environment so that these needs can be met not only in the present, but also for future generations. The United Nations 2005 World Summit Outcome Document refers to the "interdependent and mutually reinforcing pillars" of sustainable development as economic development, social development, and environmental protection.

Achieving sustainable development, while overcoming environmental challenges such as deforestation, land degradation, logging of watersheds, over-exploitation of terrestrial and aquatic biological resources, improper waste management and pollution control, impact of climate change, and the attitude of people in terms of the unsustainable use of their resources, is a central challenge of the Sustainable Economic and Empowerment Strategy (SEEDS) for Fiji.

Fiji has compiled the report regarding the Commission on Sustainable Development (CSD) 18/19 Session on the basis of past completed surveys and additional information gathered over the last few years. This report highlights the current emerging issues in Fiji in terms of the five thematic areas of the CSD.

The areas of focus include:

- Chemicals;
- Mining;
- Ten Year Framework of Programmes on Sustainable Consumption and Production Patterns;
- Transport; and
- Waste Management.

Furthermore, the report focuses on the concrete actions taken and specific progress made in implementation, and some of the lessons learned and best practices. It also highlights the recent trends, and major constraints and challenges of sustainable development.

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## 2.0 CHEMICALS

### 2.1 Summary - Chemicals

The implementation of a robust pesticide and chemical management system is critical particularly aspects relating to chemical Analysis Service and Licensing, Compliance and Monitoring and use of chemical for pesticide. To sustain agricultural production, the use of agriculture chemical for plant protection and pesticide use is inevitable to maintain increasing production. The Ministry of Agriculture (MOA) through the Research Section has ensured that chemicals used are properly analysed through proper quality control process before approval is given for public use.

Furthermore, the Republic of the Fiji Islands was the second country in the world to ratify the Stockholm Convention on Persistent Organic Pollutants, having done so on 20<sup>th</sup> June 2001. The objective of the Stockholm Convention is to protect human health and the environment from persistent organic pollutants (POPs). The convention currently covers the following twelve chemicals: aldrin, chlordane, Dichlorodiphenyltrichloroethane (DDT), dieldrin, endrin, heptachlor, mirex, toxaphene, hexachlorobenzene (HCB), polychlorinated biphenyls (PCBs), polychlorinated dibenzo-*p*-dioxins, and polychlorinated dibenzofurans. The first nine of these are pesticides. HCB is also classed as an industrial chemical, as are PCBs, while the dioxins and furans are formed as unintentional by-products in combustion processes and some industrial activities. These chemicals are to be controlled through various actions, including prohibiting future production and use of most of the pesticides and industrial chemicals, and the application of a range of measures for the reduction of releases of the unintentional POPs.

A Project was developed by the Government of the Republic of the Fiji Islands with financial assistance from the Global Environment Facility (GEF). Funds were provided for an enabling activity project to assist the country in meeting its obligations under the Stockholm Convention. The work for the project was guided by a National Coordinating Committee, which included representation from central government, non-governmental organisations, education and research institutions, and the private sector.

### 2.2 Systematic Evaluation and Labelling of Chemicals

All chemicals are tested against target pest and crops for three (3) crops

**Cycle:** This can take 2-3 years

**Classification:** All pesticides are classified under pharmacy schedules A, B, C and labelling of chemicals based on Food and Agricultural Organisation (FAO) guidelines of highly toxic, Harmful, and Caution.

**Assessment Criteria's and linkages:** Based on lethal dose (LD) and lethal concentration (LC) 50 values and also on oral injection and dermal application, we register products which are of low toxicity to the user and the environment. First Aid, precautions and

storage disposal are written in 3 languages in English, Hindi, and Fijian with FAO colour band & pictogram.

**Information exchange and corporation:** FAO code of conduct on distribution and use of chemical are also distributed by International agencies like FAO, National Agriculture Research Institute (NARI), Greenpeace, South Pacific Regional Environment Programme (SPREP), Universities and Registrar of Pesticides of various countries.

### **2.3 Sound Management of Toxic Chemicals**

**Progress within large framework of strategic approach to International chemical:** We follow the FAO guidelines on registration, testing, disposal and management of chemical and registration of pesticides coming in the country.

**Initiative and innovation of risk reduction:** Almost all chemicals imported are of lower risk; however, controls are taken not to purchase excessive stocks. Great care taken not to pollute environment, with care taken in following disposal system.

**Precautionary measures:** Use overall gumboot, tuff boot, face shield, wash hands, bath after use, keep under lock and keep away from food/ animal feed, and no refilling and selling of pesticides.

**Policy measures to control chemicals that are high risk to human:** Looking for safer alternatives and selective and importation of safe chemicals permit granted to only specialized dealers, and trained technicians.

**Policy frame work of prevention of accidents:**

- Store in original containers properly labelled;
- Use protective clothing etc;
- Store in proper house /shops separate from food/ and general public area; and
- Training of pesticides users.

**Policy aimed at reducing risk:** All chemicals are to be properly labelled and clear instructions to be put on the labels. Do not mix insecticides with herbicides to protect contamination to user and the environment. Distribution of technical bulletin, leaflets training of farmers and pesticide dealers are to be effectively carried out.

**Initiative to reduce overdependence on the use of agricultural chemicals:** Implementation of integrated pest management programmes have been undertaken with regional organisations such as the Secretariat of the Pacific Community (SPC). Developments of organic production systems for agricultural commodities that fetch a higher price have been developed. . Use of control, resistant crops and the phased planting time for crops has been also introduced. There has also been an increasing awareness through mass media on safe use of pesticides.

## **2.4 Constraints - Research, Development and Monitoring**

The technical infrastructure for POPs monitoring and research in Fiji is very limited. The only laboratory with capabilities in this area is the Institute of Applied Science at the University of the South Pacific, and these are currently restricted to the monitoring and analysis of POPs pesticides and PCBs.

## **2.5 Implementation Plan**

Consultation with stakeholders was an important element in the preparation of the National Implementation Plan, 2006. This was achieved through a combination of one-on-one consultations, presentations and a number of national workshops. The National Implementation Plan is based around a number of specific action plans. The goals and objectives of each action plan reflect the requirements of the Stockholm Convention, but are intended to address the specific issues identified as being most relevant for Fiji.

The plans are as follows:

- Action Plan to address Unintentional Releases of POPs (Dioxins and Furans);
- Action Plan for Chemical Stockpiles and Contaminated Sites;
- Action Plan for Public Awareness, Information and Education; and
- Action Plan for Research, Development and Monitoring.

The action plans were developed based on the outcomes of the National Priority Setting Workshop for the Implementation of the Stockholm Convention in Fiji. Recommendations considered at that workshop came out of the various major consultancy reports that were prepared for different aspects of the project. The plans include the following specific proposals for capacity building:

### ***POPs Pesticides***

- Staff training for effective control over imports and use of pesticides
- Staff training for regulation and management of pesticides, including enforcement of the Pesticides Act
- Education and awareness to improve practices for pesticide handling, storage, use and disposal

### ***PCBs***

- Upgrading of laboratory facilities for PCB analysis
- Training in identification and sampling
- Development of guidelines for the storage and safe handling of PCB wastes
- Staff training for effective control of PCB imports

### ***Unintentional POPs***

- Review and strengthening of monitoring systems for all possible sources
- Development of BAT/BEP information, education and awareness programmes
- Establish sampling capabilities for dioxins and furans

- Education and awareness programmes for specific target groups relevant to the specific sources of unintentional POPs (waste operators, health-care and vehicle maintenance personnel)

#### ***Stockpiles and Contaminated Sites***

- Training programmes for the assessment and management of contaminated sites
- Training programmes for the safe management of obsolete and unwanted chemicals
- Training programmes in safe storage, handling and use of hazardous chemicals

#### ***Research and Development***

- Upgrading of existing laboratory facilities and staff training for POPs analysis.

The implementation of these plans are intended to be carried out over the next three years, although some involve on-going commitments which will continue for many years in the future.

In addition to this, a National Air Pollution Control Strategy and the incorporation of the Air Pollution Permit System under the Waste Disposal and Recycling Regulations were formulated in 2007, and are currently enforced, targeting all commercial and industrial facilities. The formulation of this set of policies, together with the regularized National Air Pollution Standards fulfils obligations under the Stockholm Convention.

The Department of Environment have also worked with institutions, communities, business, hospitals schools etc for the disposal of obsolete chemicals. This is a challenge due to the absence of disposal facilities in Fiji. For assistance the Department seeks assistance with regional organization in terms of advice and disposals. The Department had nominated a new focal point for the Stockholm Convention on Persistent Organic Pollutants to the Secretariat, the earlier focal point has migrated overseas and there is a need for this nomination in order for programs relating to POP's to continue.

Likewise, a new nomination had been made for the Strategic Approach to International Chemicals Management (SAICM) Project in order for the program to continue. The earlier focal point has migrated to overseas also.

## 3.0 MINING

### 3.1 Summary - Mining

Mining and exploration in Fiji has been dominated by gold production from Vatukoula mine in the past, although significant other sector revenues come from industrial minerals such as sand and gravel, quarried stone and coral sand.

The mining and quarrying sector on average accounts for 1.4% of GDP. A sluggish performance in 2005 saw the sector decline by 30.7%, and its contribution to GDP falling to 1%. Prospects for the sector looked bleak when operations at Emperor Gold Mine (EGM) in Vatukoula was shut down in early 2006 to allow a reorganisation aimed at bringing the mine back into profitability. While the shut down was supposed to be temporary, a management decision was taken in December 2006 to close the mine, citing the inability to generate viable returns as the central reason for closure. For 2006, gold production declined by 49.2%. The EGM was back into operation in 2008.

### 3.2 Policy and Regulations

#### ➤ Features of national mining codes or mineral industry code

The Mineral Resources Department (MRD) is a statutory regulating authority/body that regulates the mining industry in Fiji and is the custodian of the following Acts & Regulations:

1. Laws of Fiji Chapter 146: Mining Act & Regulations – guides and regulates activities relating to prospecting for and mining precious metals and other minerals in Fiji
2. Laws of Fiji Chapter 147: Quarries Act & Regulations – provides for the better regulation of Quarries and quarrying activities
3. Laws of Fiji Chapter 148: Petroleum (Exploration & Exploitation) Act & Regulations – guides and regulates activities relating to the exploration for and exploitation of petroleum resources
4. Laws of Fiji Chapter 189: Explosives Act & Regulations – an act that regulates the manufacture, use, sale, storage, transport, importation and exportation of explosive substances
5. Laws of Fiji Chapter 149: Continental Shelf Act & Regulation – an Act that makes provisions for the protection, exploration and exploitation of the natural resources of the continental shelf of Fiji and of areas within the territorial limits of Fiji

It would also be worthy to note the following:

1. A draft Mineral (Exploration & Exploitation) Bill was developed in 2006 with the final draft awaiting Cabinet's approval. Once gazetted, this will result in the revocation of the Mining and Quarries Act.
2. Due to increasing commercial interests in offshore mineral exploration in Fiji, a moratorium is currently in place whilst work progresses on the development of Fiji's Offshore Mineral Policy to control the exploration and mining of offshore mineral resources. This policy will be guided by the Madang



Guidelines, a set of international offshore mineral guidelines that was developed ten years ago during an Offshore Mineral Policy Workshop that was coordinated by South Pacific Applied Geoscience Commission (SOPAC) and held in Madang, PNG.

3. To date, MRD have issued 7 petroleum exploration licenses. Interests in Petroleum have been boosted by a report titled “Petroleum Potential In Fiji” which was written in 1993 by a Jonathan Rodd whilst engaged as Petroleum Coordinator for SOPAC, which is based in Fiji. In brief, the report indicated the existence of geological structures in Fiji with a high probability that these geological structures are oil-bearing.

➤ **Fiscal policies for investments and counteracting market fluctuations**

As part of our current Government’s vision for Sustainable Economic Growth, MRD endeavours to vigorously promote Fiji’s Mineral Policy, with its primary aim being to provide potential investors with a clear, stable and transparent guide to investing in Fiji’s mineral sector. The production of the Mineral Policy statement was encouraged by the Ministry of Commerce, Trade, Industry and Public Enterprise, which, in 1996, produced Fiji’s first general Investment Policy Statement (IPS).

Fiji takes the position that the major inducement to attracting mineral sector investors is the opportunity to obtain a return on investment commensurate with the risks faced. In developing the fiscal framework, the Government has sought to create an internationally competitive package of interrelated measures, which achieves the dual goals of investment promotion and equitable returns to the people of Fiji under a variety of market circumstances.

Additionally, Government also accepts that mining is an unusually high risk industry and private investment tends to be attracted to those areas with good geological potential, transparent fiscal policies and political stability. Hence the development of the competitive and transparent Fiscal Policy that will enable investors to achieve returns, taking into account the risks that their investment faces.

Fiscal/tax concessions are subject to approval by the Minister for Finance based on individual case-by-case basis

➤ **Regulations and mechanisms for compliance and monitoring**

The mining industry is primarily regulated by the Mining Act & Regulations, although there are supporting statutes, such as the Quarries Act and the Explosives Act. These Acts are administered by the Mines Section and the Mines Inspectorate within MRD.

For the purpose of the on-going monitoring /compliance programs, Fiji adopts a pragmatic policy towards compliance with acceptable socio-environmental standards and pollution abatement technology. Government places more emphasis on mining companies complying with agreed emission levels, than with the methods of abatement to achieve compliance. This then provides investors the flexibility to choose measures

which will reduce pollution levels in the most cost effective manner, subject to Government approval.

All Prospecting Licences and Mining Leases are subject to established reporting requirements and regular on-site inspection which is undertaken by MRD's Mines Inspectorate officers. This is to ensure all activities undertaken are in adherence to statutory requirements as specified in the relevant Act(s).

As stipulated in the Exploration and Mining Policy, extensions to Prospecting Licences are normally available, providing all licence conditions have been met. Extensions are subject to the same conditions as apply to initial applications, however, in the case of an extension, it is expected that minimum exploration expenditure will significantly increase with each successive extension.

Prospecting License holders have a right to progress from prospecting to mining if they have complied with the license conditions and they have proven that a minable resource exists. Permits to Mine (for artisanal, small & middle-scale mining) can be issued for a maximum of 2 years, and are renewed annually. All leases are renewable but the renewal period depends on the size of the proven resource. Thus, exploration and development is a prerequisite of any Mining Lease holder.

➤ **Guidelines for artisanal, small and medium scale mining**

Artisanal, small and medium scale mining guidelines are stipulated in the Mining Act Cap 146 through the grant of a Permit to Mine. Permit to Mine is granted for a period of 2 years and may be extended for a period of 1 year.

Every applicant for a Permit to Mine shall report fully to the Director of Mines the nature of the mineral deposit, submit a scheme outlining the extent of the proposed operation and produce evidence to the satisfaction of the Director of Mines that the applicant has the working capital necessary to carry out such a scheme.

➤ **Public/Stakeholder consultation and participation in decision-making related to mining**

History clearly shows that mineral sector developments offer unique benefits as well as pose special problems for communities adjacent to mineral deposits, and Government views the direct participation of residents as an integral part of a successful long term relationship. The rights of landowners and immediate stakeholders are enshrined in Fiji's Mining Act & Regulations (Cap 146).

From early in the exploration phase the project sponsor and Government, through the Ministry of Fijian Affairs, should collaborate on a public information and education program about the anticipated nature and impact of the project. Government is mindful that premature release of information may unduly inflate residents expectations, and will be guided by mining company views on when certain information may appropriately be released. However, the Government of Fiji believes that a regular information flow needs to be established fairly early in the project cycle to avoid misconceptions and unwarranted rumours about potential mine development. Once the project has come into

operation, mine management is urged to consider establishing resident liaison committees to facilitate information exchange and to provide residents with a forum for airing their views.

The Housing, Social & Regional Impacts Policies further clarifies the importance of land-owners/public consultation and participation in decision-making related to mining projects.

➤ **Public governance and transparency in the mining sector**

Fiji's exploration and mining administration system is open and unbiased. The guiding principle is that exploration and mining rights are given to any candidate, who by merit, can show Government that they have the capability to carry out an agreed upon work programme. In the case of multiple applicants for a tenement, rights are allocated to the first qualified applicant. This system supports and protects the rights of all investors, both local and foreign, to prospect, explore and mine their mineral discoveries. Investors rights to mineral tenements, and their security of title are enshrined in Fiji's Mining Act and Regulations (Cap. 146).

### **3.3 Mining Best Practices**

➤ **Environmental Impact Assessment (EIA) and monitoring of all phases of mining operation (exploration, project development, mine operation and mine closure)**

The Environment Management Act (2005), administered by the Fiji Environment Department, classifies mining projects/operations as “significant waste dischargers”. Therefore, for any new mining project proposal (including exploration), an EIA study needs to be undertaken with an Environment Management Plan (EMP) formulated to mitigate environmental issues highlighted in the EIA report. All costs are borne by the mining project developer.

One of the major prerequisites for the approval of a Prospecting License or Mining Lease application is the approval of the EIA/EMP by the Dept of Environment. For current prospecting activities/mining operations, relevant waste discharge permits apply. Additionally, the MRD's Environment Division carries out on-site environmental inspections to ensure waste emissions are within the discharge permit/mine environmental release guidelines and comply with socio-environmental standards, which are benchmarked against international standards/best practices.

Developers are required to post a refundable bankers guarantee, as surety of best practice. The amount of the bond will be determined by the MRD, in consultation with the Dept of Environment, according to the element of risk associated with the project. The full bond or a partial amount thereof may be used to remedy unacceptable environmental impacts of the mining project, or may be used as a penalty for late or non-remediation of remediable impacts identified during Environmental Impact Assessment process.

This is in line with the Government's Sustainable Development Policy.

➤ **Private Public Partnership PPP for sustainable mining**

Government's main aim for the mineral sector is to ensure that developments proceed in a sustainable manner. Sustainable mineral sector projects are those that effectively incorporate community participation during the corporate decision-making process, that ensure an equitable distribution of the benefits arising from mine developments, and that, having carefully assessed the socio-environmental impacts, minimise these impacts.

➤ **Emergency Response Plans and Preparedness at the local level**

It is a requirement that all mining operations develop a Mine Safety Management Plan (MSMP) incorporating an Emergency Response Plan, which is reviewed and passed by the MRD or consultants. Contents of the MSMP include:

- The management structure
- How risks are to be managed
- Arrangements for the safe use of plant and electricity
- Contractor Management Plan
- Emergency Plan
- The O.H.S Policy for the site and it's objectives
- The arrangements for training, instructing and informing persons on O.H.S matters
- The arrangement for supervision and communication
- The arrangement for supervisors skills upgrade in terms of on-site risk assessment and developing section emergency response plans
- Induction/training arrangements on site safety rules for any site visitors or new employees
- The establishment of safety guidelines and evacuation procedures
- The arrangement of having mock drills to test the response and awareness of employees (e.g. fire drill – surface & underground, stench gas drills etc).

➤ **Risk assessment of mines and mining activities**

Due to the hazardous nature of mining operations, the Government supports the promotion of risk assessment approach to mine safety, which borders on being pro-active and the subsequent implementation of preventative measures rather than being re-active and implementing corrective measures.

As part of the MSMP requirement, mining project developers are encouraged to ensure all employees undergo formal risk management training and are equipped with the necessary knowledge and tools to be aware of the risks that are confined to their respective work areas/work sites.

➤ **Rehabilitation of affected communities and life-supporting ecosystems, including mine site decommissioning**

Wherever possible, mines are expected to rehabilitate progressively during their operation. Government believes that, ultimately, this will reduce the total costs of rehabilitation. In line with Government's adoption of the precautionary principle, and to ensure that sufficient funds are available to complete rehabilitation at mine closure, the

mining project developer will be expected to make contributions to a Mine Closure and Rehabilitation Fund. The parameters and objectives of this fund will be established as part of the comprehensive Development Agreement, prior to mine construction. Contributions to the fund can be flexibly organised to reflect debt repayment or cyclical factors but the fund must represent a good faith effort by project sponsors to make financial provision for the maintenance or restoration of the mining area/community after the cessation of mining. The final state will be ascertained from the outset, and the repaired state will be subject to an impartial assessment, to ensure that it meets final state specifications.

➤ **Technological, institutional and social initiatives for protecting the health of mining workers**

Fiji's occupational health and safety provisions pertaining to the mining industry is enshrined in the Mining Act and Regulations. Where mining companies can show compliance with the regulations, and application of best-practice work standards, a system of self-monitoring will be developed in consultation with the Mineral Resources Department. This is based on the premise that safe working conditions lead to improved and efficient production in mining.

The Government believes that safety provisions are part of the framework for responsible mining and mining project developers are expected to ensure the creation and maintenance of a safe, productive and beneficial work environment by the formulation of the mining project vision, mission and objective statement based on.

- Ensuring environmentally responsible mining
- Ensure that mine development results in benefits to workers and affected communities
- Ensuring good governance

➤ **Mine Closure Planning (Land use plans and site rehabilitation, site safety, decommissioning, waste dumps & tailings, site water management, off-site infrastructure, community socio-economic program and employees)**

The laws of Fiji are very broad in terms of mine closure. Project developer's obligations in terms of environment restoration, community rehabilitation, alternative livelihood, care and maintenance are not clearly defined in the Mining Act & Regulation (Cap 146) and in the mining license/lease.

There is no backing legislation to ensure the mine developer(s) oblige and comply with mine closure provisions based on international standards/best practices.

As such, the best approach that Government has implemented is ensuring that mining companies set up Trust Funds to help in rehabilitation work, promotion of alternative livelihood for employees and mining communities and also to ensure all other major areas in relation to mine closure are addressed.

A second approach is the establishment of Mining Deeds that allows the transfer of ownership or interest in mining claims from one party to another. A feature of the Mining Deed is the understanding that the incoming party inherits any outstanding issues of the

previous owner and settles these issues (rehabilitation, relocation and promotion of alternative livelihood for redundant employees etc) as part of the Mining Lease transfer.

The current Government and MRD's vision is to have a proper Mine Closure guideline/policy formulated and implemented as a binding document to ensure current and future mine developers carry out effective restoration and rehabilitation works as per nature of their project upon mine closure.

## **4.0 TEN YEAR FRAMEWORK OF PROGRAMMES ON SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS**

### **4.1 Summary - Agriculture**

Agriculture faces immense problem and challenges. As the population continues to grow, the food needs increases while the availability of the arable land decreases. Therefore, the shift in agricultural production towards a more sustained resource base where people, farming and forest interact harmoniously is crucial in order to meet the future challenges. This enormous task needs the commitment of the international community to facilitate the need in the agriculture sector that is beyond our economic reach to address.

The Sustainable Consumption and Production (SCP) framework addresses the concern of the United Nations Department of Economic and Social Affairs (UNDESA) theme, “Ensuring environment sustainability” at national level which provides a framework for integrating the principles of sustainable development into national policies. The agriculture sustainable plan framework basically supports the Mauritius Strategy Implementation (MSI) which focus on key thematic areas; Fresh water’, and, Land Resources’ article 38 to 43 in the MSI report. Achieving sustainable development while overcoming environmental challenges such as deforestation, land degradation, logging of water sheds, over exploitation of terrestrial and aquatic biological resources, improper waste management and pollution control.

#### **4.1.1 Land Resources, Agriculture and Rural Development**

The pressures on land resources that existed 10 years ago have only been exacerbated by competing uses, increased demands and land degradation.

National strategies have to be elaborated on sustainable land use, which tackle such issues as land tenure and management systems, combating desertification and protecting biodiversity. These strategies should include environmental impact assessments and identify the necessary policy changes and capacity-building needs within the framework of the three pillars of sustainable development.

##### ***Ministry of Agriculture Sustainable Land Management (SLM) program. (Cross Sectoral - Land Resources Development & Management)***

*Objectives:* To promote sustainable land use practices with major emphasis on land conservation and land degradation issues.

*Description:* The project aims to bring about awareness and educate the nations land users on better land use management technologies through research, technology transfer, capacity building, research generation and compilation of reliable data to realise and support such activities. Most of the country’s developments occur on sloping lands with unsustainable practices leading to the destruction of the environment affecting food security and sustainable farm economies thus living standard of rural population

deteriorates. This project continues the study of the effects of soil erosion on Fiji's environment. It has provided support for sustainable farming practices to minimise soil erosion and land degradation problems, stabilise the rural community socially, economically and environmentally. It collects, acquires and generated good quality land resource based information for sound decision making in agricultural development. The project has created awareness on the government's recently adopted Rural Land Use Policy. It has also addressed some of the issues stipulated in the Land Conservation & Improvement Act of which it is the Boards' secretariat.

*Viability:* Addressing the issues in the programme on land conservation and land degradation will save the nation millions of dollars otherwise spent on dredging, maintaining erosion, fertilisers and chemicals, food security, and other socio-economic problems. There will be an ever increasing demand from the land and quality land resources information can ensure sound decision making for its development. Long term stability in the agricultural sector can only be ensured through sustainable farming systems. Self sustained agricultural production systems will ensure the viability of farms for future generations.

***UNCCD Venezuela grant -Combating Land Degradation in Fiji through the Promotion of Sustainable Land Management Practices.***

In 2007 the Government of Venezuela provided a US\$2million Grant for the Pacific region to the UNCCD for combating land degradation. The Land Use section after submitting its proposal was approved US\$90,000 to commence with activities to combating land degradation in Fiji through the promotion of sustainable land management practices.

*Activity update* - To date five sites had been approved and project activities have been implemented. Activities carried out involves the establishment of pilot and demonstration farms, establishment and management of rural community managed nurseries and on-site training of farmers on SLM technology and nursery management. The overall objective of these projects is to promote land use practices with major emphasis on land conservation and land conservation.

The five current project sites are located at the three divisions;

- Western- (Vavinaqiri);
- Central/Eastern- (Navunikabi, Naiyala & Namoli settlement, Ovalau); and
- Northern division- (Koromakawa).

***Development of Sustainable Agriculture in the Pacific (DSAP)***

Sustainable Food and Income security for rural farm communities in economically deprived areas plus enhancing technical skills of farmers and national agricultural extension and research staff is DSAP Fiji's objective throughout the term of project and beyond.



### ***DSAP Fiji Projects***

DSAP Fiji Program in 2007 focused on capacity building for all our community projects as well as for the staff. The target of the year was to improve on the projects activities carried out from previous years and concentrate on training and related activities for the betterment of the target audience.

#### ***Project sites***

##### ***➤ Tilivalevu (Nadroga Province)***

The site was selected after the Committee considered the fall of Government's Beef Scheme project which was implemented in 1968. The project was in operation for 20 years but slowly collapsed in 1988 after the political upheaval in 1987. There were other reasons leading onto the fall of the project. The Land Use Section had organised implementing of Land Conservation Technologies because of the physical environment that Tilivalevu is situated in. DSAP therefore is continuing with Land Use technology but this time combining it with Extension and Research and adding a more economical value to the agricultural activities that farmers are participating in. Tilivalevu is also situated in the Nadroga Province which houses a lot of hotels plus the renowned "salad bowl of Fiji". Therefore it has the potential to obtain a fixed market from resorts and hotels plus the local Sigatoka market is quite high.

##### ***➤ Nabalabala (Ra Province)***

There are major tourism and other commercial developments occurring within the Ra Province. One of which is the establishing of the Studio City. DSAP has therefore taken advantage of this opportunity to boost farmer participation in the economy to contribute to minimising importation of vegetables and fruits.

The Nabalabala farmers' are mostly cane farmers. Over the past 3 years, their cane production has been stagnant and has also dropped. With this current trend and the down turn of the sugar market, DSAP wants to promote a farming system to stabilise and improve the livelihoods of the farmers.

##### ***➤ Drawa (Cakaudrove Province)***

This site is actually a GTZ model area better known as "Drawa Model Area" where Sustainable Forestry Management has been promoted. The model area consists of four villages but the DSAP site is only situated in Drawa village. DSAP's Local Technical Committee is promoting Sustainable Agricultural practices in Drawa so that the site has a more integrated approach towards development

##### ***➤ Young People's Department (YPD – Davuilevu)***

This is a centre where about 100 young people are trained to work as catechist all around Fiji's Methodist Church. The site was chosen in line with SPC's focus on promoting agriculture to youth as a means of income generation in the Pacific Region.

## **4.1.2 Water Resource Development and Watershed Management**

### ***Land and water resource management objectives***

Mismanagement of land and water resources is gradually resulting in the depletion of the nation's resources. Indiscriminate utilisation of these scarce resources will have serious impacts to the fragile economy as well. These issues need to be addressed with both long and short-term measures to ensure development and management of these resources in a sustainable manner.

The Land and Water Resource Management Division's Plan focuses on the following deliverable:

- efficient and effective drainage infrastructure maintenance works for the improvement and effective utilisation of agricultural land in the Central, Northern and Western Divisions;
- disaster mitigation activities to reduce vulnerability and risk of flooding in Nadi and Labasa;
- watershed management to reduce the impact of flooding in Nadi and Labasa;
- irrigation infrastructure development and maintenance works in irrigation schemes in the Central and Northern Division; and
- water resource development and management for sustainable crop production and drought mitigation in the Western Division.

#### ***Watershed Management program***

Watershed management is defined as the management of all natural resources in an eco-system to protect, maintain, or improve its water yields. It also is defined as the process of guiding and organising land and other natural resource use in the watershed to provide desired goods and services without affecting adversely soil and water resources. The effects of land management activities on soil and water resources often lead to detrimental effects on site and on downstream areas. The focus on watershed management is therefore on water and its interrelationship with other natural resources.

Fiji's development plans recognize the need for watershed management programs to reduce flood intensity, soil erosion and sedimentation of river systems. The worst affected watersheds are in the Western and Northern Divisions, which have densely populated flood plains and all the major infrastructures including agricultural crops. The soil losses in these watersheds range from 60 to 81 tonnes per hectare.

The Watershed Management Program focuses on structural engineering measures such as retention and check dams to control the peak flow of flood waters during high intensity rainfall to reduce the impact of flooding in the lower river basin.

#### ***Land Drainage and Flood Protection***

The cause of flooding is a consequence of sedimentation of the rivers that is usually associated with torrential rainfall and cyclones. In recognising the need to address the problem, Government commenced implementation of the flood mitigation program from 1982.

The objective of the flood mitigation program is to provide protective measures to reduce flood damages to agricultural crops, buildings, towns and villages, settlements, infrastructures and educational institutions which run into several million dollars.

Through specialised river engineering technology, river monitoring, river dredging, land reclamation and river bank protections, works can be undertaken to protect the agricultural land, villages, towns and other infrastructures.

Land and Water Resources Management Division of Agriculture department, as the leading agency in this area will continue with works for the improvement of Nadi River Basin. Funds have been made available for the construction of more retention dams and irrigation facilities.

Studies within the Ba and Labasa Watershed area will continue to identify proposals to manage and utilize water as a useful resource as an alternatives to dredging. The Division played a pivotal role in ensuring the formulation of National Water Policy and will continue to support development of strategies for water management.

#### ***Environment Studies, Monitoring and Compliance***

In line with Environmental Impact Assessment for river dredging and construction works, hydrological monitoring of Nadi, Ba, Rewa, Nawaka, Labasa, Qawa and Wailevu rivers will continue. The ongoing programme monitors water quality, salinity, and sediment and discharge measurement to monitor the state of the river environment.

Environment Impact Assessment for the dredging of the Rewa Rivers will be implemented. As a prerequisite for dredging, environmental impact assessment will need to be undertaken. Provision has been made carry out this study to ensure that we comply with the Environment Management Act.

### **4.1.3 Food Security Programme**

Our immediate goal as a Ministry is to boost the contribution of the agriculture sector so that it will enhance economic revival. With this in mind we have to change our approach and see the need for agricultural diversification, this to ensure that we maximise our effort in increasing agricultural production particularly meeting the needs of our domestic market, thus ensuring food security for the people.

#### ***Rural and Outer Islands Development (ROI)***

The long term objective of ROI is to enhance the livelihoods of people in the rural areas and outer islands of Fiji. The immediate purpose is to increase market access opportunities and services that will enable beneficiaries in the rural areas and outer islands to exploit those opportunities. Relative isolation of these ROI areas has tended to exclude them from the main stream of Fiji's economic and social development, denying opportunities to those seeking education and material advancement for themselves, their families and their communities. Hence the large movements of people especially those entering their economically active years, from rural areas to urban areas – even when this often means poor housing conditions in urban and peri-urban squatter settlements. Total fund allocated by Government for the programme in the last 3 years was \$7 million.

### ***Export Promotion and Import Substitution Programmes (EPP & ISP)***

To address constraints in the agricultural sector, the MOA recently launched the Demand and Market Driven Approach (DDA) as a new mechanism to fund and implement the Ministry's programmes. The sole distinguishing feature of the new approach is the mandatory participation of the private sector. The DDA represents an integrated market driven agricultural assistance programme targeting progressive farmers, farmer groups or agribusiness in crop, livestock or value-added production that meets market demand. The inherent public-private partnership approach should not only mobilise private sector investment, given the equity requirement criteria, but also allow Government to be better in-tuned and responsive to the needs of the market. The Demand Driven Approach consists of five programmes: the Export Promotion Programme and the Import Substitution Programme. \$8.3 million have been allocated for 2008 and 2009 for export promotion and import substitution measures.

### ***Cottage Industry Development***

The Ministry has introduced policies that encourage emerging small holder farmers who are engaged in smallholding semi-subsistence agriculture. Cottage Industries are classified as home based enterprises that produces specific product that meet the demand of a specific market. These includes the production of noni, virgin coconut oil, coconut cream, chocolate, cut flowers, traditional artefacts, jam, confectionary and traditional processing techniques. \$0.5 million have been for 2008 and 2009 for export promotion and import substitution measures.

### ***Farming Assistance Scheme (FAS)***

The programme is aimed at assisting the rural subsistence farmers with grant of up to \$1000 for individual and \$10 000 for groups. The assistance is in the form of grants for planting material, tools, agriculture inputs, small farm machinery. The project is a national one covering the ALTA Leasehold Areas in the Central, Western and Northern Division. Project aimed to sustain the development of the sugar and other agro-based industries, to create employment for indigenous landowners and ex-ALTA tenants. To create a new generation of young farmers who could be motivated and assisted through this grant.

### ***Agriculture Marketing Authority (AMA)***

The Agriculture Marketing Authority Act No.2 of 2004 established the Agriculture Marketing Authority to facilitate the purchase, sale and exportation of Agro-produce and for related matters. The Authority will provide the following services as covered in the AMA Act:

- To assist the producers of Agro-producers in marketing of their products;
- To identify markets for and to facilitate and develop marketing of agro-produce;
- To purchase, sell and export and import agro-produce or import agro-input; and
- To do any other thing necessary to properly carry its functions and powers under this AMA Act.

***Objectives:***

- Improve AMA's current operations and business portfolios;
- Increase the range of agro & aqua produce that it is dealing in, and allow for a wider representation and presence in other parts of Fiji;
- Refocus and work within the core functions of the AMA to deliver on the "Vision", of "Growing Agriculture";
- Link itself and work very closely with the Extension Division of the Ministry of Agriculture & Primary Industries, together with all other relative Government agencies;
- Become the "facilitator" of markets for farmers and exporters;
- Be the "Consolidator" between the farmers, buyers (local & overseas) and all other relevant stakeholders within the Agriculture Industry;
- To act as a "Market Intermediary" between the farmers and the hotel industry; and
- To work with the Department of Fisheries to further develop Seaweed farming as an industry in years to come.

***Coconut Industry Development Authority (CIDA)***

Government grants to assist the development of Coconut industry in Fiji on an integrated basis in order to achieve increased production of the coconut land in the traditional and plantation areas. The project aimed to assist the enhancement of coconut industry's contribution to the life and economic development of Fiji by rationalisation and modernisation of the processing of coconut products and to encourage and promote the development of a diversified range of coconut products using the coconut kernel, shell, husk and stem and the other parts of the coconut palm in order to enhance the productive efficiency and earning potential of the industry.

***Sigatoka Valley Improvement Programme (SVIP):***

The project intends to enhance the livelihood of the rural people of Nadroga Navosa in terms of increase market access opportunities, improve infrastructure and services that enables beneficiaries to exploit prevailing market opportunities. The program specifically targets the improvement of rich farmland in the lower Sigatoka valley with the estimated area of 600ha. Project aims to provide drainage and irrigation facilities under the one third, two third bases. To facilitate intensive use of available farmlands for the production of high value cash crops for the local and export markets.

***Dairy Industry Support (DIS)***

The Dairy Industry Support (DIS) program targeted to revamp the Dairy industry. The national demand for milk is 80 million litres. The Rewa Dairy has the facility to process 40 million litres of milk but averages only 11 million litres. Local production is insignificant, representing only 20 percent of national milk demand with small producers representing about 80 percent of the total existing dairy farms. There is an exorbitant import of milk products. To address this issue, the government has allocated \$750 million for the 2009 Dairy Industry Support Budget with the bulk being a milk subsidy component. The programme Focus is on developing smallholder milk producers due to

the impending expiry of land leases for most large producers and the uncertainty surrounding the future renewal of leases by landowners, and Improve average milk production supplied to Rewa Cooperative Dairy Company (RCDC) Limited from 5litres/Cow/Day to 8litres/Cow/Day.

***Benefit justification***

- The Dairy Section of the MOA is committed to the development of the dairy and beef industries because of their direct and indirect contribution to Fiji's economy through:
- Creation of permanent employment for the people in the rural areas, which will reduce urban drift;
- Provision of sustainable income resulting in higher standard of living; and
- Food security – cheap source of high quality milk and meat.

**4.1.4 Achievements**

***MOA Sustainable Land Management program (SLM). (Cross Sectoral - Land Resources Development & Management)***

Land Conservation & Improvement Act (LCIA) reviewed - Comments prepared on the rewritten LCIA, prepare documents for dissemination to land users. Prepared cabinet information paper for the amendments of Land Conservation & Improvement Act was endorsed by Cabinet. Final stakeholder consultation workshop.

*Land Conservation Board (LCB)* - LCB board facilitate the promotion of agro-forest farming techniques, to farmers to improve land sustenance and increase productivity.

*Land Care Secretariat Services provided* - Four national Land Care steering committee meetings conducted and TORs prepared for promotion of LCC data to user groups. Resource information databank built for Land resource information system that Land resource information readily available to stakeholders, so better and faster information for decision-making at various levels.

*Geographical Information System (GIS)* - Infrastructure and applications updated and Training of staff undertaken, GIS is now fully functional in all divisions. Two (2) trainings conducted on GIS applications. Soil databases converted to Land Use Capability (LUC) class.

Provide 30 maps to farmers, land owners, institutions and various stakeholders. 17 maps provided to clients (3 soils map, 1 cassava suitability for ethanol production, 1 present land use map, Ono, 1 Native Lands Commission (NLC) for Koro, 8 LUC maps, 2 tikina boundary maps, 1 Qoliqoli map for ono, and 1 Village profile map for Ono).

*Tikina based information packaged* - Land resources information by district collated into useable modules, land resources information by district has been collated. Tikina based resource information prepared for potential land developers and investors to encourage increase land use.

*Capacity built on SLM* - Training conducted for awareness and workshops on SLM. Advise on setting up conservation/demonstration farms in localities. Participate on national environmental events to increase awareness on SLM concept, awareness training conducted in the Northern division and SLM technologies seen adopted by land user at various demo farms.

*Land use planning services provided* - Land use capability maps and reports produced for land users/owners to increase commodity production by farming the right crop on the right soil classification, 42 LUC maps produced, 15 produced in the Central/Eastern, 3 in the West and 24 in the North.

### ***UNCCD Program***

UNCCD implementation in Fiji initiated for development of sustainable agriculture activity in Fiji. Signing ceremony on March 14 and Project document signed by UNDP representative and Fiji Government (PS Ministry of Agriculture and Primary Industries). Project has now received its final approval to commence with the implementation of activities.

*Expected project outcomes and outputs* - Demonstration farms established in Vavinaqiri, Nadroga and in Navunikabi, Namosi for combating land degradation through the promotion of SLM implement. A Successful completion of the project by year 2 with regular monitoring and evaluation reports. Capacity built and mainstreaming of sustainable land management conducted, setting up and hands-on training for 6 community managed nurseries. 2 community nurseries established in the west, Vavinaqiri, Nadroga and Navunikabi in Namosi Communities.

The program of work involves the carrying out of all the three activities in the respective areas starting with site surveys and selection, a community awareness workshop on SLM, explanation of the operations and responsibilities, and then a demonstration/pilot farm set up with hands-on training, nursery set up with hands-on training and finally the woodlots.

### ***SITE 1: Land rehabilitation and sustainable livelihood through SLM promotions in the rural settlement of Vavinaqiri***

Vavinaqiri settlement is located in the Western division in the province of Nadroga. Flat land is very scarce in the catchments and this has resulted in the expansion of agriculture onto marginal sloping lands with unsustainable practices. Constraints to land development in this area include limited choice of crops due to steep slopes, poor soil fertility and the unavailability of seedlings and planting materials. The project is aimed at promoting sustainable land management practices in this community. Activities will include the establishment of pilot and demonstration farms with SLM technologies, establishment of nursery, woodlots and training of farmers on SLM and nursery management.

Activities carried out since the commencement of the project are as follows:

- (i) Community meeting, awareness on sloping land agriculture;
- (ii) Demonstration site selection and participatory planning;
- (iii) Land clearing and site preparation;

- (iv) Purchase and acquisition of materials;
- (v) Farm establishment;
- (vi) Nursery design and layout; and
- (vii) Raise agro forestry, fruit trees and forest species seedlings.

***SITE 2: Combating Land Degradation in Navunikabi through the Promotion of Sustainable Land Management Practices***

Navunikabi village is located in the province of Namosi. The topography is a combination of steep to very steep mountainous land. Shortage of flat land has forced people to farm on steeper slopes. Shifting cultivation and deforestation is commonly practice in search of good arable land. Erosion features can be seen on some steep lands and this is evident especially on deforested sites.

People of Navunikabi are mostly subsistence farmers growing a variety of vegetables, crops and fruits. Farmers in the area apply very few conservation methods. Advice on farming is a service that is desired by many of the farmers in Navunikabi. Extension Officers rarely visit this area and many farmers are not aware of the new technologies available for farming improvements. The objectives of the project are:

- To established sustainable land management demonstration farms;
- To provide awareness and training to rural communities on Sloping Agricultural Land Technology;
- To reduce deforestation through the provision of woodlots; and
- To assist in the provision of planting material for land conservation.

Activities carried out since the commencement of the project includes:

- (i) Community meeting. discussion and awareness on sloping land agriculture and project objectives;
- (ii) Community training on Sustainable Land Management;
- (iii) Demonstration site selection and participatory planning; and
- (iv) Appointment of sub-committee comprised of landowners.

***SITE 3: Addressing land degradation on steep rangeland in Kavuli, Ba***

Ba province is one of the main sugar cane producing districts where other crops and livestock had been forced to marginal land. Livestock is an integral part of sugar cane production not only for weed control, and source of milk, meat and animal power, but as an alternative income generating source. The land is very steep and had been grazed very heavily in the past without any system of stock control or grazing management systems. Steep soil management in previously drier places which have now been subjected to heavy rainfall like Ba is given priority for raising awareness to proper land care and management.

The project aims at providing awareness to farming communities in the drier areas of the main island of the need of sustainable land management practices. These management practices awareness programmes will provide technology transfer, capacity building provision of valuable and reliable data to support and confirm the significance of sustainable land management systems in intensive farming situation.

The objectives of the project are:



- To establish sustainable land management demonstration farm in Sugar cane production area;
- To provide awareness and training for neighbouring farming communities on Sloping Agricultural land farming system;
- To improve soil mineral status through introduction of deep rooted leguminous forage trees that recycle mineral that had been leached deep down the profile;
- Improving livestock nutrition through nitrogen rich legume trees; and
- Reduction of soil degradation by control grazing techniques.

Activities carried out since the commencement of the project includes:

- (i) Site visit & site selection;
- (ii) Site preparation;
- (iii) Training & awareness meeting with farmers and locality livestock officer;
- (iv) Purchasing of materials for demonstration farm;
- (v) Plot layout, fencing & land clearing; and
- (vi) Raising tree legumes and arachis cuttings.

### ***DSAP Fiji***

*On farm demonstrations (Tilivalevu)* - Out of the 3 demonstration farms that DSAP established, there are now 19 individual farms and 1 farm for the youth. Farmers have shifted from off-season vegetable farming as promoted by DSAP to trialling of farming even during the vegetable season. This has led to farmers selling at the Sigatoka Market from Wednesday through till Saturday on a weekly basis. A recent survey, confirmed that the farmers in Tilivalevu are now earning an approximated figure ranging from \$500 - \$1,000 a month during the season and in the off-season – it is anticipated that the money earned could go up to more than \$2,000. We promoted an Integrated Agricultural Development Approach towards DSAP and stressed the importance of each Section's role. A consolidated effort towards agricultural projects or any project for that matter creates a better Team Spirit within the Ministry and would/could also enhance the knowledge of the Ministry Staff.

*Harvesting & Marketing* - In 2007, farmers themselves have harvested and marketed their own products. Post-harvest and marketing training they received in 2005 & 2006 have assisted them in these arenas. The weak link lies in recording of harvesting & marketing of their products. Such attitudes are common amongst Pacific Islanders. However, for the purpose of expanding into Commercial Farming, these farmers need to be trained more on Farm Management and Record Keeping.

*Nabalabala* - Vegetable production for Commercial purposes is a new farming system for the people of Nabalabala. These villagers are sugar-cane farmers. Therefore, the 1<sup>st</sup> phase of vegetable production saw a rather discouraging commitment from the villagers more because of the new farming system. However, after harvesting of the products, villagers are now keen to continue with vegetable farming.

*The Local Technical Committee (LTC)* in Rakiraki conducted hands-on training with the establishment of 3 demonstration plots. Farmers were taught the importance of having conservation measures in place especially when farming on slopes. They were also taught on planting & maintenance of various vegetables plus harvesting. Other than vegetables & fruits, dalo & yaqona are also included in the demo farm.

*Harvesting & Marketing* -The vegetables plus watermelon was sold in the local Rakiraki market. The money obtained from the sale of the products was kept by the LTC to pay for land preparation in the next vegetable season.

*Nasinu Secondary School* - Only one demonstration site was established in Nasinu Secondary. The site serves 3 purposes:

- for food security : through promotion of local fruits & vegetables
- to educate students on good farming practices
- to promote agriculture as a means of income generation to students

All the produces have been used by the school. DSAP has supplied nursery materials to the school so that the nursery could be established for training purposes and merely for the fact that the School Farm Management can purchase and raise their own seeds.

*Young Peoples Department (YPD) in Davuilevu* - The aim of the demo site is similar to that of Nasinu Secondary. Now, YPD has its own nursery and are raising their seedlings. Vegetables were used during a Methodist Church Youth Annual Camp in November, 2007. Through this project, DSAP was also invited to facilitate during the camp in promoting good farming practices to the 1,000 plus young people from all over Fiji – most of who are unemployed. DSAP LTC is also hoping that the Institution would consider maximising the use of their land on agriculture so that food and income security is achieved.

*Drawa Model Area* - The farmers in Drawa have been concentrating on dalo and yaqona production for commercial use. Vegetables are merely grown for home consumption. The emphasis in this area is to promote conservation practices as these farmers are farming on steep slopes

DSAP LTC North has also established a poultry farm for the women in Drawa. This is currently on trial with the hope that women can expand their poultry farm.

### ***Export Promotion and Import Substitution***

This project to be implemented for a quick economic recovery whereby is aimed at reducing the import of agricultural which could be locally grown thus reduce overall agricultural imports. Both livestock and crops commodities are targeted to be funded through assistance to existing farmers and stakeholders in this sector. The objective is to address the increasing level of agricultural imports by encouraging and assisting local existing to grow crops which are imported and consumed locally. A total of 449 projects have been funded in the last two years and has benefitted 16,290 households through the Demand Driven Approach (DDA).

*Cottage Industry Development* - This program has drawn the interest of women groups and small entrepreneurs in Fiji to produce specific products that meet the demand of a specific market. Significant progress is seen in the rural areas in the production of natural oil and noni production.

***Food and Agricultural Organisation***

*Project-RICE Revitalisation Program* - Rice is the main staple food-crop grown in Fiji, and Government's emphasis is to continue more rice production as an import substitution and promotion as one of the beneficial diversified crops especially in the Northern and Central Divisions.

The project entails to provide support services and procurement of agro-inputs for local rice production, boosting local production to increase foreign exchange saving and improve the quality of life for the rural communities through increasing production and income generation, creating rural employment opportunities etc. The program will encourage the indigenous land owners who acquired former rice land in irrigation schemes to cultivate rice as an alternative for their traditional root crops and benefit from the existence of large demand for local rice. The program input is sufficient to plant 100 ha of rice and produce up to 300mt paddy rice with estimated value of \$150,000. Apart from addressing the wide socio- economic issues, most importantly the program will address the food security as well as poverty alleviation situation faced by rural poor.

Project-Small-Scale Chicken and Duck Farming Pilot project for Fiji. The Fijian poultry industry as in most developing third world countries is split along formal-commercial versus informal-peasant lines. Relatively little admixture of the 2 (two) sub sectors exists in Fiji except for sourcing of single-ingredient and balanced ingredients feed inputs from the formal sub sector feed mills. To exacerbate the difficulties faced by the informal rural poulterers the 3 (three) dominant formal sub sector poultry integrators have effectively sealed off access to improved gene stock (day-old chicks, and ducklings), and feed inputs for the small holder poulterers in Fiji - creating a real dilemma.

At the end of the project (22 months) it is envisaged that FAO funded infrastructure e.g.: Hatchery, feed mill, and Breeder Growing facilities (for chicken and duck fertile egg production) will be commercially self-sustaining. And the pilot recipients can effectively operate on their own in a quasi-co-operative framework. The first batch (harvest) alone has been conservatively projected to return gross receipts of 60% of the desired FAO funded inputs of F\$96,360 (US\$58,048). This project will definitely assist in food security for the rural majority in Fiji, eradicate poverty, and assist Fiji economically because of the high turnover rate of production. This project proposal is commended for your positive response and kind assent.

*Project-Smallholder development programme for milk and beef* - The project aims to assist the smallholder dairy farms to increase their milk production and surplus stock for beef.

The scope for improvement of both the dairy and beef production on semi-commercial small farm holdings is large. These farms contribute significantly to overall production in both the formal and informal sector (subsistence). Assistance in strategic areas can lift production from these farms immediately and on a sustainable basis. It is expected that farmers will increase production from 3.5 Litres – 7 Litres per cow per day, resulting in an extra 5,000 Litres per day fetching extra income of \$2200. (\$800,000/year). There will also be extra income from the extra beef cattle produced.

#### ***Watershed Management program***

*Nadi Watershed*; Construction of Mulomulo weir dam in underway and the consultation with NLTB and resource owners for development approval is completed.

*Nasau Irrigation system*: Consultation with NLTB for development approval on lease land completed installation commenced in August and is progressing.

*Ba Watershed & Labasa Watershed*: Desk study for these projects has been completed with sites Identified.

#### ***Flood Protection***

*Nadi River Mouth dredging*; 1.8km of river was dredged with 365,000 cubic meters of material excavated. Also the Environment Impact Post Assessment (IEA) on prawn fishery resources was conducted.

*Qawa River Mouth Dredging*; A total of 125,734 cubic meters of material excavated And the dredging work completed on 10/7/08. Rewa River Dredging Environment Impact Assessment Study commissioned to assess environmental impacts on dredging activity in Rewa River.

### **4.1.5 Major Challenges and Constraints**

The most challenging food security issues for Fiji are sustaining domestic food production levels in line with food demand and market potential, and continuing the transition from subsistence to commercial agriculture. Fiji's ability to meet this challenge is greatly enhanced by its comparative advantage in the production of traditional food crops. This advantage is based on farmers' ability to grow traditional crops, consumer preference, and unavailability or high cost of imported substitutes. If grown in the traditional manner, without chemicals and in rotation, these are highly sustainable activities.

Although farmers are well versed in growing traditional crops further improvements in research and extension can have high dividends, particularly in pest or diseases and making farmers aware of unsustainable agricultural practices. Quarantine has a crucial role to play in minimising the risk of these introductions. Strategically located roads can open up significant markets for traditional food crops and provide an incentive for increased production of food crops as past road developments have shown. The nutritional value of traditional food compared with imported and processed food needs to be continually brought to the attention of the community. The rapid expansion in

commercial taro production has brought with it unsustainable production practices which need to be addressed through education and in some cases through regulatory enforcement.

There is an urgent need to commercialise the agricultural sector given that the contribution of the subsistence sector to agricultural GDP has remained constant over the years. Past interventions by the MOA to transform the subsistence sector to semi commercial have been failures. The main cause of such failures have been the adoption of a mode of project implementation whereby staff mostly focus on production with limited attention given to addressing constraints along the supply chain. The future Ministry's present plan seeks to replace top down, supply driven institutions with demand driven service delivery by government and the private sector to promote commercial farmers

Finance for farming remains a key constraint. The outreach of rural financial services is limited, because there are insufficient borrowers to make it viable. The uncertainty over Land Leasing Arrangements is an overriding constraint on the move to a more commercial focus. Allied to this, there is a need for farmers to develop better farm management and business skills, and to develop and implement business plans for viable enterprises which will in turn improve access to finance.

Future viability for the Fiji sugar industry will depend on being able to produce sugar at a profit at world market prices. Furthermore, the necessary investment required to increase productivity will not occur unless there is long term security of land tenure. With the major concerns relating to Fiji Sugar Corporation's insolvency and falling sugar prices beyond 2007 when the EU Cotonou Agreement sugar price regime ends, many cane farms will either go out of production or diversify into other forms of agriculture. The diversification is expected to have impacts on the agriculture sector as a whole, such as increasing competition in the domestic market for vegetables, fruit and poultry, and adjustments in agribusiness and agricultural service industries to meet new opportunities.

Profitable opportunities have been identified for exporting certain high value niche products. Such products are not new to Fiji. More significant examples are fresh ginger to North America, mangoes to Japan, taro to New Zealand, egg plant to Canada, coconuts to Australia, organic banana puree to France, and kava to Germany. The lesson from this long experience is that marketing and not markets per se has been the major constraint. Quality, volume and continuity of supply are seen as marketing problems and for high value exports; they are the hallmarks of success, even more important than price competitiveness. Fiji, as a small producer, must always be at the premium end of quality scale. The net gains to the exporter and grower attributed to quality can be huge and usually represents the difference in terms of viability. Fiji's past experience has shown that high value export markets cannot be developed and sustained with small exporters securing supplies from farmers in an informal ad hoc fashion. With the present structure of Fijian agriculture development of horticultural and other high-value export industries will be best undertaken by small farmers for marketing through commercial exporters and processors.

Marketing problems are prevalent in rural areas and outer islands in Fiji. Marketing networks are virtually absent or weak, and physical access to markets is constrained and costly because of inadequate infrastructure. Poor product handling practices and the absence of local cool-stores and grading and packing facilities lead to severe quality deterioration during the passage from farm to market.

A requirement of demand driven services is that the farmers need a means to communicate their demands. The small size and large number of farms is a constraint to effective communication, mechanization, technology transfer and marketing. Existing and new farmer groups need to be fostered and empowered so that they support members' needs in a farmer-to-farmer network.

#### **4.1.6 Expected Project Outcomes and Outputs**

Provided the issue of expiring land leases can be satisfactorily resolved a significant portion of the existing sugar industry can remain viable in the future, even at world market prices. However this will require significant, but achievable, reductions in costs. Thus the appropriate policy emphasis should be on improving the efficiency of the existing industry and not on encouraging large-scale transfer of lands out of sugar. This is indeed fortunate for no single crop or group of crops have been identified that could replace sugar in the foreseeable future. Yet, while recognising the continued existence of sugar, there is an urgent need, and indeed effort has been stepped up to accelerate Fiji's diversification efforts. These efforts need to be directed in the areas where the country has a sustainable competitive advantage.

As a small island economy, Fiji faces obstacles in the development process that are not present in larger countries. It is inherently less diversified which makes it more vulnerable to both internal and external shocks. With a small population, economies of scale are difficult to achieve in domestic markets and investment in infrastructure more costly and often uneconomic. In addition to problems of smallness, Fiji is relatively isolated, is prone to natural disasters, and operates under a land tenure system that constrains availability, investment and hence productivity. However there are offsetting advantages that stem from climate, location, a relatively pest free and unpolluted environment, natural beauty, and an ability to grow a wide range of nutritional, traditional foods. Fiji's appropriate long-term agricultural strategy should be focused on minimising the disadvantages of size and isolation and maximising the advantages of Fiji's location and environment. The areas that best satisfy these requirements are traditional food production and high value niche exports. With suitable conditions in the right location these are the crops that can give the highest returns to farmers' land and labour resources and provide the greatest possible level of food security. Therefore, these projects integrated with the common economic theme of sustainability in the Agriculture sector to promote economic well being.

Thus, by addressing towards the mitigation of land degradation through the promotion of sustainable productive systems that maintain ecosystem productivity and ecological functions it will contribute directly to the environmental, economic and social well-being

of the country. It will build capacity for sustainable land management for government and civil society institutions/users and mainstreamed into government planning and strategy development.

## **4.2 Summary - Energy**

Approximately 60% of the country's electricity requirements continue to be supplied by indigenous hydro and other renewable resources mainly baggase and wood chips. This is provided largely through the Fiji Electricity Authority's (FEA) grid network on Viti Levu, Vanua Levu and the island of Ovalau, and to a lesser extent from solar home systems, micro hydro installations, and biomass. The Imported petroleum for diesel back-up generators, meets the remaining balance of 40%. In the rural areas, which includes interior of the two main islands and outer islands, the Department of Energy (DOE) has installed a total of 631 diesel based systems.

The contribution of the electricity industry to GDP was 4.1% in 2006 and is expected to fall to 2.0% in 2008. The decline is due to the current political situation, large investments in Tourism Sector and Construction Sector are put on hold and lastly a decline in the Manufacturing sector.

### **4.2.1 Providing an enabling environment for a sustainable energy sector**

Effectively, measures have also been put in place to improve the efficiency, effectiveness and delivery of FEA's operations. At the moment, Government is organizing with stakeholders for the review of the regulatory role of FEA with the intention of removing this role which will enable the company to concentrate on its core business. FEA plans to invest \$350m up to 2011 in parallel with some \$150 million of private investment in Independent Power Producer (IPP) and Public Private Partnership (PPP) arrangements. FEA hopes that additional national investments, including private companies, in hydro, geothermal, wind, solar, biomass and municipal waste will help it reach its highly-ambitious goal of 100% renewable energy by 2011. The demand for Industrial Diesel Oil (IDO) may increase substantially if targets are not met within the specified period.

In terms of the Ten Year Framework of Programmes on Sustainable Consumption and Production Patterns, the Cabinet in November 2006 endorsed Fiji's National Energy Policy (NEP). It contains strategic action plan that provides the framework for a sustainable energy sector activities. The NEP provides a common framework for all (both public and private) associated with the energy sector to work towards for optimum utilization of energy resources for the overall growth and development of the economy over the next five years. NEP has four strategic areas which include National Energy Planning, Energy Security, Power Sector and Renewable Energy. Our guiding principles include:

- Social and Gender Equity;
- Environment Compatibility;
- Stakeholders Participation;

- Good Governance;
- Public Acceptance; and
- Energy Efficiency and Conservation.

The department has also included the four strategic areas in the formation of its Annual Business Plan since 2006. For this year the detailed activities includes:

➤ ***Strategic Area 1: Energy Planning***

- Institutional Strengthening
- Energy legislation
- Power Sector Development
- National Energy Advisory Committee
- Energy Information & Database
- Public Outreach
- Renewable Energy Development Infrastructure
- Hydro Potential Report
- Corporate Documents
- Waiving of Taxes for Renewable Energy Technologies
- Admin workplan
- Accounts workplan

➤ ***Strategic Area 2: Energy Security***

- Energy Conservation and Efficiency Programme
- Biofuel Initiatives
- Petroleum Standards and Supply Infrastructure
- Assessment of National Energy Security Situation
- Sustainable Energy Financing Project

➤ ***Strategic Area 3: Power Sector***

- Rural Electrification Program
- Solar Home Systems (SHS)
- Mini-Hydro project
- Hybrid Power project

➤ ***Strategic Area 4: Renewable Energy Development***

- Hydro Program
- Solar Insolation
- Wind program
- Biogas program
- Research and New Initiatives for solar water pump, solar street lights, biomass gasifier and compact biogas plant
- Coconut Husk gasifier
- Networking with other institutions
- Environment Initiatives & Clean Development Mechanism (CMD)



## 4.2.2 Major Constraints and Challenges

Development constraints and challenges include;

- lack of technical expertise in the application Renewable Energy Projects;
- Costs for the implementation of Renewable Energy Projects;
- Lack of quantifying data available for biomass and biofuel projects;
- Inconsistent services by shipping companies for outer islands;
- current high price of oil and the impact of this on domestic costs and the fuel import bill;
- current regulatory arrangements in the electricity industry;
- the lack of a regular energy sector information database; and
- weaknesses in the delivery mechanisms under the current Rural Electrification Policy.

*The major issues regarding the energy sector that was outlined in the 2008 Budget address are as follows:*

- 1) Government is concerned at the risks to the economy and our Balance of Payments position from growth in the fuel imports bill. Fuel imports bill has risen strongly over the years due to both increased demand as well as the escalating world price for oil.
- 2) In 2000, Government paid \$332 million for oil imports - about 18 percent of our total imports. Last year, Fiji's oil import bill was just over \$1 billion - one-third of the total import bill. This illustrates the phenomenal rise that has occurred over the years.
- 3) Oil consumption by the Fiji Electricity Authority accounted for 10 percent of total oil imports last year. It is obvious that steps have to be taken to reduce this heavy dependence on imported fossil fuels.

*To help facilitate this, Government will do the following:*

- i. continue with its renewable energy investments and assist in securing financing of the construction of an additional hydro-power facility in Nadarivatu and other identified feasible sites;
- ii. At the same time, Government will work closely with the Donor Agencies to identify and implement small renewable energy projects around the country, particularly in the Northern division where off-grid schemes are more viable at this stage; and
- iii. Government is pushing ahead aggressively with investments on power cogeneration and Biofuel production.

### *Policy Objectives, Strategies and Key Performance Indicators*

<b>Policy Objectives</b>	<b>Strategies</b>	<b>Key Performance Indicators</b>
The community	• Enact enforce appropriate	• GDP per kg oil

Policy Objectives	Strategies	Key Performance Indicators
<p>has increased secure access to affordable and reliable energy supplies.</p>	<p>legislation to improve sustainable energy use, including the National Energy Policy (NEP) and Renewable Energy Based Rural Electrification Act.</p> <ul style="list-style-type: none"> <li>• Monitor Customer satisfaction through survey and develop and implement an awareness programme.</li> <li>• Establish a reliable energy information system for end use decision making at all levels.</li> <li>• A better understanding of Fiji's energy security situation developed and maintained to guide future policy decisions.</li> <li>• Greater collaboration within the industry and with other sectors and strengthens private sector involvement in all forms of energy, including review of tariffs, cost recovery and competition in energy production.</li> <li>• Reduce inefficient use of energy through energy efficiency research, demonstration, energy audits, regulation, and building codes, and create a robust market for energy</li> <li>• Promote measures to reduce fossil fuel consumption, in the transport sector, and encourage alternative fuels for the power, transport and other sectors efficiency services.</li> <li>• Establish a comprehensive Biogas Programme</li> <li>• Develop and implement a national electrification master plan covering both grid and stand-alone systems.</li> <li>• Formation of an appropriate independent regulatory agency and review the Electricity Act.</li> <li>• Assess local renewable energy resource potential, undertake</li> </ul>	<p>equivalent, at constant 1995 prices, increased from \$5 in 2004 to \$8 by 2010.</p> <ul style="list-style-type: none"> <li>• Household power outages on Grid Lines are each not more than 5 minutes by 2010.</li> <li>• 88% national electrification coverage by 2010 with urban increased from 95% to 98% and rural areas from 70% to 80%.</li> <li>• IPP to produce not less than 250GWh of energy per year by 2010 (DOE will identify current levels of IPP output for comparison).</li> <li>• Improvement in the national electricity mix from 40/60 renewables to fossil fuel to 90/10 for the grid and from 5/95 to 45/55 for off grid energy by 2010 (Increase 10% renewable to 45, 10% per year).</li> <li>• 20% of fuel for transport is bio-fuel, LPG or LNG by 2010 (Current alternative fuel use is 3% (taxi))</li> </ul>

<b>Policy Objectives</b>	<b>Strategies</b>	<b>Key Performance Indicators</b>
	<p>research, identify technologies appropriate to Fiji</p> <ul style="list-style-type: none"> <li>• Encourage competition in the generation of energy.</li> </ul> <p>Promote the use of gasifiers to generate electricity for rural communities</p>	

*Sector Issues, Current and Expected Future Priority*

<b>SECTORS AND ISSUES</b>	<b>Current Government Priority</b>	<b>Expected Future Priority</b>
<b>Energy Efficiency &amp; Renewable Energy</b>		
Industrial energy efficiency	Household energy efficiency	Development of Renewable energy markets
Household energy efficiency	Industrial energy efficiency	Design standards for renewable energy projects
Renewable energy markets	Government office energy conservation & efficiency	All household appliances imported to Fiji are energy efficient.
Others	Institution energy conservation & efficiency	Population to be conscious of energy use
	Standards & Labeling	All sectors of the economy embrace energy efficiency and conservation
	Energy Audits for industrial, institution and government office.	
	Awareness programme on energy conservation & efficiency	
	Enforcement importation of energy efficient appliances	
	Harnessing of potential renewable energy sources	
	Develop feasible renewable energy resources for power generation	
	Encourage IPP & PPP in terms of power development	
	Drafting of Energy Bill	

<b>Housing &amp; Construction</b>		
Energy efficiency	Energy efficient Building Code	Building materials
Building materials		Building operations
Construction standards		Construction standards
Building operations		Energy efficient site plan
Others		National Building code that recognize energy efficiency

### 4.3 Summary – Indigenous Affairs

Under the framework of Sustainable Consumption and Production (SCP), the Ministry of Indigenous Affairs is directly involved in the coordination of better utilization of land through its national committee (Committee on Better Utilisation of Land - CBUL), coordination of the Affirmative Action Programme (AAP) and the implementation of the Business and Technical/Vocational Training through Centre for Appropriate Technology Development (CATD), Nadave.

#### 4.3.1 Committee on Better Utilisation of Land (CBUL)

Unproductive use of land especially the reverted ALTA leases has been an issue of concern of the Interim Government despite the availability of good productive land, skilled farmers and good climate. A major reason for this is the unnecessary fear that native landowners have in believing that their land can be alienated or taken away by tenants who are largely Fiji Indians.

History has proven that Fiji Indians, who have lived in Fiji for close to 130 years, have never taken an inch of Fijian native land and have no intention to do so. They are content with the leasing tenure system currently in place as it has provided them access to native land which they have utilized for their livelihood. Native landowners also receive rental income in return.

The expiry ALTA leases and the reluctance of native landowners to renew such leases has resulted in large tracts of once cultivated land lying fallow, covered in bush or simply lying barren. As a result, both the native landowners and tenants have lost their main basis of livelihood and are now finding it difficult to make ends meet. The whole nation has also suffered through a reduction in income from Sugar and the creation of a fragmented society through ethnicity mistrust.

Given this, the Interim Government is committed to address the misinformation regarding native land alienation and promote productive use of land whether by native landowners or tenants. Cabinet had because of that commitment established the CBUL at its first meeting on 15<sup>th</sup> January, 2008. CBUL's main task is to examine the relevance, viability and acceptability or otherwise of NLTB's proposal for incentives to be offered to landowners and to setup 4 Taskforce teams, covering each of the 4 divisions, to visit and

explain to the respective landowners the opportunities and benefits of re-leasing their reverted lands.

### ***Objectives***

CBUL was established to:-

To promote better utilization of land by approaching landowners to give up their unutilized ALTA reverted lands, and other available lands, for lease to prospective tenants who can maximize farm returns; and

- (ii) To ensure that the landowners realize the benefits that they and their future generations will reap if they allow their land to be leased rather than being left idle.

### ***Taskforce Teams***

The Taskforce will spearhead efforts to promote better utilization of land on ALTA reverted lands and other available lands for lease to prospective tenants who can maximize farm returns. In the process, the Taskforce will assure the landowners that neither the Indians nor the Interim Government has any intention at all to alienate native lands. This is to allay the fear implanted by politicians and extreme nationalists on the alienation of native land. The Taskforce teams will also ensure that the landowners realize the benefits that they and their future generations will reap if they allow their land to be leased rather than to be left idle.

### ***Justification for Promotion of Better Utilisation of Land***

The non-renewal of ALTA lease has basically brought more suffering to land owners, ex-tenants and the nation as a whole than benefits. In fact, the only beneficiaries are the politicians and extreme nationalists who had discouraged landowners from renewing ALTA leases for their own interests.

#### **• Landowners**

Many of the reverted ALTA leases have been left idle and uncultivated by landowners. While there are several reasons to explain this, one noticeable reason is the lack of knowledge and skills for cane cultivation. This and the loss of income from land rental has drastically reduced the income derived from sugarcane farming activities. This has in turn affected other mataqali commitments such as direct deduction payments on housing loans under the Housing Authority Village Housing Scheme and putting other mataqali business ventures in jeopardy. Also, infrastructural development at villages such as construction of access roads, community halls, sanitation projects which used to be subsidized or fully paid for by mataqali's, have also been affected.

At the individual level, many members of the mataqali have also felt the pinch of reduction in land rental income as they are now required to foot the bills that were once met by their mataqali such as school fees, church contributions and other social commitment like deaths.

- **Ex-Tenants**

Like landowners, ALTA tenants have also lost part or all of their household income. With their little savings, they have moved to ALTA re-settlements areas where they are engaged with a totally different type of farming or to move to other areas and engage in informal activities to generate much needed income. However, most have opted to move to towns in search of jobs resulting in the rise of squatter settlements especially in Suva. Most of these ex-farmers lack technical skills such as carpentry and engineering thus; contributing to the high unemployment rate.

These displaced farmers in their new residences have to rebuild their lives by building new homes, finding new schools for their children and adjust to new life styles. All these changes have affected them psychologically and also chew up a sizeable portion of their savings and some have been left penniless and poor.

- **Nation**

The Sugar Industry, a backbone of Fiji's economy is now finding it difficult to meet its export quota because of a decline in cane production and is on the verge of collapse. This has affected the overall economy by the decreasing sugar returns and reduced consumption capacities of those directly relying on the industry.

The increase in urban drift has resulted in the overall increase in squatter settlements and a decline in rural population especially in sugarcane growing areas. This has pressured Government to divert more funds to solve the squatter problem and is likely to reduce funding in the future on the depopulated areas for reasons of economic viability.

- **Benefits To All Stakeholders**

The renewal of ALTA leases and giving up of all available lands for leasing and be productively utilized will certainly reverse the current trend. Landowners, tenants and the whole nation will regain the benefits lost and will reap more benefits once crop production is maximized.

### ***Measures to Promote Better Utilisation of Land***

- **Government Incentive**

In its commitment to promote better utilization of land and to ensure that both the landowners and tenants reap maximum benefits, the Interim Government has agreed to provide the following incentive package:

- i) Land rental subsidy payments of \$8 million per annum for all ALTA leases for the next 5 years. It is anticipated that ALTA will be amended to allow land rents under ALTA to be based on Unimproved Capital Value (UCV) within this timeframe. Subsidy will be paid only to 12,867 ALTA leases from the current 33,997 leases administered by NLTB.

ALTA dictates that rent be charged up to 6% of UCV although current market values are between 10-12% of the UCV. NLTB however has not been charging 6% but merely 2-4% of the UCV due to affordability factor, uneconomical

holdings and other reasons. The subsidy now approved by Government therefore will raise ALTA lease rentals to around the current market value.

The criteria for rental subsidies are as follows:

1. only ALTA leases be eligible for subsidy;
  2. subsidy is payable only on those leases that are adequately utilized;
  3. NLTB Field Officers will file a schedule of leases productively being utilized which would be eligible for rental subsidy;
  4. Landowners consent in each case would be sought prior to application of subsidy;
  5. There will be no poundage deduction by the NLTB on the subsidy component;
  6. The rental subsidy will be separately reflected in the billings and invoices to the tenants and landowners respectively; and
  7. The effective date for implementation of the subsidy was from 1<sup>st</sup> July, 2008.
- ii. Payments of \$100,000 per annum to NLTB for the administration and payments of subsidy payments.

- **Native Land Trust Board (Nltb)**

NLTB on behalf of the landowners have seen the adverse effects of the non-renewal and unutilized reverted ALTA leases on landowners. In view of this, it has come forward and supported Government's initiative in promoting better utilization of land and submitting proposals that will benefit landowners. One of this resulted in the payment of subsidy by Government on all ALTA leases. In addition, it has agreed to forego the 15% poundage payments to ensure that all subsidy payments are directed to the landowners and instead accepted an annual payment of \$100,000 by Government to oversee the implementation and administration of subsidy payments.

- **Landowners**

This onus is therefore on the landowners to give up their uncultivated reverted ALTA lease lands and other unproductive lands for leasing in order to reap monetary benefits from land rentals. With the increase in rental through Government subsidy, landowners will be able to receive about double the amount that they used to receive prior to subsidy payments. This will certainly assist them to increase their standard of living and acquire the basic needs and wants.

- **Tenants**

Tenants are to ensure that lands acquired through lease are productively utilized and settle their lease rentals on time. Failure to do this may result in termination of lease by NLTB as currently practiced.

### **4.3.2 Affirmative Action Programme (AAP)**

The social justice policy of Government is central to its mission of creating a peaceful and prosperous Fiji. Its goal in this regard is the equitable participation of all in socio-economic development. The Social Justice Act, 2001 was legislated to help bring this about through the 29 AAP targeting the disadvantaged in society. Beneficiaries for these programmes are categorized according to socio-economic status, disability, age group, race and physical/geographic location. Out of the twenty nine programmes, seventeen benefit the disadvantaged in all communities; ten are specifically for Fijians and Rotumans; and two for Indians and minority communities.

Government's commitment to the disadvantaged in society is demonstrated by the substantial financial resources allocated to AAP, which in 2005 amounted to about \$71 million or five per cent of GDP. This was 12 per cent higher than the allocation for 2004. The performance of the 29 programmes has been reported mainly with an input/output – focus. In this regard, the scope suggests that in general the programmes are reaching a wide section of society and are making some impact on targeted beneficiaries. Whilst progress may be slow in some areas, there have been real benefits in terms of improved school facilities and resources, availability and accessibility to land, provision of housing, participation in business and advancement in technical knowledge and further training. Some highlights from the various programmes in the three sub-categories are given below.

Assistance is directed towards 3 broad areas:

*i. Education and Training*

The thirteen programmes in this category aim at increasing access to educational opportunities at all levels for disadvantaged groups. Eight programs benefit all communities; three are specifically for indigenous Fijians/Rotumans and two for Indians and other minority groups.

In 2005, about \$23 million or 1.6 per cent of the National Budget was set aside for these programmes, which included both in-school and post-school initiatives. In some cases, target groups benefited indirectly through institutional and programme strengthening as in Vocational Training in schools. Others were more direct benefits such as the improvement of quality passes at Form 7 in Centers of Excellence; the accessibility to skills training and development for youths from different communities; the increasing involvement of women in village development planning as a result of leadership and basic management training; and access to tertiary education for over 2,000 students through scholarship and loan schemes. Some specific results in the Education and Training category include:

*Students Loans Scheme administered by the Public Service Commission (PSC)* – a total of 281 students graduated from six approved institutions and either joined the labor force or continued with further studies. This represented a 200 percent increase over the 2004 graduates. About 51 students had their loans terminated.



*Fijian Affairs Board (FAB) Scholarship* – in 2005, 692 students were awarded scholarships for programmes undertaken at overseas institutions as well as locally. The acceptance rate was well below 30% of applications received suggesting that the awards available could not match the high number of applications. The mismatch was largely due to limited funds, increase in education costs and students failure in some cases to meet the award requirements.

*Multi-Ethnic Affairs Scholarship* – Students from disadvantaged families were considered and 1095 benefited in 2005. There was a 75 percent increase in awards to minority communities.

*Infrastructure Development in Rural Areas* – The EU funding of F\$44m was launched in November 2005. About 300 rural primary and secondary schools have been prioritized for infrastructural funding support. Those missed will continue to be supported under the \$1.8m building grant. Allocation for 2005 in upgrading works on classrooms, hostels and teacher's quarters for schools under the Centre of Excellence all went to Queen Victoria School.

*Educational Performance* – significant improvement was noted for students sitting for the Fiji Seventh Form Examination. The average pass rate of 75%. Adi Cakobau School recorded the highest with 96% pass. FSLC average pass rate was 56.6% a decline from the 63% in 2004 but reflecting national trend.

*Vocational Training* – School leavers benefited from the various vocational programmes offered. Training centers turned engineering and basic agriculture. Training in bee keeping, animal husbandry, and basic computing benefited 12 communities. Inmates in prisons throughout the country also benefited from various trade courses with 197 graduating in 2005.

Implementation results also revealed instances where delivery and management of programmes require strengthening to enable target groups receive maximum benefit. The general academic achievement of Centers of Excellence is a case in point as more consolidation work is necessary in order to reach the benchmark set for these schools.

## **ii. Land and Housing**

Programmes specifically designed to address land and housing needs for the disadvantaged are included in this category; poverty is also addressed in two groups.

Out of the nine programs, eight benefit all communities and one target indigenous Fijians and Rotumans. In 2005, about \$14.4m or 1.0% of the National Budget was set aside to sustain these nine programs. Specific results included:

*Land Resettlement* – a record cane production of over 2.5m tones for sitting farmers who were assisted with lease renewals. The number of people assisted for resettlement, lease renewal and residential lease increased from \$7.75m.

*Squatter Settlement* – About 200 families moved to new houses under Housing Authority lease at Waila Subdivision and at Field 40 in Lautoka. Development works is currently in progress in Badrau, Ba and Sasawira. At the completion of this project, another 200 families are most likely to benefit.

*Self-Help Projects* – Multi-Ethnic funded 302 self-help projects while 694 recipients benefited from Provincial Development funding.

*Family Assistance* – The number of people assisted in 2005 increased by 9.9% to 22,534 compared to the previous year. Fijians & Rotumans continue to receive the bulk of the assistance by number and value. The demand on this programme is high and the commitment by Government through increased budget allocation from \$12m in 2004 to \$15m in 2005 enabled more disadvantaged to be assisted.

Indications are that this trend will continue and the dual challenge is how to meet this increasing demand while at the same time ensuring that those who genuinely deserve assistance are identified and assisted.

### **iii. *Participation in Commerce and in All Branches of State Services***

There have been no specific programs for employment in State Services for the last 5 years and it should be a consideration for the future. The 7 existing programs under the category are directed towards participation in Commerce.

Five of the seven programs are for the specific benefit of the indigenous community. The under-participation of Fijians/Rotumans in business is an acknowledged fact by various governments both before and since independence. The 5 programs are seen as a means of narrowing the social and economic disparity between indigenous Fijians/Rotumans and other ethnic groups.

In 2005 alone, about \$14m or 1.0% of the national budget was set aside for the continuation of the 7 programs.

The increasing focus and development relating to small/micro-enterprises suggest the opportunities and potential these have in providing basic income and employment for the disadvantaged. Highlights include:

*Small Business Equity Scheme* – In 2005, the value of loan approved to indigenous Fijians increased by 108% to \$2.208m. Grant given amounted to \$384,334 or 16% of the loan value. A total of 51 loans worth \$0.781m were approved for other communities. The grant component of the loan was \$108,778 or 14% of loan value. Most common business funded with FDB loans were wholesale, retail and restaurant business, and for Fijian applicants motor vehicles as well.

*Small Micro Enterprise Development* – total value of savings collected at the end of December 2005 was \$1.54m, an increase of over \$0.5m compared to the results of 2004. The number of savers joining the program for the first time was 5,442. the National Centre for Small and Micro-Enterprise Development also helped set up 186 small

business during the year and provided business advice and technical support to 1398 individuals.

Increase participation through the Social Justice Regulation – the performance of Fijians and Rotumans under the SJR provisions is disappointing. Since 2000, Fijian participation in PWD contracts had been below 1%. The participation in Government supplies contracts through increasing is still below 40%.

The low participation could be attributed to a number of factors, including the lack of initiative by the target group to fully utilize the assistance given through the reservation of 50% of Government contracts, licenses and permits. The challenge in this program is the lack of start up capital and basic management and business skills to drive the day-to-day financial activities. This is where joint venture partners enter the system and to date most are using Fijians as ‘fronts’ and reap the benefits, which should go to Fijians and Rotumans.

*Seed Capital Revolving Fund (SCARF) Facility* – Facility for fishing was suspended by FDB for a number of strategic reasons including high debt level (close to \$2.0m), short term license and lack of management skills. SCARF facility for logging and transportation needs reviewing in order that targeted groups benefit fully.

*Participation in the Tourism industry* – in 2005, a total of 36 eco-tourism projects were approved for Government grants totalling \$591,330.81. It was estimated that these projects created 284 direct employments and 3635 indirect employment in the rural areas.

*Government Rented Spaces*- Fijians and Rotuman landlords leased out 602,117sq.ft to Government for office accommodation to a rental value of \$9.8m. This office space represented 57% of total office space rented by Government while the rental value is 63% of total rent paid out. This is the only one out of 7 business programmes where Fijian involvement is above 50%.

#### *Status of Implementation*

The AP was implemented in 2002, since then there were 3 reports being tabled to Cabinet:

2002-2003;  
2004; and  
2005.

The 2006-2008 reports have not been tabled because of the uncertainty of the status of the programme due to the political crisis in 2006. However, some lights of the 2005 reports are highlighted below:

### **4.3.3 Challenges**

Implementation of AAP in 2005 was constrained by a number of common challenges. These included the need for capacity building and development particularly amongst the indigenous community and institutions, the lack of available resources and inadequate monitoring and evaluation.

AAP has been in existence for almost ½ of its 10year prescribed life span. In general, the 2005 Report as in previous issues, measured success in terms of the increase in the number of people or groups assisted under the program from approved funds. However, to gauge the real performance of these programmes would require a full impact assessment or comprehensive review; this is recommended in the medium-term.

The challenge that lies ahead requires a holistic approach. Amongst recommended courses of action are wider consultations with relevant stakeholders including target groups and beneficiaries; reviewing supporting legislations; strengthening research as basis for action; and including a capacity building component into the programmes. At the same time, the success of AAP would be greatly enhanced if the machinery to implement and monitor each program was clearly and appropriately identified. This could be done under a project implementation plan that also incorporates principles of good governance and best practice.

#### **4.3.4 Way Forward**

The strategic framework for Change confirms the continuation of the Programme and the need for review. The review will include:

- i) The AAP is to be reviewed as required under *Pillar 7: Reducing Poverty to a Negligible Level by 2015* in the Peoples Charter, to comply with the existing relevant legislations on equality and justice and the Declaration of Human Rights. The Review is also required to consider areas such as the race-based Programmes, monitoring and reporting mechanism, key outcomes and indicators and the Social Justice Preamble.
- ii) The Peoples Charter also require that a Research and Analysis Commission be established whose members are to be drawn from the academic and civil society and be appointed by the President. Its main role is to ensure that the data that will be used as the basis of formulating AAP Programs are independent, reliable and unbiased.

#### ***Centre for Appropriate Technology & Development (CATD)***

The CATD is responsible for the provision of short and long term technical training for young people and adults especially women in rural areas. The purpose of conducting this training is to provide the target group with the necessary skills and the encouragement to pursue small scale commercial undertakings that will help to support their largely subsistence lifestyle. The training also allows their communities to have those skills that would assist in their personal and community development.

During 2008, the CATD was provided \$900,000 and was able to offer training in the following courses/programmes.

#### ***Long Term Technical Training Programme (LTTTP)***

80 trainees went through the LTTTP during 2008 in Metal Work, Village Installations, Plumbing/Sheetmetal, Welding /Fabrication, Automotive Engineering and Carpentry &

Joinery. Of this total, 15 graduated in Automotive Engineering, and 15 in Carpentry & Joinery.

Twenty six (26) of the 30 trainees, who graduated, also passed their TPAF Trade Test and were issued with the National Trade Test Certificates at Class 111 Level in their respective trades.

### ***Rural Community Outreach Projects***

The following were undertaken by Long Term Technical trainees:-

- Construction of one Drum Oven Stove for the Father Law Home at Veisari, Lami.
- Construction of a three classroom building was undertaken and completed by Carpentry students at the Noco Junior Secondary School, Rewa.
- Engineering students were involved in the repair and maintenance of 43 equipments involving 11 outboard motors, 19 brush cutters, 5 lawnmowers, 4 chainsaw and 4 portable generators. In addition they also repaired 8 private vehicles and carried out the servicing of all the five Centre vehicles.

Such programme helps trainees to gain hands on experience while assisting communities to complete their development projects.

### ***Rural Community Technical Training Programme***

This programme has been fully completed.

- 10 Outboard Motor Maintenance & Servicing Programmes in Kadavu, Tailevu, Serua, Bua, Cakaudrove, Macuata, Namosi, Ra, Ba, Naitasiri, Namosi.
- 267 villagers were trained and 275 equipments were serviced or repaired during the training. Details are in the VISUALS of this report.
- 1 Village Sanitation Training was conducted at Nakalou Village, Macuata. 17 villagers were trained and they constructed 13 flush toilets funded under the Village Improvement Scheme (VIS)

### ***Short Term Seminars/Workshops***

32 workshops were conducted with 1062 participants. Details of these workshops are in the VISUALS section of this report.

### ***Appropriate Technology for Rural Villages***

Drum Oven and Bee Hive Construction training were provided to 15 CATD Carpentry trainees. A total of 80 LTTTP students were given training at the CATD in 2008 and 30 of these students graduated in September. A breakdown by discipline and province is shown on the following table.

***Rural Fijian Women Training Programme (RFWTP)***

The programme continued its Team Building and Planning Training which aimed to assist rural Fijian Women organizations to be better organized and focused with clear direction about the types of development they want to undertake. Under the programme, 667 women were trained in 25 different locations in 14 provinces. In addition, 380 training motivators from 14 provinces were also trained.

Women organizations in villages were able to prepare development plans with clear vision and mission statements and lists of activities they were to undertake. 380 Village Training Motivators were also trained and 68 follow up visits were made to villages that were attended to in 2007.

The follow up visits undertaken indicated that most rural Fijian Women Organisations were involved in village beautification.

## **5.0 TRANSPORT**

### **5.1 Summary - Transport**

Transport remains to be a vital component of the economy contributing to around 10 percent to GDP. The goal of this sector is to provide efficient transport services at reduced costs to enhance access to services and markets. The transport sector includes land, sea and air transport.

In 2004, the Department of Environment in consultation with Ministry of Transport through an ADB funding undertook a detailed assessment of vehicle emissions in Fiji.

An Action Plan was developed for the reduction of vehicle emission through wide consultation. With changes in ministry portfolios and staffing, it is anticipated that this report would be implemented with necessary changes.

It is reality that vehicle emission is contributing towards climate change and air pollution, and is a major challenge. The Land Transport Authority randomly checks on vehicle emission. Emission standards for ships and aviation are dealt with by the International Maritime Organisation and International Civil Aviation Organisation.

### **5.2 Particulate Emission**

Assessment of the Kyoto Protocol have found that particulate emission is a major concern for Fiji. Second hand vehicles of low grade and older diesel engines emit high level of particulates. Vehicles owners were, to some extent, not aware of costs linked to emissions and the way to reduce such emissions. More over, diesel is taxed less as compared to petrol since diesel is considered the working fuel.

Traffic congestion directly impacts vehicle emission, therefore traffic volume needs to be intelligently reduced so that fewer journeys are made. Effective partnership and paradigm shift eg. from diesel vehicles to unleaded vehicles is recognised by government as the way forward.

### **5.3 Growth Policies**

There is the dilemma of growth-oriented policies that generate increased transportation, and environmental policies that advocates emission reductions. The transport policy is anticipated to address technology improvements in managing emission to support the increasing traffic volumes at a controlled rate. The Land Transport Authority has in place an age limit to imported second-hand vehicles. Newer engines are expected to be more economic and made more fuel efficient.

Furthermore, traffic volume must be reduced so that fewer journeys are made by car plane. The policy would be to explore supply side objective of developing greener motor vehicles.

#### **5.4 Alternative Travel**

Recently, governments are encouraging car pooling, restrictions on car access and parking capacity and encouraging alternative forms of travel such as public transport, cycling and walking. However, stronger incentives are required to discourage car use. More efficient, convenient and affordable public transport would entice people to leave their cars at home.

#### **5.5 Subsidies and Options**

Transport subsidies need to be carefully analysed in light of the pollution cost. There is strong growth in the use of bio-fuels. Fiji has wealth of natural raw materials for bio-fuel. Coconut Natural Oil in transport has been applied successfully in blends with kerosene and diesel in the region during the past years, in adapted vehicles. We must now reassess our options, realign our priorities and double our efforts to drastically cut down on hazardous gas emissions, and through concerted efforts with the community and stakeholders, improve the air quality in the transport sector.



## **6.0 WASTE MANAGEMENT**

### **6.1 Summary – Waste Management**

Environmentalism promotes just and equitable access to resources. The natural environment is an integral part of Fiji's products and services and the quality of nature plays a significant role in the success of any socio-economic development. As such, the generation and disposal of wastes does have direct and indirect impact on the socioeconomic development of our nation. The Government has taken steps to support sustainable resource management and encourage environment conservation through the Environment Management Act (EMA) 2005. The Act sets guidelines and policies for environmental impact assessments, waste management, pollution control and penalties.

Waste material present wasted money in-terms of original cost of materials, cost of materials, cost of disposal and also potential value of the material as a recyclable and reusable resource. Poorly managed wastes can have negative effects on tourist destination image and by association with health warnings about infectious and vector-borne diseases

### **6.2 Programs/Projects**

Waste cannot be reduced without a system that manages waste from the point of generation through to disposal. Below are various programs/projects currently being implemented by the Department of Environment in the effort to minimize waste at a National level:

#### ***EU Funded 'Lami Rehabilitation Project'***

Following the opening of the Naboro Landfill in October 2005, the Lami Dump, which constituted the main site of rubbish disposal for the greater Suva area, has been closed. However, serious environmental risks remain at the dump including emission of leachates, gas and the risk of fire or tidal wave.

To assist the Department, the European Union granted EU 550 000 for the rehabilitation of the Lami dump. The overall objective of the project is to assist the Government of Fiji in its capacity to work towards an improvement of the environmental situation in Fiji, in particular as regards to solid waste management and rehabilitation of Lami Dump and other institutional support services.

Hydea an Italian company was contracted to carryout Phase I (preparation of tender documents) of the project. The contract duration of Phase I is two (2) years which begun on 27<sup>th</sup> April 2009 to 27<sup>th</sup> April 2011. The consultants have prepared an Inception Report (draft released 23<sup>rd</sup> May 2009) which covered their activities undertaken such as a review of the EIA of the Rokobili extension, which has extensive data on a variety of environmental parameters, undertaking of field visits to the dump site where they collected leachate and gas samples and also drilled boreholes for water samples. Some estimation on gas production based on decaying exponential models were also done.

### ***Waste Minimization and Recycling Promotion Project***

The request for assistance for a “Waste Minimization and Recycling Promotion Project” was proposed to the Government of Japan and the project was considered by JICA to be initiated in the western division (Lautoka City and Nadi Town. JICA have selected the consultants Kokusai Kogyo Co., Ltd and Ex Corporation to jointly implement the project. First team arrived on 17<sup>th</sup> October 2008.

The overall goal of the project is to develop and promote the idea of 3R (in this case, Reduce, Reuse, Return) mainly in the western division of Fiji.

The outputs of the project are:

- 1) Solid Waste Management Plans focusing on 3R are developed respectively in Lautoka City and Nadi Town.
- 2) Lautoka City and Nadi Town obtain the capacity for proper Solid Waste Management (SWM) through the implementation of Pilot projects.
- 3) Lautoka City and Nadi Town obtain the capacity for 3R promotion activities at whole is implemented at whole area of Lautoka city and Nadi Town Council.
- 4) Awareness of residents in Lautoka City and Nadi Town is raised through implementation of environmental education activities on 3R promotion.
- 5) 3R model for Fiji is developed and recommended.

### ***Progress of the Project - First Year***

To date the team have conducted eight (8) different baseline surveys including a Waste Amount and Composition Survey, Final Disposal Amount Survey, Time and Motion Survey, Public Opinion Survey, Compost Demand and Market Survey, Recycling Activity Survey, Community Survey and Topographic Survey in Lautoka Landfill. A survey was also conducted at the Lautoka Vunato Landfill site

The Community survey collects basic materials necessary for selecting 3R pilot project site and also information for studying about how the 3R activity would be promoted in the whole area of Lautoka and Nadi and how it is disseminated to other areas in Fiji.

### ***Container Deposit Legislation and Sustainable Solid Waste Management in Suva, Fiji – Project by the United Nations Development Programme (UNDP)***

Phase I of the project started in April 2009 with a Feasibility study on Managing Solid Waste in Fiji using the CDL System and a Litter Survey in the Suva area. The surveys were conducted respectively by two independent consultants. Phase I ended on March 4<sup>th</sup> 2009.

Phase II of the project will also develop and execute a public campaign to inform the public of the new system, and attack the widespread behavior of indiscriminate littering,

using the leverage in public attention to this issue provided by the introduction of the deposit & refund recycling system.

An Implementation Plan has been produced which provides considerable detail concerning the individual activities required, and the coordination of those activities. In addition, a comprehensive Communications Strategy has been developed which also contains considerable detail concerning media outlets and costs in Fiji, as well as an analysis of the potential means of broadcasting the public awareness message to be promoted in Phase II. Detailed legal analysis has been conducted on the current legislative framework, and two separate legal opinions sought to ensure that the legal strategy outlined below is based on sound and valid principles of law. In addition, the detailed Economic Analysis, referred to above, provides the foundation of determining the number of beverage containers affected by the proposed system, the financial flows expected through the revolving fund holding deposits and paying out refunds. This analysis also looked at the economic benefits through reduced waste collection and landfilling costs, and some analysis of the employment impacts of introducing the system. That analysis also determined the sensitivity of the results produced to initial assumptions.

***Environmental Management Act 2005 and Environment Management (Waste Disposal and Recycling) Regulations 2007***

The purpose of these Regulations is to prevent the pollution of the environment by controlling the discharge of solid waste from facilities, the discharge of liquid wastes, the emission of polluting gases, smoke, steam and dust, and the handling, storage and disposal of wastes and hazardous substances generally.

Part 5 of the Environment Management Act 2005 sets out the framework for waste management and pollution control in the Fiji Islands. It prohibits any commercial or industrial facility from discharging any waste or pollutant into the environment or handling or storing hazardous materials without a permit and gives the Waste and Pollution Control Administrator power to issue permits. The Act came into force on 1<sup>st</sup> January 2009 and the Department of Environment has been to date encouraging commercial and industrial facilities to submit in their application for a permit. Throughout 2008 and 2009, the Department had been conducting awareness workshops and trainings at a national level, press releases on newspapers, television and radio were also conducted. The Department is grateful to a few Councils, Rural Local Authorities, Provincial Offices and business houses who have been assisting the Department in the effective implementation of this law, keeping in mind the lack of manpower within the Department to carryout this task.

***National Solid Waste Management Strategy for Fiji (NSWMS) 2006***

The NSWMS details the current waste management practices and outlines the inadequacies that exist in the institutions, it provides a platform from which future waste management activities can be developed and the mechanisms for coordinating the programs. It provides implementation at national, municipality, local and community level.

The key objectives of the national solid waste management strategy are to:

- reduce the amount of waste that each community generates;
- make best use of the waste that is generated;
- develop and implement economic and social incentive mechanisms to change wasteful behavior, improve and upgrade existing waste management and disposal systems;
- encourage/provide waste management practices, which minimize the environmental risk and harm to human health; and
- Provide a guideline template for rural or community level solid waste management practices work.

The department is implementing this strategy through requests made from the general public and the community in specific. Number of waste management workshops and training have been conducted to the industrial business community and the rural communities on waste minimization through the emphasizing the use of the 3Rs. For effective implementation, the NSWMS Action Plan requires the development of an Integrated Communication Plan. A plan was compiled with the assistance of SPREP through a roundtable consultation with relevant stakeholders in May 2009 and a draft plan is now available for review.

The Department of Environment (DOE) has been charged with addressing Objective 6 of the (NSWMS&AP) which states, "Upgrade current dump sites in urban centers by 2009." Objective 6 stipulates that a Minimum Operating Guideline for all dump sites be established as well as upgrade at least 3 current dump sites to meet the Operating Guidelines. In order to achieve this Objective, workshops were scheduled for both Vanua Levu and Viti Levu to train the Municipalities on how and why to upgrade from the current practice of open dumping to what is referred to as a controlled dump system. Both workshops had been conducted, Vanua Levu on 27<sup>th</sup> May 2009 and western division of Viti Levu on 25<sup>th</sup> June 2009.

#### ***Other Waste Management Strategies***

Other strategies implemented by the Department is the National Liquid Waste Management Strategy, National Air Pollution Strategy, National Plan for the Implementation of the Stockholm Convention on POP's in Fiji, Rural Waste Policy, Chemical Management Plan.

The National Liquid Waste Management Strategy has not been launched, however, work has already started in a few areas, and with the recent enforcement of the Waste Disposal and Recycling Regulations, part of the action plans have been accommodated for.

Regarding capacity of the Department of Environment (DOE), although now endowed with a modern applicable environmental legislation and regulations, there is has minimal human, technical and financial resources to implement/monitor the Act or the strategies.

#### **1. Naboro Sanitary Landfill**

The greater Suva area is now fortunate to have a sanitary engineered landfill (Naboro Landfill) opened in October 2005 which services Suva City Area, Nasinu Town Council, Nausori Town Council, Navua Rural Local Authority and Korovou Rural Local Authority. It is an Anaerobic Landfill System that was funded by the European Union. It is maintained by a Private Contractor, H.G.Leach, and administered by the Department of Environment.

This landfill has alleviated some major solid waste problems associated with open dumps, such as health concerns from flies, rodents, and environmental health concerns from leachate.

However, a lot is still needed in terms of consistency of waste received from the councils as factors such as fuels costs associated with distance and gate fees have been problematic. There have also been serious concerns raised in terms of odour and infestation of rodents, flies (health concerns) as a result of such operations. For such, Government have tried to facilitate in terms of purchase of aerators, and audits such as this, in order to ascertain how best such issues can be addressed.

## **7.0 CONCLUSION**

There is a need for strengthened regional mechanisms for cooperation to share information and lessons learned, to promote regional and interregional exchange and to undertake joint projects and research activities. This will enhance the generation and dissemination of information to support the implementation of sustainable development in PICs. A critical requirement in implementing national sustainable strategies is a supporting infrastructure for the effective exchange and movement of information.

The University of the South Pacific (USP) in Fiji has committed itself to remain fully engaged at both national and international levels as a vehicle for promoting education for sustainability in the PICs.

Additionally, the establishment of effective sustainable development financing mechanisms is essential for successful implementation of sustainable development strategies in the region. This should encompass innovative financing, such as social investment funds to help alleviate poverty and the Global Environment Facility (GEF) small grants programme which is now being extended to the Pacific and will provide at least limited opportunities in this regard.