



**New Partnership for
Africa's Development (NEPAD)
Comprehensive Africa Agriculture
Development Programme (CAADP)**



**Food and Agriculture Organization
of the United Nations
Investment Centre Division**

GOVERNMENT OF THE REPUBLIC OF MAURITIUS

SUPPORT TO NEPAD–CAADP IMPLEMENTATION

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Volume I of VII

**NATIONAL MEDIUM TERM INVESTMENT PROGRAMME
(NMTIP)**

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MAURITIUS: Support to NEPAD–CAADP Implementation

Volume I: National Medium–Term Investment Programme (NMTIP)

Bankable Investment Project Profiles (BIPPs)

Volume II: Agricultural Diversification (Integrated Processing and Marketing)

Volume III: Mauritius Agricultural Information System (MAIS)

Volume IV: Sustainable Land and Water Management Project

Volume V: Community Development and Poverty Alleviation Project

Volume VI: Mauritius Agricultural Biotechnology Institute (MABI)

Volume VII: Strengthening the Agro–processing Capacity of Rodrigues

MAURITIUS:

NEPAD–CAADP National Medium–Term Investment Programme (NMTIP)

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Abbreviations

ACP	African, Caribbean and Pacific
ADB	African Development Bank
AFD	<i>Agence française de développement</i>
AFRC	Albion Fisheries Research Centre
AMB	Agricultural Marketing Board
ANDE	<i>A Nou Diboute Ensam</i> (Let's stand together)
AREU	Agricultural Research Extension Unit
BADEA	Arab Bank for Economic Development in Africa
BIPP	Bankable Investment Project Profile
BP	Bankable Projects
CAADP	Comprehensive Africa Agriculture Development Programme
CAS	Country Assistance Strategy (WB)
CBO	Community–based Organizations
CIF	Cost, Insurance, Freight
COMESA	Common Market for Eastern and Southern Africa
COSOP	Country Strategic Opportunities Paper (IFAD)
CSP–ADB	Country Strategic Plan (ADB)
CSP	Country Strategy Paper (EU)
CWA	Central Water Authority
DBM	Development Bank of Mauritius
DDC	District Development Committee
ECA	Economic Commission for Africa
EDF	European Development Fund
EIB	European Investment Bank
EIP II	Environmental Investment Plan II
EPZ	Export Processing Zone
EU	European Union
FAD	Fish Aggregating Device
FAO	Food and Agriculture Organisation
FARC	Food Agricultural Research Council
FDP	10–Year Fisheries Development Plan
FSC	Farmers Service Corporation
GDP	Gross Domestic Product
GEF	Global Environment Facility
GOM	Government of Mauritius
GM	Genetically modified
ICAC	Independent Commission Against Corruption
ICT	Information and Communications Technology
IFAD	International Fund for Agricultural Development
IOC	Indian Ocean Commission
IPM	Integrated Pest Management
KFAED	Kuwait Fund for Arab Economic Development
LDC	Least Developed Countries
MABI	Mauritius Agricultural Biotechnology Institute
MACOSS	Mauritius Council of Social Services
MAFTNR	Ministry of Agriculture, Food Technology and Natural Resources
MCA	Mauritius Chamber of Agriculture
MDG	Millennium Development Goal

MFA	Multi–Fibre Agreement
MFED	Ministry of Finance and Economic Development
MoR	Ministry of Rodrigues
MSA	Mauritius Sugar Authority
MSIRI	Mauritius Sugar Industry Research Institute
MTEF	Medium Term Expenditure Framework
MWRCDFW	Ministry of Women’s Rights, Child Development and Family Welfare
NDU	National Development Unit
NEA	New Economic Agenda
NEAP	National Environment Action Plan
NEPAD	New Partnership for Africa’s Development
NES	National Environmental Strategy (2000–2010)
NFIDC	Net Food Importing Developing Country
NGO	Non Governmental Organisation
NMTIP	National Medium–Term Investment Programme
NPIP	Northern Plains Irrigation Project
NSSSP	Non Sugar Sector Strategic Plan (2003–2007)
OECF	Japanese Overseas Economic Cooperation Fund
POP	Persistent Organic Pollutants
RDP	Rural Diversification Programme
RIFF	Regional Integration Facilitation Forum
RRA	Rodrigues Regional Assembly
SADC	Southern African Development Community
SME	Small and Medium Enterprise
SIE	Sugar Industry Efficiency
SSSP	Sugar Sector Strategic Plan (2001–2005)
STC	State Trading Corporation
UNDP	United Nations Development Programme
WB	World Bank
WTO	World Trade Organisation
WUA	Water Users Association

Preface

*In an effort to halt and reverse the decline of the agricultural sector in the continent, the African ministers for agriculture unanimously adopted, at the 22nd FAO Regional Conference for Africa, held on 8 February 2002 in Cairo, a resolution laying down key steps to be taken in relation to agriculture in the framework of the **New Partnership for Africa’s Development (NEPAD)**. As a follow–up to this resolution, they endorsed, on 9 June, 2002, the **NEPAD Comprehensive Africa Agriculture Development Programme (CAADP)**. The recent **Declaration on Agriculture and Food Security in Africa**, ratified by the African Union Assembly of Heads of State and Government during its Second Ordinary Session, held in Maputo between 10 and 11 July 2003, provided strong political support to the CAADP. During this session, the Heads of State and Government agreed to adopt sound policies for agricultural and rural development, and committed themselves to allocating at least 10 percent of national budgetary resources for their implementation within five years.*

*The CAADP provides an integrated framework of development priorities aimed at restoring agricultural growth, rural development and food security in the African region. In its very essence, it seeks to implement the key recommendations on food security, poverty reduction and sustainable use of natural resources, made at recent global conferences. The CAADP comprises **five pillars**:¹*

- 1. Expansion of the area under sustainable land management and reliable water control systems.*
- 2. Improvement of rural infrastructure and trade–related capacities for improved market access.*
- 3. Enhancement of food supply and reduction of hunger.*
- 4. Development of agricultural research, technological dissemination and adoption to sustain long–term productivity growth.*
- 5. Sustainable development of livestock, fisheries and forestry resources.*

As an immediate follow–up to the Maputo Declaration, representatives of 18 African ministries for agriculture from member countries of the NEPAD Implementation Committee, the NEPAD Steering Committee, the African Development Bank, the World Bank, the International Fund for Agricultural Development, the World Food Programme, FAO and civil society, participated in a meeting held in Rome on 17 September 2003, in order to discuss the implementation of the CAADP, and more specifically the:

- Methodology for the review/update of the **national long–term food security and agricultural development strategies**.*
- Preparation of **National Medium–Term Investment Programmes (NMTIPs)**.*
- Formulation of the related “**Bankable Investment Project Profiles**”(BIPPs).*

¹ Pillar 5 was initially not part of CAADP, but has been added in recognition of the importance of the sub–sectors.

It is within this context that the Government of Mauritius, in an effort to reinforce its interventions aimed at fighting poverty and food insecurity, has requested FAO to assist in preparing a NMTIP and a portfolio of BIPPs, with the aim to:

- *create an environment favourable to improved competitiveness of the agricultural and rural sector;*
- *achieve quantitative objectives and mobilize resources to the extent needed for the associated investment in agriculture;*
- *achieve the targeted allocation of national budgetary resources to this area, reflecting the commitment made in the Maputo Declaration; and*
- *create a framework for coordinated bilateral and multilateral financing of the sector.*

*The present NMTIP, which draws on work of the recent Non Sugar Sector Strategic Plan (2003–2007) and Sugar Sector Strategic Plan (2001–2005), was prepared by a team of consultants, under the overall supervision of the National Project Coordinator/NEPAD focal point in the Ministry of Agriculture. The team was assisted by experts from the FAO Investment Centre Division² while the Office of the FAO Representative provided crucial administrative support. In the process of preparing this document, participation was sought from major stakeholders from government, development partners, farmer’s organisations, private sector and civil society. Key to the finalization of the NMTIP was the **National Stakeholder Workshop** held on 26 April 2004, during which a draft of this document was discussed and validated, and project ideas for the BIPPs prioritized, based on agreed–upon selection criteria. Six of these (including one for the island of Rodrigues) were further developed into BIPPs, that are presented in a separate document.³ Lastly, the NMTIP and the BIPPs were reviewed by an FAO Virtual Task Force of technical experts.*

This document starts with a brief description of Mauritius’s agricultural sector in the context of the country’s economy and poverty and food security situation. This is followed by a review of national and development partner strategies and programmes, lessons learned, and an analysis of the principal constraints to, as well as opportunities for, the development of the sector. Based on this analysis and taking into account existing government strategies and the five pillars of CAADP, priority areas for investment have been identified. Finally, an attempt has been made to estimate the financing gap in terms of additional resources that would be required to meet the target of allocating 10 percent of national budget to the sector within five years, and a proposal put forward for monitoring and evaluation of the NMTIP implementation.

² A. Agostini, TCIS.

³ For the purposes of the present exercise, “Bankable Investment Project Profiles” are defined as documents elaborated in a format and with the information that could make them favourably considered by the financial institutions, donors and private investors foreseen in the Maputo Declaration. These documents should enable cooperating partners to make preliminary indications of interest, and of approximate level of funding commitment. Further feasibility analysis and subsequent processing through the concerned partner(s) regular project formulation systems would follow to obtain a project/programme proposal elaborated to the feasibility study level.

I. INTRODUCTION

A. The Economy

I.1. Mauritius is a development success story. Per capita income rose from US\$260 at independence in 1968 to US\$4,500 in 2004 and Mauritius, albeit a Small Island Developing State, is now classified as a Middle Income Country. The country is ranked 64th in the Human Development Index 2004 ranking and the population of 1.2 million is growing at 1.1%. In the early 1980s, the government pursued an aggressive export–led growth strategy, accompanied by a determined drive towards diversification away from agriculture into industrial production (mostly garment–manufacturing for exports). Tourism and financial (offshore) services grew rapidly in the 1980s, turning Mauritius into a four–pillar economy. With the construction of a cyber–city in Ebene, Mauritius is looking to position itself as a regional IT hub, and to make the ICT sector a fifth pillar of the economy. As Mauritius forges its way towards a knowledge– and service–based economy, the contribution of agriculture to GDP (less than 7% in 2002–03) is expected to continue on its downward trend, while financial services and manufacturing combined are poised to increase their share of GDP beyond the 90% mark.

I.2. An important factor in stimulating growth has been Mauritius’s judicious use of preferential trade agreements, in particular the *ACP–EU Sugar Protocol* under the *Cotonou Agreement* (which guaranteed a minimum price of €23.70 per tonne of sugar) and the *Multi–Fibre Agreement (MFA)*, which guaranteed duty– and quota–free access for textiles to the EU. Rents from these preferential agreements are estimated to have amounted to 4.5% of GDP in the 1990s.⁴ However, today the economy is faced with great and immediate threats caused mainly by the proposed reforms of the EU to the Sugar Regime (whereby the guaranteed price per tonne could fall to as low as €329 by 2007, i.e. -37%) and the dismantling of the MFA in January 2005. The reforms proposed by the EU, for a price–cut of 25% as early as July 1, 2005 and to be extended to 37% by July 1, 2007, if implemented without any amendments, would have severe disruptive effects on the agricultural sector, with adverse repercussions on the whole economy. The agricultural economy has revolved around the sugar industry for many years and the latter has played a crucial multifunctional role as regards income and employment generation, the balance of the ecosystem, rural development and the production of green energy. To respond to these threats, the Government has already embarked on an ambitious *Accelerated Sugar Sector Strategic Plan* and is increasing its lobbying efforts at the EU level to obtain compensation as a result of the sugar reforms.

I.3. On the other hand, the textile industry remains under intense pressures, especially from quota elimination in 2005, China’s membership in WTO, and rising wage levels locally. In addition, whilst Mauritius is rapidly advancing in the high technology sector, rapid growth in this area is limited by a shortage of skilled labour in the short to medium terms. Finally, it is noteworthy that, in its budget 2004/05, the government has defined the democratisation of the economy as a core priority for the country and this will be achieved by widening access to land, greater employee participation in profit sharing/ownership, equal opportunities in employment, and greater entrepreneurship through the development of small and medium enterprises (SMEs).

I.4. **Public Finances.** In the early 1990s Mauritius contained its budget deficit below 3%. However, this rose to 6.5% in 2000/01, largely due to massive capital expenditures in productive sectors of the economy after the change of government in September 2000 (that set the pace for

⁴ The government has recently commissioned the international firm Landell Mills/ERM to carry out an evaluation of rents derived from the Sugar Protocol. The report is due in early 2005 and will serve as the basis for negotiations during the ACP–EU talks on proposed agricultural reforms.

implementation of the *New Economic Agenda*). The budget deficit for 2003/04 is Rs9.15bn, representing 5.6% of GDP and is above the set target of 5%. The projected budget deficit for 2004/05 would be Rs9.11bn, representing 5% of GDP. The objective is to bring the figure down to 3.5% in 2006/07. To ensure that spending decisions are made on the basis of performance, government is starting a major budgetary reform process through the introduction, on a pilot basis, of a *Medium Term Expenditure Framework* (MTEF). MTEF requires the preparation of a medium term macro–economic framework, within which multi–year expenditure estimates are prepared. It is a process that relates resources to priorities. It also involves policy analysis and includes mechanisms for measuring performance.

I.5. The government expenditure programme responds to four challenges facing the economy: (i) the erosion of preferential trade agreements; (ii) rising unemployment (10.6% in June 2004); (iii) the growing gap between production costs and productivity increases; and (iv) a rapidly ageing population. Indeed, population projections indicate a continuation in the process of ageing. The proportion of the population under 15 years of age will be decreasing from 25.7% in 2000 to around 18.4% within the next 40 years. This is the direct consequence of the fall in fertility in the projected period. The proportion of the elderly aged 60 years and over is projected to increase from 9.1% in 2000 to around 23.5% by 2040. Public debt stands at Rs109.9bn in June 2004, representing 66.7% of GDP. According to the *Economic Commission for Africa* (ECA), central government debt levels remained manageable and stood at 6% of GDP and 15% of export receipts in 2003. Government is currently working towards a lengthening of its maturity structure in order to be able to carry forward interest payments. Total debt servicing works out to around Rs9.6bn, representing 5.5% of GDP in financial year 2003/04, with internal debt servicing accounting for 4.9% of GDP. As part of its debt management strategy, the Government will aim at reducing the ratio of debt to GDP and ensuring that new debt finances only capital expenditure.

I.6. **Membership in International and Regional Organisations.** Mauritius is a member of, *inter alia*, the *Common Market for Eastern and Southern Africa* (COMESA), the *Southern African Development Community* (SADC), the *Indian Ocean Commission* (IOC), the *Regional Integration Facilitation Forum* (RIFF) and the *African, Caribbean and Pacific* (ACP) Group. Mauritius considers its participation in regional agreements as a step towards building resilience for full integration into the world economy. Mauritius's participation in the multilateral trading system and in various regional agreements reflects its interests as a small, export–oriented economy with advantages in a few products including sugar. As part of its economic success is due to preferential market access granted by major trading partners, Mauritius is taking steps to adjust to changes in this international environment (see above for the expected changes in the Sugar Regime).

I.7. **Price Controls.** Import, export and price controls are maintained, and strategic reserve stocks are held, on certain agricultural products. In Mauritius, the *Agricultural Marketing Board* (AMB) imports or purchases locally several agricultural foodstuff and products such as potato seeds, onions, potatoes and milk and sells these to registered dealers at controlled prices. The AMB also holds reserve stocks of staple agricultural products to make up for general shortages. Public enterprises and parastatals still hold a monopoly over the importation of certain food and non–food products, including flour, petrol and certain rice varieties. Since 1985, the *State Trading Corporation* (STC) is the sole importer of petroleum products in Mauritius, given their strategic importance for the development of the country. Half of the country's requirements in flour is produced locally and the remaining half is imported by the STC. Customs tariffs on agricultural imports range from zero to 80%; the 80% rate applies, *inter alia*, to cane or beet sugar, chemically pure sucrose (in solid form), and molasses resulting from the extraction or refining of sugar. Other trade restrictions in the form of quotas are maintained on private (i.e. not AMB) imports of potatoes and on exports of certain types of chilled fish, the latter with the objective of preserving the country's marine biodiversity.

I.8. **Poverty, Food Security and the Millennium Development Goals (MDGs).** Poverty in Mauritius is predominantly related to social exclusion rather than abject poverty. Most of the poor have access to basic social services. According to World Bank estimates, the “depth” of poverty in Mauritius is relatively low. The transfer of a mere 0.9% of GDP would suffice to lift every adult out of poverty. As yet, there is no official definition of poverty for Mauritius and Rodrigues but a study is currently being conducted by the African Development Bank (ADB) to define a poverty baseline for the country. There have been several attempts to quantify poverty: A. Duncan and P. Valenti had defined an absolute poverty threshold of Rs2,250 per equivalent adult per month, in 1996 Mauritian Rupees. The *Common Country Assessment 2003* estimated a relative poverty index using the proportion of households below 50% of median per capita income. 9.4% of the Mauritian population were estimated to fall below this poverty threshold. But in the absence of an official classification statistic, the incidence of poverty among the agricultural workforce and the female population remain difficult to estimate. Persistent pockets of poverty exist, however, in particular in Rodrigues.

I.9. The financial budget 2004–2005 aims for a fairer distribution of income through a more progressive income tax system and a targeted approach for basic retirement pensions amongst others. According to the budget, the poorest 20% of the population is receiving only 6.2% of national income. However, Mauritius has already met or is highly likely to meet all of the MDGs by 2015. Based on existing data, the prevalence of hunger and malnutrition is low. According to the *Nutrition Survey* of 1985 and 1995 respectively, the level of malnutrition amongst under–five children for the Republic of Mauritius, measured in terms of the percentage of underweight children, has fallen by 7.3% over the period 1985–1995 (from 23.9% to 16.6%). However, given that poverty is heavily localised, the incidence of malnutrition may be higher in some regions relative to others (for example in Rodrigues). The absence of indicators on nutritional level by region is a serious limitation in that it may hide wide disparities across the country and mislead policy makers in the determination of priority areas of intervention. GOM has given increased consideration to the needs of vulnerable groups, as reflected by the increased share of government current expenditure on social security and welfare over the past years, rising from 18% to 25.3% over the period 1990/91 to 2000/02. Other than governmental support, civil society organisations and NGOs in Mauritius are also active in the sector but generally most of them have failed to achieve their set targets because of lack of capacity at the human resources level.

I.10. **Gender.** On the subject of gender, Mauritius is one of the countries in the SADC region with the lowest level of women representation at the National Assembly, with only 5.7% of seats to women in 2000. There is gender equality at all levels of education. In the employment sector, there is a lower proportion of women engaged in non–agricultural activities with around 34.3% in 2000. The Government of Mauritius will soon introduce the *Equal Opportunities Bill* to prohibit discrimination and promote equality of opportunity in the work place. The *Action Plan for Poverty Alleviation* noted a growing feminisation of poverty with an important proportion of very poor households headed by single women. According to a study conducted by a local consulting firm, female–headed households earn significantly less than the male–headed households, the average monthly income being Rs4,700 compared to Rs8,500. With decreasing job opportunities in the agricultural and EPZ⁵ sectors, there is a serious threat that poorly educated women might be marginalized on the labour market.

⁵ Export Processing Zone.

B. The Agricultural and Rural Sector

I.11. **Contribution to the Economy.** At the time of independence, agriculture was the largest sector in the economy and accounted for more than 25% of GDP, out of which the sugar sector (primary production and processing) accounted for 26%. The share of agriculture in GDP has steadily declined to 6.5% in 2002. Whereas the rest of the economy flourished in diversification, sugarcane remains the dominant crop in the agricultural sector, contributing around 4.3%⁶ to GDP in 2003. As of 2002, the agricultural sector still employed some 9% of the workforce (28% in Rodrigues), with women providing around 23% of the total employment in the agricultural sector in 2002. The sector's overall contribution to export earnings has declined significantly over the 1990s.

I.12. **Physical.** The State of Mauritius comprises the main island of Mauritius as well as the smaller islands of Rodrigues, Agalega, Tromelin, Cargados Carajos and the Chagos Archipelago, including Diego Garcia. As compared to many African countries, Mauritius is not classified according to agroecological zones. However, the unequal distribution of rainfall in time and space has led to the formation of various agroclimatic zones. Some 90,000 ha (48%) of land is cultivated and 56,400 ha is forested (of which 22,000 ha are state owned). In 2003, sugarcane production made up for 93% of the agricultural land whilst the remaining land was under the cultivation of food crops, tobacco, tea and fruits.

I.13. In Rodrigues, 600 ha of the total 10,800 ha are cultivated, whereas 3,000 ha is pastureland and 4,000 ha are forests. Soils in Mauritius and Rodrigues are of volcanic origin, but erosion, heavy rainfall and unsuitable land management have depleted their natural fertility. Rodrigues is hilly and dissected, and degradation is a serious problem.

I.14. **Structure of Sector.** The rural sector in Mauritius cannot be clearly delineated. However, for purposes of statistical compilation and analysis, the urban sector is defined as the population in the five *Municipal Council Areas*⁷ defined according to proclaimed boundaries. Given the small size of the island and the easy accessibility guaranteed by the well developed road network, even the declining percentages of the rural population (from 61% in 1990 to 57% in 2003) must be interpreted with caution. Only around 4500 households are estimated to rely exclusively on smallholder farming for their livelihood.

I.15. **Sugar.** About 93% of the farmed land is dedicated to sugarcane. Seventeen large millers and planters, who account for the bulk of total production, cultivate about half the total area planted with sugar. The other half is cropped by around 30,000 small planters who use traditional cultivation methods. A high proportion of these small planters, most of whom are part time farmers, own around 0.5 ha or less. Of the total sugar production in 2003 (estimated at 537,000 tonnes), almost the totality of it, i.e. 99%, was exported to the main markets of the EU and the USA. Of the 17 large millers and planters, there are currently 11 private sugar factories operating in the country. Provision has been made in the *Sugar Sector Strategic Plan (2001–2005)* for the closure of about 6–7 sugar factories by 2005.

I.16. All sugar is sold through the *Mauritius Sugar Syndicate*. Support services in marketing, research, information, and insurance continue to keep planters in the sugarcane production. Most of

⁶ Calculated from the Central Statistical Office online database: *National Accounts Estimates (2001–2003)*, December 2003 issue. This calculation is based on the preliminary estimates for 2003, and takes the contribution of sugarcane to the 'Agriculture, hunting, forestry and fishing Industry' and the 'Manufacturing Industry', as a percentage of GDP at basic prices.

⁷ Port Louis, Beau Bassin/Rose Hill, Quatre Bornes, Vacoas/Phoenix, Curepipe.

Mauritian sugar is sold at guaranteed prices, which have been well above world market prices, in particular benefiting from preferential access to EU markets (see above, para. I.2). The costs of production for Mauritius is around 18–20 ¢/lb on the basis of a crop of 600,000 tonnes, compared to low costs of production of 9–12 ¢/lb for Australia and Thailand or 7–10 ¢/lb for the cheapest producer, Brazil. Sugarcane continues to be an important export earner amounting to 20% of total domestic exports and accounting for 4% of total employment in 2003. Sugarcane produces its own energy requirement and since the 1980s, the sugar estates have been a net supplier to the grid representing 45% of the country's total power requirements. Harvests are volatile and have frequently suffered from cyclone damage as well as from drought.

I.17. **Non Sugar Agriculture.** Mauritius imports all its basic staples namely rice, wheat and oil and has been classified as a *Net Food Importing Developing Country* (NFIDC) by the WTO. The food import bill amounted to Rs11.6bn or 17% of total imports for 2003. The country is self-sufficient in fresh vegetables except in times of unfavourable climatic conditions (cyclones, drought, heavy rains). The production of food crops in 2003 was 103,455 tonnes for a harvested area of 7,228 ha. The most important food crops in terms of area under cultivation and volume of supply are tomatoes, potatoes, onions and cucumbers. Local fruits such as pineapple, banana, citrus, litchi, mango, papaya and passion fruit are cultivated commercially. Preserved fruits and fruit juices are imported. Imported fruits are available throughout the year at relatively low prices, and are preferred by the local population for their quality and price. Under the *Sugar Industry Efficiency Act* (SIE), “*producers, wherever applicable, shall rent out to growers not less than 50 per cent of the aggregate area of land used for the cultivation in interline and rotational land of crops other than sugar cane.*”

I.18. The **tea industry**, which was the second largest agricultural revenue earner prior to the 1980's, eventually became unprofitable due to quality constraints and uncompetitive prices on the world market. In 2003, 681 hectares tea gardens produced 1,436 tonnes of black tea, mainly for the domestic market. 424 tonnes of tobacco leaf was produced locally in 2003/04, exclusively for domestic consumption, from 379 ha of land by 324 growers. Presently, Mauritius is the second largest exporter of anthurium flowers worldwide after the Netherlands, exporting an average annual 15 million stems. Honey production in Mauritius was 50 tonnes in 2001, while Rodrigues produced 47 tonnes in 2000. Rodrigues honey has been recognised internationally for its high quality, but gradual destruction of food sources limit the potential for expansion.

I.19. Losses in harvested agricultural produce include handling damage, insect, fungal, vertebrate pests, diseases, and spoilage. Lack of cold storage facilities and access to processing technologies and equipment have until recently prevented the proper utilisation of increased production of vegetables and fruits.

I.20. **Land.** Fertile land is becoming an increasingly severe constraint to food crop production in Mauritius. The 1994 Master Plan for Agriculture estimated that 300–350 ha of land was being removed from agriculture annually. Also, rotational land from sugar estates is becoming less available to food crop growers. In an effort to increase local food crop production and enhance local food supply, the SIE required the sugar estates to devote a total aggregate area of not less than 2,300 ha of land for food crop production and not less than 50 per cent of this area (1,150 ha) was to be rented out to growers for this purpose. Through the democratisation process, the Government of Mauritius is widening access to lands and will make available 200 acres of agricultural land to be leased out to small planters for agricultural diversification. (See Table 1.)

Table 1: Evolution in Land Use in Mauritius

Land Use	Land Area (ha)					
	1965	%	1986	%	1996	%
Sugarcane	97,973	52.5	82,289	44.7	76,840	41.2
Tea	6,232	3.3	3,776	2.0	9,660	5.2
Tobacco & food crops	2,023	1.1	3,000	1.6		
Total Cultivated Land	106,228	56.9	89,065	48.3	86,500	46.4
Forest, scrub & grazing land	64,465	34.6	65,380	35.0	57,000	30.6
Built up areas	11,857	6.4	25,500	13.7	36,400	19.5
Reserves, roads	3,925	2.1	5,605	3.0	6,600	3.5

Source: *Food Security Issues in Mauritius and Rodrigues*, University of Mauritius, 2003.

I.21. **Water management and irrigation.** Mauritius is considered to be a well-watered island, with an annual average of 2000 mm rainfall. Its unequal distribution in time and space has led to the formation of various agroclimatic zones. In some zones, agriculture is not possible without irrigation, whereas in others agricultural production is limited by excessive rainfall. The total water capacity of the 10 man-made reservoirs is about 67.4 Mm³ with an annual yield of 213 Mm³. Total water storage capacity has been increased with the construction of the Midlands Dam which has a regulating capacity of 42Mm³. The island has five main aquifers over which there are about 350 boreholes, of which 128 are used for agriculture. Water management has become a critical issue and modernising and increasing efficiency of irrigation systems have become a priority. The various policies regarding water relate to its efficient use, preservation of quality, and equal and reliable distribution. Insufficient and/or inadequate storage structures, coupled with relatively lesser amount of rainfall in the North and West of the country, leads to insufficient water for irrigation in certain regions of the island and at certain times of the year, and consequently optimum yields are not possible in these regions.

I.22. The *Northern Plains Irrigation Project* (NPIP) was set up to cater for the irrigation needs of the food crop and cane growers in the Northern Areas. The first phase of the project was launched in 1982 and covered some 1,920 ha and comprised the installation of high-pressure sprinklers systems. The second phase of the NPIP (NPIP II) has already started and aims at promoting agricultural diversification, rationalizing sugar production and increasing the supply of water to the area. NPIP II will improve yield on the land of some 3,800 planters. In the next two years 1,150 planters will benefit from irrigation at Fond du Sac, Belle Vue, Pilot and l'Esperance Trébuchet. Works have been completed in the lands of the small planters under Block 3 (400 ha) and construction works have started in Block 2 (380 ha). The NPIP project, comprising both phases, has received financing from various sources including the EU, the Government of France (via the *Agence française de développement*, AFD) and IFAD. The construction of the Midlands Dam has provided additional water resources to irrigate an additional 3,200 ha in the North, to complement the current 21,619 ha of land under irrigation. Most of the irrigated lands are located along the coastal regions where rainfall is insufficient and erratic: in the North, 32%; the South, 25%; the East, 15%; the West, 25%; and the Centre of the island, 3%. In the financial budget 2004/05, the government is providing Rs127m for irrigation projects, NPIP II and small-scale irrigation projects. (See Table 2.)

Table 2: Land under irrigation, 2003

	Land Area (ha)			
	Overhead	Surface	Drip	Total
North	5,173	756	1,012	6,941
East	3,015	–	174	3,189
Centre	732	85	–	817
West	4,030	1,151	166	5,347
South	4,756	40	529	5,325
Total	17,706	2,032	1,881	21,619

Source: CSO, 2003.

I.23. **Livestock.** Per capita consumption of meat, milk and table eggs has increased significantly from 1981 to 2001. At the same time, imports of beef, chevron/mutton and milk have shown a drastic increase and the gap between consumption and domestic production has widened. The production of venison has stagnated for the past 10 years. Local production cannot meet the market demand. The production of beef from live cattle increased by 2% in 2003 to reach 2,505 tonnes and local production (including imports of live cattle from Rodrigues) accounted for 8.1% of total beef consumption. The production of goat meat and mutton was 107 tonnes in 2003 and the share of local production in total goat meat and mutton consumption was 34.6%. The production of pork has increased by 3.7% to reach 784 tonnes in 2003. The pork industry is facing problems with the quality of the carcasses available on the domestic market for further processing. There is inadequate disposal of pig waste and this has become a serious environmental threat to the quality of water. The level of exports of live pigs from Rodrigues for further processing has shown a drastic decline. Mauritius imports more than 90% of the raw materials required for the manufacture of livestock feeds. All the maize required to support the poultry industry is imported. The volume of maize import has increased from 60,200 tonnes in 1995 to 64,100 tonnes in 1999 (+6% increase). The increase in the CIF value of imported maize showed a 44% increase for the period 1995–1999.

I.24. **Agro–industry.** The agro–industrial sector has been expanding fast in the 1990s. In 1998 the annual turnover was estimated to be around US\$70,000. Apart from the well–established agro–industrial activities of sugar, tea and tobacco processing, some 100 formal small and medium enterprises produce canned vegetables and fruits, fruit jams, fruit juices and concentrates, canned tuna fish, yoghurt, flavoured milk, and processed poultry meat and special cuts. Wheat flour is milled from imported wheat grains. In addition an informal sector is operating in activities ranging from processing to food marketing. Agro–industrial development is constrained by the small size of local market, which does not allow economies of scale, stiff competition from imported products and by the scarcity of agricultural land for the production of the required raw materials in sufficient quantity and quality, and must therefore rely on imports. Regional production of food crops like potatoes and onions has started on a small scale in Madagascar and Agalega to supplement local production. Regionalisation of production will aim at providing high quality raw materials for the agro–industry in the future.

I.25. **Fisheries.** Mauritius has an *Exclusive Economic Zone* (EEZ) of 1.9 million km² extending 200 nautical miles from the coasts of the island, Rodrigues and the outer islands of St Brandon, Agalega, Tromelin and Chagos. The fishing sector employs about 9,500 people and an additional 1,400 for fish processing. Currently, there are a total of 2,000 fishing boats in Mauritius and Rodrigues, with a little over 1,000 in Mauritius. Fishing includes professional coastal and off–lagoonal fishing, sport fishing, artisanal fishing as well as aquaculture, including mariculture, in *barachois*⁸ and ponds.

⁸ *Barachois* ponds are tidal pools formed when a sandbar builds up at the border between a stream and the ocean.

Bank fisheries where larger vessels go out to the banks of Saya de Malha, Nazareth, North of Albatross and in the waters of Chagos Archipelago for extended periods, are also important. Recently, two trawlers have started fishing in the distant waters of the Indian Ocean. In 2003, total fish production increased by 6% from 10,752 tonnes in 2002 to 11,403 tonnes, with more than half of production coming from offshore demersal fishery. Apart from tuna, which is canned for the local and export markets, other fish are mainly for domestic consumption. The total value of imports and exports of fish and fish preparations for 2003 were Rs2,560m and Rs3,178m respectively. The tuna canning industry is an important processing industry. About 29,000 tonnes of tuna were exported in 2002 at a value of around US\$68 million. In the same year, the total value of the exports of marine products amounted to US\$137 million. The contribution of artisanal fishing to fish production was around 35%, with the main types of catch being finfish, shellfish and molluscs. Port Louis is also an important port for other fisheries, namely Patagonian toothfish caught in Antarctic waters and for Taiwanese and Korean tuna longliners which fish throughout the Indian Ocean.

I.26. As part of the government's strategy for the fishing sector, a *Ten Year Plan for Development of the Fisheries Sector* was introduced in June 1997. The conclusions of this plan are that there is limited potential for further exploitation of the marine capture fisheries and that Mauritius should aim at maximising its returns from the existing fisheries through transformation and value addition. The plan also suggests a more sustainable management of the marine resources. The importance of functioning marine life as an attraction for tourism is also increasingly recognised. In view of the limited potential in the fishing industry, efforts and investments have been concentrated into the development of a Seafood hub in Mauritius. It will eventually comprise a centre for transshipment, processing, storage, distribution and re-exportation of high value-added seafood products. This project has obtained strong support and interests from local and foreign investors and builds the way for strategic partnerships with established fishing nations.

I.27. **Forestry.** About 30% (57,000 ha) of the total extent of Mauritius is presently under forest, mainly in the South–West of the island, of which 22,000 ha is owned by the state. About 700 species of indigenous plants are present, of which 300 are found only in Mauritius. Rodrigues has 47 endemic species. Currently, the planted forests provide timber, poles and fuel wood for industrial, agricultural and domestic purposes. Local timber production provides for 30% of the local need and the rest is imported. Mauritius has endorsed the forest principles and is a signatory of all the major conventions on environmental protection. In this context, the *National Forestry Policy* is being reviewed to make provision for soil and water conservation as well as conservation of the indigenous flora and fauna. Other policies also address issues of revenue, proper management compatible with sustained yield and development of ecotourism as a source of income. The forestry sector offers further potential for the extraction of essential oils, medicinal compounds and pesticidal compounds.

I.28. **Rodrigues.** The island of Rodrigues, located 653 km from the east coast of Mauritius, forms part of the Mauritian territory. It was awarded the status of “autonomy” in 2003. Rodrigues has a population of 36,000 inhabitants and its economic pillars are agriculture, fishing and cattle. Tourism development is gaining increased attention. Water and land management are important issues for Rodrigues: 80% of the land is degraded and water scarcity is a severe problem both for residential and commercial uses. The Agriculture, Forestry & Fishing Industry in Rodrigues employed some 3,910 persons (i.e. around 28% of the employed population), out of whom 2,600 were male and 1,310 female, in 2003. Food crops grown in Rodrigues include chilli, maize, onion, potato, sweet potato, garlic, groundnuts, and beans. Fruit crops include banana and citrus. Apiculture, fisheries, and other seafood such as octopus and squid make up the other components of Rodriguan agriculture. However, acreage under agricultural production in Rodrigues has been declining drastically over the last decade. Rodrigues's exports, essentially to Mauritius, are mainly commodities issued from its primary sector including fish, octopus, livestock, lemons and honey, but exported quantities have fluctuated widely.

I.29. **Institutions.** There have been several reshuffling of mandates pertaining to the various functional responsibilities linked to the agricultural and rural sectors. Under the current political regime, the principal actors among the various ministries, major parastatals and independent bodies involved with the agricultural and rural sector in Mauritius are identified as follows:

- **Ministries:**

- *Ministry of Agriculture, Food Technology and Natural Resources (MAFTNR).* The MAFTNR aims to drive the agricultural sector forward through the development of various business avenues, and the provision of new opportunities to the planting community. It advocates the adoption of modern production techniques and innovative technology in a well–defined framework to face the challenges of: mounting pressure on land resources, climatic uncertainties, rising costs of imported inputs, exposure to pests, rigorous sanitary and phytosanitary use, among others. The MAFTNR also encompasses the Forestry Service, which looks after 16,000 ha of State forests of which 3010 ha are native forests with a rich biodiversity — its Tree Seed Centre and Biodiversity Unit are responsible for reforestation and conservation activities, respectively.
- *Ministry of Fisheries.* The Ministry of Fisheries is in charge of ensuring the sustainable development and management of fisheries resources, conservation and protection of living aquatic resources and the marine environment in the waters of, and of interest to, Mauritius and continued socio–economic benefits to stakeholders.
- *Ministry of Environment.* The Ministry of Environment is responsible for the protection and the management of the environment assets of Mauritius so that their capacity to sustain the society and its development remains unimpaired and to foster harmony between quality of life, environmental protection and sustainable development for the present and future generations.
- *National Development Unit (NDU).* The NDU is concerned with the identification and implementation of projects aimed at improving basic amenities, provision of social and recreational activities in Mauritius, particularly in deprived localities. Mauritius has been divided into 20 Constituencies for the implementation of these projects.
- *Ministry of Rodrigues (MoR).* The MoR represents the interests of the island of Rodrigues and is responsible for its administration and development. Together with the Rodrigues Regional Assembly (RRA), it is responsible for the formulation of policies for the development of Rodrigues, the coordination with other ministries and non–governmental organisations to ensure timely implementation of all government policies and the supervision of the Rodrigues Administration.
- *Ministry of Women’s Rights, Child Development & Family Welfare (MWRCDFW).* The MWRCDFW, through the various units, which have been set up under its aegis, is responsible for the following general mandates: to work for the advancement and development of women and children, to ensure that their rights are respected, and to support and consolidate the family respectively. As such, it aims at ensuring, among others, the development of women and their active participation at national level in all spheres, whether legal, political, educational, social, cultural and economic.
- *Ministry of Finance and Economic Development (MFED).* The MFED, as the principal instrument of policy, is responsible for the financial soundness of the government’s economic policy and for the proper control of revenue and expenditure.

- ***Agricultural Bodies and Parastatals:***

- *Agricultural Research Extension Unit (AREU)*. The AREU aims at serving the non–sugar agricultural sector (crop and livestock) through excellence in cost–effective high–quality research and extension for better agricultural production, and to meet the policy requirements of the government in terms of agricultural diversification and food production generally.
- *Mauritius Sugar Authority (MSA)*. The MSA was established and empowered in 1984 with a view towards shouldering the following responsibilities: (i) formulate such systematic policy and nationally–integrated planning for the industry as it may consider necessary; (ii) monitor and coordinate of research, planting, milling, transport, bulk handling, marketing and other activities of the industry; (iii) advise the Minister on measures necessary to ensure the viability of the industry, including the structure of taxation affecting the industry generally; (iv) review, on a regular basis, the economic and financial performance as well as the problems and prospects of the industry; (v) advise the Minister on legislative proposals likely to affect the industry; (vi) supervise the overall activities of sugar and by–products. The MSA collects cess on the exports of the sugar industry and channels these funds into the financing of supporting services such as the *Farmers Service Corporation (FSC)* and the *Mauritius Sugar Industry Research Institute (MSIRI)*.
- *Food Agricultural Research Council (FARC)*. The FARC is an institution which aims at: promoting and channelling the development of research in the agri–food and related sectors, addressing the national interest and needs, and sectoral challenges, while ensuring that resources are expended on efforts that are scientifically relevant, excellent and innovative, directed towards priority problems and practical objectives.
- *Agricultural Marketing Board (AMB)*. The AMB, which was set up under the *Mauritius Agricultural Marketing Act* of 1963, is responsible for the provision of, among others, the efficient marketing facilities of controlled agricultural produce at fair and reasonable prices; the operation of storage, handling and processing facilities and the purchase, sale, import, export of controlled products.
- *Irrigation Authority (IA)*. The IA was established under Section 3 of *Irrigation Authority Act No. 39 of 1978* with a view to (i) study the development of irrigation and to make proposals to the *Central Water Authority (CWA)* for the preparation of schemes for the irrigation of specific areas; (ii) implement and manage irrigation projects; and (iii) undertake research into the optimum use of water made available by the CWA for irrigation.
- *Albion Fisheries Research Centre (AFRC)*. The AFRC under the charge of the Ministry of Fisheries. As such, its main responsibilities involve the following: (i) to carry out research, monitoring surveys and studies needed for the sustainable development and management of marine living resources (fish stocks, coral reef etc.); (ii) to provide support services to stakeholders of the fishing industry (including those involved in aquaculture development); (iii) to provide advice to policy makers on matters related to the management and development of marine resources and the conservation of marine environment including the creation of marine parks and reserves in accordance with the provisions of the *Fisheries and Marine Resources Act* and the *Environmental Protection Act*; and (iv) to act as a focal point for collaborative

research and management as regards regional and international fisheries and marine living resources.

- *Ministry of Agriculture, Food Technology and Natural Resources/Horticulture Research International (HRI)*. There are several experiment stations throughout the island which undertake research in the field of horticulture with a view to developing this practice. Mushroom cultivation and tissue culture are undertaken in closed laboratories and the produce is handed over to interested individuals for further propagation.

- ***Other Related Organisations:***

- *Mauritius Chamber of Agriculture (MCA)*. The MCA regroups the agricultural producers and other persons or firms connected with sugar and other agricultural crops and industries. Its basic objective is to promote and safeguard the interests of the agricultural community. In this respect, it provides the necessary forum where agricultural problems are debated and recommendations are made concerning the development of agriculture and agricultural industries.
- *Development Bank of Mauritius (DBM)*. The DBM is the financing arm of the government in the implementation of the socio–economic programmes of the country. Initially a parastatal body in 1964, it is now a private bank providing loan schemes in various sectors of the economy such as agriculture, large–scale manufacturing and tourism, small and medium enterprises and industrial estates. The main areas of intervention for the agricultural sector are for sugar cane, vegetables, livestock and miscellaneous agricultural products where loans are provided at concessionary terms.
- *University of Mauritius (Faculty of Agriculture)*. Originally founded as the *School of Agriculture* in 1914, the Faculty of Agriculture plays an important role in training human resources and fostering intellectual development and research in the agricultural and food sectors. In addition to offering courses and training to students in the agricultural field, the faculty carries out research in various areas of agriculture. It also provides in–service training to the staff of institutions in the agricultural and agro–industrial sectors.

I.30. ***Civil Society:***

- ***Agriculture.*** There are several associations that regroup planters and farmers in Mauritius. They exist at all levels of the food production chain from land preparation, planting and harvesting to processing. Examples of such organisations would include *Farmers Service Corporation, Vegetable Growers Association, National Federation of Young Farmers' Clubs* and *Water Users Associations* amongst others. Many of these associations are constrained by lack of resources, technical expertise as well as information on their respective fields.
- ***Welfare and poverty.*** The *Mauritius Council of Social Service (MACOSS)* is the umbrella organisation for Non–Governmental Organisations (NGOs) seeking to promote social and community development. As at August 2003, 169 organisations were affiliated to the council in various areas such as education, community development, poverty alleviation and environment and sustainable development.

I.31. **Financing.** Table 4 depicts the evolution of total budgetary resources allocated to agriculture and rural development during the past four fiscal years. For the Ministries of Agriculture, Fisheries and Environment, the entire capital and recurrent budgets have been included. For Rodrigues and other Ministries (Public Utilities, Local Government and NDU), only parts of the budget relevant to the agricultural sector and to rural development have been included. Whilst all expenditures on water management have been incorporated in the estimates, capital expenditures on wastewater management and sewerage/sanitation have been excluded altogether. On average, Government has devoted 6.91% to agriculture and rural development during the past four years. However, when capital expenditures on wastewater are included, the estimates reach an average of 9.1% per year as shown in Table 3 below.

I.32. In Mauritius, sugar and related institutions are financed mainly through the global cess. For the crop year 2000, global cess was estimated to be around 7.10% of net sugar proceeds (Rs500m). Over the ten–year period 1990–2000, global cess has amounted to an average of 5.65% of net sugar proceeds. For the financial year 2001/02, the money collected was used to finance the following institutions: *Mauritius Sugar Terminal Corporation* (Rs138m), *Mauritius Sugar Industry Research Institute* (Rs152m), *Cane Planters and Millers Arbitration and Control Board* (Rs58m), *Mauritius Sugar Authority* (Rs44m), the *Farmers Service Corporation* (Rs34.5m) and the *Sugar Planters Mechanical Pool Corporation* (Rs45.5m).

Table 3: Percentage of Total Government Budget Devoted to Agriculture and Rural Development

(Rs. billion)	2000/01	2001/02	2002/03	2003/4
Total Government Budget	35.93	35.67	41.94	45.31
Agriculture & Rural Development Budget (including wastewater)	2.69	3.28	3.94	4.61
% of Total Budget (excluding wastewater management)	6.03%	7.29%	7.16%	7.16%
% of Total Budget (including wastewater management)	7.49%	9.20%	9.39%	10.17%

Table 4: Budgetary Resources Devoted to Agriculture and Rural Development

(Rs.; Figures for Agriculture and Rural Development exclude wastewater management)	2000–01	2002–02	2002–03	2003–04
Recurrent Budget				
Total Government Budget	31,398,251,078	29,577,023,598	33,529,492,362	36,878,427,863
Change		-5.8%	13.4%	10.0%
Share of Agriculture & Rural Development				
Ministry of Agriculture	824,932,300	858,506,078	897,439,898	980,079,897
National Development Unit	47,580,519	53,051,983	55,311,694	62,499,184
Ministry of Environment	83,998,330	92,540,294	107,613,022	121,259,485
Ministry of Fisheries	111,440,004	96,015,449	104,032,162	111,742,882
Ministry of Public Utilities	28,393,305	48,991,383	44,796,187	53,182,369
Rodrigues	47,974,868	55,126,427	59,056,000	*
Sub-total	1,144,319,326	1,204,231,614	1,268,248,963	1,328,763,817
% of total	3.64%	4.07%	3.78%	3.60%

NEPAD – Comprehensive Africa Agriculture Development Programme
Mauritius: National Medium–Term Investment Programme (NMTIP)

Table 4: Budgetary Resources Devoted to Agriculture and Rural Development				
<i>(Rs.; Figures for Agriculture and Rural Development exclude wastewater management)</i>	2000–01	2002–02	2002–03	2003–04
Capital Budget				
Total Government Budget	4,527,570,911	6,092,268,988	8,406,988,680	8,428,613,052
Change		34.6%	38.0%	0.3%
Share of Agriculture & Rural Development				
Ministry of Agriculture	179,194,728	161,265,382	125,463,377	248,771,939
Local Govt. & NDU	180,711,485	308,427,545	323,938,201	447,000,010
Rodrigues	86,100,000	189,700,000	245,800,000	400,000,230
Ministry of Fisheries	11,474,939	4,019,248	26,210,821	132,279,363
Ministry of Public Utilities	497,131,313	609,996,075	823,538,096	425,594,514
Ministry of Environment	67,896,565	123,590,100	189,632,960	262,334,120
Sub-total	1,022,509,030	1,396,998,350	1,734,583,455	1,915,980,176
% of total	22.58%	22.93%	20.63%	22.73%
Total				
Total Government Budget	35,925,821,989	35,669,292,586	41,936,481,042	45,307,040,915
Change		-0.7%	17.6%	8.0%
Total Agriculture & Rural Development	2,166,828,356	2,601,229,964	3,002,832,418	3,244,743,993
Change		20.0%	15.4%	8.1%
% of total budget	6.03%	7.29%	7.16%	7.16%

* Figures not available.

C. The Strategic Framework

(i) Government Objectives and Strategy

I.33. GOM's principle policy driving economic development is the *New Economic Agenda (NEA)*, also referred to as the *Economic Agenda for the New Millennium (2000)*. The NEA aims to transform Mauritius into a high-tech, high-income service and knowledge economy and its key objectives are:

- Increasing competitiveness and productivity to maintain and increase the high rates of growth, thus reducing poverty and increasing incomes and social well-being;
- Bringing about deeper social development and social cohesion through (i) higher quality education and more equitable access; (ii) social assistance that reaches the poor more efficiently and is financially sustainable; and (iii) improved and financially sustainable healthcare; and
- Preserving and protecting Mauritius's fragile environment to ensure that higher growth is environmentally sustainable.

I.34. The budget has been realigned to meet these strategic priorities: expenditure concentrates on education, environment, infrastructure, and poverty. The NEA is expected to further diversify the Mauritian economy into a high-skill services sector endowed with an efficient public sector delivering quality services, and a modern infrastructure consisting of new public transport systems and state-of-the-art information technology. The NEA is also expected to provide more opportunities for those who have not fully benefited from the country's past economic performance as well as those selected groups who may be negatively affected by the transformation of the economy. The NEA also provides mechanisms for ensuring that growth remains sustainable and does not negatively affect Mauritius's fragile natural environment. According to the World Bank *Country Assistance Strategy (CAS)*, the

most important requirement to allow NEA to succeed is the expansion and improvement in quality and relevance of the education system, an area where Mauritius relative progress has lagged behind overall national performance. Especially children from poor backgrounds are at a disadvantage when it comes to accessing high quality education. Further areas of intervention to implement the NEA include a greater focus on: (i) social programs and their effectiveness; (ii) environmental issues, including the development of new modes of transport; and (iii) public resource management and the management of contingent liabilities.

I.35. The NEA makes provision for the various challenges, which the agricultural sector must live up to. For instance, a comprehensive restructuring of the sugar sector, which emphasises centralisation, mechanisation, efficiency gain, labour rightsizing and the optimal use of cane biomass and sugar by-products, is under way. This is to streamline the sugar sector to bring it up to date with the international scenery, given the gradual phasing out of the preferential treatment obtained under the Sugar Protocol (see above, para. I.2). To build up the prospects of growth in the agricultural sector, various large scale projects have been put forward, most notably, the setting up of a sophisticated *Food Laboratory*, a *Mauritius Agricultural Biotechnology Institute*, and the expansion and modernisation of the irrigation network, to the tune of Rs50m, Rs360m and Rs144m, respectively. The NEA also provides for the setting up of various schemes for registered professional fishermen, e.g. the *Fishermen Welfare Fund* (Rs3m), the provision of life jackets (Rs5m), and duty exemption on spare parts for outboard motors, safety and security equipment. Under the NEA, a fisheries training and extension centre has been built at Pointe aux Sables and has been in operation since October 2004. The training centre will be dispensing training in various fields, including basic navigation, fishing techniques, safety at sea, protection and conservation of lagoons and marine resources and small business management. Construction of the Centre has been financed mostly through a grant aid from the Government of Japan. GOM priorities in the agricultural sector are summarised in four strategic documents: The *Sugar Sector Strategic Plan*, the *Non-Sugar Strategic Plan*, the *Fisheries Development Plan* and the *Forest Policy*.

I.36. **Sugar Sector.** The *Sugar Sector Strategic Plan* (SSSP) developed in consultation with the private sector and specifically the *Mauritius Sugar Authority* and the *Mauritius Chamber of Agriculture* covers the time frame of 2001–2005 and aims (*inter alia*) to ensure that the nation's export commitments are fulfilled and to reduce the cost of sugar production from 0.18 US\$/lb to 0.10–0.12 US\$/lb. The reform process implies increased centralisation, cost reduction, enhanced productivity, manpower rightsizing, optimising the use of cane sugar resources, diversifying activities and improving value addition. The specific interventions sought to achieve the above objectives include (i) consolidation of sugar factories from their current level of 11 (previously 18) to 7 or 8 plants with the view to improving efficiency and gaining economies of scale; (ii) increase energy output from renewable sources in particular bagasse; (iii) increase sugar land under total mechanisation to 60,000 ha and provide irrigation water for some 32,000 ha with water efficient systems by 2010; (iv) substantial reduction in the sector's labour force through implementation of socially efficient *Voluntary Retirement Schemes* (VRS); (v) efficient and judicious use of land water resources; and (vi) increased investment on R&D in biotechnology, biotic and cane biomass. The Plan also promotes the production of special sugar for niche markets. The reform for the rightsizing of the labour force has already started and a total of 8,000 workers have retired through this scheme, with a compensation of more than Rs2bn. According to estimations, the total cost of the VRS, including costs of infrastructure and land development, could well exceed Rs5bn. The Mid–Term Review of the SSSP is currently being performed at the same time as a new action plan for the sugar sector is being drafted.

I.37. **Accelerated Reform for the Sugar Sector/Sugar Action Plan 2005–2015.** In response to the threat of a reduction in the guaranteed export price of sugar, the government is currently working on the preparation of a *Sugar Action Plan* that would speed up the reforms of the sugar industry, as

formulated in the SSSP. However, it is expected that the accelerated reforms would leave more or less unchanged the proposed orientation for the sugar industry namely centralisation of operations; continuation of VRS; development and optimisation of the manufacture of sugar cane co-products (such as ethanol/gasoline blend for use in motor vehicles, bagasse for energy production, agricultural rum, alcohol-derived chemicals); production of more special sugars with higher value-added; an intensive derocking/irrigation/mechanisation programme. The new accelerated plan, or *Sugar Action Plan 2005–2015*, will build upon what has already been accomplished and propose policies to accelerate the reforms yet to be implemented. The Plan will be used as a basis for discussions to be held with ACP and EU partners in determining the amount of compensation that would make up for the loss expected following the reforms to the EU Sugar Regime. The EU has signalled its intention to adopt the new legislation by mid-2005, implying that, at the earliest, the new Sugar Regime could be implemented in 2006. However, ACP countries are currently engaged in intense lobbying to request the EU to adopt a more gradual and less-abrupt approach to the reform process, i.e., starting a more modest price-cut in 2008 and ending by 2016.

I.38. **Non-sugar Sector.** The non-sugar agricultural sector is governed by the comprehensive medium term strategic plan for the Non-Sugar Sector development, drafted by the MAFTNR (*Non Sugar Sector Strategic Plan, NSSSP 2003–2007*). The Plan is to provide the basis for restructuring the non-sugar sector to allow it to take on a more important role vis-à-vis the increasingly challenged sugar sector. The NSSSP aims to modernise agriculture to make it economically viable and sustainable. The plan has also devised strategies with a view to making Mauritius become an agricultural processing hub. To that effect, all the possibilities of using some countries of the region as production bases is under (regionalisation).

I.39. The specific objectives of the Plan include: (i) optimising productivity by promoting transfer of technology; (ii) enhancing quality and setting up of a *Food Technology Laboratory* to ensure strict conformity with international norms governing food safety and quality; (iii) attaining a certain degree of self-sufficiency in sectors in which the country is not already self-sufficient to reduce food import bill; (iv) optimising utilisation of agriculture; (v) reorganising marketing system through, *inter alia*, setting up of a *Market Information System*; (vi) fostering productive interaction between agricultural stakeholders and private/public sector; (vii) developing export avenues through an emphasis on value-addition and local agro-processing; (viii) enhancing research and development; (ix) promoting capacity building and entrepreneurship; (x) strengthening administrative, infrastructure and legislative frameworks to achieve a modernised agriculture while ensuring biosafety; (xi) promoting conservation of natural biodiversity and fostering sustainable utilisation of natural resources; and (xii) revamping agriculture in Rodrigues. The government has recently introduced incentives for the promotion of agricultural diversification and these have included amongst others the introduction of a pilot crop insurance scheme for carrots, the setting up of a *Small Planters Diversification Scheme* at the Development Bank of Mauritius (DBM), the setting up of a *Certification Authority* (to meet phytosanitary international norms) and the construction of five additional agricultural centres/one-stop shops at Roches Brunes, Flacq, St Pierre, Rivière du Rempart and Long Mountain. The government, with the assistance of the AMB, is currently reviewing the marketing system for food crops (auction system) and has been encouraging the planters' community to take responsibility for post harvest handling, with the proposed setting up of a washing unit at AREU, amongst others. A fine-derocking scheme for vegetables will soon be introduced to meet the high demands for this facility.

I.40. **Fisheries.** The country's fisheries strategy is outlined in the *10-Year Fisheries Development Plan* (FDP). The FDP states that overall potential for the further development of marine capture fisheries is limited, with the potential exception of off shore migratory species such as tuna and swordfish, and some aquaculture in Mauritius. The emphasis of the FDP therefore lays on sustainable resource use and protection of the marine environment, as well as on maximising returns from existing

fisheries resources through value addition. Investment in environmental and fisheries management is essential in order to prevent severe degradation of fisheries resources, which not only affects the fisheries sector but also has considerable repercussions in the tourism sector. The plan identifies project interventions over the 10–year timeframe amounting to approximately US\$20m. Currently the Government of Mauritius is considering the possibility of regional cooperation with Madagascar and Mozambique in the fishing industry. The biggest development to the fishing sector has been the setting up of a seafood hub in Port Louis to establish Mauritius as a seafood processing platform for the region.

I.41. **Forestry.** Mauritius has sought the expertise of FAO for the formulation of a new *Forest Policy* and *National Forest Action Plan* for the next decade. In line with its status of member country of the *United Nations Convention to Combat Desertification* (UNCCD), Mauritius is currently drafting a policy to combat desertification, with the assistance of FAO staff. The Forestry Service is currently implementing projects aimed at the conservation of biodiversity and for recreational and eco–tourism purposes at Mont Vert, Forest Side and Bras d’Eau Forest Reserve.

I.42. **Environment.** Rapid growth in Mauritius poses a threat to the environment and environmental degradation in turn threatens economic growth in particular in tourism, fisheries and agriculture. In 2000 GOM approved a 10–year *National Environment Strategy* (NES) for the period 2000–2010. Its main objectives are to control pollution, promote clean technology, conserve resources and protect the natural and global environment. The *Environmental Investment Plan II* (EIP II) outlines an implementation programme for the first five years, focusing in particular on waste management, controlling urban growth, combating the loss of biodiversity and preventing the contamination of fresh water resources and air pollution.

I.43. **Poverty Alleviation.** The overall vision of the *Poverty Alleviation Action Plan* (2002) is to achieve “*social cohesion and integration in a poverty–free Mauritius*”. The objective of the action plan is to provide a framework for the implementation of poverty alleviation programmes, which have been elaborated in three main areas namely community development, income generating and technical assistance. Two large programmes which aim to implement the strategy are the ‘*A Nou Diboute Ensam*’ (Let’s stand together), ANDE, programme implemented and completed by the former Ministry of Economic Development, Financial Services and Corporate Affairs and financed by the European Union, and the *Trust Fund for Vulnerable Groups* which is run by the Ministry of Finance and is ongoing. These new programmes emphasise de–centralised grassroots assistance using a participatory approach; they aim at empowering the poor through better access to education and credit facilities so that they can be involved in productive activities. National and local government, NGOs and community organisations also provide their assistance in the implementation of these programmes. The umbrella organisation for NGOs in Mauritius (MACOSS) together with the United Nations Development Programme (UNDP), the Ministry of Finance & Economic Development, the Ministry of Social Security, National Solidarity, Senior Citizens Welfare & Reform Institutions and the NGO Trust Fund are currently working on an NGO Development Programme (2005–2007) that seeks to promote capacity and accountability as well as develop the strategic planning capabilities of the NGO sector of Mauritius and Rodrigues.

(ii) **Major Donors’ Strategies**

I.44. **European Union.** EU is Mauritius’s biggest donor, and its indicative commitment to Mauritius over the period 2001–2007 amounts to €33 million in grant resources (9th *European Development Fund*, EDF). Of these, €28 million will be in the form of targeted budgetary support channelled to the Environment Sector, in particular the waste water sub–sector where funding will be

given to the *West Coast Sewerage Project* and components of the *Plaines Wilhems Sewerage Project* amongst others. The remaining € million of the 9th EDF, under the decentralised cooperation programme, will be used to finance projects that will target poverty alleviation. Priority will be given to projects benefiting the most deprived areas of Mauritius, Rodrigues in particular, and the poorest segments of the population. In considering the various options for sector support within the country programme, the *Country Strategy Paper* (CSP) states that support to the agriculture sector, such as diversification of the product base, remains difficult to implement as long as the well–organised sugar sector remains profitable. The EU is also expected to make available a compensation package and line of credit in the context of the expected drastic reforms under the EU Sugar Protocol.

I.45. **World Bank.** The World Bank CAS 2002 embraces the NEA and commits to direct financing for its implementation timed to coincide with the GOM budget cycle. Support of US\$80 million was envisaged for the time period 2002–2004, and financing would be through *Public Expenditure Reform Loans*, which are expected to yield economies of scale and be more cost efficient than individual projects.

I.46. **UNDP.** The *Country Cooperation Framework* for Mauritius for the period 2003–2007 will focus primarily on helping the country to achieve the *Millennium Development Goals* (MDGs). Under this objective, a number of projects have been identified for Mauritius and Rodrigues. A sustainable integrated development plan will be formulated for Rodrigues while for Mauritius, an ICT strategy will be formulated, a gender information system will be set up and the capacity of NGOs will be assessed. The programme will also provide support to the anti–corruption organisation in Mauritius (*Independent Commission Against Corruption*) and will address environmental/energy issues including Marine Protected Areas (MPA), Persistent Organic Pollutants (POPs), the removal of barriers to energy efficiency and energy conservation in buildings and capacity building for Sustainable Land Management (SLM), mostly with funding from the *Global Environmental Facility* (GEF). UNDP is also supporting the drafting of the country’s National Action Plan to combat desertification under the UNCCD.

I.47. **IFAD.** IFAD is a major donor in the agricultural sector in Mauritius even though it currently operates only one programme, the *Rural Diversification Programme* (RDP, US\$16.6m, of which US\$ 11.1 million is a loan from IFAD, 1999–2005). The RDP aims to boost rural employment, income generation and food production, by exploiting the potential of the scarce irrigable land and marine fisheries while building up grass–roots capabilities of the rural poor and their communities to meet their needs through self–employment and local initiatives. The RDP targets smallholder cane planters, artisan fishermen and women, labourers, the landless and female–headed households located in northern and eastern Mauritius and in Rodrigues — areas with below average regional development indices. In the RDP’s *‘Irrigated Agriculture Development’* component, IFAD supports the construction and rehabilitation of the small–scale irrigation schemes, crop diversification, and the consolidation of the institutional capabilities of the Water Users Associations (WUAs) and the Irrigation Authority. At the time of the Mid Term Review in April 2004, rehabilitation of two irrigation schemes was completed and work in respect of 4 more were contracted out. Total disbursement for the two phases of rehabilitation works have been estimated at Rs23.8m. A training module has been developed and several WUAs trained successfully. As part of the Fisheries component, RDP is developing and encouraging the use of Fish Aggregating Devices (FADs) to facilitate line fishing of migratory oceanic species, and makes provision for investment in FADs and a comprehensive package of incentives, credit for off–store boats and equipment, and training to fishermen to encourage the move away from depleted lagoon fishing to deep sea fishing. Twelve new FADs have been put in place, and the viability of FAD development has been confirmed in a recent assessment report. The main identified issues are the lack of human capacity and of large fishing boats

needed for FAD fisheries. The project also supports micro–enterprise development and microfinance, currently troubled by high default rates, as well as community development in priority areas.

I.48. **Food and Agriculture Organisation (FAO).** FAO has supported agriculture in Mauritius through a number of technical assistance projects. A project on strengthening of plant health management capability and seed and plant certification was recently concluded. Currently, FAO is providing assistance in the implementation of CAADP, in the review of the *National Forest Policy*, in stock assessment of fishery resources at St. Brandon and in a survey on agricultural costs of production. Areas identified for possible future support include technical assistance in the agricultural census, market information and capacity building of farmers, irrigation advisory services and training of WUAs, and in protected agriculture, hydroponics and high–tech propagation techniques.

I.49. **European Investment Bank.** Mauritius has secured, among others, a loan of €35m for the *Plaines Wilhems Sewerage Project* in December 2001, which encompasses the rehabilitation and extension of sewerage networks in the Plaines Wilhems area. In addition, a loan of €20m was awarded in December 2002 for the *CWA Reduction of Non Revenue Water Project*. This project concerns the improvements to be applied to six water supply networks on the island.

I.50. **Japanese Bank for International Co–operation (JBIC).** Mauritius has enormously benefited from Japan’s expertise in agricultural, economic and educational areas, since the establishment of diplomatic relations in 1969. A significant consolidation of these relations occurred in May 2000, with the signing of the Fishing Agreement between Mauritius and the Federation of Japan Tuna Fisheries Cooperation Associations, which makes provision of licences to 10 tuna long–liner vessels for fishing in Mauritius’s territorial waters. JBIC supported the construction of and provision of equipment to the Albion Research Centre, the Fishing Port and its extension, the Marine Shrimp Cultural Experimental Station, the *Coastal Fisheries Resources and Environment Construction Project* among others. The latest major contribution by the Government of Japan involves a grant aid of Rs187m for the construction of a Fisheries Training and Extension Centre at Pointe aux Sables identified in the NEA.

I.51. **African Development Bank.** In November 2000, the ADB approved a US\$19.02m loan to finance the *South Eastern Road Project* in Mauritius. The ADB has also approved a loan of a cumulative amount of US\$5.03m and €5.75m to finance the *Plaines Wilhems Sewerage Project*. This project falls within the framework of the *Sewerage Master Plan* produced by the government in 1994 with funding from the ADB. The objective of the project is to contribute to sustainable socio–economic development by protecting the coastal environment, averting pollution of water resources and reducing the health risk due to flooding.

I.52. **Agence française de développement (AFD).** The AFD is the main operator for the French Official Development Assistance system and is involved in more than 60 countries in the world. The agency has contributed to the financing of development projects for both public institutions and the private sector through subsidies, concessional loans and guaranteed loans. The AFD has financed several projects in Mauritius such as the improvement and rehabilitation of the water supply system in the Northern and Southern parts of the country, a sewerage project in Grand Baie and conversion of existing high pressure sprinkler systems using portable pipes of the NPIP I into drip, pivot and solid sets.

(iii) *Other Development Initiatives*

I.53. **Mauritius Council of Social Service (MACOSS): NGO Development Programme.** The council is presently working on a development programme for the NGO sector, jointly with UNDP and several Ministries. The programme will start with an assessment of the NGO sector, looking at its strengths and weaknesses, identifying the needs and capabilities, following which, projects will be formulated in order to respond to the demands of the sector. The whole process will involve a review of the legal and regulatory framework, formulation of a National NGO Policy, a review of the council as the umbrella organisation for NGOs, training of human resources as well as institutionalisation of training received by NGO workers. The programme will also aim at building capacity of NGOs in developing strategic planning, management development, project management, micro–project, micro–credit, community development, small–agricultural project, policy and advocacy.

(iv) *Project Pipeline*

I.54. A pipeline of ongoing and planned projects is presented in Annex 1.

II. CONSTRAINTS AND OPPORTUNITIES

II.1. **Macroeconomic.** Mauritius’s strong economic performance and continued growth provide a strong basis for investment. The country has a well–developed financial system with a sound and highly profitable banking system. The reduction in the interest rates, as part of the easing in monetary policy, has reduced the cost of credit and should help to stimulate economic growth. A key threat to the Mauritian economy is the imminent phasing out of preferential trade agreements, particular the reduction in the guaranteed price of sugar exports, and the increasing pressures from emerging economies like China. In other sectors such as the textile industry, the *Multi–Fibre Agreement* will be phased out in January 2005. There will be further trade liberalisation through the establishment of a full customs union in COMESA and a free trade area in SADC. Other pillars of the economy will also be affected by the liberalisation of trade and commerce, and competition from imports of agricultural produce is expected to increase. Whether developments in the ICT and financial services sector will be able to cushion these fluctuations is still unknown. A relatively high proportion of the population depend on the textile and agricultural sectors for their livelihoods and there may be potential problems in relocating the workforce to other sectors of the economy.

II.2. The SMEs in Mauritius currently employs more than 40% of the labour force and the Government of Mauritius is encouraging the development of this sector through the setting up of the institutional framework (Ministry for SMEs amongst others) and facilitating access to finance and infrastructure. Despite the 4.4% growth in the country GDP, other macroeconomic variables such as unemployment, fiscal deficit and public debt remain high and persistent. Mauritius also imports all of its basic staples and is thus vulnerable to increases in freight costs as such was the case with the recent 25% increase on the sea freight for flour and a 40% increase for rice.

II.3. Of particular interest to the agricultural stakeholders is the proposed erosion of the preference margin under the Sugar Regime reform (see para. I.2 above). The trade liberalisation process, including the above reform, will have significant adverse socio–economic repercussions on the Mauritian economy, with an estimated absolute loss of US\$201m, a reduction of 4.4% in GDP and a fall of 11.5% in the country’s exports of goods.⁹ The resulting fall in government revenue has been

⁹ IMF 2004.

estimated at 24.4% (based on a 40% price–cut). The ACP response has been to launch an intensive lobbying campaign in the EU, with Mauritius as the leading spokesman for the ACP sugar exporting countries. So far, the country has been able to rally a number of EU countries to its cause and there is unanimity amongst the ACP and EU countries, which are opposing the reforms, that the extent of the price reduction and the timeframe would have severe disruptive effects on the economies concerned. There are talks of a postponement of the proposed reforms to 2006 instead of 2005 and of a line of credit/compensation package to the tune of Rs3bn being granted to Mauritius. However, the official terms and timeline for the reforms to the Sugar Regime will only be known after the completion of the negotiations between EU and ACP countries, i.e., by mid–2005.

II.4. ***Climatic/Environmental.*** The main climatic threat, which affects agriculture, in particular is the occurrence of cyclones, which significantly damage or even eradicate harvests. Under the phasing out of preferential sugar markets, Mauritius is expected to diversify from sugar into other, particularly vegetable, crops, and this threat becomes even greater, since sugar is more resistant to cyclones than other crops. Further, while in the sugar sector an insurance scheme is fully functional, a pilot insurance scheme for the food crop sector has only recently been started with only one crop being covered namely carrots. The scheme will be replicated to other crops upon the successful performance of the insurance scheme. Other climatic threats include drought incidences and damage from heavy rain.

II.5. Environmental constraints include high levels of land degradation and limited water availability in Rodrigues, and degradation of forests and watersheds in Mauritius. The rocky soils in Mauritius pose a challenge for cultivation, and especially mechanisation. Invasion of alien species threatens remaining endemic biodiversity and the current management system for terrestrial and marine park protection is still inadequate. Lagoons have been depleted through overfishing and must be protected through concerted efforts in order to revive fishing potential and protect the natural resource base.

II.6. ***Rural Infrastructure.*** Provision of potable water is a constraint in Rodrigues and the adequate disposal of wastewater also remains a challenge on the main island. A Water Supply Development and Management Master Plan and A Sewerage Master Plan are currently being implemented in both Mauritius and Rodrigues.

II.7. Additional food crop production has been constrained by poor irrigation facilities. Further development of NPIP II (blocks 4, 5, 6, 7) has been planned but implementation can only start upon the obtention of funds to the tune of Rs620m. In the financial budget 2004/05, the Government of Mauritius has provided financial resources to the tune of Rs127m in support of small–scale irrigation schemes and the NPIP II. Constraints in irrigation management include challenges to consultation in the development of new structures as well as the capacity of WUAs to perform operation and basic maintenance of irrigation facilities effectively and efficiently. Lately, The Government, through the Ministry of Agriculture, Food Technology and Natural Resources, has been placing emphasis on the need for further capacity building of WUAs, in continuation of the programme funded under the IFAD RDP.

II.8. The road infrastructure in Mauritius is well developed and provides a solid backbone to rural development. Market infrastructure instead has lagged behind, and the facilities currently used are inadequate to ensure transparency in market operations and enhance competition, as well as to ensure the adherence to sanitary and food safety standards.

II.9. ***Agricultural Production.*** Apart from climatic and macro–economic challenges, the main constraints in agricultural production include (i) limited availability of land resources and sub–optimal utilisation and management of land; (ii) limited availability of finance for the agricultural sector;

(iii) lack of modern management practices and adoption of new technologies: mechanisation and modernisation are constrained by small plot sizes and dispersion of ownership which limit economies of scale; food crop production continues to be labour intensive and labour accounts for more than half the total cost of production; (iv) pests and diseases; (v) high costs of inputs such as labour and chemicals — high quality planting materials are relatively scarce and expensive; (vi) inadequate planning of production in relation to market demand; and (vii) non–conformity with international norms, in particular maximum pesticide residue limits, which limit export potential.

II.10. Opportunities exist predominantly in the development of improved fresh products for the local market to substitute imports, and of niche markets for export. Organic agriculture, including traditional foods, may be a particular opportunity in Rodrigues, which has quasi–organic status. Further opportunities exist to capitalise on Mauritius’s industrial capabilities and infrastructure, as well as its skilled and semi–skilled labour force to strengthen the agro–processing sector, using domestically produced as well as imported raw materials.

II.11. **Livestock Production.** The relative scarcity of land and the low–cost efficiency of livestock producers are the major obstacles to the development of large–scale livestock activities. Feed resources are mostly imported and costly. Tight environmental legislation in the proximity of urban and residential areas imposes additional costs. In Rodrigues, the livestock sector has suffered from prolonged droughts and overgrazing, and current efforts relate to reducing livestock populations to a sustainable level.

II.12. **Fisheries.** Lagoon fisheries are overexploited. Protection of lagoons from overfishing as well as reduction of effluents from agricultural and industrial activities remains a challenge. FAD development has opened up off lagoon fisheries, and while there is limited potential to increase the number of FADs, the capacity of existing FADs is still only exploited to around one third of their potential. An increased transfer of fishermen from lagoon to off–lagoon fisheries is constrained by lack of skills and awareness and limited collateral to finance larger vessels, although concessionary financing is available. The setting up of the fisheries and extension training centre in Pointe aux Sables will cater to the training needs of the fishermen and is expected to resolve the problem of shortage of skills and awareness. The planned seafood hub in Port Louis will offer further development opportunities in the fisheries and processing sector.

II.13. **Institutions.** Strong support services organisations and facilities exist, particularly for the sugar, but also the non–sugar sector, including research, extension and ancillary services. A proliferation of parastatal bodies, and parallel institutions for the two sub–sectors have led to some overlap and streamlining would be appropriate. The ‘clustering’ of inter–related institutions and stakeholders from private and public sectors has been suggested as a means to achieving a more effective and optimal utilisation of the agricultural resources.

II.14. The collaboration of small farmers for irrigation management and joint crop management to reduce costs and aide mechanisation is limited, partly owing to the fact that most small planters are engaged in agriculture only as a part time activity.

II.15. **Legal and Regulatory Framework.** The current legal and regulatory framework needs to be reviewed in line with liberalisation of trade and advancements in technology. The legal framework for biotechnology is under development and the Government is currently finalising the Plant Protection Bill, Seed Bill and Plant Breeder’s Rights Bill. Existing incentive systems for large and small farmers will need to be revisited. In view of the importance of food safety, a stronger regulatory system should be developed.

II.16. **Conclusions.** It is expected that with the decline in preferential market access for sugar, the overall share of agriculture in the Mauritian economy will decline. Agriculture does no longer form the backbone of the economy and the constraints to competitive primary production are such that development in this sector will be dependent upon a concerted exploitation of Mauritius's advantages in terms of its skilled labour force, infrastructure, and capacity of research and support services. Value addition rather than primary production will receive greater attention, and within primary production, advanced technologies will need to be developed alongside traditional agricultural practices.

II.17. **Constraints and Opportunities for Rodrigues,** which is heavily dependent upon its primary economy for employment and income, differ from those of the main island, and the agricultural intervention strategy must reflect these differences.

III. INVESTMENT PROGRAMME OUTLINE

A. Priority Setting

III.1. Given that the Mauritian and Rodriguan economies are significantly different from each other, both in terms of stages of development and levels of poverty, the levels of intervention within each priority area are expected to be different. There are similar components in the priority areas for both countries as regards agro–processing, sustainable land and water management, and sustainable management of fisheries among others.

(i) *Priorities for Mauritius*

III.2. The *New Economic Agenda* of the GOM identifies the re–adaptation of the sugar sector, the need for technological maturity in the non–sugar sector and the re–orientation of the fisheries sector as its key priorities for the agricultural and fisheries sector. The governing principle of the GOM in these sectors is to restructure and consolidate, with a view towards exploiting new profitable opportunities, and venturing into the exploration of new technological avenues to engender economic growth, and by implication reduce poverty. Thus, although the manufacturing, tourism, services and ICT sectors have gained important ground in presenting the backbone of the Mauritian economy, agricultural development nonetheless remains a strategic priority. Within the agricultural sector, the following main priority areas for a medium term investment programme can be identified.

III.3. ***Priority 1: Modernisation and Competitiveness of Agriculture.*** The overarching priority in the GOM's strategies for the sugar and non–sugar agricultural sector is to modernise agriculture and make it more competitive in the domestic and international markets (commercial approach to agriculture). The urgency of modernising and improving the competitiveness of Mauritian agriculture has been spurred by the recent threat of trade liberalisation in the agricultural sector (see para. I.2 above). Within the NMTIP, key interventions for the sector must address this priority, which is closely linked to CAADP Pillar 1 (*Improvement of rural infrastructure and trade–related capacities for improved market access*). Specific priorities for development into bankable projects in the sugar and non–sugar sector would include the following:

- ***Sugar Sector:***

- *Reducing costs of production* (from 18 ¢/lb to 10–12 ¢/lb by 2008) through the consolidation of the industry, including a reduction in the labour force (through the Voluntary Retirement Scheme) as well as in the number of sugar factories.

- *Developing and optimising the production of new products and co–products* of sugar cane, including special sugars for niche markets, new co–products including molasses, ethanol, ‘*rhum agricole*’ and further electricity generation from bagasse (diversification of the sugar industry is crucial in the likelihood of the price reduction).

- ***Non–sugar Sector:***

- *Promoting value addition to agricultural produce, in particular through agro–processing*, building upon Mauritius’s capacity to deliver reliable industrial services, through increased support services and clustering. Processors would use domestic produce as well as primary produce from regional investments, as well as regional purchasing (regionalisation). In fisheries, the development of Port Louis as a seafood hub has been identified as a priority.
- *Promoting modern production techniques*, including intensification and greenhouse cultivation, soil–less cultivation, hydroponic/aeroponic systems, integrated pest management, and capacity building in production, handling, processing and sales.
- *Enhancing and monitoring the quality of produce* through strengthening of regulatory and inspection services including laboratory services (*Food Technology Laboratory*), as well as certification capacities, and through increased capacity building in crop management techniques to reduce pesticide residues, including through *Integrated Pest Management (IPM)*, to meet international standards. Further, improved post harvest handling including storage, transport and packaging.
- *Clustering and promoting a ‘filière’ approach* to increase the effectiveness of agricultural policies and institutions by structuring the relationship between the Ministry and institutional level, and the producer level, and by setting up interactive structures between the various operators in a *filière* (value–added commodity chain).
- *Improving the physical and operational conditions of markets* in Mauritius to enhance quality and food safety and to increase transparency in price setting and distribution, and developing an effective *Market Information System*, which would provide information on market prices as well as production.
- *Developing niche products through market intelligence* for domestic and export markets, including organic agriculture (in particular in Rodrigues).
- *Strengthening the biotechnology capacity* for domestic application as well as to establish Mauritius as a regional centre of excellence and regional nursery. (mainly through the setting up of the *Mauritius Agricultural Biotechnology Institute, MABI*).
- *Strengthening livestock production* on marginal lands to supplement local production of meat and derived products.

- ***Cross–cutting:***

- *Capacity building and strengthening of institutions and agricultural players* to facilitate and improve the implementation of agricultural policies and to enhance the efficiency and quality of agricultural activities.

III.4. **Priority 2: Sustainable Land and Water Management.** The development of efficient water control systems and of sustainable land management remains a priority in agricultural development in Mauritius, and is linked to CAADP Pillar 1. Particular priority areas in the sugar and non–sugar sector include:

- ***Sugar Sector:***
 - *Raising the total area under complete mechanisation to 60,000 ha and the area irrigated with water efficient systems to 32,000 ha within the next 10 years, including investments in irrigation development as well as de–rocking.*
- ***Non–sugar Sector:***
 - *Developing new large and small scale irrigation facilities through the completion of NPIP II and the construction of selected small–scale schemes.*
 - *Improving the efficient utilisation of water resources in agriculture, through sensitisation of irrigation developers and planters on efficient irrigation techniques, and strengthening the institutional set–up to oversee and promote efficient irrigation development.*
 - *Improving land preparation through fine de–rocking for vegetable growing.*
- ***Cross–cutting:***
 - *Adoption and investment in watershed management for Mauritius and Rodrigues in particular through forest conservation, reforestation and improved land management (including sustainable grazing in Rodrigues).*
 - *Sustainable and effective land management including land policy to take account of competing needs for land resources and the pressures on the terrestrial environment.*
 - *Capacity building and strengthening of both the departments/agricultural bodies responsible for land and water management as well as the recipients of these services.*

III.5. **Priority 3: Agricultural Research, Technology Dissemination and Adoption.** This priority focuses on the commercial application of research and technology to the agricultural sector. Priority areas for development in the context of CAADP Pillar 4 include the following:

- ***Sugar Sector:***
 - *Intensifying research on soils and plant nutrition, the use of biofertilisers and organic fertilisers, agronomic management practices to reduce herbicide use, and design of drain to reduce the cost of planting in super–humid areas. Further research is needed on plant physiology and breeding of high yielding and site–specific varieties.*
- ***Non–sugar Sector:***
 - *Strengthening R&D support in order to provide high yielding planting materials, precise and rapid diagnosis and treatment services in horticulture and livestock, efficient biological control mechanisms, modern production systems and soil–less cultivation techniques, environmentally friendly production techniques, efficient post*

harvest techniques and handling methods to minimise losses, optimised techniques for food preservation and processing to develop the local agro–industry.

- *Capacity building of scientific and technical staff* to improve service delivery, in particular technical training, in new and improved primary production techniques, land management and value–addition.
- *Technical training of planters/farmers* in modern production techniques, land management and value–addition.
- ***Cross–cutting:***
 - *Conservation of natural biodiversity* and plant genetic resources, especially threatened endemic resources.
 - *Developing a biotechnology programme*, in particular through the creation of a *Mauritius Agricultural Biotechnology Institute (MABI)*. The MABI would be empowered with the adequate infrastructure, legislative and technical organisation to endorse its role as a national resource base for high tech research and the operationalisation of agricultural biotechnology.
 - *Conducting an agricultural census* and establishing and maintaining a database on the agricultural sector.
 - *Increased international training and cooperation* on research and the application of internationally developed technologies to Mauritian context.

III.6. **Priority 4: Reducing Vulnerability and Poverty.** In the context of CAADP Pillar 3, the following interventions have been identified as priorities:

- ***Climatic and Environmental Threats:***
 - *Cyclone preparedness and damage limitation* including early warning systems and strategic reserve storage of staple foods such as potato by the Agricultural Marketing Board.
 - *Insurance:* Developing a comprehensive crop insurance scheme for the non–sugar sector.
- ***Rural and Peri–urban Poverty Alleviation***
 - *Community development programmes* for the vulnerable groups in deprived areas (pockets of poverty) including capacity building for income generation, fisheries development (and alternative income strategies for small scale fishermen), small scale livestock rearing and crop cultivation, small scale agro–processing and trading and crafts.
 - *Facilitating access to land* for agricultural purposes to the vulnerable groups.
 - *Improved coordination between existing poverty alleviation programmes* to align incentives and enhance impact.

- *Strengthening and capacity building* of consumers and producers organisations, community based organisations as well as non–governmental organisations to improve service delivery and targeting.

III.7. ***Priority 5: Environment and Natural Resources.*** Priorities in environmental protection and sustainable management of natural resources (CAADP Pillar 5) related to rural development include:

- *Coastal zone management*, including the protection of lagoons, control of overfishing, reduction in water pollution from agro–chemical run–off, industrial waste and sewage seepage, information and awareness campaigns, and the strengthening of the *Integrated Coastal Zone Management Unit*. In Rodrigues, interventions should also focus on alternative coastal livelihoods and erosion control.
- *Sustainable management of fisheries* with consideration given to the environmental pressures of the fishing activities.
- *Promotion of Port Louis as a seafood hub* including improved facilities for foreign flag fishing vessels, investments in processing, and strengthening of information delivery on regional fisheries to improve the management of fisheries in the Indian Ocean.
- *Water resources and quality management*, through improved pollutant and sewage management, and judicious allocation of water in Rodrigues.
- *Biological resources conservation*. Protecting Mauritius’s marine biological resources and coast, as well as remaining terrestrial biodiversity through the implementation of the recommendations of the National Biodiversity Strategy and Action Plan, and the strengthening of protected areas.

(ii) ***Priorities for the Island of Rodrigues***

III.8. Three main priorities of intervention specific to Rodrigues were identified for the NMTIP in collaboration with the Rodrigues Regional Assembly, which should also be incorporated in the *5–Year Sustainable Integrated Development Plan* currently under formulation:

- ***Priority 1: Capitalising on Rodrigues’s Speciality Products.*** Improving the value and branding of Rodriguan speciality products (including Chilli, onions, Rodriguan ham, lemon, red beans, honey, etc.):
 - determining feasibility and value added of organic production (study);
 - improving the entire value chain from primary production to final sales;
 - improve efficiency and modernise primary production methods, developing greater economies of scale and better quality (research, training, technologies, equipment);
 - agro–processing: improving quality and diversity (research, training, technologies, equipment);
 - certifying quality (and possibly organic status) of primary and processed products;
 - developing a marketing and labelling strategy for Rodrigues’s brand(s) (marketing plan, sales and labelling strategy, with concrete implementation plan);

- strengthening associations of producers and processors (technical, organisational and financial through savings and credit groups).
- ***Priority 2: Sustainable Fisheries Management.*** Reducing the pressure on overfished lagoon resources and encouraging fishermen to benefit from off–lagoon fisheries:
 - protecting the lagoon from unsustainable fishing;
 - building capacity of fishermen to fish outside the lagoon — FADs, demersal, banks (training and financial support to access larger/safe vessels);
 - build institutional capacity and coherence of fishermen through associations (group dynamics and management, financial management, savings and credit etc.);
 - reviewing/revising FAD operations, ensuring that specifications fit Rodrigues context;
 - value–addition of fisheries products; and
 - aquaculture in lagoons.
- ***Priority 3: Land and Water Management.*** Combating land degradation and improving access to water for productive purposes:
 - sustainable grazing management (including fencing with live and other fences, pasture regeneration and management, shift to zero–grazing/intensive cultivation);
 - erosion control (terracing, contours, reduced tillage/appropriate cropping patterns);
 - drought resistant crop development and management (adaptive research, training);
 - reviewing lease arrangements for arable land and pasture (long term leases for full time/professional farmers); and
 - review pricing strategy for water.

III.9. The formulation of a *5–Year Sustainable Integrated Development Plan* for Rodrigues comes at a time when it is important to ensure increased co–ordination, coherence and synergies amongst different initiatives from different partners with the existing framework and programmes.

B. Project Selection Criteria

III.10. The principal criterion used in the identification of the preliminary investment programme, is Government priority. Within this programme, specific projects will be identified using the following additional criteria:

- ***Technical feasibility and sustainability.*** This is the crucial test of whether the proposal makes technical sense and can be seen as sustainable in terms of resource utilisation. Examples of previous projects or projects in similar areas, which have proved their technical viability, are useful indicators in this respect. This criterion also covers likely effects upon the environment. Proposals indicating the scope for synergy between various interventions will receive favourable consideration.

- **Financial and economic feasibility.** At the early stage of project identification, it is difficult to obtain more than a vague idea of the financial and economic viability of a project, but enough information should be included to justify continuation of the project preparation process. Indicative crop budgets can suggest whether a particular technical process is financially viable in the current pricing and marketing context. A rough idea of irrigation investment costs per hectare in comparison with returns from the crop(s) likely to be grown will give an indication of the financial viability. Wherever possible, a preliminary comparison of the benefits with the costs of the project should be made.
- **Absorptive capacity.** A preliminary judgement may be made in the context of the experience of the particular department/institution(s) concerned with the proposed technology or approach, and their manpower capacity.
- **Ease of implementation.** Experience indicates that projects with complicated implementation mechanisms have difficulty in attaining their objectives in a timely fashion. For this reason, priority will be given to projects with well designed implementation mechanisms, suitable to the proposed activities, with clear demarcation of responsibilities.
- **Funding priorities of development partners.** In areas where domestic sources of finance will not be available or sufficient, an important criterion for project selection will be strategic and funding priorities of potential donors and financial partner institutions. The overarching goal of the international community is currently poverty alleviation and consideration should be given to investment programmes that include “*potential to foster poverty alleviation and empowerment of the disadvantaged groups*”.

C. Identification of Bankable Investment Projects

III.11. Out of several project propositions, six potential entry points for the development of BIPPs were selected following the deliberations of the National Stakeholder Workshop held in April 2004 to discuss the draft NMTIP and investment priorities (the respective profiles are presented in separate documents):

- ***Agricultural Diversification (Integrated Processing and Marketing);***
- ***Mauritius Agricultural Information System (MAIS);***
- ***Sustainable Land and Water Management Project;***
- ***Community Development and Poverty Alleviation Project;***
- ***Mauritius Agricultural Biotechnology Institute (MABI); and***
- ***Strengthening the Agro–processing Capacity of Rodrigues).***

III.12. Some additional project ideas (approved by their respective ministries) that have not been developed into bankable project profiles, but that could be considered at a later stage, are listed in Annex 3.

IV. FINANCING GAP

IV.1. At the Maputo Summit, Heads of State and Government pledged themselves to commit “... allocating at least 10% of national budgetary resources for [the] implementation of [CAADP] ... and sound policies for agricultural and rural development within five years”. In the case of Mauritius, agriculture’s share of the budget (total public expenditure on agricultural resources) amounted to 7.16% in fiscal year 2003/04, a slight decrease from 2001/02.

IV.2. Mauritius is moving fast towards being a knowledge– and service–based economy and it is expected that the contribution of agriculture to GDP will continue on a downward trend in the coming years. The current share of agriculture to GDP is less than 7% (comprising mostly exports of sugar) while financial services and manufacturing combined contributed more than 90% to GDP. To this extent, therefore, the nature of the Mauritius economy is significantly different from most of its African peers and it is believed that the 10% threshold, as defined in Maputo, might not be a prerequisite for long–term economic growth.

IV.3. Table 5 below depicts the current situation as well as a hypothetical scenario based on achieving the 10% budgetary resources devoted to agriculture. Current government resources devoted to agriculture and rural development in the table below exclude the budget for wastewater management and sewerage/sanitation (7.16% in 2003/04). If the latter budget were included, total resources would amount to 10.17% in 2003/04 (as shown in Table 2 above), implying that Mauritius would have already met its commitment made in Maputo.

IV.4. A linear forecast (based on an average of the past three years) reveals that total budgetary resources devoted to agriculture and rural development might reach Rs62,327m by 2007/08, i.e. about 8.9% of the total budget. The resulting financing gap at the end of the period 2007/08 would amount to 1.1%.

	2003/04	2004/05 (*)	2005/06 (*)	2006/07 (*)	2007/08 (*)
Rs. million					
Estimated future agricultural requirements	3,245	3,882	4,603	5,416	6,233
Government resources devoted to agriculture sector	3,245	3,715	4,254	4,871	5,577
Financing Gap	0	167	349	546	656
Total Government Budget	45,307	49,068	53,140	57,551	62,327
Per cent					
Actual % of total budget devoted to agriculture & rural development (excluding wastewater management)	7.2	7.6	8.0	8.5	8.9
CAADP Maputo target in % of total budget	7.2	7.9	8.7	9.4	10.0
Financing Gap	0%	0.3%	0.7%	0.9%	1.1%
(*) Forecast					

IV.5. The above analysis is based on the 10% commitment of the NEPAD–CAADP. However, irrespective of the Maputo Declaration, Mauritius is planning substantial investment in the agricultural sector, in particular, to finance the implementation of the *Sugar Action Plan 2005–2015*. Part of the funds required for this modernisation process is expected to come from the compensation package/line of credit to be granted by the EU (as part of the reform of the EU Sugar Regime).

V. MONITORING AND EVALUATION

V.1. Neither the SSSP nor the NSSSP or the *Fisheries Development Plan* include a monitoring framework with specific indicators. The implementation of the NSSSP is monitored by the High Powered Committee chaired by the Minister.

V.2. The monitoring system for the NMTIP should be developed in line with an overarching framework to monitor progress on these strategic plans. Some of the key indicators to be considered in monitoring progress on the NMTIP include:

- contribution of the agricultural sector to GDP broken down by sub–sector;
- % of poor households relying on agriculture as primary source of income;
- production and yield levels of major crops;
- production costs in sugar and other major crops;
- % of crop production using high–tech;
- % of crop production using organic agricultural practices;
- contribution of agro–processing to GDP;
- average use and distribution of agrochemicals in crop production;
- % of agricultural produce meeting international quality standards;
- km of irrigation canals built/rehabilitated and area under irrigation;
- yields pre and post irrigation;
- efficiency of water use/water losses/non–use water in the irrigation systems;
- no. of water user associations trained in operation and maintenance;
- % of irrigation infrastructure operated and maintained by water user associations;
- no. and value of biotechnology applications developed;
- no. of farmer associations trained in modern production techniques;
- no. of extension workers trained in modern production techniques;
- levels/regeneration of fish stock in the lagoons;
- levels of water quality in lagoons and ground water resources.

V.3. Baseline data will have to be collected against which progress can be monitored. The planned agricultural census could be a key source for baseline information. Overall monitoring responsibilities rest with the MAFTNR, which would liaise with other ministries, institutions and partner agencies to complete regular updates and disseminate information on progress.

ANNEXES

- Annex 1: List of Ongoing and Future Projects and Programmes**
- Annex 2: List of Other Project Ideas Approved by the Government**
- Annex 3: List of References**

NEPAD – Comprehensive Africa Agriculture Development Programme
Mauritius: National Medium–Term Investment Programme (NMTIP)

Annex 1: List of Ongoing and Future Projects and Programmes

Funding sources	Project Title/Sector	Objectives and Activities	Budget	Duration	CAADP Pillars
IFAD (*)	Rural Diversification Programme	Agricultural and fisheries development	IFAD Loan US\$11.1m	6 years; Approved on 29/04/99	All
EIB (*)	Plaines Wilhems Sewerage Project	Rehabilitation and extension of sewerage networks	Project Loan: €35,000,000	64 months; Approved on 20/12/02	2
	CWA Reduction of Non Revenue Water	Enhancing 6 water supply networks on the island	Project Loan: €20,000,000	Approved on 17/12/01	1
ADB (*)	Plaines Wilhems Sewerage	Rehabilitation & Extension of sewerage networks	Project Loan: US\$5.03m and €5.75m	21 months; Estimated start date: June 2002	2
	South Eastern Road Project	Construction and upgrading works for the Mahebourg – Bel Air Highway	Project Loan: US\$19.02m	42 months; Estimated start date: October 2001	2
Gov. of Japan (*)	Fisheries Training and Extension Centre	Construction of Centre at Pointe aux Sables; Consolidate local knowledge of fisheries; Address food security concerns	Grant aid of Rs187m	Start Date: March 2003 Completion date: September 2004	5
Gov. of France (‡)	Northern Plains Drip Irrigation Project	Irrigation	Loan of Rs25m (†)		1
AFD (‡)	Grand Baie Sewerage Project	Provide sewerage facilities in the Northern Touristic Zone	Loan of €11.4m	Start date: August 2001 Completion date: August 2003	2
Govt of Japan/OECF (‡)	Environmental Sewerage and Sanitation Project	Control the waste water pollution from Port Louis	Loan of €33.6m	Estimated completion date: End of 2004	2
World Bank (‡)	Environmental Sewerage & Sanitation Project	Control the waste water pollution from Port Louis	Loan of US\$12.4m	Completion date: End of 2004	2
BADEA (‡)	Water Project		Loan of Rs26m (†)		1
	Midlands Dam	Water supply for domestic and irrigation purposes	Loan of US\$10	Start date: April 2000 Completion date: End of 2002	1
KFAED (‡)	Water project		Loan of Rs15m (†)		1
	Midlands Dam	Water supply for domestic and irrigation purposes	Loan of US\$10m	Start date: April 2000 Completion date: End of 2002	1

(*) Source: website of the organisation.
(†) These amounts are not indicative of the total value of the projects identified, nor of the timing/phasing. They represent the estimated funding for the budgetary year 2003/04.
(‡) Source: Draft Capital Budget 2003/04 of the Ministry of Finance & Economic Development.

Annex 2: List of Other Project Ideas Approved by the Government

(These proposals have not been developed into bankable project profiles given that they were either still in their early stages of formulation or they would overlap with existing interventions.)

1. *“Integrated Coastal Zone Management”* – Ministry of Environment and National Development Unit;
2. *“Modernisation of Central Abattoir”* – Mauritius Meat Authority (Ministry of Agriculture, Food Technology and Natural Resources); and
3. *“Development of a Marketing Intelligence Unit”* – Agricultural Marketing Board (Ministry of Agriculture, Food Technology and Natural Resources).

Annex 3: List of References

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