



REPUBLIC OF MOZAMBIQUE

MINISTRY FOR THE COORDINATION OF ENVIRONMENTAL AFFAIRS

NATIONAL REPORT TO THE UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT (RIO+20)



RIO+20

Conferência das Nações Unidas
sobre Desenvolvimento Sustentável

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LIST OF ACRONYMS

ANAC:	National Administration of Conservation Areas
AQUA:	National Agency for Environmental Quality Control
ARVT:	Anti-Retroviral Treatment
CAADP:	Comprehensive Africa Agriculture Development Program
CC:	Consultative Council
CCA:	Scientific Water Council
CDS:	Sustainable Development Centre
CGTC:	Disaster Management Technical Council
CITES:	Convention on International Trade in Endangered Species
CMC:	Community Multimedia Centres
CONDES:	National Sustainable Development Council
CPLP:	Community of Portuguese Speaking Countries
CSD:	Commission on Sustainable Development
CT:	Technical Council
DINAIA:	National Environmental Impact Assessment Directorate
DNER:	National Renewable Energies Directorate
DNGA:	National Environmental Management Directorate
DOT:	Direct Observation of Treatment
DPCCN:	Department for Preventing and Combating Natural Disasters
EADS:	Environmental Strategy for Sustainable Development
EEFP:	Employment and Professional Training Strategy
EITI:	Extractive Industry Transparency Initiative
FAO:	United Nations Food and Agriculture Organisation
FDA:	Agricultural Development Fund
FDD:	District Development Fund
FFM:	Mining Promotion Fund
FNI:	National Research Fund
FUNAB:	National Environmental Fund

FUNAE:	National Energy Fund
LPG:	Liquefied Petroleum Gas
HCB:	Hidroeléctrica de Cahora Bassa
IIA:	Water Research Institute
IMPFA:	Mid-level Physical Planning and Environmental Institute
INAM:	National Meteorological Institute
INE:	National Statistics Institute
INGC:	National Disaster Management Institute
INTIC:	National Institute of Information and Communication Technologies
IUCN:	International Union for the Conservation of Nature
JPol:	Johannesburg Implementation Plan
MCT:	Ministry of Science and Technology
MDG:	Millennium Development Goals
MICOA:	Ministry for the Coordination of Environmental Action
MINAG:	Ministry of Agriculture
MITUR:	Ministry of Tourism
MPD:	Ministry of Planning and Development
NAPA:	National Adaptation Programmes of Action.
NEPAD:	New Partnership for Africa's Development
PAPA:	Food Production Action Plan
PEB:	Biofuel Policy and Strategy
PECODA:	National Environmental Education Programme
PEDSA:	Strategic Plan for the Development of the Agricultural Sector
PEE:	Strategic Education Plan
PIDOM:	Home Spraying Programme
PROAGRI:	Agricultural Rehabilitation Programme
PVMM:	Mozambique Millennium Villages Programme
REDD+:	Reducing Emissions from Deforestation and Forest Degradation
REN:	National Electricity Grid
RWS:	Regional Water Strategy
SADC:	Southern African Development Community

TIA:	Agricultural Survey
TDR:	Rapid Diagnosis Test
UN:	United Nations
UNAPROC:	National Civil Protection Unit
UNCED:	United Nations Conference on Environment and Development
UNCSD:	United Nations Conference on Sustainable Development
UNEP:	United Nations Environment Programme
VM:	Millennium Villages
WCS:	World Conservation Strategy
WWF:	World Wide Fund for Nature

Executive Summary

The United Nations General Assembly, at its 64th Session on 31 March 2011, through Resolution A/RES/64/236, decided to hold, in 2012, the United Nations Conference on Sustainable Development (Rio+20 Conference). The following Conference objectives were established: (i) to ensure a renewed political commitment to sustainable development, (ii) to assess the progress achieved and the gaps in implementation of the decisions of previous conferences on sustainable development, and (iii) to outline strategies for facing emerging challenges. The focus of the Conference will be on the Green Economy in the context of sustainable development and poverty eradication and on the institutional framework for sustainable development.

The present report forms part of the preparation for Mozambique's participation in this conference. It assesses the degree of implementation of the decisions taken at the main summits on Sustainable Development (Agenda 21 in the Rio summit in 1992 and the Johannesburg Implementation Plan at the Johannesburg Summit in 2002). Throughout the presentation, the report deals with the achievements and challenges in implementing decisions on sustainable development. It also identifies the opportunities and the challenges that the emerging Green Economy approach could bring to encourage Government efforts aimed at sustainable development and the eradication of poverty in the country.

The adoption of Agenda 21 at the Rio Conference (1992) occurred at an unparalleled moment in the history of Mozambique, a few months before the signing of the General Peace Agreement, which brought an end to a 16 year long armed conflict. At this time, the country placed itself in a position that favoured implementation of the major decisions of this summit, but these were also enormous challenges for a country emerging from a war. However, despite the immense difficulties, such as the lack of human resources and the shortage of funds and material conditions, the country embarked on implementation of the decisions with the setting up of institutions, creating a legal and strategic framework, and ratifying various international conventions.

The establishment of the national framework for sustainable development began with the creation of the Ministry for the Coordination of Environmental Action (MICOA) in 1994, as the mother institution that defines the instruments and coordinates all activities aimed at sustainable development and the preservation of the environment. Since then the question of sustainable development has come to be dealt with in an integrated manner in the various sectors of the country's social, economic and political life.

The present report deals with 16 sectors of activity and concludes that the degree of implementation of the decisions of the summits on sustainable development is positive. The main accomplishments over the past 20 years include the approval of policies and strategies seeking sustainable development, political stability, rapid economic growth and poverty reduction, improvements in agricultural production and food security, the expansion of clean and renewable energies, the expansion of areas for the conservation of biodiversity, the planning and reorientation of urban growth, an increased rate of employment, the reduction in illiteracy, better use of water resources, better control in fisheries and in tourism, creation of parks to encourage science and technology aimed at sustainable development, improvements in health services, reduction in the damage caused by natural disasters, and a greater national awareness about the environment and sustainable development. These achievements have contributed to improving the welfare of the country's population.

Despite the advances, Mozambique still has several challenges ahead of it, including the eradication of absolute poverty, social equity, increasing agricultural productivity, energy security and efficiency, urban planning, the institutional capacity of the various sectors to implement and/or supervise activities, better use of its natural resources, such as forests, water resources, minerals and hydrocarbons, and implementation of a plan of action for attaining a Green Economy.

Based on these challenges, it is in the country's interests, at the Rio+20 Conference, that there should be renewal of the world undertaking for sustainable development; the adoption of a world platform to stimulate the inclusive Green Economy aimed at fighting poverty; and the creation of mechanisms that seek to build the capacity of institutions in developing countries to implement actions aimed at the Green Economy and sustainable development.

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UNITED NATIONS CONFERENCE ON SUSTAINABLE DEVELOPMENT RIO+20

NATIONAL REPORT OF MOZAMBIQUE FOR THE RIO+20 CONFERENCE

1 ANTECEDENTS

The United Nations began to consider questions of sustainable development in 1972 when the United Nations Conference on the Human Environment was held in Stockholm, to outline the “rights” of the human family to a healthy and productive environment. Eight years after this conference, in 1980, the International Union for the Conservation of Nature (IUCN) published the World Conservation Strategy (WCS) which was a precursor to the concept of sustainable development.

The Strategy stated that the conservation of nature could not be achieved without development that reduced the poverty and misery of hundreds of millions of people. It also stressed that the interdependence between conservation and development depends on care with the land: “unless the fertility and productivity of the planet are protected, the future of humanity is at risk”.

Ten years after the Stockholm Conference, the 48th Session of the United Nations General Assembly adopted the World Charter for Nature, which states that “mankind is a part of nature and depends on the uninterrupted functioning of natural systems”. A year later, in 1983, the Commission on the Environment and Sustainable Development was set up, and in 1984 the UN General Assembly constituted the Commission as an independent body, and it was invited to draw up a global agenda for change. In response to this invitation, the Commission published the report “Our Common Future”, which dealt with economic, social, cultural and environmental problems and global solutions. The report stated that the environment does not exist as a sphere separated from human actions, ambitions and needs, and so should not be considered in isolation from human interests. The environment is the place where we all live and development is what we all do in the attempt to contribute to our “home”.

In June 1992, the first United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro. It adopted the agenda for the environment and development in the 21st century, known as Agenda 21. This instrument is a Programme of Action for Sustainable Development, which contains the Rio Declaration on the Environment and Development. This Declaration recognises the right of each nation to seek social and economic progress and gives States the responsibility to adopt a model of sustainable development. It was also during this conference that the following conventions were adopted to which Mozambique is a signatory: (i) Convention on Biological Diversity, (ii) UN Framework Convention on Climate Change, and (iii) Convention to Combat Desertification.

In Rio de Janeiro, UNCED mobilised, for the first time, the largest groups and legitimised their participation in the sustainable development process. This participation has been a

constant up until today. This was also the first time that the life style of today’s civilisation was debated, in Principle 8 of the Rio Declaration. All Heads of State recognised and expressed the urgent need for a profound change in models of consumption and production. Agenda 21 reaffirmed that sustainable development is based on economic, social and environmental pillars. The Rio Conference considers that: "Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature" – First Principle of the Rio Declaration.

Five years after the Rio summit, in June 1997, the UN General Assembly dedicated its 19th Special Session to drawing up an Implementation Plan for Agenda 21, which was adopted at the Johannesburg Conference held in September 2002, and is known as the Johannesburg Implementation Plan (JPol). This Conference also renewed the undertaking on sustainable development made at Rio and gave the Commission on Sustainable Development (CSD) the task of following its implementation.

In 2009, the UN General Assembly adopted Resolution (A/RES/64/236), under which the States agreed to hold the United Nations Conference on Sustainable Development (UNCSD) in 2012 in Rio de Janeiro. The Conference is also referred to as 'Rio+20'.

2 INTRODUCTION

2.1 SOCIO-ECONOMIC ENVIRONMENT OF MOÇAMBIQUE



Mozambique is located on the eastern coast of southern African, between the mouth of the Rovuma River in the north and the Republic of South Africa in the south, It is bathed by the Indian Ocean along a coastline that is about 2,700km long. It has a surface area of 799,380 km² and a population of about 22 million. Administratively, it is divided into 11 provinces subdivided into 128 districts. Mozambique has a tropical climate with two seasons (rainy and dry) and its network of water resources covers more than 65 rivers. The country has good agricultural, agro-industrial, water, mineral and tourism potential, as well as forestry and marine resources, and an excellent rail and port location in the geo-strategic space of southern Africa.

Figure 2.1 – Map of Mozambique

Despite factors such as the international financial crisis, the oil crisis, the rise in grain prices, the fall of GDP at world level, reduction in the flow of direct foreign investment, the reduction in international trade, the cyclical occurrence of droughts, floods, high winds and

cyclones in the country, Mozambique has recorded a high level of economic growth by international standards, as shown in Table 2.1 below:

Table 2.1 – Some indicators of economic growth and welfare

YEAR	GDP growth rate (%)	Population living below poverty line (% of total)	Average annual inflation	Life expectancy at birth (years)	Infant mortality (deaths per 1000 births)
1997	11.1	69.4	5.9	42	145
2003	6.5	54.1	-	-	-
2004	7.9	-	-	-	-
2005	8.4	-	-	-	-
2006	8.5	-	-	-	-
2007	7.3	-	8.2	49	118
2008	6.8	-	10.3	-	-
2009	7.0	54.9	3.3	-	-
2011	7.2	-	10.4	52	89
2015 (Forecast)	-	44.0	-	-	-

Sources: Compiled from INE (1997, 2007, 2012) and MPD (2010, 2011)

With an average annual economic growth rate of approximately 8% between 1996 and 2007, it is forecast that by 2015 the percentage of the population living below the poverty line will fall to less than 44%, thus meeting the Millennium Development Goals (MDGs). Although the country's economy is based on agriculture, new sectors such as the extractive industry, energy, transport and communications, financial activities and tourism have played an important role. In the medium and long term, this will allow the national economy to become more diversified, becoming more resilient to less favourable international conjunctures.

2.2 MOZAMBIQUE AT THE RIO+20 CONFERENCE

The United Nations Conference on Environment and Development is to be held on 20-22 June 2012, in Rio de Janeiro, Rio+20. After the Earth Summit (Rio 1992), which established the bases for a global approach to the problems of humanity, this Conference is seen as a splendid opportunity for better harmonisation between nations aiming at sustainable development.

Mozambique's participation in the Rio+20 conference follows several international, regional and national consultations. In June 2011, Mozambique took part in the 17th Conference of the African Union in Malabo, where African leaders agreed strategies seeking a better participation of the continent. In Malabo the leaders decided (decision 381 of the African Union) that Africa should have a single position at the Conference and appointed the Republic of the Congo to coordinate preparation of the African position. The

leaders also decided to propose the transformation of UNEP into a World Agency specialised in the Environment to be based in Nairobi. In addition to this meeting, Mozambique attended the meeting of Environment Ministers of the Community of Portuguese Speaking Countries (CPLP) in Luanda in March 2012, which decided on the need to defend an inclusive Green Economy prioritising the fight against poverty. In April 2012, Mozambique organised a sub-regional conference involving Tanzania and Kenya in order to discuss the Green Economy and speed up the road maps of the three countries. At national level, as will be discussed below in Chapter 3 of this report, the preparation for the conference began in the provinces, where meetings were held among various sectors of society to assess implementation of the Environmental Strategy for Sustainable Development (EADS) and to seek ideas that would enrich the country's participation in the conference.

The present report is part of the efforts the country is undertaking to respond to the global sustainable development agendas and is one of the stages followed by Mozambique in the run-up to its participation in the Conference. Sustainable development, as described in the previous chapter, has been part of the global agenda since 1972. Since then targets have been agreed, that countries individually should comply with. Following up this process, the Rio+20 Conference has three objectives, namely: (i) to guarantee renewal of the political commitment to sustainable development; (ii) to assess progress made and gaps in execution of the undertakings already made, and, (iii) to deal with emerging challenges.

The emerging challenges that the member-states agreed to deal with are: (i) how to promote the Green Economy in the context of sustainable development and of poverty eradication, and (ii) the institutional structure for sustainable development, that is, how to improve the coordination of national and international efforts for sustainable development, heading towards a future with more employment, cleaner energy, rational use of natural resources, reduction of carbon dioxide emissions and of pollution, greater security and more decent living standards for all. Thus the Conference proposes to define strategies for poverty reduction, and the promotion of equality, and to ensure protection of the global environment, being in mind that there are ever larger numbers of people living on the planet.

This report deals essentially with 3 points, namely: (i) the degree of implementation of the decisions taken by the 1992 and 2002 summits by sectors and analysis of the accomplishments (16 sectors, amongst which the sectors of agriculture and food security, energy and cities are dealt with in detail); (ii) Green Economy in the context of Mozambique including challenges and opportunities in implementing the Green Economy; and (iii) institutional framework for the Green Economy and sustainable development.

The report is structured into 7 chapters, as follows: Chapter 1 looks at the antecedents of the Rio+20 Conference. Chapter 2 presents the introduction, dealing in a succinct manner with the country, the Rio+20 Conference itself, and the content of the present report. Chapter 3 concerns the methodology used in drawing up the report. Chapter 4 weighs up the achievements, and presents the challenges facing the country arising from the decisions taken by the earlier conferences. Chapter 5 broaches the question of the Green Economy which is one of the foci of the Rio+20 conference. Chapter 6 concerns the institutional framework for the Green Economy and sustainable development in

Mozambique and, finally, Chapter 7 presents the main conclusions and challenges that the country faces in terms of the Green Economy and sustainable development.

3 DRAFTING OF THE NATIONAL REPORT FOR THE RIO+20 SUMMIT

The preparation of Mozambique's National Report for the United Nations Summit on Sustainable Development, Rio+20, was coordinated by the Ministry for the Coordination of Environmental Action through a participatory and inclusive process which involved various stakeholders (political decision makers, government institutions, civil society, the private sector, cooperation partners and academics) at both provincial and central levels. Centrally, the Rio+20 Conference preparation technical group was set up, which included the above mentioned stakeholders, with a description of the specific activities of each of them.

The information contained in the present report results from a triangulation of several sources. In 2011, the Conference preparation group held provincial meetings to assess implementation of the Mozambique Environmental Strategy for Sustainable Development and gathered information on the activities undertaken by various sectors, the degree of implementation, the challenges faced and sector visions in the context of the major decisions of the Rio and Johannesburg summits.

The vast scale of the sector data concerning the accomplishments made it impossible to present that data in full for all sectors. An attempt was therefore made to expand the information from the Agriculture and Food Security, Energy, and Cities sectors which were regarded as crucial for the Green Economy and sustainable development in Mozambique. The Mozambican government has always defined agriculture as the base for the economic and social development of the country. It is the activity which involves the overwhelming majority of Mozambicans, and has proved to be the main motor in the fight against poverty. Energy is an important and indispensable factor in the life of Mozambicans of any social stratum and represents the major challenge in the fight against climate change and for the preservation of nature and humanity in the 21st century. Access to energy is a crucial indicator in people's quality of life. The growing demand for energy and the exhaustion of sources, as well as the need to replace dirty sources of power, pushes humanity to resort to renewable sources both for the conservation of ecological systems, and for economic reasons, the protection of the environment and the preservation of health. Finally, the growing exodus of people from the countryside to the cities and peri-urban areas has increased the pressure on these zones. The scarcity of resources in the cities, in terms of infrastructures, water and adequate sanitation, makes it important to adopt measures tending to mitigate the effects of overpopulation. The contribution of these sectors in sustainable development and their potential for the degradation of the environment justifies selecting them as key sectors and so they have been dealt with in greater depth. For the remaining sectors, the accomplishments and challenges are presented in summary form, but this in no way means that they are less relevant or that they have had fewer achievements.

The gathering of data from the various sectors was based on a questionnaire sent to the institutions, followed by interviews for clarification and for supplying additional information where necessary. After this phase, seminars at various levels were held and sector contacts made to allow the contributing sectors to check the reliability of the data and to suggest additional information to be included. Alongside this, there were regular meetings of the preparation group, meetings of the Consultative and Technical Councils of MICOA and of the National Council for Sustainable Development (CONDES). The members of the preparation group also took part in conferences inside and outside Mozambique to gather experiences of other countries who were drawing up their own reports. Events which were particularly relevant were the Sub-regional Conference on the Green Economy and the Symposium on Strategic Environmental Assessment, involving Mozambique, Tanzania and Kenya, organised by MICOA in partnership with WWF (World Wide Fund for Nature) on 23-27 April 2012. These events were an opportunity for the country to enrich the content of the present report, begin preparation of its ‘road map’ for the Green Economy and to debate with the other countries present actions for the post Rio+20 period. Finally the draft report was submitted to the cooperation partners for comments and enrichment. The entire procedure can be shown schematically as follows (Figure 3.1):

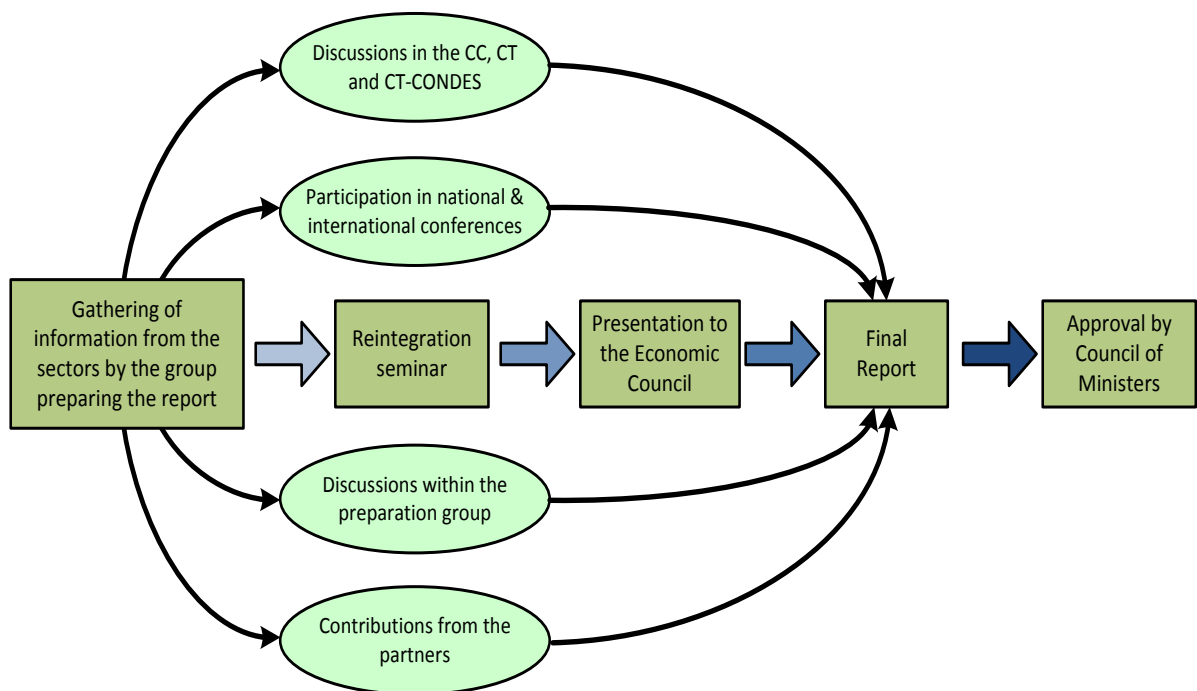


Figure 3.1 – Phases in the procedure for drawing up the National Report for the Rio+20 Conference

4 DEGREE OF IMPLEMENTATION OF THE DECISIONS TAKEN BY THE SUMMITS ON ENVIRONMENT AND SUSTAINABLE DEVELOPMENT

4.1 INTRODUCTORY NOTE

The implementation of decisions taken at the world summits on environment and development, notably the Rio Summit, was strengthened with the creation of the Ministry for the Coordination of Environmental Action, the activities of which resulted in defining sustainable development policies and strategies. The activities were included in the government's five year plans for each sector, and the results of implementation are included in the records of governance.

In this context, all the decisions deserved special attention. However, as mentioned in the previous chapter, three key areas were defined for the present report, namely (i) agriculture and food security, (ii) energy and (iii) cities, which will merit a more exhaustive approach, with tables (in the appendix) listing the main decisions and the respective degree of implementation, while the remaining sectors will be dealt with in a succinct way.

4.2 AGRICULTURE AND FOOD SECURITY

4.2.1 INTRODUCTION

In Mozambique, agriculture is the main source of sustenance and income. About 80% of the Mozambican population works in agriculture, which contributes about 25% of the national GDP. Agricultural growth helps reduce poverty and protects the environment, since it raises the income of producers, and provides cheaper food for people living in both rural and urban areas. In addition, it produces resources which can generate more economic opportunities, allowing a transition from an economy dependent on agriculture to a more diversified economy.



Figure 4.1 – Field planted with maize

Mozambique has succeeded in reducing poverty levels very significantly. The percentage of the population living in absolute poverty fell from 69.4% in 1996/7 to 54.1% in 2002/3. This level remained unchanged up to 2007/8 due to several factors, notably the world crisis of 2007-2009. This reduction was due to strong performance by the agriculture sector throughout the period under consideration. Agriculture grew at an average annual rate of 8%, higher than the 6% advocated by the African Union in the 'Comprehensive Africa Agriculture Development Program' (CAADP). The country possesses 36 million hectares of arable land and currently the cultivated area is about 3.3 million hectares (only about 10% of the potential). Crops are mostly produced by small producers who occupy about 95% of the cultivated area, an average of 1.1 hectare/household.

It is common to include within the concept of agriculture activities such as agricultural production, livestock, fishing, forestry and wild life, and hunting. However, the analysis in this sector of the present report will consider agriculture and food security (dealing with food production and livestock) in one section (4.2.2) and in separate sections fisheries (4.5) and forestry and wild life (4.6).

4.2.2 MAIN DECISIONS ON THE AGRICULTURE AND FOOD SECURITY SECTOR AND DEGREE OF IMPLEMENTATION

Mozambique has obligations regarding sustainable agriculture which arise from Agenda 21 (1992), the Rome Declaration (1996), the Millennium Development Goals (2000), and the Johannesburg Implementation Plan (2002). The situation regarding implementation of these obligations is shown in detail in Table A1 in Appendix I.

4.2.3 ASSESSMENT OF THE DEGREE OF IMPLEMENTATION AND MAIN CHALLENGES

Table A1 (Page I, Appendix AI) shows that Mozambique has advanced significantly in implementing the decisions arising from the sustainable development forums held earlier. The country has approved various policies and strategies seeking sustainable development and achieving the commitments made. In 1995, shortly after the war (which ended in 1992) and the first multi-party elections (1994), the Agricultural Policy and its Implementation Strategy were approved. The goals of these instruments were to ensure that the country reached food self-sufficiency, provided raw materials for industry, and increased the contribution of the sector to the balance of payments. Later there followed the Agricultural Development Programme (PROAGRI in 1998/2006), the Green Revolution Strategy (ERV) in 2007, the Food Production Action Plan (PAPA), and the Food Security Strategy in 2008.

PROAGRI I (1998) sought to improve coordination of the activities of the agricultural sector and to build the capacity of the Ministry of Agriculture. PROAGRI II (2006) sought to harmonise the financing of the agricultural sector with strengthening the producers. The Green Revolution Strategy intended to increase the production and productivity of the sector so as to reduce hunger and food insecurity, increase exports and guarantee raw material for national industry. The objective of PAPA was to overcome the great food shortages that occurred during the world crisis of 2007-2009 by attempting to replace

imports with increased production of maize, rice, wheat, oilseeds, cassava, potatoes and poultry. In 2011 the country approved 2 very important instruments in the area of agriculture and food security, namely the Agricultural Sector Strategic Plan (PEDSA) which focuses on increasing the profitability and competitiveness of the sector, and the Strategy to Reduce Chronic Malnutrition, seeking to reduce the prevailing rates of chronic malnutrition in the country. PEDSA is the national instrument for implementing the African agricultural development strategy presented in CAADP to which Mozambique is a signatory.

Practical actions linked to these policies include intensifying agricultural production in the areas with the greatest potential; implementing food production and job creation actions through opening lines of funding for the sector such as the Agricultural Development Fund (FDA) and the District Development Fund (FDD), among others; raising awareness of the need to change food habits (consumption of a balanced diet and nutritional foodstuffs); raising awareness about the use of household assets to guarantee food security (e.g. sale of livestock); mapping soils and agro-ecological conditions; controlling the use of agricultural chemicals; introducing new crops and practices; and the diversification of crops. The FDD is a fund provided by the government in order to finance multi-sector initiatives, essentially aimed at food production and job creation.

In general, there has been an increase in both food crops and cash crops in the country. The Agricultural Survey (TIA) carried out by the Ministry of Agriculture shows an increase in the main food crops in Mozambique. Maize production rose from 920,000 tonnes in 1996 to 1,214,000 tonnes in 2008, while cassava production rose from 366,000 tonnes to 4,040,000 tonnes in the same period. Bean and groundnut production underwent an average annual growth rate of about 6.2%. The average annual growth rate for sorghum was 3.1% in the same period.

Cash crops are mostly grown in the centre and north of the country where traditionally coconut palms, sugar cane, cashew, tobacco, cotton, sunflower are grown and, more recently, banana, paprika, sesame and jatropha. The TIA results show that production of the main commercial crops underwent a significantly higher average annual growth rate than food crops during the period between the 2000/01 and 2005/06 campaigns – 18%. This growth was largely determined by the increased production of sugar cane, the largest of this group of crops in terms of production. The amount of sugar cane produced grew at an annual rate of 20%, rising from 676,000 tonnes in 2000/2001 to about 2 million tonnes in the 2005/2006 agricultural campaign. Except for copra, which fell from 64,000 tonnes in 2000/2001 to a relatively stable level of 47,000 tonnes in the following campaigns, all the commercial crops followed a positive growth trend. In terms of the highest average annual growth rates, the products among this group of commercial crops that stood out most in the period in question were tobacco (31%), citrus fruit (22%) and green leaf tea (11%).

The TIA results show that 65% of rural households raise chickens, 25% have ruminant livestock (particularly goats), 12% have pigs and 6% have cattle. In numerical terms, in 2008 Mozambique had a livestock herd of 2,865,000 goats, 505,000 pigs, 584,000 sheep and 1,235,000 cattle. Chickens are raised throughout the country, while cattle are raised mostly in the southern and central regions, and particularly in Gaza, Inhambane and Tete provinces. The lower numbers of cattle in the north is due above all to the presence of tse-

tse fly and trypanosomiasis. Comparative data show that national beef production has risen, from about 1,500 tonnes in 2000 to 9,357 tonnes in 2009. But this is well below national demand. Mozambique still imports about 32% of the total beef it consumes. Imports of eggs and milk are also high. Although egg production has grown at an annual average rate of almost 17% and milk production by about 9%, most of these products consumed in Mozambique continue to come from abroad.

Because of these advances in agricultural and livestock production, the country has significantly reduced its food insecurity and its malnutrition indices. The Food Security and Nutrition Strategy and Plan of Action 2008-2015 (SETSAN, 2007:11) mentions that in 2006/7 Mozambique provided about 80% of the maize marketed informally in the SADC region (particularly for Malawi and Zambia). Meanwhile the report on assessing attainment of the Millennium Development Goals (MPD, 2010) shows that the prevalence of low weight among children under 5 years of age has fallen from 26% in 1997 to 18% in 2008. Likewise, the level of moderate and severe malnutrition fell from 7.9% to 4% in the same period.

However, the agriculture sector faces enormous challenges that must be dealt with in the coming years. Among others, one notes that the increase in production has been achieved mainly by increasing the areas under cultivation, and this puts pressure on the forests. There is a need to increase productivity by area, since most crops still have very low yields compared with their potential. To achieve this, the use of irrigation and of agro-chemicals must be raised to acceptable levels, and the extension services must become more dynamic. Furthermore, the support infrastructure, such as the question of the producers' health, access roads for moving the products, storage and markets, remains inadequate for encouraging the production and productivity of the sector. Increased productivity, access to markets, the correct management of natural resources, and the strengthening of agricultural institutions are challenges that the agriculture sector has mapped out, and on which it intends to focus, through PEDSA, in the next ten years.

4.3 ENERGY

4.3.1 INTRODUCTION

Energy is essential for social and economic development. Sustainable energy is essential for a better quality of life and for sustainable development. World statistics show that the energy sector is the greatest contributor to climate change, since it is responsible for 60% of total emissions of greenhouse gases. Thus cutting reliance on sources of carbon intensive energy is a key long term objective in order to reduce the impact of climate change. Much of the world's energy, produced and consumed to face growing demand, could be sustainable, if accompanied by technological improvements both in the production and the use of energy.

Agenda 21 recommends removing obstacles to increasing the supply of the environment-friendly energy which is indispensable for attaining sustainable development, particularly in developing countries. In addition, the same Agenda instructs States to undertake joint actions in order to improve access to reliable and accessible energy services in order to

achieve the Millennium Development Goals, taking into consideration that access to energy facilitates poverty eradication.



Figura 4.2 - Images of the Cahora Bassa dam and a public lamppost

4.3.2 MAIN DECISIONS ON THE ENERGY SECTOR AND DEGREE OF IMPLEMENTATION

The country's energy sector commitment was based on Agenda 21, on the Millennium Development Goals and on the Johannesburg Implementation Plan. Table A2 (Page VI of Appendix AII) presents in detail the main decisions and targets, and how far they have been implemented.

4.3.3 ASSESSMENT OF DEGREE OF IMPLEMENTATION AND MAIN CHALLENGES

As in other sectors, the main decisions in the energy sector are expressed in the Government's five year plans. The programmes covered the promotion of electricity generation projects; expansion of the national electricity grid (REN) and extension of the Rural Electrification Programme, prioritising the connection of more districts and consumers to the national grid; the promotion of new and renewable energies (solar, wind, hydropower and biomass); promoting the construction of facilities to transport and store petroleum products; and promoting the expansion of the liquid fuel distribution networks to the poorest zones.

Table A2 (in the appendix) shows the advances the country has made in the introduction of alternative energies. Currently, about 81% of the Mozambican population depends on energy from biomass. This damages the health of the public and the environment. To reverse this scenario, the Government has banked on disseminating the use of improved stoves and/or alternatives to biomass, and the use of local, environment-friendly sources to produce energy, such as solar and wind power. In the field of introducing improved technologies for the production and use of wood fuels, in the 2005-2009 five year period, for example, about 13,500 fixed and portable stoves were produced and installed in homes, student residences, hospital kitchens, barracks and prisons. Experiences in the use of solar power are being consolidated under the Millennium Villages project (see section

4.15), as well as in the supply of energy to health units without access to the national electricity grid.

The Government also approved the rural electrification programme which is intended to electrify all district capitals with clean energy from the Cahora Bassa hydroelectric company (HCB) by 2014. This is almost completed. Currently 107 of the 128 districts are linked to the Cahora Bassa power network. Here one should note the change in ownership whereby control over Hidroeléctrica de Cahora Bassa was transferred to the Mozambican state, which now holds 92.5% of the HCB shares.

Also in the context of clean energies, the country is expanding its capacity to produce hydropower by building the Cahora Bassa North Bank power station, approving the Mpanda Nkuwa dam and building or rehabilitating the Lúrio, Massingir, Alto Malema and Mavúzi and Chicamba hydroelectric power stations. The Mpanda Nkuwa dam will benefit not only Mozambique, but also other counties in the region, such as Malawi, Zimbabwe, Swaziland, South Africa and Botswana. To attain this production capacity, the Government has approved the construction of the centre-south transmission line (CESUL).

At the same time, the country is encouraging the use of biofuels and natural gas, in order to reduce dependence on fossil fuels and to promote clean energies. The National Renewable Energies Directorate (DNER) was set up with the mission of reducing dependence on fossil fuels. In this context, the Government drew up and approved resolution no. 22/2009, on the Biofuel Policy and Strategy (PEB). The PEB describes Mozambique's vision for biofuels, guaranteeing their presence in the energy sector. By way of example, in 2010 there were already 29 biofuel projects in the country (13 to produce ethanol and 16 for biodiesel). The PEB defined sugarcane and sweet sorghum as the raw materials for the production of ethanol, and *Jatropha Curcas Linn* and coconuts as the raw material for biodiesel. In 2012 the obligatory mixture of biofuels with petrol and diesel will come into force. The proportions are petrol to ethanol, 90:10; and diesel to biodiesel, 97: 3 (%).

Other accomplishments include the introduction, in 2004, of the use of natural gas in private industries, in order to replace imported fuels (centres to convert vehicles to run on natural gas are in operation); the leasing of the distribution of natural gas for the areas of Matola and Machava (where 24 industries are using natural gas instead of imported fuels), Maputo City, Marracuene and Inhambane province; and conclusion of the viability study for the production of LPG (Liquefied Petroleum Gas) from components of natural gas.

The expansion of access to energy through the various initiatives described above is resulting in expanding economic activity and the supply of jobs, in improving access to education (after work) and to health, and in a reduction, albeit limited, in deforestation. There has been a growing interest from national and foreign private investors in participating in the development of energy infrastructures in Mozambique.

Despite these advances, the country faces constraints in speeding up the use of renewable energies. The production and maintenance of clean energies has high initial costs that the country is not able to bear on its own. Thus it is urgently necessary to create financial packages that will allow the country to increase its use of clean energies. The shortage of

enough skilled staff to guarantee attaining the goals marked out for this sector is a reality. Achieving energy security and efficiency is still an objective.

4.4 CITIES

4.4.1 INTRODUCTION

There are 23 cities and 68 towns in the country, of which 43 are organised into municipalities. Currently, about 35% of the population lives in urban areas and the rate of urbanisation is about 4% a year. At this rate, it is expected that by 2020, almost 45% of the population will be living in the urban areas and that by around 2030 the urban population of Mozambique will be larger than the rural population.

This phenomenon has put pressure on the employment market, which is unable to meet the demand. Consequently the number of destitute people has grown, worsening urban poverty. This reality has increased the proliferation of informal settlements and the occupation of spaces in dangerous areas (beside electricity transmission lines, in the protective strip along railways, in areas prone to flooding, and on steep slopes). The increase in the population of Mozambican cities is determined essentially by natural growth and by migration from the countryside into the cities.



Figure 4.3 – View of some of the buildings in Maputo city

From the environmental point of view, the scenario described above has also contributed to worsening the degradation of the urban environment, particularly in the disposal and treatment of solid waste, in the supply of clean drinking water, and in sanitation, leading to cyclical outbreaks of endemic diseases such as cholera, malaria and diarrhoeal diseases.

4.4.2 MAIN DECISIONS IN THE CITIES SECTOR AND DEGREE OF IMPLEMENTATION

Mozambique had obligations concerning urban settlements arising from Agenda 21, the Millennium Development Goals and the Johannesburg Implementation Plan. The situation with regard to implementing these obligations is shown in detail in Table A3 in Appendix AIII.

4.4.3 ASSESSMENT OF DEGREE OF IMPLEMENTATION AND MAIN CHALLENGES

The exponential growth of the urban population has contributed to great pressure on the environment, through the demand for new areas (reducing the green areas in the urban belt), pressure on infrastructures and the proliferation of informal settlements in all the country's cities and towns.

In order to turn around the picture described above, the government has prioritised the district as the pole of development, promoting local development through the allocation of public funds (FDD) aimed at promoting self-employment and infrastructures. On the other hand, in order to reverse disorderly growth, the shortage of infrastructures and the environmental degradation in the cities and towns, the Mozambican government approved the Policy and Law on Territorial Organisation (19/2007 of 18 July) and its Regulations (2008).

In 2006, in order to strengthen and encourage regularisation of land occupation in urban areas, the Mozambican government approved the Urban Land Regulations (Decree no. 60/2006 of 26 December) which establish that urbanisation is a pre-requisite for attributing land use rights in cities and towns. The same decree states that land use rights cannot be granted in urbanised zones that include areas earmarked for social undertakings and public services.

In 2008, the Mozambican government approved the creation of the Mid-Level Institute of Physical Planning and the Environment, in order to provide the country with skilled technical staff. It also approved the Strategy for Intervention in Informal Settlements, the objective of which is to contribute to improving the living standards of the inhabitants of the informal settlements, through setting up basic infrastructures and facilities, and correcting the trends towards disorderly occupation in cities, towns and in rural areas. In 2010, as part of improving community living conditions and contributing to better urban management, a Ministerial Diploma was approved which regulates and approves the Directives on Expropriation and the Housing Policy.

In response to these initiatives, the country's municipalities have begun to draw up the territorial planning instruments necessary to regulate and manage the growth and development of urban settlements. Under local initiatives, Urban Structural Plans were drawn up in the municipalities of Maputo (2008), Matola (2009), Xai-Xai (2011), and Tete (2012). Partial urbanisation plans and detailed plans are being drawn up in cities and towns throughout the country.

The current model of procedures for drawing up the Territorial Planning Instruments prioritises the participatory method whereby the community plays a determinant role in decisions concerning local development. A further important theme is determination of the environmental and patrimonial conditions for defining the material contents of the territorial ordering plans.

The Environmental Strategy for the Sustainable Development of Mozambique envisages attaining a satisfactory level of health, for both the rural and the urban population, avoiding exposing them to sources of pollution, and reducing the foci and vectors of endemic diseases. To this end, the government has been improving the treatment and

disposal of solid waste in all urban centres, and has undertaken actions linked to improving individual and collective hygiene practices.

The pressure on urban settlements caused by the growing migratory flow from the countryside to the cities, and the migration of foreigners, particularly through illegal immigration, form a constraint on the sustainable development of the cities. City management faces challenges that include: implementing and monitoring the urban land management instruments, and the growing demand for urban land, employment, transport, energy, water and sanitation. Furthermore, since most Mozambican cities are located along the coast, the impacts of climate change are a great threat to their existence and sustainability.

4.5 FISHERIES

Fishing is an important activity for guaranteeing food security and for generating income for households and for the country. Section 1 of Agenda 21 and Chapter 4 (point 30, line d) of the Johannesburg implementation strategy speak of implementing the convention on the protection of biodiversity and the development of responsible fishing. In general, this means promoting sustainable fisheries.

The promotion of responsible fishing in Moçambique is guided by various regulatory instruments. In 1990 the Fisheries Law was passed; in 1999 the Fisheries Policy and its Implementation Strategy were approved; and in 2002 the Fisheries Sector Development Plan (2002-2006) was approved. Alongside these, in 2003, the General Maritime Fishing Regulations were approved, and in 2006 Decree no. 45 which regulates protection of the marine and coastal environment. There are also the Fisheries Master Plan (2012-2019), the Artisanal Fisheries Strategic Plan, the National Plan to Combat Illegal Fishing, the Fisheries Management Plan, and the Fisheries Research Strategic Plan. To make these normative instruments operational, the government has been creating institutes linked to fisheries, such as the Small Scale Fisheries Development Institute, the Fisheries Produce Inspection Institute, the Fisheries Promotion Fund, the National Aquaculture Institute and the National Fisheries Research Institute.

The government is banking on increasing good quality fisheries production and in strengthening the regulatory mechanisms so that fishing may be sustainable. Over the past 5 years, the government has been strongly committed to improving fisheries monitoring. To this end, it has acquired patrol boats and means to control the quality of fisheries produce. In addition, it has mapped the places where industrial and semi-industrial fishing takes place and has developed a permanent control system for environmental information along the entire coast. The government has also undertaken an ecological assessment of the marine ecosystems along the Mozambican coast in order to take better decisions on where, how and how much to fish.



Figure 4.6 – Group of fishermen displaying the product of their work

Despite these advances, the fisheries sector faces various constraints. Among these there can be mentioned in the first place the weak capacity to inspect fishing and the lack of knowledge leading to the use of inappropriate fishing gear. Furthermore, the facilities for conserving and for marketing fisheries produce are limited in many fishing areas.

4.6 FORESTRY AND WILD LIFE

Section II of Agenda 21 and chapter 4 of the Johannesburg Implementation Plan, as well as the seventh goal of the MDGs, deal with the protection and correct management of natural resources. They challenge national governments to undertake actions seeking to combat deforestation, to conserve biodiversity, to protect the atmosphere and fragile ecosystems, and to control pollution.

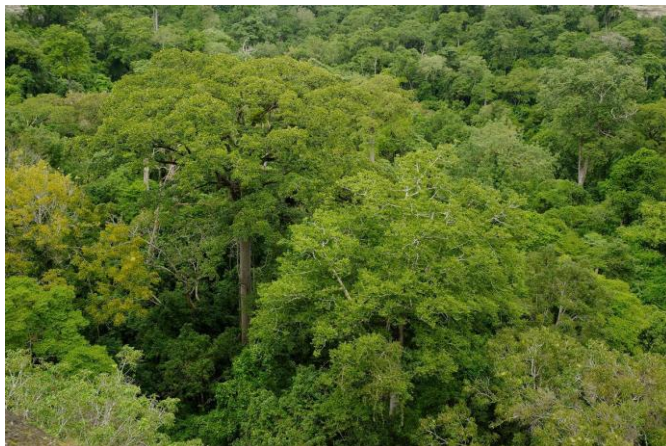


Figure 4.9 – Forested area in Mozambique

Mozambique covers a surface area of 799,380 Km² of which 54.8 million hectares (about 70% of the national territory) are covered by forests and woody vegetation. Of this area, 26.9 million hectares are productive forest, 13.2 million are forests in reserves and the remaining 14.7 million are multiple use forests. The wild life conservation areas - parks, reserves, hunting areas, and wild life farms - cover 18% of the national territory. To ensure environmental protection and the sustainable use of forests and wild life, the Mozambican government has approved various instruments such as the Forestry and Wild Life Development Policy and Strategy (in 1997); the Forestry and Wild Life Law (in 1999); the Action Plan to Prevent and Control

Uncontrolled Bush Fires (in 2007); the Regulations to Prevent Pollution and to Protect the Marine and Coastal Environment (decree no. 45/2006); the Regulations on the Management of Substances that Destroy the Ozone Layer (decree no. 24/2008); and the Regulations on the Control of Invasive Exotic Species (decree no. 25/2008).

Given the international demand for wood, notably from emerging economies such as those of China and India, added to the growing need for wood fuel on which most of the Mozambican population depends, and the increase in areas cultivated both by the family and the private sectors, the country has been suffering deforestation at a rate of nearly 0.6%/year over the past 10 years.

This scenario worries the government and it has laid down several measures in order to reverse it. In 2009, the government approved the Reforestation Strategy which aims to plant, by 2030, at least a million hectares of forest for commercial purposes. In 2010 the government approved the National Strategy to Promote Integrated Community Management of Natural Resources, which seeks greater involvement and appropriation of natural resources by the communities. To make this instrument more operational, the government set up the Environmental Education, Communication and Dissemination Programme which seeks, among other aspects, to create community forests. Within this initiative, protected areas such as national parks and reserves have also been expanded.

Outside of the legislative context, the President of the Republic undertook several individual initiatives to preserve the environment, notably the initiative “one pupil, one tree” and “one leader, one forest”. These government efforts in environmental preservation have made it possible to reforest several areas. This environmental commitment won the President international recognition and the prize *Gift to the Earth* awarded by the organisation WWF in 2011.

4.7 TOURISM

Mozambique has competitive advantages in tourism, which makes this sector pivotal in the fight against poverty. In Mozambique tourists can enjoy sun and beach tourism, ecotourism, cultural tourism, adventure tourism, and game watching and thematic tourism. Sustainable tourism is one of the aspects mentioned in the Johannesburg Implementation Plan and it seeks to ensure that all tourist activity should be undertaken in such a way as to protect and value the environment.

Arising out of this, Mozambique has legislated and designed several interventions in this area. Among others, there stand out the National Tourism Strategy and Policy of 2003; the 2004-2013 Tourism Development Strategic Plan of 2004 and the Code of Conduct for Tourism produced in 2007. The common goal of all these legal provisions is to make the tourism sector a pole of development for the country, without neglecting nature which is the *raison d'être* of tourism.



Figure 4.4 – A tourist resort in Mozambique (Matemo Lodge – Cabo Delgado Province)

Thanks to these efforts, the country has expanded protected areas such as the Bazaruto Archipelago, the Maputo Special Reserve, the Niassa National Reserve and the Gorongosa National Park. It has declared new areas such as the Chimanimani National Reserve, the Malhazine National Reserve, the Ponta de Ouro Marine Partial Reserve, the Lake Niassa Partial Reserve, the Quirimbas National Park, the Limpopo National Park and declared the Marromeu complex and Lake Niassa as RAMSAR wetlands areas. Throughout the country, the programme to build and rehabilitate management facilities in the parks and reserves is under way, notably in the Chimanimani National Reserve, the Banhine National Park, the Zinave National Park, the Maputo Special Reserve, the Quirimbas National Park, the Gorongosa National Park, the Limpopo National Park, and the Niassa National Reserve. In the period from 2001 to 2011, the conservation areas generated about 190 million meticaís in revenue.

The empowerment of tourism is having visible results in the country. Tourism contributes more than 200 million dollars a year to state revenue. For example, between 2004 and 2008 its contribution to GDP grew 1.7% to 2.2%. In the period from 2006 to 2010, investment in the sector grew by 20% rising from 608 million dollars to 741 million. In the same period, the revenues of hotel establishments grew by 104%. These gains extended to the communities through an increase in job and small business opportunities.

In order to stimulate the development of tourism, and to meet the global challenges and developments, Mozambique will need to promote and position itself aggressively, in order to lead the development of a competitive and sustainable tourism sector. In the first place, the country needs to improve the basic infrastructures that support the tourism industry, namely airports, frontier posts, roads, electricity, water, telecommunications, land and air transport. Mozambique should also invest in human resources, particularly in hotel and tourism professionals. Finally, it should improve, in a speedier way, the business environment, so as to reduce the costs and the time to start up a business, and the transaction costs.

4.8 WATER RESOURCES

Mozambique is a downstream country, and shares 9 of the 15 international river basins in the SADC region. It possesses 104 river basins, including permanent and seasonal rivers. Of these, 13 are major river basins. For the better management of shared waters, SADC adopted the Revised Protocol on Shared Watercourses (agreed in 2007), which provides the context for the Regional Water Policy (RWP) and declares the objectives adopted in the Regional Water Strategy (RWS), instruments to which Mozambique is a signatory. These will lead to the development of national strategic plans of action, known as National Water Resource Plans (SADC 2007).



Figure 4.5 – Water tank and standpipe in Mozambique

The Water Law and its regulations and the Water Policy are important legal instruments for the management of water resources in Mozambique. The law, in accordance with the provisions of the constitution, stipulates that the water of the public domain covers all the inland waters (lakes and reservoirs), the surface waters, the beds of rivers and the ground water.

Since water resource management is a matter that involves several sectors, intersector coordination is essential in the integrated management of natural resources. Hence this legal framework is in harmony with other related laws, namely: agricultural, environmental and mining legislation, laws on the sea, fisheries, energy, state administration and other relevant areas.

For Mozambique, the target laid down for expanding access to clean drinking water is to reach 70% of the population by 2015. The figure for improved sanitation is to reach 50%. The country is making efforts that will allow it to reach these figures. In 1997, only 29% of the population had access to drinking water and 37% to basic sanitation. In 2009, the percentage of the population with access to drinking water had increased to 43%. Access to basic sanitation had increased to 56%.

Analysing by areas in the period under consideration, access to drinking water in the urban areas rose from 30 to 60% and in the rural areas from 40 to 54%. Access to basic sanitation rose from 38 to 50% in the urban areas while in the rural areas it rose from 25 to 40%. Water supply, particularly in rural areas, comes mainly from ground water, using boreholes

and wells. Sustainability in maintaining these facilities is still a challenge. In urban areas, the challenge posed to infrastructures dependent on ground water is centred on reconciling these with low cost sanitation (latrines in densely populated areas).

In Mozambique, there is not much irrigation used in agriculture. Despite the immense potential, estimated at 3.3 million hectares of irrigable land, currently no more than 50,000 hectares are irrigated, This is 0.1% of the existing potential. The irrigation infrastructures are also distributed irregularly across the country. In the southern region, 28% of all farms have irrigation. In the central region the figure is 10.5%, and in the north it is 3.5%.

The largest industrial park in the country is concentrated in Maputo and Matola cities and Boane district. The supply of water to the industrial units located in the Greater Maputo area is exclusively in the hands of the company Águas da Região de Maputo (Waters of the Maputo Region). The industries are supplied from the Pequenos Libombos dam, which is the same source used for domestic supplies. It is estimated that the daily supply capacity is about 300m³. Recent studies show that the amount of water produced at the Pequenos Libombos dam would not be able to satisfy new demands for industrial use, particularly for iron and steel.

Other small scale industrial areas located throughout the country resort to ground water, water from the public network, and water taken directly from rivers.

Despite these advances, enormous challenges still remain in the water resource sector. The country has not yet attained the Millennium Goals for water supply or for sanitation. With regard to sanitation, the treatment of domestic and industrial effluent, mainly at the points where wastes are discharged, will continue to merit special attention. The control of the negative environmental impacts on the river basins should merit absolute priority from the authorities, in order to guarantee good quality water for human consumption as well as to preserve environmental services. Some important parameters, such as the indicators of the existence of nutrients and of eutrophication, such as total phosphorus, nitrates and ammonia, are not yet analysed with a constant frequency, and this is not good for the country's public health.

The challenges facing Mozambique in the management and development of water resources also include the need to respond to growing demand due to the following: rapid expansion of the industrial sector throughout the country; disaster mitigation; the quantification and assessment of ground water; and the management of cross-border water resources. With regard to this last point, the country still has poor capacity to store and manage the shared waters, and weaknesses are noted in the compliance with the SADC Protocols on Shared Water Courses by the upstream signatories.

4.9 CONSERVATION AND ENVIRONMENT

After the Rio summit in 1992, and the creation of the Ministry for the Coordination of Environmental Action in 1994, the country advanced rapidly to set up environmental instruments. Thus, in 1995 the National Environment Policy was approved by Resolution no. 5/95, of 3 August. This is an instrument through which the government recognises the

interdependence between development and the environment. This policy is the basis for sustainable development in the country, seeking the gradual eradication of poverty, and improvement in the quality of life of Mozambicans, as well as reducing damage to the environment.

Because the various sector laws and regulations only concern the specificities and concerns of each State sector, Law no. 20/97, of 1 October (Environment Law) was passed. This law laid down the legal bases for correct use and management of the environment and its components, in order to make sustainable development a reality in the country. The approval of this Law encouraged the drafting and application of specific regulations, including, among others: (i) Regulations on the Environmental Impact Assessment procedure, approved by Decree no. 45/2004, of 29 September, with the alterations introduced by Decree no. 42/2008, of 4 November; (ii) Environmental Inspection Regulations approved by Decree no. 11/2006, of 15 June; (iii) Regulations on Environmental Quality Standards and the Emission of Effluent, approved by Decree no. 18/2004, of 2 June, with the alterations introduced by Decree no. 67/2010, of 31 December; (iv) Regulations on Environmental Audits, approved by Decree no. 25/2011, of 15 June; (v) Regulations for the Prevention of Pollution and the Protection of the Marine and Coastal Environment, approved by Decree no. 45/2006, of 30 November; (vi) Regulations on Waste Management, approved by Decree no. 13/2006, of 15 June; (vii) Environmental Regulations for Petroleum Operations, approved by decree no. 56/2010, of 22 November; (viii) Regulations on the Banning of Asbestos and its derivatives, approved by Decree no. 55/2010, of 22 November; (ix) Regulations on Access to and Sharing Benefits from Genetic Resources and Associated Traditional Knowledge, approved by Decree no. 19/2007, of 9 August; (x) Regulations on Managing Substances that Destroy the Ozone Layer, approved by Decree no. 24/2008, of 1 July; (xi) Regulations for the Control of Exotic Invasive Species, approved by Decree no. 25/2008, of 1 July; (xii) Resolution no. 78/2009, of 22 December, on the banning of the import, export, production, sale and transit of substances that destroy the ozone layer; (xiii) Ministerial Diploma no. 129/2006, of 19 July, which approves the General Directive for Environmental Impact Studies; (xiv) Ministerial Diploma no. 130/2006, of 19 July, which approves the General Directive for Public Participation in Environmental Impact Assessment; (xv) Environmental Regulations for Mining, Decree no. 26/2004 of 20 August; (xvi) Basic Environmental Management Norms for Mining, Ministerial Diploma no. 189/2006 of 14 December. It is also important to mention the 2005-2015 Strategic Plan for the Environment Sector, and the 2007-2017 Environmental Strategy for Sustainable Development (EADS) as crucial instruments for sustainable development.

From the point of view of institutional support, the following diplomas, which set up new institutions, should be mentioned: (i) Ministerial Diploma no. 55/2009, of 15 April which set up the Mid-Level Institute of Physical Planning and the Environment, abbreviated as IMPFA, and approved its Organic Statute; (ii) Decree no. 80/2010, of 31 December, which set up the National Environmental Quality Control Agency, abbreviated as AQUA; (iii) Decree no. 11/2011, of 25 May which set up the National Administration of Conservation Areas, abbreviated as ANAC.

In 2000 the National Environment Fund (FUNAB) was set up. Its powers were revised in 2011, and they now include, among others, to encourage economic undertakings in the use

of clean technologies and environmentally acceptable production processes; to take part in the capital of companies or institutions the object of which benefits the environment, directly or indirectly; and to raise funds through bilateral and multilateral entities to implement environmental activities. In 2003/4 three Sustainable Development Centres (CDS) were set up, all of them subordinate to MICOA. One was focused on coastal areas (in Xai-Xai), a second on the urban environment (in Nampula) and the third on the conservation and management of natural resources (in Manica). Additionally, the Marine and Coastal Environment Research Centre (in Pemba) was set up in 2007. The government also developed plans to set up the National Environmental Quality Control Agency, (AQUA), to improve the capacity to monitor the quality of the environment and guarantee the analysis of samples collected of gases, dust, water and soil.

Practical aspects linked to the policies and strategies include the declaration of a series of protected areas, such as Lake Niassa, covering an area of 47,800 hectares, declared in 2011 a RAMSAR wetland site; the Quirimbas National Park, covering an area of 750,639 hectares, declared in 2002; and the Chimanimani National Reserve, declared in 2003 with an area of 68,300 hectares. The recent increase in the number of Protected Areas has increased the total area of the country reserved for conservation to 2,051,700 hectares, covering 18% of the land area, 6% more than the world average, and 7% of the marine area, 1% more than the world average.

The instruments mentioned above are determinant for implementing the Rio conventions on Biodiversity, Climate Change and the Fight against Desertification. In total, 24% of the country is reserved for conservation, far above the figure advocated by international conventions.

Despite these advances, there are major challenges in the environmental sector. Over the past decade the country has suffered from severe droughts, devastating cyclones and floods. Furthermore, increased migration to the urban and coastal areas has provoked desertification and pollution of surface and coastal waters. Inappropriate agriculture and mining practices have also resulted in deforestation and soil degradation. In short, the whole context of extreme poverty puts heavy pressure on natural resources, since these are the main source of subsistence for most households. Foreign investment, attracted to the country by political stability and good macro-economic performance, has been putting significant pressure on the country's productive potential, particularly in forestry, mining, fisheries and tourism.

A further aspect is the scarcity of financial and technical resources to monitor plans and actions linked to the environment. The total budgetary allocation to environmental management activities is equivalent to 2.58% of the total State Budget and 0.9% of GDP, well below the volume of financing recommended by the World Bank for developing countries which should spend between 1.4% and 2.5% of GDP on environmental management. A relevant challenge, and one that would help capitalise the sector, would be to include natural capital when calculating the country's economic growth, and payment for the services of the national ecosystems.

4.10 INDUSTRY AND TRADE

Chapter 30 of Agenda 21 states that industry and trade, including the transnational companies, play a crucial role in the economic and social development of a country. The Mozambican government considers industry as one of the determinant factors in economic development. For the development of industry, the government defines as the main objectives of the sector: (i) adding value to agricultural, livestock, forestry, mineral and energy resources; (ii) increasing the supply of consumer goods essential to the life of the public; (iii) increasing the supply of jobs, (iv) increasing the national added value; (v) reducing the imports of intermediary goods and promoting exports; (vi) the development of small and micro enterprises, making use of local resources; (vii) taking advantage of the privileged location of the country, in order to promote industry along the port and rail corridors; (viii) increasing the supply of means and factors of production; (ix) modernisation and expansion of the industrial park; (x) accompanying the post-privatisation situation of companies; (xi) the protection of industrial property; (xii) the maintenance of ecological balance, for the defence and preservation of the environment.

Industrial production has undergone a noteworthy growth (3.5% between 2005 and 2008), particularly the food and drink industry, furniture and other manufacturing industries, engineering, and the manufacture of electrical machinery and equipment. The sector is also advancing at a good pace with regard to improving the business environment and removing administrative barriers, thus contributing to a greater attraction of Direct Foreign Investment.

In the trade sector, the government's fundamental priority is to expand the commercial network, developing functional systems for marketing agricultural produce, and promoting food security and exports. In this area, the following main objectives were laid down: (i) Promote marketing so as to contribute to the growth of agricultural and industrial production oriented to supplying the domestic market; (ii) Establish the commercial network, covering a storage capacity aimed at supporting the development of agricultural and industrial activities; (iii) Expand the commercial network in order to create poles of rural development; (iv) Contribute to improving the balance of payments through increasing exports and reducing imports; (v) Develop technical norms and appropriate legislation to safeguard the interests of the consumer; (vi) Support regional and international initiatives that contribute to regional cooperation and economic integration; (vii) Promote gradual integration of the informal sector into the formal sector; (viii) Introduce mechanisms that discipline the export of grain surpluses produced by the population, to the benefit of the country.

In this sector, a wide range of activities was undertaken, among which the following stand out: (i) Expansion of the commercial network through an exhaustive survey of abandoned and/or ruined rural shops, and promoting their sale; (ii) Disseminating the SADC Protocol and promotion of the concept *Made In Mozambique* in order to stimulate consumption of national products, encouraging an increase in production and productivity of companies aimed at the domestic and foreign markets; (iii) Survey of the national productive potential that flows to the neighbouring countries, so as to identify how to improve this activity by raising the value of the products.

Among the activities undertaken in this sector in recent years there stand out the following: the approval of the new Licensing Regulations for Commercial Activity (Decree no. 49/04); the licensing, rehabilitation, financing and sale of thousands of commercial establishments; approval of the Commercial Strategy, the Competition Policy, the Law on Competition, and the Agricultural Marketing Strategy. The VAT exemptions on maize and oilseeds destined for agro-industries were extended, in order to reduce the costs of production and persuade local industries to consume local raw materials. Actions that have been undertaken on a permanent basis allow an increase in the supply of products and consequent price stabilisation, namely: stepping up inspection of economic activities, publicising prices of essential consumer goods charged in provincial capitals and on international markets; promotion of permanent dialogue between economic operators and the government, in seeking solutions for keeping the market regularly supplied; and promotion of the competitiveness of national chickens, among others.

The challenges in the industry and trade sector include the scarcity of human, financial and technological resources for implementing and inspecting compliance with various legal instruments.

4.11 MINERAL RESOURCES

The extractive industry, namely mining (exploitation of coal, precious and semi-precious stones, tantalite, titanium, ilmenite, zircon, bentonite, bauxite, and limestone, among others) and hydrocarbons (particularly natural gas), is a sector which in recent years has undergone great development in Mozambique. Its contribution to the GDP has grown recently, and this year reached 1.74%. Mining is regulated by the law on mines and its regulations, while the exploitation of hydrocarbons is regulated by the law on petroleum and its regulations

Chapter 46 of JP01 presents the major decisions taken with regard to this sector. In this area, various activities have been undertaken, from the establishment of the legal framework for the sector to implementation and control mechanisms, so that mining and the exploitation of hydrocarbons may take place in a transparent manner, respecting socio-economic and environmental sustainability, in order to obtain just benefits for the country. Thus one may point to the approval of the following instruments: Mining and Geology Policy, resolution no. 4/98; Petroleum Law, Law no. 3/2001; Regulations on Petroleum Operations, Decree no. 24/2004; Environmental Regulations for Petroleum Operations, Decree no. 56/2010; Strategy for the Concession of Areas for Petroleum Operations, resolution no. 27/2009; Law on Petroleum Production Taxes, Law no. 12/2007; Regulations on Petroleum Production Taxes, Decree no. 4/2008; Mining Law, Law no. 14/2002; Regulations of the Mining Law, Decree no. 62/2006; Regulations on Technical Safety and Health for Geological and Mining Activities, Decree no. 61/2006; Environmental Regulations for Mining, Decree no. 26/2004; Regulations on the Marketing of Mineral Products, Decree no. 16/2005; the Law on Mining Taxes, Law no. 11/2007; Regime on Fiscal Incentives for the Mining and Petroleum areas, Law no. 13/2007; Ministerial Diploma no. 189/2006, on Basic norms of Environmental Management.

A further complementary initiative to the effective management of mineral resources is Mozambique’s application to join the Extractive Industry Transparency Initiative (EITI). It should be noted that Mozambique ratified the 1997 SADC Mining Protocol.

The evolution of activities in the mineral resources sector poses some challenges such as: (i) the creation of human capacities that can meet the requirements for skilled staff for the mining and hydrocarbon undertakings, both in the state sector and the productive sector, (ii) making technological resources available for implementing the directives of the sector and inspecting compliance with the legal instruments approved to regulate the sector’s activities.

4.12 DISASTERS AND DISASTER MANAGEMENT

Mozambique is a country prone to disasters of human and natural origin. The location of the country along the shores of the Indian Ocean (2,700Km of coastline), where every year dozens of depressions and cyclones of various magnitudes are formed, and at the downstream end of 9 international river basins, makes Mozambique prone to cyclones, floods and droughts, which can become disasters if prevention and mitigation measures are not taken. Statistical data show that, on average, the country is affected by 1 large scale disaster every year, and is among the 3 countries most vulnerable to disasters in Africa. The impacts of climate change make this context still more fragile. Indications provided by the National Disaster Management Institute, in its 2009 study on climate change in Mozambique, show that the frequency and intensity of disasters have increased in the country and will tend to increase further. The floods of 2000 which killed about 700 people and affected almost 5 million other Mozambicans in the south of the country, clearly showed the vulnerability of Mozambique and the need to develop coherent and robust disaster management policies and strategies in order to attain lasting development, as desired at Rio and in Johannesburg.



Figure 4.7 – The floods of 2000 in southern Mozambique

Aware of this context the Mozambican government in 1999 approved the disaster management policy and, in the same year, revised the national structure that supervises disaster management by transforming the DPCCN (Department for Preventing and Combating Natural Disasters), which was a more reactive body, into the INGC (National

Disaster Management Institute) with the main purpose of developing pro-active measures to prevent disasters, and thence to draw up response and mitigation measures.

Since the approval of the policy, several disaster management instruments have been set up. The annual drafting of contingency plans began. These plans present the disaster scenarios that may happen in the following year, the total number of people likely to be affected, the measures that should be taken and the respective budget.

In 2006, the government approved the Disaster Management Master Plan, which defines the areas of intervention necessary to make the population more resilient and less vulnerable to both natural and human threats. This instrument also advocates interventions in Protecting Biodiversity, Combating Desertification and Adaptation to Climate Change. Based on this instrument the government set up, within the INGC, the National and Regional Emergency Operational Centres (CENOE) which make the response to disasters faster. It set up the Reconstruction Coordination Office (GACOR) to respond to the needs of post-disaster reconstruction. It set up the Arid Zones Department which looks specifically at areas heavily affected by drought, and it established the National Civil Protection Unit (UNAPROC) with the aim of rescuing people whose lives are in danger. At local level, Local Disaster Risk Management Committees were set up. They work to reduce the vulnerability of communities. The communication system was strengthened with the creation of the Disaster Management Technical Council (CGTC) at national, provincial and district level, and the Operational Emergency Committees at the same levels. To improve the performance of the sector, the staff table, the capacity building and the financing of disaster reduction activities were also strengthened by the state. Likewise the weather information and early warning system, coordinated jointly with the National Meteorological Institute (INAM), was strengthened.

As a corollary to this effort, the number of lives lost, the material damage, and the number of people affected by disasters have fallen dramatically in the country, and Mozambique has been mentioned as a good example of disaster management policies and practices.

The attentions of the government and its partners now seem more strongly turned towards climate change adaptation, mitigation and resilience. Studies show that climate change is real in Mozambique. In the last 50 years, the temperature has risen by about 0.6⁰C, rainfall has declined, summers are hotter and winters are less cool. A still more alarming scenario is expected for the next 30-50 years, if measures are not taken. To face this situation, the government has approved the REDD+ strategy which will assist in mitigation, and NAPA to deal with questions of adaptation. The National Strategy for Climate Change is being drawn up.

4.13 EDUCATION

Section III of Agenda 21 broaches the situation of children and young people in development, and in Chapter 25, line 25.5, it urges the need to promote access to education. The same aspect is stressed in the MDGs (Goal II), and in the Johannesburg Implementation Plan (chapter II, line g).

At the end of the civil war, in 1992, the education system had been completely disrupted. However, opportunities to study have greatly increased since then. Today all children of school age have access to education, but in 2003 only 69% had school places. Likewise, the percentage of children who complete primary education grew from 22% in 1997 to 77% in 2008 and it is expected that by 2015, the country will reach the target of 100%.

To attain these results, the government took several measures, including drafting the Strategic Plan for the Education Sector 1999-2005 (PEE) and the Strategic Education and Culture Plan 2006-2011. In 2003 Mozambique also began implementation of the ‘fast track initiative’ financed by the World Bank and other cooperation partners. Based on these plans, several initiatives to increase enrolment and improve the quality of education were implemented.



Figure 4.8 – Group of pupils in a classroom

The education sector currently absorbs almost 25% of the entire State Budget. In 2005 primary education enrolment fees were abolished, the free distribution of primary school textbooks began, and the Programme for Direct Financial Support to schools started. There were specific programmes to improve school management and the introduction of a new primary school curriculum. There was an improvement in programmatic content so as to include contemporary themes such as conservation of the environment. Under this point, there stands out the presidential initiative of “one pupil, one tree per year”. Environmental themes are now dealt with in specific university courses for licentiate and masters degrees.

In recent years the school network has expanded. The government is continuing the accelerated construction of new classrooms. For example, in 2011 570 new classrooms were finished, which made it possible to absorb and retain more pupils. On average, almost 10,000 new teachers were recruited per year to meet the needs of universal primary education.

Despite these gains, the education system continues to face various challenges. The increase in primary education completion rates brings added challenges to secondary education, which must also grow. Other challenges concern the quality of those trained. Furthermore the teacher/pupil ratio remains high and the drop-out rate is still a matter of concern. The conditions and quality of education, the expansion of secondary education, and a reduction in the drop-out rates (particularly for girls) remain the great challenges for the sector.

4.14 HEALTH

Chapter 6 of Agenda 21, on the protection of human health, states that health and development are closely linked. The MDGs can only be attained in the absence of debilitating diseases, while gains in health for the entire population require the eradication of poverty.

To attain the MDGs, the government fixed as targets (i) to reduce the incidence and prevalence of diseases that can be prevented by vaccinating children aged 0-23 months, children of school age, and women of child-bearing age, reaching a vaccination coverage of not less than 80% among children and pregnant women and 42% among women of child-bearing age; (ii) To reduce by two thirds, between 1990 and 2015, the mortality rate among children under 5 years of age (iii) To increase access to basic and complete essential obstetric care, and reduce the rate of mortality from obstetric complications, attaining a coverage of about 60% of institutional births by the end of the period, to cut the maternal mortality rate within hospitals to 100/100,000 live births, and to provide mother and child care in the health units; (iv) To reduce the maternal mortality rate by three quarters between 1990 and 2015; (v) To reduce the impact of endemic diseases on the health of the population, particularly HIV/AIDS, tuberculosis, leprosy and malaria; (vi) to reduce the number of new HIV/AIDS infections and to make the fight against HIV/AIDS a matter of national urgency. The target is to block the spread of HIV/AIDS and to have begun to reverse it by 2015. Also by 2015, to have halted the incidence of malaria and other important diseases, beginning to reverse the current trend.

The rate of mortality among children under 5 years old underwent a reduction from 23.5% (in 2004) to 15.2% (in 2006). As for the infant mortality rate, that is the number of children who die in their first year of life per 1,000 live births, this fell from 15.8% (1994) to 10.5% (2006). With regard to the components of vaccination coverage, there has been an average compliance of 100% (programmed) in the VAS and DTP/Anti-polio, in the HB 3rd dose and in BCG coverage rates.

Turning to the incidence of malaria, it is estimated that more than 40% of all out-patients and 60% of cases in hospital paediatric wards are suffering from malaria. It is also estimated that malaria is responsible for almost 30% of all hospital deaths. The malaria prevalence rates among children under 5 years of age may vary between 40 and 90%, resulting in up to 36,000 deaths of children every year due to this disease. It is estimated that malaria is responsible for 30% of the mortality among under-fives. The true scale of the economic losses caused by malaria in the country is not known. Most of this situation can be attributed to, among other factors, poor access to the health services, which only cover about 50% of the population, as well as the weak use of preventive services.

In order to reduce the weight and impact of malaria, the health service continues the mosquito control programme through home spraying (PIDOM), the distribution of long lasting mosquito nets, and the expansion of Rapid Diagnosis Tests (TDR's) among other actions.

Efforts to reduce the weight and impact of tuberculosis (TB) (which to a large extent is associated with HIV/AIDS) have shown encouraging results. For example, in the period from 2005 to 2009 the cure rate rose by 3.1%, from 78.9% to 82.0%, thanks to improvement in implementing Directly Observed Therapy (DOT), which guarantees drugs are taken regularly and greater adhesion to the treatment. DOT continues to expand at all levels.

Efforts are now centred on the need to improve access to and the quality of the services provided, in preventive health, monitoring and diagnosis, as well as the expansion of paediatric ARV-T, which remains very slow (e.g. only 6,320 children were covered in 2007 which was 53% of the planned figure of 11,820 children under 15 years old), among other actions linked to mother and child health.

4.15 WOMEN'S AFFAIRS AND SOCIAL WELFARE

One of the main objectives in this sector is to promote women's full participation, on a footing of equality with men, in taking decisions at all levels, giving primacy to gender aspects in all policies and strategies. In this area, the gender policy was defined; the CNAM (National Council for Women's Advancement) was set up; Law no. 29/2009 on domestic violence was passed; the 2008/2012 National Plan of Action against Violence against Women was drawn up. Sector gender strategies were also drawn up (MINED, MICOA, MISAU).

As regards women's participation in the various sectors of the economy, women were trained in associations for agro-processing in order to guarantee their food security and increase their income; women were trained in business management and income generation; lobbying and advocacy were undertaken to register women's associations. Likewise, associations of women were supported and trained in notions of cross-border trade and in entrepreneurial skills. With regard to preserving the environment, a greater involvement of the target groups was promoted in managing the environment and planting trees in their zones of origin.

A multi-sector mechanism for integrated care for women victims of domestic violence was set up; the implementation of the SADC Gender Protocol, and the policy of gender equity and the economic empowerment of women was guaranteed; implementation of the gender policy and the strategy for achieving it was defined. One should also note the definition of the sector strategy of women and social welfare; the programme of direct social action for the most vulnerable population groups and the strategy for girls' education through free enrolment up to the end of primary education. The greatest challenges in the Women's Affairs and Social Welfare sector concern the scarcity of funding for implementing the various programmes.

As for political participation, 39.6% of the members of the Assembly of the Republic are women and women hold 32% of decision making positions.

4.16 EMPLOYMENT

In the labour area, essentially employment, the mission remains that of developing programmes that ensure an increase in job opportunities, the prevention of labour disputes in companies through publicising the Labour Law and Social Protection Law, and expanding the services of the Social Security System. A major effort continues in normative activity with dissemination of the Labour Law and its respective regulations.

Under the Employment and Professional Training Strategy (EEFP), in the past 3 years 267,510 jobs were created, which was 171% of the target figure. The sectors that contributed most to creating these jobs were the following: Agriculture, animal husbandry, hunting and forestry (27,928), Extractive Industry (1,239), Manufacturing Industry (2,223), Construction (8,824), Wholesale and Retail Trade (5,048), Accommodation and Refurbishment (3,248), Transport, Storage and Communications (2,966) and households with domestic servants (1,683).

Initial and continual training was also promoted for men and women candidates for employment. In the sphere of Inspection and Labour Relations, companies were continually monitored to check compliance with labour norms. For the 2010-2015 five year period, the government laid down as its strategic objectives: (i) to improve the quantity and quality of the supply of professional training, seeking to increase the employability of citizens, as well as promoting job opportunities and employment in the countryside, paying special attention to young people, women, the disabled, and people affected by HIV and AIDS; (ii) to consolidate the development of a compulsory social security system and the consequent guarantee of its financial sustainability; (iii) to ensure observance of health and safety norms at work; (iv) to prevent and solve labour disputes, and promote and control labour legality, ensuring better working conditions; (v) to continue drawing up normative instruments that are complementary to the Labour and Social Protection Laws which help consolidate a favourable environment for investment, and (vi) to produce statistics on the labour market.

4.17 SCIENCE AND TECHNOLOGY

The Johannesburg Implementation Plan and the MDGs establish the need to improve access to modern technologies in the areas of agriculture, renewable energies, education, health, fisheries, industry and others. They also stress the need to provide technological support to rural communities so that they can benefit from safe and sustainable opportunities for subsistence. The creation of the Ministry of Science and Technology (MCT) in Mozambique was the first step towards complying with these objectives. There followed the government's approval in 2006 of the Science and Technology Policy and of the Mozambique Science, Technology and Innovation Strategy (ECTIM), which are the most important regulatory and guiding instruments for MCT activities.

Based on the above instruments, this Ministry has undertaken various activities ranging from the promotion of technological innovation, to the dissemination of technologies, the training of rural communities in various matters, support for education and research institutions and for (new) scientists. Among the list of activities, there also stand out the

creation of the Scientific Water Council (CCA) and the Water Research Institute (IIA); the launch of water research projects coordinated by the Water Research Institute (IIA) and the National Research Fund (FNI); implementation of the African Information and Communication Technologies Indicators Initiative, in partnership with NEPAD; establishment of the Science and Technology Park in Malauna, Manhiça district, Maputo province; signing of the agreement between the Mozambican Ministry of Science and Technology and its counterpart in Swaziland; establishment of 35 Community Multimedia Centres (CMC) in the various districts of the country; implementation of the Electronic Government Strategy by the National Institute of Information and Communication Technologies (INTIC); funding of Research and Transfer of Technology Projects by the National Research Fund.

The most evident reflection of these actions in the communities are the Millennium Villages. A Millennium Village is a practical demonstration of community-based integrated rural development, making better use of science and the available technologies and experiences so as to achieve and maintain economic development in the communities. The establishment of the Mozambique Millennium Villages Programme (PVMM) is part of implementing the second objective of the Mozambique Science, Technology and Innovation Strategy, which advocates promoting innovation and using science and technology based approaches in impoverished and disadvantaged communities. From the social point of view, the PVMM seeks to raise the awareness of being Mozambican, and of creating more collective and conscious social identities, faced with a globalising world which today torments societies that are not economically solid.

To encourage research, the MCT organised an International Conference on Research (ICSU) in Maputo. Also held were 2 Mozambican Innovator galas, science and technology weeks in the districts, science and technology exhibitions and fairs, and annual coordination and planning meetings between the MCT, research institutions and other stakeholders in the national science and technology system.

Implementation of MCT activities counts on the participation of several cooperation partners. Cooperation agreements were signed with the governments of Brazil, Finland, India, China, Portugal, and Sweden and with the World Bank.

Many gains have been provided by the MCT in improving the welfare of the public. They can be seen in rural areas through the positive impact of the Millennium Villages, and from the expansion of research capacity and of science and technology across the country, particularly in the rural areas which are those most at a disadvantage in terms of science and technology.

But the performance of the science and technology sector needs to be strengthened. The MCT is still young and is at the phase of boosting its technical, human and financial capacity so that it can fully respond to the challenge of disseminating science and technology in the country. Several initiatives under way, such as the creation of science and technology parks, will need strong national and international support so that they can become established and produce the expected results in the medium and long term. A further great challenge is how to systematise and preserve the vast local knowledge that Mozambique possesses so that it can serve the country's development.

5 GREEN ECONOMY

5.1 DEFINITIONS

The life style that world society has been following for the past 50 years has become unsustainable and is threatening the existence of the human species. Almost 60% of the ecosystems on which humanity and other beings depend for their existence are being degraded. This is happening at a time when the world's population has reached 7 billion, and is expected to reach 9.2 billion by the middle of this century (2050).

The increase in population will put pressure on the weakened ecosystem, and is accompanied by a series of continual and developing environmental problems. If the current life style is maintained, it is forecast that the demand for energy will grow by about 45% by 2030. This growth in demand will push up the price of fuel which could reach USD 180/barrel, and will drive a search for food to satisfy the growing population. Added to this, the emission of greenhouse gases will continue to increase, which could lead to a rise in global temperatures of around 6°C by the end of the century. With this pattern, it becomes difficult to develop nations, to maintain peace and world harmony, and to provide prospects for a better future for the new generations..

The concept of the *Green Economy* responds to this context which needs to be changed, if we want sustainable development, defined as satisfying the current needs of humanity without compromising the ability of future generations to meet their needs. The Green Economy can be seen as the mechanisms that society intends to use to reverse the grim picture in which the world finds itself and from there to promote sustainable development. The Green Economy initiative was launched by the United Nations Environmental Programme (UNEP) in 2008 with the intention of promoting a world economy that preserves the environment.

The concept of the Green Economy for some, or of Green Growth for others, is defined in various ways. According to UNEP (2010:3) the Green Economy “is that which improves welfare and social equity while at the same time reducing environmental risks”. In this vision, the Green Economy should be based on (i) reducing carbon emissions and pollution; (ii) the use of alternative energies and an increase in energy efficiency, (iii) preventing the loss of biodiversity and environmental services.

The question of energies and energy efficiency seems to be that which draws most attention in the Green Economy approach. FAO (2011:2) says there is no definitive conclusion about Green Economics, but it involves a question of productive efficiency. The Green Economy is the capacity of the various sectors of the economy to do more and better with fewer natural resources. In the same vein, Huberty *et al.*, (2011:11) say that an economics and/or growth can be regarded as green if it is able to create jobs or sustain economic growth that is compatible with or led by actions to reduce greenhouse gases and promote clean energies.

In 2011, UNEP published a document that deals with the idea of the Green Economy, as well as the actions that can be undertaken in 11 sectors. These are agriculture, fisheries,

water, forests (considered as natural capital), renewable energies, industry, construction, transport, tourism, cities and the treatment of waste linked to energy efficiency. In this publication, UNEP praises the relationship between Green Economy and energy efficiency/alternative energies, stressing that the Green Economy is summarised as a low use of carbon in the efficient use of resources and social inclusion (UNEP, 2011:16).

The treatment of the Green Economy has led to strong international debates between those who favour the approach and those who fear that lack of clarity about the consequences of the transition may compromise the future of humanity. For example, despite the strong arguments raised by UNEP, Huberty *et al.* (2011) concluded that the Green Economy works for some countries. Sawyer (2011) argues that the Green Economy is not just a question of energy, technologies and economics, but is also a question that covers all other sectors of society, many of them with an incalculable economic value, such as: ecological functions, human rights, freedom, culture and the sovereignty of states. He also argues that the Green Economy cannot be a merely cosmetic process of the transfer of technologies (regarded as clean and efficient) from the west to developing countries. If this is the case, it is worthwhile maintaining and improving the undertakings given at Rio in 1992 and Johannesburg in 2002.

5.2 GREEN ECONOMY IN THE CONTEXT OF MOZAMBIQUE

The concept of the Green Economy is still new for Mozambique, just as it is internationally. However, looking at the debate presented above, it is the vision of Mozambique that the question of the Green Economy should not be viewed only as an improvement in productive processes and in current consumption. Instead, it should focus on total transformation of a current life style which is incompatible with existing ecological resources and services. Mozambique believes that making the Green Economy operational involves advocating new values and standards of living in all activities in people's day-to-day activities. The vision of the country on the Green Economy is drawn up in more depth in its Green Economy 'Road Map'.

However, the efforts undertaken by Mozambique over the last 20 years as a response to the Rio and Johannesburg sustainable development recommendations, allow us to state that the country has advanced greatly towards the Green Economy as defined in this document. Here, the country looks at the Green Economy as the vehicle for achieving sustainable development, and not as something that replaces it or competes with it.

There is a variety of evidence for this: the conservation areas have grown, and to advise the government on questions of sustainable development and to encourage it, the country has set up the National Sustainable Development Council (CONDES). CONDES is a mechanism for public consultation and is chaired by the Prime Minister. The establishment of CONDES and the representation on it of the government at the highest level shows the government's commitment to the question of sustainable development. In addition to CONDES, most of the ministries have environmental units and include environmental aspects in their sector policies and strategies. There is also a national environmental education programme (PECODA); a national sustainable development strategy; and the country has developed the REDD+ strategy, and has approved the reforestation strategy.

One also notes the efforts made by the President of the Republic in environmental preservation. Point 4.7 dealt more exhaustively with a series of instruments and measures that fit into the context of promoting the Green Economy.

With specific regard to energy, which is the main focus of the Green Economy, initiatives are under way in the country to reduce dependence on fossil fuels and encourage the use of clean energies. This includes projects to conserve biodiversity and reforestation; improving the energy efficiency of biomass through the use of improved stoves; the dissemination of the technology to produce and use biogas; the mixture of fossil fuels with biofuels; the elimination of the use of fuel containing lead; the mass cultivation of the species that are the precursors of biofuels; and the construction of hydro-electric power stations particularly in the centre of the country.

Despite these efforts, the Green Economy *'Road Map'* for Mozambique presents various challenges such as: monitoring the exploitation of mineral resources; constraints of human, material, technological and financial resources for the transition; cyclical threats of drought, floods, strong winds and cyclones; population growth; the growth of the urban areas; and low levels of productivity in various sectors.

6 INSTITUTIONAL FRAMEWORK FOR SUSTAINABLE DEVELOPMENT

Mozambique possesses a strong institutional framework for sustainable development questions. The Constitution of the Republic states in Article 117 that the government must promote initiatives seeking to guarantee ecological balance, and the conservation and preservation of the environment for the welfare of the population. To this end, the Ministry for the Coordination of Environmental Action was set up. This is the mother institution for sustainable development questions, and over the years of its existence it has accumulated experience and various instruments aimed at harmonising social, economic and environmental development.

In Mozambique, the government regards the question of the environment and sustainable development as a cross-cutting issue, and so all the Ministries and institutions, public or private, are called upon to observe the relevance of maintaining natural capital in the process of development. In the public sector most ministries have environmental units and all sector policies and strategies take into account the question of the environment and sustainable development.

Furthermore, the government has set up CONDES, a public consultation body that advises the government on policies and practices that lead, or not, to sustainable development. CONDES, chaired by the Prime Minister of the Republic, meets ordinarily twice a year, and in extraordinary session whenever necessary.

Alongside this, in 2007 the government approved the Environmental Strategy for Sustainable Development which guides actions aimed at sustainable development in Mozambique. This strategy focuses on 4 areas relevant for sustainable development: (I) the protection and management of Eco-systems and Biodiversity; (II) good management of the growing urban environment; (III) control of atmospheric pollution and of climate change,

and (IV) Population and welfare – which looks at health, knowledge, governance and equity in access to and sharing national resources.

In MICOA, there is the Cooperation Directorate which coordinates implementation of multilateral treaties concerned with sustainable development. In its duties, the Cooperation Directorate meets every quarter with the focal points of the multilateral treaties in order to gather information on activities held and planned. The Cooperation Directorate is also responsible for producing aggregate information on this and for divulging it. The information is partly disseminated through the Internet, and to this end the websites *www.legisambiente.gov.mz* and *www.convamambientais.gov.mz* have been set up which are depositories of electronic information.

Apart from the Cooperation Directorate, there also exist the National Environmental Management Directorate (DNGA), the National Environmental Impact Assessment Directorate (DINAIA) and the National Territorial Planning and Ordering Directorate (DINAPOTE) which carry out concrete environmental protection and management actions.

7 CONCLUSIONS AND POINTS FOR RIO+20

With the present report, Mozambique intends to reflect the advances, challenges and prospects in implementing sustainable development principles and goals in the period from the Rio summit in 1992, through the 2002 Johannesburg summit, to the present. The report also deals with the country's commitment to the question of the Green Economy.

Despite the vicissitudes that Mozambique has passed through since its independence, caused essentially by the prolonged war, the country has adhered fully to the common efforts around sustainable development. The notable scarcity of human, financial and technological resources, which characterised the country in the moments following its international undertakings on the subject, still remain an added challenge to designing and implementing strategies, plans and programmes to make sustainable development a reality.

The present report reflects the enormous efforts made by the country, focusing on the commitment of the leaderships and of the institutions at the various levels to the undertakings concerning sustainable development. It also stresses the positive balance sheet of the advances made in implementing concrete strategies and actions aimed at sustainable development. To support this finding, the National Report ends by pointing out the main accomplishments and challenges for strengthening sustainable development in Mozambique.

In the series of the country's achievements in implementing the principles and objectives of sustainable development, there stand out the various international agreements on sustainable development that the country has ratified, such as: (i) Convention on International Trade in Endangered Species (CITES); (ii) Vienna Convention for the Protection of the Ozone Layer (ODS); (iii) Convention on Biological Diversity and the Cartagena Protocol; (iv) Convention on Climate Change and the Kyoto Protocol; (v) Convention on Combating Desertification and Drought; (vi) Basle Convention on the Transboundary Movements of Hazardous Wastes and their Disposal, (vii) Bamako

Convention on the Ban of the Import into Africa of Hazardous Wastes; (viii) Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Eastern African Region; (ix) Rotterdam Environmental Conventions, (x) Ramsar Convention, and (xi) Convention on Migratory Species. The Millennium Development Goals are also a relevant multilateral instrument that the country has joined.

Other major actions worthy of mention are:

- The creation of the Ministry for the Coordination of Environmental Action, the main institutional landmark in coordinating the multi-sector efforts necessary for implementing the undertakings signed and ratified by the country.
- The efforts for poverty reduction and the elimination of absolute poverty in which considerable steps were taken, shown in the reduction in absolute poverty from 69.4% in 1996/7 to 54% in 2002/3. The percentage remains the same currently, for several reasons, including the global crisis of 2007-2009.
- Sector involvement at the most varied levels in designing policies, strategies and actions for sustainable development, shown by the noteworthy production and approval of legal instruments. Themes such as food security, the preservation and adequate use of Natural Capital, the search for Clean and Renewable Energies, and the Conservation and Protection of the Environment enjoy broad regulatory and normative coverage. There is also considerable legal coverage of urban development, the use of clean technologies in industry, sustainable tourism, basic education for all, among others.

Under way are sector initiatives such as:

- Mapping Mozambican soils and agro-ecological conditions;
- The introduction of soil conservation technologies including for the combat against uncontrolled bush fires;
- The introduction of water harvesting and conservation technologies and increased investments in irrigation;
- Electrification of all the country's districts (currently 107 of the 128 districts are already electrified);
- Switch of the management of Cahora Bassa to the Mozambican state, and approval of the project for the Cahora Bassa north bank power station and the project for the new dam at Mpanda Nkuwa;
- Exploration and use of natural gas;
- Encouraging the use of biofuels and clean sources such as natural gas, and wind and solar power;
- Encouragement for the use of clean and less polluting technologies through fees and subsidies and cancelling operating licences for activities opposed to the environmental legislation;

- Efforts to attain the Millennium Goals in Water and Sanitation, Education and Health;
- Allocation of the District Development Fund, which is important in the efforts to reduce asymmetries;
- Approval of the code of conduct for the tourism sector which seeks to discipline all practices damaging to the environment and which allow the communities to own and care better for natural capital;
- The initiative '*one pupil one plant per year and one leader one forest*' launched by the President of the Republic with the objective of encouraging preservation of the environment;
- Approval of the Disaster Management Master Plan which guides action to prevent, mitigate and respond to disasters over a period of 10 years.
- Allocation of about 25% of the State Budget to Education.

In broaching the concept of the Green Economy (a new concept), Mozambique stresses its role as a vehicle for attaining sustainable development. For Mozambique, the Green Economy should not be viewed in the narrow sense of the term, focusing on the intensive use of fossil fuels and the emission of high rates of carbon, but on the total transformation of the current life style, which is incompatible with the existing ecological resources and services.

With regard to the challenges for sustainable development in Mozambique, it can be stated that:

- The levels of absolute poverty remain high in Mozambique. The pursuit and strengthening of measures for their significant and verifiable reduction are a national priority;
- The rise in food prices, the growth in the population and the great challenges for the global economy will continue to demand immeasurable efforts to reverse the trends. Food security and the preservation of natural capital are fundamental;
- The search for energy security and efficiency, despite the high costs, remains a permanent feature in Mozambique's development strategy;
- Climate change affects the country and contributes to natural disasters. The effective management of environmental risks in a wide-ranging perspective should remain on the agenda of national priorities;
- The need for increased productivity, for market access, for the use of clean and less polluting technologies, and the correct management of natural resources demand the reconversion and modernisation of the agricultural, livestock and industrial sectors;
- The pursuit of measures for the structural and functional consolidation of the Mozambican state, the consolidation of the democratic regime, and the strengthening of the rule of law are inescapable objectives;

- The theme of sustainable development is being consolidated in Mozambique. It is fundamental that environmental units are set up by public and private institution at the most varied levels;
- Promotion of political, geo-strategic, economic, social and cultural integration in the region and in Africa, should be prioritised and consolidated;

Mozambique is reaffirming its commitment and undertaking to continue making the greatest efforts possible in support of the sustainable development of the country.

Mozambique allies with the people and nations of the world in calling on the industrialised countries, the largest producers of greenhouse gases, to strengthen their commitment to reduce the effects of climate change and embark upon the Green Economy.

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