

MOZAMBIQUE NATIONAL REPORTING TO CSD 18-19

COMMON ISSUES

Since 2008, Mozambique is implementing a programme of environmental education, communication and diffusion (PECODA) aimed at creating a shared vision for environmental management, conducive to sustainable development that contribute for reduction of environmental degradation problems, particularly those originated by human being. The scope of PECODA is the promotion of environmental communication aiming the diffusion to the communities, not only of the knowledge of environmental issues, but especially to be able to lead to change of behavior through educative actions.

An environmental data base is being constructed since 2008 to allow a country to establish an environmental information system.

During the year 2008, the following legislation was approved:

- . Regulation of the Law of Territorial Planning;
- . Regulation on management of substances that deplete the ozone layer;
- . Regulation for control of alien invasive species;
- . Guidelines for Expropriations for purpose of territorial planning;
- . Rectification of the amendment to the Montreal 1997 and Beijing 1999 to the Protocol of the Montreal on substances that deplete the ozone layer.

THEME-SPECIFIC ISSUES

CHEMICALS

1. Assessment of chemical risks, including:

1.1 - Mechanisms for systematic evaluation, classification, and labeling of chemicals, including initiatives towards a harmonized system of classification and labeling of chemicals

Mozambique has a system for evaluation, classification, labeling of Pesticides coordinated by Ministry of Agriculture with involvement of Ministry for Coordination of Environmental Affairs and Ministry of Health.

For Obsolete Pesticide similar procedure is used under Ministry for Coordination of Environmental Affairs with involvement of Ministry of Agriculture

Customs office is one of relevant sector involved in importation and exportation systems in order to follow the international and national regulation on management of pesticides and hazardous waste under the Ministries of Agriculture and for the Coordination of Environmental Affairs respectively.

1.2 - Initiatives for assessment of toxic chemicals, hazard and risk assessment, and participation in various international and regional initiatives

Under the Ministry for Coordination of Environmental Affairs a pilot project related to assessment, classification and elimination of toxic chemicals was developed and submitted to the potential donor's .

Mozambique, represented by the Ministry for the Coordination of Environmental Affairs is one of members states that are strongly involved with regional and international agreements like Basel, Stockholm and Rotterdam Conventions related to management, treatment and elimination of hazards risks.

1.3 - Strategies for exposure assessment and environmental monitoring and improvement in procedures for using toxicological and epidemiological data to predict and estimate the effects of chemicals on human health and the environment

It is necessary to improve adequate capacity to develop strategy and procedure to use toxicology and epidemiological data to estimate the effects of chemical on human health and environment.

In Mozambique there is no a special laboratory for determination of principal cause of effects on human health and environment. Normally, samples are send to South Africa or Europe for analyses. The Mozambican Environmental Law 20/97 regulates the

standards dose and chemical effects dose according to the standards parameter (lower and upper).

1.4 - Information exchange and cooperation, data-quality assurance, application of assessment criteria, and linkages to risk management activities

Based on existing pilot project on management of chemicals networks for exchanges of information, applications and assessment of impact related deferent's activities in different sectors are being developed. Usually there is one sector that deals with collection and systematization data's from all sectors.

2. Sound management of toxic chemicals

2.1 Progress within the larger framework of Strategic Approach to International Chemicals Management (SAICM)

The Ministry for the Coordination of Environmental Affairs is the focal point of SAICM in Mozambique. Related to the implementation of the SAICM, a Pilot Project was developed and

submitted to UNEP for financial mechanism and support (Budget) and the country is still waiting for final decision.

2.2 Initiatives and innovations for risk reduction, particularly taking in to account the life cycle of the chemicals

The competent authorities in Mozambique are taking initiatives for implementation of National regulation and International agreements to reduce risk associated of Chemicals. Based on that, the first Landfill for treatment and disposal of hazardous according our National Regulation and Basel procedure in Maputo Province is being developed.

The Ministry for the Coordination of Environmental Affairs has started to develop a Hazardous Waste Strategy and actually is conducting an awareness campaign around the country for dissemination of national regulation and international agreements.

2.3 Precautionary measures derived from broad-based life cycle analysis

The precautionary measures derived from board-base life cycle analyses depend on the type of chemical and its effects on human health and environment. Sometime it is necessary to develop projects for elimination and treatment of contaminated sites in order to avoid associated problems.

2.4 Policy measures to phase out chemicals that pose unreasonable and unmanageable risk to human health and human environment, such as, for example, ozone-depleting substances

The Government of Mozambique, through the Ministry for Coordination for the Environmental Affairs is one of member's states that implement Vienna Convention and Montreal Protocol on Ozone Depleting Substances.

For monitoring activities, the Ministry for Coordination of Environmental Affairs developed a special regulation on Ozone Depleting Substances that the country uses to control importation and exportation of related substances.

2.5 Policies and frameworks for prevention of accidents, preparedness and response

The existing policies and frameworks for prevention of chemicals of accidents, preparedness and response involve relevant sectors such:

- Ministry for the Coordination of Environmental Affairs
- Ministry of Agriculture
- Ministry of Health
- Ministry of Industry and Trade
- Ministry of Mineral Resources
- Ministry of Transport and Communication
- Ministry for Home Affairs - Fire Extinguish Staff
- Private Sectors
- NGO's

For monitoring the activities there are regulations on chemicals management and hazardous waste chemicals such Environmental Law 20/97, Hazardous Waste Regulation, Environmental Impact Assessment, Environmental Standards, Environmental Audits, Pesticide Regulation, Bio-Medical Waste, Environmental Inspections. Also the country is developing a National Strategy on Hazardous Waste.

2.6 Policies aimed at reducing the risks posed by lead, mercury and cadmium and other harmful heavy metals, including through a review of relevant studies, such as, for example, the United Nations Environment Programme global assessment of mercury and its compounds

A pilot studies conducted by the Ministry of Mining in coordination of Ministry for the Coordination of Environment about alternatives uses of mercury on washing mining were developed in Manica Province.

2.7 Initiatives to reduce overdependence on the use of agricultural chemicals

In 2009 a new Pesticide regulatory framework was approved. Under this framework import, storage and movement of pesticides within the country is regulated. The Ministry of agriculture annually approves the list of authorized pesticide to be imported. For a new pesticide a risk assessment need to be done before its importation. Monthly the importers

should inform the Ministry body on the existing quantities and expired dates of pesticides in the market place.

This measure is to avoid a situation of accumulation and future deterioration of pesticide.

During the civil war several tons of pesticides was imported and become obsolete. In 2002 the Ministry of Agriculture launched a project to identify area and quantity of accumulated pesticides. Later on, a project for destruction of obsolete pesticides was designed and implemented by the Ministry for the Coordination of Environmental Affairs.

It is important to note that agriculture is the main economic activities that rural people are involved with. Agriculture in Mozambique is labor intensive and rain fed with low use of inputs. Annual agricultural survey (TIA) estimates the use of pesticides at 4% in the last decade, being mostly used for horticulture and cotton by stallholders, and sugar cane industry by commercial farmers.

Pipeline investments in fruit production and crop production in general may raise the current level of chemical inputs use in the country. However, is not expected that the new accumulation occur. Farmers receive information, through extension services, on how to handle, store and dispose (manage) pesticides to avoid human and environmental contamination.

MINING

1 – General

Mozambique is well endowed with mineral resources and, with a total area of 801.000 km², is very prospective for the discovery of metals and minerals.

The main mineral resources currently being produced at large scale are: natural gas (120 million GJ/yr), coal (two projects are being developed to produce 20 million tons/yr for export, starting in 2011) and titanium products from heavy sands (a capacity of 800.000 tons/yr).

Mozambique produces also tantalum, marble, bauxite and graphite.

Gold, precious and semiprecious stones are being produced, mainly at the level of small scale and artisinal mining.

Mozambique is very active in exploration, and there are more than 700 prospecting and exploration licenses currently granted to nationals and foreigners. Coal, limestone (for cement production), gold and base metals are key targets for exploration.

The contribution of the mineral resources is the entity of the government responsible for geology, mining and petroleum upstream.

Mozambique is now submitting the documents to become a candidate to the “Extractive Industries Transparency Initiative (EITI)”. A Coordination Committee, with representatives from the government, the civil society and the private sector, was already established.

2 - Legal framework. General

The mining Law n° 14/2002 from 2002, and its regulation, approved by the Decree n° 62/2006 apply to all mining (excluding petroleum) in Mozambique, namely the prospecting, exploration, development and production of mineral products.

The following mining titles can be granted under the Law:

- a) Recognizance license;
- b) Prospecting and Exploration license;
- c) Mining certificate; and
- d) Mining concession.

The mining certificate, granted for a period of two years exclusively to Mozambicans, applies to the small scale mining activities.

The National Directorate of Mines under the Ministry of Mineral resources, as the regulator, is responsible for the monitoring of the mining activities. All the mining title holders have the obligation to submit regularly reports about its activities. Inspectors from the Government also make periodical inspections to the mining activities to check if the same are carried out in accordance with the legal framework applicable to mining, labor, health, safety and environment.

The participation of the State in the mining ventures is presently very limited. It will have a 5% participation of the company that is now developing a project to mine in the near future 10 million tons/yr of coal in Moatize and it will also hold 5 to 10% in a company being established to produce graphite in the north of Mozambique.

I year 2007 new legislation has been approved in respect of the fiscal regime applicable to mining. Surface taxes and royalty are specific for mining and general income tax rate of 32% applies also to the sector.

3. Artisanal Mining

The artisanal mining is widespread in the country and it is estimated that 100.00 people are involved in this activity, particularly in the mining of gold, semiprecious and precious stones.

In accordance with the mining Law and its Regulations only the nationals are authorized to carry out artisanal mining in certain areas designated by the Government for that purpose. The authorization is granted, through the issue of a mining pass, only to the persons belonging to the communities in the area.

Under the environmental legislation the artisanal mining is classified as level 1 activity and the Basic Rules and Directives for Environmental Management approved by the Ministry of Mineral resources are applicable.

The designation of areas for artisanal mining, currently 55, facilitates the monitoring of such activities, the provision of technical assistance and training to the miners. This assistance is provided by a foundation under the Ministry of Mineral Resources, the “Fundo de Fomento Mineiro”.

4. Environmental Legislation

The Environmental Law n ° 20/97 and its Regulations establish the guidelines and rules applicable to all sectors of activity.

These are complemented by the “Environmental Regulations for Mining Activities” approved by the Decree n° 26/2004.

For the purpose of these Regulations, the mining activities are classified in three levels, from 1 to 3, according to the magnitude of the impact on the environment.

The prospecting and exploration activities, the production of the building materials and pilot projects are normally classified as activities of level 2. The large scale mining is normally classified as activity of level 3.

The activities of level 2 require previous approval of an Environmental Management Plan.

The activities of level 3 require an EIA, an Environmental Management Plan, which is periodically updated.

Under the EIA the concessionaire has to submit “program for the control of risk situations and emergencies”.

5. Health and Safety. Risk assessment

The Labor Law and its regulations contemplate provisions and rules, of general application, dealing with health and safety.

These are complements by the “Regulations on technical safety and health for geological and mining activities” approved by the Decree n° 61/2006.

The article 297 of these Regulations provides guidelines for risk assessment to assure the safety of workers and equipment. Companies, miners associations and the workers shall be involved in the discussion of the risk analysis.

6. Public Consultation

The decisions below require the previous public consultation of the communities from the areas where the mining activities are carried out:

- . The granting to the concessionaire the right to use of the land for mining;
- . The Environmental Impact Assessment;
- . The Mine Closure Plan.

The title holder has the obligation to compensate third parties for any damage or loss caused by the exploration or mining activities.

7. Closure and reclamation phase obligations. The mining concessionaire shall for its exploration license (s) and mining concession (s) in the contract area comply with all reclamation and closure obligations for exploration licenses and mining concessions specified in the Mining Law, the Environmental Mining Regulations, Environmental Impact Assessment Regulations and any Environmental Management Plans approved under regulations.

Reclamation of Exploration License area. In accordance with the Basic Rules and Directives for Environmental Management for level 1 activities as provided for under Ministerial Diploma 189/2006 and with the approved Environmental Management Plan for Level 2 activities carried out in exploration licenses areas, the mining concessionaire shall, in a continuous fashion, reclaim area disturbed by the operations under an exploration license during and before the expiry of the term of the exploration license to a condition reasonably similar to that condition which existed prior to the issuance of the exploration license.

Reclamation of Mining Concession area. The mining concessionaire shall, in a continuous fashion, reclaim area disturbed by the operations under a mining concession in accordance with the Mine Plan and the Environmental Management Plan during the term and before the expiry of that mining concession.

Financial guarantees. The Mining Concession is obligated to provide and maintain an insurance policy or bank guarantee as a financial guarantee in the amount approved in the Environmental Management Plan.

8. Mine Closure

Declaration of Closure. The mining concessionaire shall notify the Ministry of Mineral Recourses 6 months before permanently closing a mine and such notice shall include the reasons for the decision to close the mine.

Duty to make safe. The mining concessionaire shall make safe disturbed by the operations under its mining concession before the expire of that mining concession so as insure the long-term safety of the public and future users and occupiers of land. This obligations includes but not limited to:

- a) all shafts and adits, including those for access and ventilation, if any, shall be sealed in a permanent manner
- b) all power distribution lines used solely by the mining concessionaire shall be removed
- c) all steep – sloped pits and artificial precipices shall be contoured to make their boundaries safe from inadvertent falls, and where necessary, fenced and permanent signs posted warning of danger;
- d) all dams whether for water, tailings or spoils shall be made safe to withstand collapse.

Mine Closure Plan. The Mining Concessionaire shall develop and update from time to time as part of any required Environmental Management Plan, in consultation with the community and local authorities, a Mine Closure plan that seeks to prepare the community for the eventual closure of the mining concessionaire's operations.

9. Corporate Social Responsibility

Two major mining projects have been recently developed in Mozambique:

. A heavy sands projects at Moma that started producing in 2007 ilmenite, rutile and zircon. The total investment was US\$ 460 million and the capacity is for 800,000 tons/yr of products.

. A coal project with the capacity to produce 10 million tons/yr of cooking coal and stem project for export. The total investment is estimated in US\$1,300 million and the production will start in 2010.

During their development phases the Concessionaires invested in several social projects, including housing, schools, hospitals, orphanages, waster supply and others. The total investment in the last 4 years was around US 10 million.

The communities and local authorities participate in the definition of the scope of the social projects.

The investment in social projects by the concessionaires is not compulsory by law.

TRANSPORT

1. Policies and progress on transport access, including the rural population and poor

To increase mobility and accessibility in rural urban transport the government is implementing policies and strategies to reduce the lack of passenger transport and for the transportation of goods. Thus a project for massive use of bikes and motorcycles is under implementation.

2. Regional and global transport system integration encouraging efficient modes

Mozambique is part of the SADC Protocol on Transport, Communication and Metrology. It is within this context that it signed road transport bilateral agreements with some countries of the region namely, RAS, Malawi, Swaziland, Zimbabwe and Zambia. The agreements are aimed at:

- Create a regulatory system that will lead to a road transport that will be of full use to the citizens;
- Ensure development of strong, competitive of transport industry;
- Ensure the maintenance of adequate levels of safety in the public transport;
- Promote correct use of transport infrastructures and collect revenue in a non discriminatory basis;
- Promote acceptance of harmonized standards;
- Provide to any transport the right to develop transport activity in accordance with the law and regulations in force in the member counties;

3. Urban transport planning and policies

The country has an urban transport policy which foresees:

- Develop passenger transport with priority to collective transport;
- Ensure public passenger transport in the major urban centres through public companies which may enter in private management schemes if so adequate taking into consideration the social character of its operation, by defining the acceptable fare;
- To guarantee, through appropriate institutions, road transport in the transportation of passengers.
- To ensure licensing of private economic agents to explore internal and peri urban routes to the urban centres in accordance with existing passenger flows.

4. Vehicle efficiency and emissions policies

Compulsory Periodical Inspection Vehicle Centres are under construction which are due to be concluded within 2009, and they are aimed at certify mechanical and technical condition of vehicles as to guarantee safety standards.

5. Development of any transport technology research and development (public sector our private)

There is a lot to be done in this area because there are limitations of financial resources to adopt new monitoring technologies to the transit management system and transportation means both in public and private sectors.

6. Road, rail and marine systems construction standards and changes in the, in anticipation of climate change impacts (sea level risk, and increased frequency and severity of weather events)

The government is creating conditions for the strengthening of transportation capacity with the purchase of more buses, ferry boats and fast trains for public transport, standardizing the models and makes that must adapt themselves into local conditions (in terms of simplified mechanical operation). Furthermore, the use of national natural gas vehicles are being testes in the cities of Maputo and Matola. The other challenger is the reponsibilization of all road, rail and water public and private transportation companies for them to participate in the integrated system of urban passenger transport.

Integration of transport system into multimodal to facilitate desired connections for passengers and balance the fares.

Creation of tariff system that takes into account the distance that the passenger has to go through (regardless of the connections that he/she may have to make) and availability of pre paid tickets with preferential fairs with preference to those tickets purchased will in advance.

Establishment of appropriate system of tariffs for most vulnerable groups of the society.

7. Capacity building needs on transport activity assessment and analysis for integrated planning (e.g., urban transit, congestions relief, non-motorized transit, vehicle efficiency programs development, assessing fiscal incentives, inter-modal freight management systems)

In 2008 the government approved the strategy for the reorganization and management of urban public transport that foresee the following actions that are being implemented:

- Creation of operatios' training centres in relevant fields like, business management, fleet management, legislation, maintenance etc.
- Training of drivers in relevant subjects to guarantees road safety
- Implementation of norms of conduct in passenger transports to improve service rendering to the public
- Creation of conditions for the setting up of workshops that will support public transports

- Limitation of circulation in the city of limited capacity transporters so as for them to transport in the sub urban area (entry and exit from cities) and transporters of greater capacity for circulation in the urban areas to prevent major road traffic constraints.
- Creation of conditions for meticulous and permanent inspection of vehicles and rigorous observance of road traffic law.
- Creation of infrastructures in the public transport terminals so that vehicles and passengers do not block public roads at the time of embarkation and disembarkation
- To achieve these objectives it is important to have institutional capacity building, training and computing of operators and drivers.

WASTE MANAGEMENT

1. General

The inadequacy, out datedness and lack of systematisation of information on solid waste in Mozambique constitute a serious problem for broader understanding of the situation of waste, as well as for the services linked with the matter, so as to allow the establishment of policies for developing this area, and to direct the activity of the government or private bodies that deal with the question.

Some of the first initiatives to produce consistent summary information on solid wastes in the country began with the diagnosis of solid wastes drawn up by MICOA in 2003. In this area, it should be noted that the records of systematic information by some municipalities began to improve significantly as from 2000.

As from this period, there also occurred, albeit infrequently, research work to obtain information on solid waste. Among this research is the work done by AGRESU in 2004 in Maputo city and by MICOA in 2003.

All the government bodies identified that have an interface with urban waste management were consulted.

There are several central government bodies that operate in the area of solid waste, particularly by supporting municipalities with investments in the area.

Coordination between these institutions already takes place, based on the creation of the national sanitation information and communication network (RICAS), with its headquarters in the Ministry of Health (MISAU).

At municipal level there has been a substantial change. Diagnoses of the solid waste situation are being undertaken in many urban centres, focused particularly on the technological, social and economic questions. These diagnoses have been made, in many cases, with the technical and financial support of MICOA, CDS-ZU and NGOs.

Given the scarcity of information on the management of urban solid waste, the present draft report on the area intends to be a contribution as a source of didactic information, a vehicle of general information on the country and particularly on the municipalities, directed to interventions based on partnerships between institutions linked to the coordination and management of Urban Solid Waste.

Alongside the problems related with solid waste, there are other environmental problems that affect Mozambican urban centres which also deserve reference and other approaches, namely:

- a) Degradation of the sanitation and drainage systems;
- b) Defective supply of clean drinking water;
- c) Soil erosion and deforestation;
- d) Poor institutional and coordination capacity;
- e) Disorderly occupation of space;
- f) Mismanagement of green spaces (parks and gardens);
- g) Impact of cyclones and/or strong winds.

Urban classification

Mozambican cities are divided into four categories, namely A, B, C and D. This classification is based on the degree of development attained by the country's urban centres, particularly the complexity of their political, economic, social and cultural life, their population density, the number and type of industries, trade, and health, education, cultural and sporting activities.

The capital of the country is classified as a level A city. The cities of Matola, Beira and Nampula are classified as level B. They are provincial capitals and have a preponderant role in internal regional development and in programmes of international cooperation. Level C is allocated to the other provincial capitals, and to cities whose national and universal historic-cultural dimension, and their economic and communications importance, gives them a national and regional cooperation interest. The remaining urban centres of the county are classified as level D, where their degree of development characterises them as cities and they play a significant role in local development. The summary classification of Mozambican cities and towns can be seen in the following table:

Level A	Level B	Level C	Level D
Maputo	Beira	Chimoio	Angoche
	Nampula	Nacala	Cuamba
	Matola	Quelimane	Chibuto

		Inhambane	Chokwe
		Lichinga	Dondo
		Pemba	Gurue
		Tete	Manica
		Xai-Xai	Maxixe
		Mozambique Island	Mocuba
			Montepuez

Source: Classification of cities and towns, INPF, 1998

a) Defective system for Management of Urban Solid Waste (USW)

Most cities in the country suffer from inadequacies in the collection, transport, treatment and final deposit of USW.

2. Management of urban solid waste in Mozambique

General Considerations

Currently, the management of USW is one of the emerging problems in Mozambican municipalities which mainly affects the most vulnerable strata of the population.

Management of USW is a complex and multi-sector activity. It is one of the attributes of the Municipal Councils under Article 25, line c) of Law 11/96 of 2 May.

In the suburban and peri-urban neighbourhoods, the problems of urban management are at their most significant. The wastes are essentially of organic origin, and are generally treated by the producers themselves, because the municipal authorities have no capacity to cover this area.

Worsening this situation is the disorderly occupation of space, which makes access difficult. On the other hand, there is a lack of space to resort to traditional waste management measures such as burning and burying.

There are various sources of waste production: domestic activities, trade, agricultural and livestock activities, hospitals, workshops, the transport and communication sector, the building industry, tourism and recreational practices, industry and informal activities.

All the cities in the country suffer from inadequacies in the collection, deposit and treatment of USW, and Maputo and Beira are the most notorious cases.

In general, the final destination of the waste is open air rubbish tips on the outskirts of the cities. The location of these rubbish dumps often does not respect basic criteria – such as that they should be in areas of low population density, that the aquifer should not be near the surface, the soil should not be very permeable, and should not be subject to erosion.

In most Mozambican cities, USW is not collected in the suburban areas. On the contrary, they are deliberately deposited in inhabited suburban areas, or used to fill in holes, particularly those caused by rain water erosion. In general, there is no special treatment of hospital waste, including syringes, dressings, bandages, laboratory and anatomical wastes.

Suburban communities adopt an “informal” USW management system (recycling, burying and burning rubbish). However, this system is not ideal, given that the neighbourhoods are growing, and there is no space, inside or outside the yards, for this type of treatment. Apart from this, the system does not envisage special treatment for the toxic and non-biodegradable components, which can cause other environmental problems. From the health point of view, USW must be regarded as potential vectors for the transmission of infectious and parasitic diseases.

The production of USW is increasing from year to year. This phenomenon results from the following factors:

- Increase in population;
- Market liberalisation;
- Extremely aggressive marketing and advertising strategies;
- Appearance of products with a short life span.

This situation, linked to the defects in the USW management system, has as its consequences:

- Reduction in the useful space available;
- Direct threats to health from pathogens;
- Indirect damage to health from pollution of the air, of ground water, etc.

In Mozambique, the collection and treatment of USW is the responsibility of the municipal authorities.

All the cities in the country suffer from inadequacies in the collection, transport, treatment and final deposit of USW. In our country, the final destination of urban waste is open air rubbish dumps on the outskirts of the cities. The location of these dumps often does not respect basic criteria – such as that they should be in areas of low population density, the depth of the aquifer, or that the soil should not be very permeable, and should not be subject to erosion.

The town of Songo in Tete province is the only one in the country with a system for the final deposit of waste that is in accordance with some environmentally acceptable technical norms.

In the case of special wastes, it is important to note the existence of a landfill for dangerous waste in Maputo province.

The management of Urban Solid Waste involves various stages from production, treatment, transport, and collection to deposit. At each of these stages, the reuse of waste may occur, as a source of generating income, and in other cases of energy.

In past decades, it was thought that solid wastes were materials that were no longer useful, and that it was urgent to eliminate them through various methods, such as dumping them on rubbish tips, incinerating them, or burying them, among other practices.

The current behaviour of society towards solid waste, as well as the work of some authors, show that, unlike what was believed in the past, they are still a valuable resource.

2.1 Production

Official estimates point to a variation in the annual production of USW in the country's main urban areas.

The data, in general, show an increase in recent years. For example, an inquiry made in the Maputo City Municipal Waste Services indicated a daily production of around 800 tonnes of waste

Production of USW in some Mozambican cities

Cities	Production (tonnes/year)
Maputo	1,135,000
Matola	110,000
Xai-Xai	17,163
Inhambane	52,370
Vilanculos	3,650
Beira	62,065
Nampula	191,625
Mozambique Island	7,200
Nacala	33,127
Quelimane	4,500
Mocuba	750
Pemba	6,300
Montepuez	6,500
Mocimboa da Praia	2,160

2.2 Characterisation

As for the composition of waste, in terms of major groups of components, one notes the presence currently of:

- a) 60% easily fermentable material (organic material). These are mixed with agricultural rubbish, rubbish from the public highway, industrial and commercial waste, health waste and rubble;
- b) 25% material that can potentially be recycled;
- c) 15% other.

These percentages could undergo evolution over time, if one considers the alterations in the living standards of the population.

2.3 Collection

The collection of USW by the municipal services has not been very good. The Maputo City municipality, for example, collects about 40-45% of the total daily USW produced. This covers basically the urban area, and part of the suburban area, but does not include the peri-urban area. These wastes are collected in containers of 1 m³, 6 m³, 10 m³, and 16 m³, depending on the area and number of inhabitants.

The experience of Beira, in the centre of the country, shows that containers can have a volume of approximately 60 litres, and can be made locally of galvanised sheet metal.

2.4 Transport

The vehicles used to collect USW include open tippers, compacting vehicles, to load and unload large volume containers, and tractors in the municipal districts.

Observing this fact on the ground, it may be concluded that the use of compacting trucks with a hydraulic system as a means to collect and transport USW does not seem technically appropriate for certain areas of our cities due to the different perceptions and socio-economic capacities of city residents who mix together all kinds of waste in the same container, including glass, paper, organic material, and waste of varying density, including rubble.

2.5 Treatment

Mixing different kinds of solid waste in the same recipient makes recycling difficult, although it is recognised that some people do informal recycling of recipients, selecting plastic, glass and metal, often for their own use or for informal sale. This practice also takes place on the Maputo City municipal rubbish dump, with obvious risks for the people collecting waste there.

2.6. Final deposit

The final destination of USW in Mozambique consists of simple open air rubbish dumps and the controlled landfill. In these places, waste is burnt, buried and compacted, causing a certain concern in society because:

- a) The rubbish dumps are located in the centre of residential areas, and the USW is transported there along public roads, used by large amounts of traffic;

- b) There are no studies on the types of soil under these rubbish dumps, which may sometimes be susceptible to leaching and to pollution of ground water;
- c) At the same time, air pollution may occur, caused by the fumes, bad smells, and potentially toxic particles, since the USW is not subject to prior sorting, and is burnt from time to time;
- d) They are not easily accessible to the USW workers, which means that the waste may be deposited at the entrance and beside the roads;
- e) Although no conclusive studies have been made into the impact of these rubbish dumps on public health, one cannot ignore the potential danger they pose, because no specific treatment is given to the USW.

2.6 Recycling of urban solid waste in Mozambique

Recycling is the result of a series of activities through which material that would otherwise become useless waste is used again. This material is collected, separated and processed so that it may be re-used as raw material.

The main advantages of recycling are: it reduces the amount of waste to be buried, and thus increases the useful life of landfills; it saves energy in productive processes; it reduces air and water pollution; it creates jobs and above all occupies the participants, a significant number of whom are unemployed youths. It thus reduces the levels of crime and drug consumption.

In Mozambique, mixing different types of solid waste in the same recipient makes recycling or re-use difficult, although it is recognised that some people do informal recycling of recipients, selecting plastic, glass and metal. This occurs mainly at the rubbish dumps and in some areas where solid waste is concentrated in the main urban centres, and particularly in Maputo.

Recycling is most significant in the cities of Maputo and Matola, because of the amount of waste produced and the ease of finding a market for recycled produce, either through export to neighbouring South Africa, or through sale to interested persons.

The value of materials that can be recycled is unquestionable, but the capacity of Mozambican industry to absorb these materials means that this is still a limited market, where few can really make a profit.

Currently in Mozambique, there are no organised forms of making use of materials that can be recycled from USW.

The re-use of glass bottles, plastic, metal and other materials occurs above all at individual level or in the informal sector.

There are some industries with a recycling capacity which are paralysed, such as Vidreira (glass) and Fapacar (paper).

There are also companies that wish to be involved in recycling activities such as MOZA WASTE PAPER (paper) and NEOQUIMICA (glass). One of the companies that recycles paper is RECLAM (the Reclamation Group Ltd), based in Matola. This is a company that buys paper and iron. There are also other companies that buy paper and iron to resell them later to RECLAM.

The National Integrated Urban Solid Waste Management Strategy, drawn up by MICOA, advocates as one of its activities the recycling of solid wastes and encourages the development of markets in recycled materials, as well as promoting the recycling industry itself.

Due to the mixing together of various wastes, care should be taken in collecting plastic from the rubbish dumps and other places of accumulation, in order to avoid the contamination of the plastic by dangerous wastes.

Recycling in Mozambique could encourage the development of greater environmental awareness and community participation.

Municipalities with Exemplary Management of Urban Solid Waste

3. *Challenges facing MICOA in the area of usw*

- Promote the adoption of strategies, norms and action programmes oriented towards the management of Urban Solid Waste;
- Promote and support the drafting of Municipal Urban Solid Waste Management Plans;
- Stimulate civil society intervention in the management of urban solid waste.

4. Activities undertaken

1. Drafting the National Integrated Urban Solid Waste Management Strategy;
2. Drafting the Waste Management Regulations;
3. Drafting the Manual for Integrated Urban Solid Waste Management in Mozambique;
4. Drafting the Technical Directive for Establishing and Operating Landfills in Mozambique;
5. Drafting the Municipal Integrated Urban Solid Waste Management Plans for the municipalities of Nampula, Nacala, Mozambique Island, Pemba, Montepuez, Quelimane and Mocuba.

6. Main strong points for the development of the sector

- Capacity building of the Municipal Councils and arranging partnerships so as to endow them with resources (trucks, tractors etc), for improved management of waste;
- Design programmes to remove waste from the entire urban area, based on the type and volume of rubbish;
- Promote collaboration of the community, based on making people aware of good practices for the household management of USW;
- Institute penalties for offenders based on existing legislation;
- Organise food-for-work type campaigns as far as possible, in order to collect the current rubbish, with priority for critical places;
- Collect accumulated rubbish at the sites of concentration on fixed days;
- Strict control of the functioning and management of the rubbish dump;
- Stress the use of adequate practices (landfill and burning);
- Quantify the type of rubbish produced in the main urban centres so as to recommend the adoption of new forms of treating and eliminating waste. The population census can be a basis for estimating the amount of waste produced per municipality.

THE TEN YEAR FRAMEWORK OF PROGRAMMES ON SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

The Ten Years Framework of Programmes on Sustainable Consumption and productions is on the way in Mozambique. A document on the Programme for the Cities of Maputo and Matola has been produced, where the key priorities areas has been identified that could be undertaken under the thematic areas of energy, water, urban development, and industrial development. Each thematic area was considered in the context of NEPAD Environmental Action Plan and regional poverty reduction priorities, on the other hand a National Cleaner Production Centre established, entity that is in charge of implementing the programme.

Chapter III of the Johannesburg Plan of Implementation identifies a number of sectors and issues as well as policy instruments relevant to sustainable consumption and production patterns.

Please indicate in the tables below the areas relating to sustainable consumption and production in which are of current high priority for your government, and those that in your judgment are likely to be priority areas for future work. Please specify other areas if appropriate.

If possible please add a contact name and email for the person responsible for areas of current high priority.

SECTORS AND ISSUES	Current Government Priority	Expected Future Priority
Solid waste management		
- Waste disposal	X –CMCM/DMSC	
- Reuse and recycling	X	
- Waste reduction,	X	
- Others		
Transport		
- Clean fuels and vehicles	X	X
- Public and alternative transportation	X	
- Urban and regional transportation planning	X	
- Others		
Cleaner production		
- Resource efficiency	X- MNCPC/CNPML	
- Pollution prevention	X	X
- Technology strategies	X	X
- Others		
Energy efficiency and renewable energy		
- Industrial energy efficiency	X –UEM –Public University	
- Household energy efficiency	X-	
- Renewable energy markets		X-ME
- Others		
Housing and construction		
- Energy efficiency	X – INNOQ/MOPH/MCT/UEM	
- Building materials		X
- Construction standards	X	
- Building operations	X	
- Others		
Food and clothing		
- Organic products	X	X-MICOA/World Vision/MINAG
Chemical management		
Hazardous waste	X-MICOA/ENVSERV	X

B. POLICY INSTRUMENTS	Current Government Activities	Expected Future Priorities

General policy instruments		
- Taxes, subsidies	X	
- Preferential tariffs and trade policies		
- Economic instruments		
- Tax reform	X	
- Consumer protection policies	X-ADECOM/MIC	X-ADECOM/MIC
- Polluter-pays principle	X-MICOA	X-MICOA
- Integrated product policies	X-MICOA/UEM/MIC	X-MICOA/UEM/MIC
Changing consumer behavior		
- Education and public information	X-MNCPC/MICOA	X
- Consumer information		X-ADECOM/MNCPC
- Labeling, eco-labels	X-IPE/MIC	
- Consumer organizations	ADECOM/MIC	
- Public procurement policies	SISTAF- GOVERNMENT	
- Others		
Changing production patterns		
- Regulation of emissions and effluents		X
- Charges or incentives for cleaner production		X
- Product standards (e.g. energy efficiency)	X – MNCPC/UEM/MIC/M ICOA	X
- Cleaner production programmes (R&D, training, technical assistance)	X X	
- Pollutant reporting and registers		X-MICOA
- Strategic industrial and technology planning	X	X
- Investment incentives	X-MIC/CPI	
- Voluntary initiatives and codes of conduct		X
- Corporate social/environmental responsibility	X-FEMA/CTA	
- Improved management accounting	X	
- Investment analysis	X-CPI/MIC	
- Others		
Analytical tools		
- Life-cycle analysis		X-UEM-Engineering Faculty
- Indicators of sustainability		X
- Technology impact assessment		X
- Policy impact assessment		X-UEM and Government
- Impacts of globalization and urbanization		X-UEM and Government
- Impacts of changes in international markets		X-UEM and MIC
- Others		

Acronyms

CMCM/DMSC – Municipality of Maputo City /Directorate of Municipal salubrity and Cemeteries

MNCPC/CNPML - Mozambique National Cleaner Production Center

UEM - Eduardo Mondlane University

INNOQ - National Institute for de Normalization and e Quality

MOPH - Ministry for Public Works and Habitation

MCT- Ministry for Science Technology

MICOA - Ministry for the Coordination of Environmental Affairs

MINAG – Ministry of Agriculture

ADECOM - Consumers Association

IPE - Institute of Industrial Properties

MICOA -Ministry for Industry and Trade

FEMA - Business Forum for the Environment

CTA - Confederation of Economics Associations

CPI - Center for Promotion of Investments