

UNION OF THE COMOROS

Unity-Solidarity-Development

**MINISTRY OF RURAL DEVELOPMENT, FISHERY, CRAFTS AND THE
ENVIRONMENT**

National Department of Environment, Forests and Agricultural Strategies

**NATIONAL BIOSAFETY FRAMEWORK
OF THE UNION OF COMOROS**

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PREFACE

The Rio de Janeiro Conference in 1992 identified biotechnology as a promising tool relevant in contributing to sustainable development, especially in the area of health, agricultural production and food security. Today modern biotechnology has showing significant developments.

However, faced with this rapid development, a series of questions and fears have been linked or raised on the impacts on use of Genetically Modified Organisms (GMO) or the consumption of products thereof, could eventually have on the animal, human health and on the environment. A Protocol was therefore developed to the Convention on Biological Diversity on the management of potential risks of biotechnologies "The Cartagena Protocol" has been adopted in Montreal on June 29, 2000.

The objective of the Protocol is to contribute to ensuring an adequate level of protection in the field of the transport, handling and use of GMO resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account potential risks to human and animal health.

The Cartagena Protocol also instituted a policy and regulatory framework on transboundary movements in the commercial requirements related to management of impacts on LMOs on the environment, biodiversity and human health in relation to modern biotechnology. The Cartagena Protocol also focuses and as a priority on the transboundary movements of genetically modified organisms or their products

Thus each party must:

- Notify the importing country of any transboundary movement of GMO. Each party must communicate to the relevant persons and national, regional and international organisations all the information relating to the persons entitled to receive the notifications, the estimated quantities and the GMO characteristics, the available information on the potential adverse effects and the sustainable use of biological diversity.
- Notify the States affected or likely to be, the competent international organisations, of any incident that it is aware of and that falls under its competence and result in the unintentional release likely to lead to a transboundary movement of GMO and adverse effects on the biological diversity taking into account risks to human health.

Until now it seems that no introduction of GMO has been recorded by the competent institutions in the Comoros. However the absence of specialised human and institutional resources does not guarantee that uncontrolled introductions of GMO have been avoided.

The ratification of the Cartagena Protocol will allow our country come out of its isolation of the rest of the World and set itself in a position allowing it to have recourse to some competence, international jurisdiction and international solidarity in case of conflicts or difficulties between the Comoros and other countries.

Already, our country has benefited from financial and technical support from the Global Environment Facility (GEF) and the United Nations Environment Programme (UNEP) to draw up this national biosafety framework. This support has allowed the country to elaborate proposals for:

1. legislative and regulatory framework on biosafety ;
2. policy framework on biosafety;
3. strategic framework on biosafety.

Thus, the elaboration of this national biosafety framework opens the way for the implementation of actions aimed at building capacities to meet its obligations with the active support of the international community.

Mohamed ABDULHAMIDE

Table of Content

DISCLAIMER:	2
ACKNOWLEDGEMENTS	3
PREFACE	4
ABBREVIATIONS AND ACRONYMS	8
I. GENERAL INTRODUCTION: GEOGRAPHICAL AND ENVIRONMENTAL	10
I.1 Geographical Characteristics	10
I.2 Environmental Characteristics	10
I.2.1 Ecosystems	10
I.2.2 Specific Biodiversity	10
I.3 Economic Characteristics	11
I.3.1 A mainly agricultural country	11
I.3.2. A very weak private sector	12
I.3.3. A growing poverty of the population	12
I.4 National Background on Sustainable Development	13
I. 4.1 Objectives	13
I.4.2 National Environment Policy	13
I.5 National Background on Biosafety	14
I.5.1. The project: “Development of a National Biosafety Framework”	14
I.5.2 Setting up of a national structure	14
I.5.3 Process of developing a National Biosafety Framework	15
I.5.4. Results and recommendations of surveys and workshops	15
I.5.5 The existing legislative, regulatory and institutional instruments	16
I.5.6 The national capacities: Technical and institutional	18
I.5.7 Institutional Organisation	18
II. NATIONAL BIOSAFETY POLICY	20
II.1 Introduction	20
II.1.1 The Convention on Biological Diversity	20
II.1.2 Selective genetic breeding and genetic modification	22
II.1.3 The issues in biotechnology	23
II.1.4 The Cartagena Protocol	25
II.1.5 The precautionary principle	26
II. 2 The National Biosafety Policy	28
II.2.1 The basic principles	28
II.2.2 Advance Informed Agreement Procedure	29
II.2.3 Responsible Organs	29
II.2.4 Activities involving GMO or products thereof	30
II.2.5 Notification and authorisation	30
II.2.6 GMO production on the national territory	30
II.2.7 Exemptions and simplified procedures	31
II.2.8 Principle 10 of the Rio Declaration	31
II.2.9 Public Information	31
II.2.10 Required information	32
II.2.11 Confidential information	33
II.2.12 Risk assessment	33
II.2.13 Risk management	34
II.2.14 Monitoring – Evaluation of authorised activities	35
II.2.15 Sanctions and Penalty	35

II.2.16 Liability and redress	35
II.2.17 Unintentional release and emergency measures.....	36
II.2.18 Capacity building	37
II.2.19 Regional cooperation.....	37
III INSTITUTIONAL AND ADMINISTRATIVE FRAMEWORK.....	38
III.1 Introduction.....	38
III.2 The implementation Structures.....	38
III.2.1 At national level (<i>Union of Comoros</i>)	38
III.2.2 At the Regional level (<i>autonomous islands</i>)	42
III.3 How the activities will be conducted?	43
IV CONCLUSIONS	48
BIBLIOGRAPHY	49
ANNEXES.....	50

Abbreviations and Acronyms

DNA:	D eoxyribonucleic A cid
CNA:	C ompetent N ational A uthority
NEA:	N ational E xecuting A gency
NBC:	N ational B iosafety C ommittee
NCC:	N ational C oordination C ommittee
CNDRS:	N ational S cientific R esearch D ocumentation C entre
IOC:	I ndian O cean C ommission
PBC:	P ublic B iosafety C ommittee
GEF:	G lobal E nvironment F acility
INRAPE:	N ational R esearch I nstitute on A griculture, F ishery and E nvironment
LCE:	F ramework L aw on the E nvironment
GMO:	G enetically M odified O rganism
NGO:	N on G overnmental O rganisation
LMO:	L iving M odified O rganism
GDP:	G ross D omestic P roduct
UNEP:	U nited N ations E nvironment P rogramme
PNAC:	N ational A utonomous P harmacy of C omoros
TOR:	T erms of R eference

Summary

This document "National Biosafety Framework" was developed in the framework of the UNEP-GEF project relating to the implementation of the Cartagena Protocol on Biosafety. The objective of this project was to help the countries in the implementation of the Protocol by building their capacities (technical, institutional, administrative and legislative).

The project execution started in January 2003. The project has carried out many studies on the situation of biosafety as well as the diagnosis of what exists on legal issues and existing management capacity on biosafety.

The studies were amended and validated during the national workshops and informed the drafting of the national biosafety structure (representing the island entities) as well as the national framework. The latter include the national policy, the legal framework and the implementation and monitoring mechanism.

I. GENERAL INTRODUCTION: GEOGRAPHICAL AND ENVIRONMENTAL

I.1 Geographical Characteristics

The archipelago of Comoros is a multi-island State, constituted of four islands located, at the entrance of the Mozambique Channel, between Mozambique and Tanzania to the East and to the South respectively. The four islands from the North-West to the South-East are Great Comoro, Moheli, Anjouan and Mayotte. The first three islands currently constitute the Union of Comoros; the fourth is an island under French Administration.

- the island of the Great Comoro is the largest is 1,011 km² ;
- the island of Moheli is the smallest is (211km²) is protected by a white sand coral reef of 2 kilometres wide and bordered by large beaches of sands of varied colours. Its tourism potential is important especially because of the numerous islets located to the South of the Island;
- the island of Anjouan is (424km²);
- Mayotte the closest to Madagascar is the least mountainous of the four islands.

The climate is of island tropical humid with two season type, dry (June-October) and the humid (November-May).

The temperatures fluctuate between a minimum of 15° centigrade and 33 degree centigrade;

The annual rainfall varies from 2,000 mm to 4,000 mm.

I.2 Environmental Characteristics

I.2.1 Ecosystems

The natural environment of the Comoros is characterized by heterogeneity of ecological conditions. The zones of heterogeneity constitute a spontaneous plant formation of which some are reserves with very rich biodiversity such as the forest of mount Khartala. Other natural ecosystems are very rich reserves of low stretch or fragments in mosaic contributing to the national biodiversity wealth. These are humid zones, gallery forests along the rivers, nests of fruit bats in Anjouan.

The floral diversity of the archipelago is large. We also distinguish a pioneer flora of lava flows, a flora of primary rain forest, the savannah and the bush, semi-upland vegetation in altitude.

I.2.2 Specific Biodiversity

The Comoros abound in a diversity of flora and fauna species in the natural habitats of which some are endemic and/or threatened of extinction. There are others still unknown to science, whose very incomplete studies do not allow an appreciation of their scientific wealth.

The country harbours some species of fauna and flora among the least studied and the most endangered of the Indian Ocean. According to the available data for the flora, more than 33% of indigenous vascular plants are endemic.

The fruit bat of Livingstone, a species of giant bat (*Pteropus Livingstone*) is threatened of extinction. We find some hundreds of individuals in Comoros and in the World.

Another rare and threatened species, of scientific and ecological interest at the global scale is the coelacanth, (*Latimeria chalumnea*) only known from the fossiliferous registers until its discovery by science in Comoros in 1938.

In addition to its tourist attractions, the biodiversity of Comoros offers important potentialities for scientific research for the benefit of genetic engineering, medicine, pharmaceutical industry and agriculture.

I.3 Economic Characteristics

The Comoros are part of a group of countries, the least developed small island States having a GDP per capita of less than 350 US Dollars. The growth of the national wealth measured by the Gross National Product has been of 0.9% per annum on average since 1986 against demographic growth rate that was of 3% on average. The GNP per capita has lowered of 1.7% per annum on average resulting in growth in poverty that is affecting according to the last survey (1995) "consumption budget" 45% of households and 53% of the population.

I.3.1 A mainly agricultural country

The Comorian economy is mainly based on agriculture and fishery. These sectors employ 80% of the active population and contribute to around 40% of the GDP as well as the whole of its exports.

But the local agriculture and fishery products does not meet the food needs of the population. There is therefore a high demand for imported food products. These imports make the country dependent on external supplies, and lead to a certain vulnerability in terms of food availability. The total ignorance of the population about the existence of GMOs and biotechnological risks increases the country vulnerability.

This vulnerability is intensified by:

- the strong demographic growth which implies an increase in the demand for imported food;
- Insufficiency in appropriate technical skills, monitoring and control systems ;
- Weakness of specialised institutions.

The Comoros are confronted by serious problems of food security. However the insular and narrow character of the territory could be at the same time an asset and a constraint.

An asset because the islands have natural barriers that theoretically shields them from illegal introduction of clandestine products from the neighbouring countries apart from port and airport access ways.

A constraint because depending mainly on imports of foodstuffs from East Africa, Asia, Brazil and Europe and that monitoring and control measures are very weak.

I.3.2. A very weak private sector

The contribution of the private sector to the economy is very weak. One of the characteristics of the private sector is the predominance of trader whose contribution to the national wealth creation is around 20%. Industry also represents only 4% of the GDP despite some comparative advantages: membership to a free zone, the proximity to the East and Southern Africa market and the membership to economic zones (PTA, COMESA, IOC).

The main obstacles to private sector development are:

- The narrowness of the local market, the insufficiencies in industrial infrastructure and the weakness of the national economy ;
- High transaction costs ;
- Outdated codes (investment, labour, fiscal...), that need updating;
- An unskilled labour force ;
- A lack of an entrepreneurial spirit.

The private sector also suffers from the absence of a national strategic plan for industrial development. Apart from some projects of promoting the production of marketable goods and services by the creation of micro, small and medium enterprises supported by the international community.

This absence has heavy consequences for the future of Comoros that pile up economic handicaps and does not take the opportunities that its geographical position in the region presents to it.

Thus the inexistence of a strong and dynamic private sector, of food product processing industry and the growing request of products in a context of a multi-island State and of the extreme poverty of its population are important factors that contribute in reinforcing the vulnerability of Comoros to the uncontrolled introduction of GMOs or products thereof at competitive prices compared to local products generally less available.

In conclusion, the specific context of Comoros emphasises the need to place a high focus on biosafety as an important national issue.

I.3.3. A growing poverty of the population

Poverty is not a new phenomenon in Comoros at least due to lack of development. It has always been expressed by low revenue and by bad living conditions of the population.

Poverty is unequally spread throughout the regions and within the social categories.

A growth in social and spatial injustice ensues from the underlying poverty issues. Farmers and the Ajouan Island are the most affected by poverty.

The stopping of the economic growth per capita from 1986, the very weak investment capacity, the near stagnation of the economy from 1985 has contributed to reduce standard of living of the people. Poverty consequently spread, affecting a growing number of households.

I.4 National Background on Sustainable Development

I. 4.1 Objectives

According to the Growth and Poverty Reduction Paper – PRSP, up to now, the Comoros have neither a national plan nor a global strategy on development. Some sectors (rural development, health, education) have managed to conduct diagnostic studies in their respective fields, with the technical and financial assistance of development partners.

Currently the global objectives on development focus on:

- the fight against poverty ;
- economic growth.

The poverty reduction strategy paper was validated in a national workshop and targets the rural people and unemployed youth. In the framework, the programme provides about 71% of funding to the affected through identified activities that will help improve the living conditions of the rural population. The activities are: access to health care, to water, to credit, to rural infrastructure, to the youth, supervision and training, to more integration of women in all revenue-generating activities.

For economic growth, the actions focus on the implementation of economic potentialities, especially in the field of agriculture, tourism and private sector development.

But despite the efforts made by the authorities, the Comoros depend a lot on the support of the international community because most of the problems to be resolved go beyond national capacity.

I.4.2 National Environment Policy

The Comoros suffers from a perpetual drain of their natural resources. But it must be recognized that it is the pressure of poverty that leads to destruction of resources.

During these last years, the degradation of the environment is getting faster and faster as well as the loss of natural habitats, threatening the survival of the flora and the fauna of Comoros, leading to many endemic and migrating species disappearing.

During this last decade the government of Comoros is committed to the conservation of the environment and biodiversity by adopting a national environmental policy, an institutional framework for its implementation, a national biosafety strategy, and a framework law on the environment and joining the Convention on The Biological Diversity.

I.5 National Background on Biosafety

I.5.1. The project: “Development of a National Biosafety Framework”

The Comoros initiated the process of Developing a National Biosafety Framework in January 2003 with the technical and financial support of UNEP/GEF. The main objective of the project is to help the beneficiary countries to prepare themselves to enforce the Cartagena Protocol on Biosafety by developing their national biosafety framework.

The national framework must include the following 5 elements:

1. A national biosafety policy ;
2. A biosafety regulatory framework ;
3. A system for processing applications and requests for permits ;
4. Systems for ensuring the follow-up and the control of impacts on the environment;
5. Systems on public information, awareness and participation.

The project is an 18 month and is executed in 3 phases:

Phase 1:

Information gathering on biosafety (surveys, inventories in the different sectors of biosafety and biotechnologies).

Phase 2:

- Consultation and analysis of the various information obtained ;
- Identification of priorities so as develop the national biosafety structure ;
- Involvement of concerned actors and partners through workshops.

Phase 3:

Development of the first draft of national biosafety framework

I.5.2 Setting up of a national structure

In the framework of carrying out the project, three workshops were organised throughout the national territory:

- Mohéli July 28 and 29, 2004 ;
- Anjouan August 4 and 5, 2004;
- Grande Comore les 1^{er} au 2 September 1st and 2nd, 2004.

These workshops have been organised to allow the public to be informed and be sensitized and to give an opportunity to make observations and suggestions on the conducted studies as to validate them. The participants to these workshops are the representatives of the public and private sectors, of the civil society and national experts.

I.5.3 Process of developing a National Biosafety Framework

The various steps taken were as follows:

After the set up of project executing organs NEA, NCC, there was a stock taking of the biosafety situation in Comoros on the basis of many studies carried out namely:

- National, bilateral and multilateral programmes on capacity building;
- Existing mechanisms for harmonization of risk assessment and management;
- Review of import, liberalisation of commercial GMOs and products;
- Review and assessment of the existing legislation on the use of biotechnology;
- Review of national experts *specialization* in biotechnology;
- Regional cooperation.

To carry out the assessments, the following steps were taken:

- The development of TORs
- Recruitment of consultants for assessments ;
- Surveys of national institutions ;
- Validation workshops;

At the close of the consultation and the validation of assessments, a draft of the national biosafety policy and the strategy of its implementation, a draft legal and legislative framework were developed.

I.5.4. Results and recommendations of surveys and workshops

The studies carried out in the various sectors to assess the national biotechnology situation and the analysis of the recommendations of the workshops generated the following information:

- Lack of specialised human, institutional and material resources on biotechnologies and the management of biosafety;
- Insufficient knowledge and information on the risks and dangers of biotechnologies

Taking into account the gaps in capacities to manage biotechnologies, to control, to assess and to bring under control all the potential risks and the fact Comoros mainly depends on imported food products, the country must acquire specialized institutional and technical competences so as to better implement the national biosafety framework.

a) Institutional level :

- An enforcement, monitoring and evaluation structure that will be in charge of legal and regulatory texts, to ensure the enforcement, monitoring and evaluation of potential risks in line with obligations to the Cartagena Protocol on Biosafety.
- A specialised biosafety structure possessing an equipped and specialised laboratory whose main role is to ensure a scientific inspection in the area of biosafety ;

- A national technical biosafety committee.

b) At the technical skills level

- To train specialists in competences for research and management of biosafety;
- To provide the country with competent scientific structures for better management of issues relating to biotechnologies and biosafety ;
- To organize awareness and information meetings on risk assessment and management;
- To develop regional cooperation in the area of biosafety.

I.5.5 The existing legislative, regulatory and institutional instruments

Like most African countries, Comoros does not have a legal instrument specifically dedicated to biosafety. Nevertheless at the end of the studies conducted in the framework of the project, one cannot talk about a legal vacuum on the matter because some provisions of existing texts can apply to GMOs. (The list of legislative, regulatory and institutional Instruments will be transmitted to the clearing house of the Protocol).

The main instruments are:

The Framework Law on the Environment (LCE) N°94-018 modified by the law n°95-007, stipulates in its articles 18, 39, 40, 44the following provisions:

Art 18: the State ensures by necessary and appropriate measures the protection of various natural components of the environment... (including the water resources, the marine environment, the flora and the fauna)

Art 39: the various plant animal species, their habitats and ecosystems are part of the national and universal heritage that is necessary to preserve the rational and sustainable use to safeguard the essential ecological balances.
The conservation measures must be considered as priority in the original environment.

Art. 40: For purposes of an appropriate protection of species of wild fauna and flora of Comoros the law distinguishes:

- (i) For animal species (the capture, the detention and the killing specimens the transfer, the purchase, the sale, the export of living or dead derived products, any gene coming from these species during the period of reproduction and dependence; the destruction, the gathering and the detention of eggs, even empty and nests);
- (ii) For the plant species (the gathering, the picking, the cutting, the uprooting, the destruction by fire or any other destruction, the transfer, the purchase, the sale, the export in fresh or dried condition including their derived products).

Art .44: The import in each one of the islands of the union of Comoros of living exotic species is prohibited, unless exempted by the Minister of the Environment, after advice of a registered national scientific institution, for species presenting an

undisputable and safe economic interest for the ecological balance of the archipelago.

a) **draft law on plant protection in the Union of Comoros**

The draft proposes a legislative arrangement which include the following:

1. The phytosanitary protection of the territory, including
 - i. the prevention (citizen responsibility with regards to harmful organisms) ;
 - ii. The health control of multiplication institutions (registration of multipliers and monitoring right of the State)
 - iii. The monitoring, the alert and the intervention (vigilance and fight against the harmful organisms).
2. The phytosanitary control at import and at export
 - (i) the control at import (phytosanitary certificates, level of intervention, principle of quarantine lists, duty of the importer, exemption) ;
 - (ii) the control at export (guarantee of the health status of exported plants, phytosanitary certificate, exemption);
 - (iii) the provisions common to the control operations at import and export (role of phytosanitary officers, phytosanitary inspection taxes, no obstacle to trade.)
- c) **draft forestry law**: the section 1 paragraph 2 of article 33, specifies the need to classify the forests so as to:
 - Preserve the biological diversity, conserve and develop the particular ecosystems.
- d) **Decree n°01-052/CE relating to Environmental Impact assessments** having the objective of regulating the terms of carrying out environmental impact assessments as well as the terms of their review by the administration and the public information.
- e) **Decree n°01-053 of April 19, 2001 creating the Moheli marine park whose main objectives aim**: The conservation of a part of the reef ecosystem as well as the associated biotic habitats and communities so as to contribute to the long term upholding of halieutic resources that depend on it;
- f) **Decree N°02-024 of November 22, 2002 creating a health security squad at borders for food products intended for human consumption**. The squad will be in charge of ensuring the inspection and control of health status of imported food products, animal or plant origin, and intended for human consumption and at the level of borders.

The squad also ensures the issuance of licences for importing living animals, of import and exploitation health certificates, and the issuance of import agreements of meat-based products.

Order n° xxx on the establishment of a regime of agreements for the import of fresh agricultural produces, agricultural, fish and veterinary product inputs

1.5.5a List of bilateral, regional and international instruments

The List of bilateral regional and international instruments that the Comoros have ratified will be communicated to the Clearing House of the Protocol.

1.5.6 The national capacities: Technical and institutional

The assessments carried out in the framework of the project have underlined the fact that there is a very weak level of specialised competences (technical and institutional) in the field of biosafety. However the surveys have shown that there is a human potential trained in various scientific subjects, but there is a big vacuum in biotechnology and the targeted experts, are unaware of even the definition that is given to biosafety. Thus many people have expressed the need to benefit from a training (scientific and administrative) in the various areas of biosafety. Currently there is no biosafety training programme surveys that has been registered during the

At the level of institutional capacities, the Comoros has no scientific institution specialised and capable of conducting research and analysis in the area of biotechnologies.

There are some institutions that have analytical laboratories, INRAPE (National Research Institute on Agriculture, Fishery and Environment), CNDRS (National Scientific Research Documentation Centre), at the Ministry of Health but none has material, scientific and human means essential for a good functioning of a scientific institution coupled with the problems of maintenance of the existing equipments.

The skills and capacities among the different laboratories vary:

- **The CNDRS** has the technical skills but does not have the appropriate infrastructure;
- **The INRAPE** is equipped with a relatively well equipped laboratory but does not have the specialised personnel to conduct the state-of-the art works in the area of GMOs. They must consequently benefit either from training either individually or in the form of workshop;
- **The Ministry of health** has a laboratory installed at the El Marouf Hospital in Moroni but is neither equipped nor capable of carrying out analyses or research on risks linked to food safety.
- **The PNAC** The National Autonomous Pharmacy of Comoros also has a laboratory.
- **The University of Comoros** has a laboratory at the level of the School of Medicine and Public Health.

The collaboration among these various institutions is very weak.

1.5.7 Institutional Organisation

The Comoros being a multi-island country, the development of a national biosafety structure, the set up of various management and decision-making institutions must take into account the diverse characteristics of the country, of its organization system of its public authority and administration. Four years ago, the Comoros adopted a new constitution that redefines the State structures.

This new constitution created the Union of Comoros which is defined as Federal State composed of 3 autonomous islands: Grande Comore, Anjouan and Moheli. They enjoy a large political, administrative and financial autonomy.

Each island has its own Constitution and its leadership organs that are composed of an Executive and an Assembly elected by universal suffrage.

The constitution of the union fixes quite complex competences between the Union and the islands, because between the exclusive competences of the Union and those of the islands, an area of concurrent legislation called "shared competence" where the assembly of the Union or the assemblies of the islands can intervene. However the constitution does not clearly define the scope of this shared competence and provide for an organic law. In this context, the development or the set-up of national biosafety structures must take into account the new structure and the insular specificities of Comoros.

II. NATIONAL BIOSAFETY POLICY

II.1 Introduction

II.1.1 The Convention on Biological Diversity

An archipelago of volcanic origin, located in the Mozambique Channel, the Comoro islands are separated from the African continent. This isolation, combined with the variety of microclimates linked to the altitude and to the explosion, has promoted the development of original ecosystems, flora and fauna presenting a high level of endemism. These high levels of endemism and biodiversity are recognized and have led to the designation the Comoran islands and other islands of the South West of the Indian Ocean, as one of the global biodiversity *hotspots*.

The ecosystems and natural habitats of Comoros are declared having priority because of one or many of the following characteristics:

These are ecosystems and natural habitats

- with high diversity and containing numerous endemic and threatened species
- necessary for the migratory species
- having a social, economic, scientific or cultural importance
- representative, unique or associated to the evolution processes or other essential biological processes.

Besides these ecosystems and natural habitats, the Comoros holds emblematic, unique, threatened and globally important fauna and flora species. For example:

The coelacanth, (*Latimeria chalumnea*), fish that was thought lost since 70 million years has been caught, for the first time, in the comran waters in 1938. Its reduced population is located especially on the west coast of the Grande Comore where it lives in depths which vary between 150 and 700m. The coelacanth is threatened by fishing, despite the fact that its capture is usually accidental.

The Livingstone's fruit bat, (*Pteropus livingstonii*), is the largest known bat. It lives in the big trees of humid tropical forests of Anjouhan and Moheli islands. The Livingstone's fruit bat is threatened by the destruction of its habitat.

The birds present a strong rate of endemism with 113 endemic species and 34 endemic sub-species. Some species are particularly rare and threatened: *Zosterops* of Khartala, *Otus panliani*, the flycatcher of Khartala, *Nesillas mariae* of Moheli and *Otus capnopes*.

The orchids are represented, in the Comoro islands, by 72 species of 36 are endemic. These are epiphytes that colonise, most often, the big trees of humid tropical forests.

Furthermore, despite the smallness of the territory, many types of ecosystems are represented, such as: the humid tropical forests, the mangrove swamps, the aquatic plant habitat and the coral reefs.

Most of the species and ecosystems are threatened by the expansion of agriculture, the search for firewood or cut wood and the sampling construction materials.

Aware of the national and international stakes relating to biodiversity, the Union of Comoros (Ex Federal Islamic Republic of Comoros) ratified the Convention on Biological Diversity on September 29, 1994.

The objectives of the Convention on Biological Diversity are the following:

- the conservation of biological diversity;
- the sustainable use of its components; and
- the fair and equitable sharing of benefits arising out of the utilization of genetic resources.

However, on top of requirements concerning the conservation of biodiversity that constitute the main objective of the Convention, the progress of biotechnologies pose new questions that the Convention on Biological Diversity has underlined and which are the target of the Cartagena Protocol (The Protocol).

II.1. 2 Selective genetic breeding and genetic modification

Since the beginning of the domestication of animals and the practice of agriculture, human beings have attempted to improve the breeds, the varieties and the animal and plant species by intervening in the reproduction processes. These techniques of selection, as far as the animal reproduction is concerned, go through the selection of the progenitor, that express the looked for characteristics, to reserve them for the reproduction. The crossing of varieties of plants, which could have not been crossed without the human intervention, has allowed the creation of new varieties. This classic genetics is based on the visible characters and the variations that exist naturally in the micro-organisms, the plants and animals, and between individuals of the same species. It uses the natural tracks of the reproduction.

As for the biotechnologies developed since the 70's, they directly intervene at the cellular level. The cells of the living things are provided with a genetic material, which is at the origin of some of their characteristics. This material is known as DNA (Deoxyribonucleic acid). The progress of knowledge and techniques concerning cell biology allow the isolation, modification, replication and transfer of this genetic material of a donor organism towards a recipient organism. These techniques of genetic modification, commonly called "genetic engineering" thus overcome the natural barriers that could have prevented the exchanges of genes between individuals of the same species or different species. The genes thus transferred could be transmitted to the descendants.

The genetic modification fundamentally differs from the classic selective improvement.

The genetic improvement is based on the variability of genes that naturally pre-exist in the plants and the animals. These are more often small natural mutations. The selection and the reproduction of individuals carriers of these variations allow the transmission of the desired characteristics in a new line. The reproduction normally occurs between individuals of the same species or very close species. It is at times necessary to resort to techniques that overcome the obstacles of reproduction among the concerned individuals. The genetic material of these latter is not modified.

In case of genetic modification, the genes are isolated from cells of an organism, replicated, modified and transferred in the cells of another organism.

Some stages of this process are carried out “in vitro” that means outside any organism. These techniques allow overcoming the natural barriers that prevent the breeding of genetic material between different species. Biotechnology thus allows the creation of genetically modified organisms (GMOs) or Living Modified Organisms (LMOs).

For the purposes of the Protocol application, LMO “means any living organism that possesses a novel combination of genetic material obtained through the use of modern biotechnology”. As for the modern biotechnology, it “means the application of: (a) *In vitro* nucleic acid techniques, including recombinant deoxyribonucleic acid (DNA) and direct injection of nucleic acid into cells or organelles, or (b) Fusion of cells beyond the taxonomic family, that overcome natural physiological reproductive or recombination barriers and that are not techniques used in traditional breeding and selection;”.

II.1.3 The issues in biotechnology

Modern biotechnology tools are used by private commercial firms so as to produce commercial GMOs. These are usually genetically modified seeds of soya, maize, cotton and canola. GMOs and products thereof can be used as ingredients in the composition of foods intended for human beings.

The production and the use of GMOs for commercial purposes are much debated. The pro-GMO supporters put forward the following arguments:

- the GMOs offer new and interesting perspectives on the fight against hunger in the world by allowing the production of high yielding crops (rapid growth, better quality food, foods free from allergens and toxic substances);
- Enhanced biomass could also be produced for energy purposes to replace the fossil energies ;
- chemical products could be produced, especially in medicines;
- some genes introduced in the plants would allow limited use of pesticides ;

As regards to the field of biological diversity, the following advantages are cited:

- An enhanced agriculture will allow for the reduction of pressure on lands, especially the non farm lands such as the forests ;
- The use of genetically modified plants resistant to insects and to diseases could lead to the reduction in use of pesticides ;
- Some genetically modified micro-organisms could produce plastics and fuels and reduce the resorting to chemical products ;

However the critics of GMOs argue as follows:

- modern biotechnology resorts to use of "unnatural" processes ;
- modern biotechnology techniques are not sufficiently tested and brought under control ;
- We do not have enough history on the possible negative effects of GMOs;
- The effects of GMOs on health especially concerning allergens and toxicity, are not sufficiently known;
- The production and the use of genetically modified seeds could lead to risks including impacts that would result in the disappearance of local species with a result loss of small family holdings of developing countries;
- The production of seeds risks to fall in the hands of a reduced number of multinational commercial firms;
- It is morally unacceptable to patent living organisms, genes or genetic material ;

Fears on the probable effects of GMOs on the environment are put forward:

- The main fear is linked to the risk of introduction in nature of invasive GMOs;
- The genes could accidentally go from one species to another by natural processes;
- The impacts could not be limited to targeted species (for example the harmful insects) but also affect useful untargeted species;
- The lifestyles, the means of subsistence and the cultures of native and traditional societies could be directly or indirectly affected.

II.1.4 The Cartagena Protocol

The Cartagena Protocol on Biosafety is a Protocol to the Convention on Biodiversity.

The Convention on Biological Diversity, though not specific to biotechnology has three provisions relating to this subject. These are articles 8(g), 19(4) and 19(3) of the Convention.

The article 8(g) stipulates: “Each Contracting Party shall, as far as possible and as appropriate: establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health;” This article obliges the Parties to regulate, manage or bring under control the risks associated to the living modified organisms derived from modern biotechnology also taking into account health risks.

As for the article 19(4) of the Convention, it stipulate : “Each Contracting Party shall, directly or by requiring any natural or legal person under its jurisdiction providing the organisms referred to in paragraph 3 above, provide any available information about the use and safety regulations required by that Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned to the Contracting Party into which those organisms are to be introduced.”

This article 19(4) requires each party to communicate all the relevant information relating the use and the safety regulations, as well as the information on the potential negative impacts of LMOs that are introduced in the territory of any other Party.

The article 19(3) that has been at the origin of the Protocol stipulates that: “The Parties shall consider the need for and modalities of a Protocol setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.”

This article 19(3) has been at the origin of negotiations the Cartagena Protocol on Biosafety

Genetic modification which is at the root of genetic engineering could be carried out so as to create new animal species and plant varieties which could impact on the composition of foodstuffs. These foodstuffs could be carriers of allergens or be toxic to the human being. Thus potentially there is a risk to human health. This potential risk for health is taken into account in the text of the Convention, and under the Protocol as: “also taking into account the risks to human health”

The objective of the Cartagena Protocol on Biosafety is stipulated as follows in the 1st article of the Protocol : “In accordance with the precautionary approach contained in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on transboundary movements.”

II.1.5 The precautionary principle

The precautionary principle is at the root of the Protocol. This provision takes effect from principle 15 in the Rio declaration (1992) that stipulates that: “In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.”

This means that even in the absence of the absolute certainty, supported by scientific results, measures must be taken to protect the environment (and the human health) from the potentially negative effects. In fact, more often, it is difficult, even often impossible to repair the damages to the environment or human health. When the risks of irreversible damages exist even in the absence of absolute certainty, it is

advisable to take preventive that are required. Thus, the potential negative effects of GMOs on the environment and on the health are not always obvious, but the precautionary Principle leads to taking any measure so as to reduce or remove the potential risks.

II. 2 The National Biosafety Policy

II.2.1 The basic principles

The national biosafety policy of the Union of Comoros is based on the precautionary principle. Considering the potential risks to the environment and health that could arise from biotechnology and the benefits the major progress concerning agricultural and food-processing production, therapy and others, the Union of Comoros intend to regulate, the production, the transit, the export, the contained use, the release and the placing on the market of GMOs and products thereof.

The objective of the national biosafety policy is to define the principles that will be the basis for the biosafety legal and regulatory framework. On top of the precautionary principle, the following principles should underline all the activities linked to GMOs on the national territory:

- Transparency : the individuals and companies that intend to produce, make transit or introduce GMOs in Comoros are liable to supply all the information that could be requested from them by the competent authorities; the population and civil society organisations will have communication on any relevant information in these operations;
- Public participation: The public should be informed, from the beginning, of the procedures relating to the production, the transit, the import or the release of a GMO on the national territory. It will be consulted in adequate manner and will participate in the decision process.
- Vigilance : the competent authorities, organisations of the civil society and the promoters are held to place a particular attention at any activity linked to GMOs in Comoros ;
- The opening up to progress : the GMOs whose risk level will have been scientifically proved as sufficiently weak, would be subject to simplified procedures ;
- Responsibility: the promoters of GMOs remain responsible for damages that could occur and could be subject to prosecution in case of damages to human health or to the environment.

II.2.2 Advance Informed Agreement Procedure

This important procedure of the Protocol requires that before the first intentional transboundary movement of a specific LMO into its jurisdiction, the Party of import:

- is notified of the proposed transboundary movement;
- receives information about the LMO and its proposed use; and
- is given an opportunity to decide whether or not to allow the import of the LMO, and upon what conditions (if any)

This procedure is provided with limits and conditions of the implementation of the various articles of the Protocol. Globally, this procedure also remains at the root of the national biosafety policy. In the case where the Union of Comoros will adopt a new national regulatory framework concerning the notification of a GMO import the latter can be applied in place of the advance informed agreement procedure in so far as it complies with the provisions of the Protocol.

II.2.3 Responsible Organs

The government, through the institutions and the administrations, develops the law and the application decrees, ensures the monitoring, the control and their enforcement.

The government appoints an institution that will be in charge of the monitoring, the control and the enforcement of the biosafety law. The law determines exactly and exhaustively the roles of this institution.

The government nominates a National Biosafety Committee with representatives from administrations and the civil society. The National Biosafety Committee will have the role of advising the responsible institution.

The institutions involved in the production, the import, the contained use, the release or the placing on the market of GMOs or products thereof must set up public biosafety committees to guarantee and control the safety procedures as well as the conditions of use.

II.2.4 Activities involving GMO or products thereof

The activities involving GMOs or products thereof are strictly prohibited on the whole of the national territory except on express authorization of the responsible institution. In particular, the production, the transit, the import, the export, the release of GMOs and products thereof, for any application, are prohibited on the whole of the national territory except on a written authorization from the competent authority in conformity with the law in force.

II.2.5 Notification and authorisation

The individuals and companies that wish to engage in activities involving GMOs and products thereof must, in the framework that will be fixed by the law, notify in writing to the competent authority. The law will fix the terms of this notification. The implementation of this activity is submitted to a prior authorization of the competent authority.

II.2.6 GMO production on the national territory

Any individual or company willing to develop activities in the framework of biotechnologies so as to produce GMOs on the national territory will have to notify it in writing to the competent authority and obtain the prior authorisation.

The production of GMOs on the national territory could only occur in contained environment.

The law will determine the contents that must appear in the notification, but will contain especially:

- the place where this activity must be developed ;
- the conditions of production ;
- the scientific proofs that the release in the environment is prohibited.
- the final use of these GMOs or product thereof.

II.2.7 Exemptions and simplified procedures

The competent authority can, in some particular cases, apply a simplified procedure, or grant an exemption, in the import, from a third country into the national territory, of a GMO or product thereof whose safe character for the environment and human health has been proved by the importer. The law determines the type of GMO that can be subject to such exemptions and simplified procedures. This information will be specified later.

II.2.8 Principle 10 of the Rio Declaration

Public participation to management of the environment is one of the basic principles of sustainable development. The public must be informed on issues linked to the management of the environment, especially the management of GMOs. It must also be able to participate in the decision process and promote its rights in case of damages on the environment.

The principle 10 of the Rio Declaration stipulate: “Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. At the national level, each individual shall have appropriate access to information concerning the environment that is held by public authorities, including information on hazardous materials and activities in their communities, and the opportunity to participate in decision-making processes. States shall facilitate and encourage public awareness and participation by making information widely available. Effective access to judicial and administrative proceedings, including redress and remedy, shall be provided.”

II.2.9 Public Information

The national biosafety policy makes the principle 10 of the Rio declaration on the public participation its own. The public will be informed in time and in a timely manner of any project relating to a GMO or product thereof. The Competent National Authority (CAN) could decide to organize public consultations. It will take into account the concerns of the public and will inform them of the final decisions taken; the public

will be informed of the existence to recourse or redress procedures in case of damages caused to the environment. The CAN ensures that public awareness and education comprise will enhance knowledge or access to the information on the LMOs that can be imported, within the Protocol, as well as the means of access to the Clearing House.

II.2.10 Required information

The national competent authority will ensure that third country, party or not to the Cartagena Protocol, addresses it, prior to any transboundary movement of GMO or product thereof, to the national territory. The notification will include minimum information specified in the Annex I or in Annex II of the Protocol, in the second case if it is a GMO or product thereof intended for human food. The notification will include especially information on the previous uses of the genetically modified organism or product thereof. However, the law will reserve the possibility of the competent national authority to require other additional information judged relevant.

The competent national authority will also ensure that any project of transboundary movement from the national territory towards a third country, party or not to the Cartagena Protocol, be subjected to a prior notification to this third country.

The biosafety law should comprise the penal provisions in case of non respect of the requirement of the notification, in the framework of the advance informed agreement procedure.

The language to be used in the notification is French.

The competent national authority could any moment request for additional information that it judges necessary for the decision making.

II.2.11 Confidential information

The Comoran biosafety law will comprise provisions to protect the intellectual property or commercial information whose disclosure could be detrimental to the owners. However, the competent national authority could request the evidence which justify the confidential nature of the information. The competent national authority could object to the confidentiality of some information and notify the proponent accordingly.

In the case where the GMOs or products thereof are intended to be intentionally released in the natural environment, the information relating to the objective of the release, the place of this release is supposed to take place and the previous uses cannot be considered as confidential in the eyes of the comoran law.

II.2.12 Risk assessment

No authorization of production, transit, import or export could be granted, without a prior risk assessment for the environment and the human health.

The biosafety law will require from the notifier file a risk assessment linked to a GMO or product thereof for which an authorization of production, transit, import or export is required.

The file on the risk assessment will be based on a minimum on the information provided for in article 8 of the Protocol and will be based primarily on the scientific methods described in the annex III of the Protocol. The information of the annex III of the Protocol will be annexed to this national framework.

The competent national authority imposes to the notifier to proceed, at his expenses, the risk assessment, either by the Scientific and Technical Committee set up by this National Framework, or by the experts chosen by mutual agreement with the CNA and, whose competence and experience are recognized.

The competent national authority will bring together a Committee for the examination of the risk assessment file which brings together representatives of the

administration, especially those in charge of sectors of the environment and health, representatives of the civil society and in case of release to environment, the local authorities of the concerned communities.

No permit or authorisation will be granted, for the production, the transit, the import and the export of GMOs or products thereof intended for hostile purposes.

II.2.13 Risk management

Mechanisms, measures and strategies are defined by the CNA so as to regulate, manage and bring under control the risks associated with the use, the handling and transboundary movement of GMOs. The competent national authority defines a scale of risks according to the results of a risk assessment. The structure of the risk scale is defined as follows:

Level 0: no risk

Level 1: risk existing but minimal

Level 2: sensitive risk

Level 3: very high risk

On the basis of the risk assessment and in case where the risk level is acceptable, the competent national authority will request the notifier to propose a strategy and an action plan for the management of the identified risks. The strategy and the action plan will deal with each one of identified risks and will propose actions measures so as to minimize to an acceptable level or eliminate these risks.

The CNA ensures that any LMO, imported or developed locally, be subjected to an appropriate observation period corresponding to its lifecycle or to its formation time, within the Competent Technical Committee before being used as planned.

The GMOs or products thereof will be marked or labelled, according to scientifically acceptable methods and techniques so as to ensure their traceability. The labelling methods are specified in the law.

In case where the competent national authority would have given favourable reply to the notifier, the strategy and plan of managing the risks will be updated according to a periodicity to be defined.

II.2.14 Monitoring – Evaluation of authorised activities

The Producer, the Importer or the Exporter will submit according to a periodicity that will be defined by the competent national authority, a follow-up report of the authorized activity. This report will comprise specifically the description of actions taking place, already carried out and programmed in the short term. The risks associated with these actions will be underlined, as well as the measures and actions taken or to be taken so as to eliminate or minimize the risks to an acceptable level.

The law will reserve the right for the competent national authority, or its representatives to carry out visits on the sites where the activities are conducted.

The law will reserve the right for the competent national authority to demand the suspension of activities not planned in the notification or where new facts establish an unacceptable level of risks.

II.2.15 Sanctions and Penalty

In case of disrespect to the provisions of the law, this one will provide for applicable sanctions and penalties. Especially, the law will reserve the right for the competent national authority to proceed or terminate any activity unauthorized or that has been proved that constitutes a threat to the environment or health. Should this happen, the termination of activity will be carried out at the expense of the owner.

II.2.16 Liability and redress

The law will provide for any person that produces, makes transit, imports, exports, uses in contained environment, releases or places on the market a genetically modified organism or product thereof is strictly held responsible for damages caused. These damages must be entirely repaired.

All the activities concerning any type of GMOs or products thereof, on the whole national territory engage the strict responsibility of the promoter.

The competent national authority or any other person or group of people that feel wronged by GMOs or products thereof, as well as by the activities linked to GMOs or products thereof will be able to seek for redress at a competent court of law.

All types of damages will be taken into account by the law, especially damages to resources, the means of production and subsistence, personal and collective goods, the frame of life and health.

In case of acknowledgement of damage likely to have derived from a GMO or product thereof, a sufficient time period will be observed to establish without doubt the link between the damage and the incriminated GMO or product thereof.

The liability and redress will be governed by the common law regime as far the civil liability is concerned in the Union of Comoros.

II.2.17 Unintentional release and emergency measures

In case of unintentional transboundary movement, from the national territory, of GMO or part of GMO, that could have impact on the environment or human health, the Union, promptly takes, appropriate measures to inform all the countries affected or likely to be, as well as the Biosafety Clearing House.

The CNA determines the emergency measures being part of the national strategy for the risk management linked to the unintentional transboundary movements. It will apply these measures in case of incident in the shortest period.

The notification to countries affected or likely to be will consist of at least the information specified by the Protocol, as well as other information that could be specified by the law.

The CNA determines the terms and emergency measures to take in such situation, the political and technical leaders as well as the institutions that must be involved in its management that will be precisely clarified in the application decrees of the law.

II.2.18 Capacity building

The implementation of the Protocol requires capacity building at all levels. As well as the following institutions and partners should be built at the level of their institutional capacities. These are:

- institutions that constitute the national centre and the competent national authority ;
- technicians and executives that constitute the national biosafety committee ;
- institutions involved in the production, the import, the contained use, the release or the placing on the market of GMOs ;
- organisations of the private sector such as the Chamber of Commerce and the employers;
- other partner institutions such as the customs officers and border police ;
- journalists and other media technicians ;
- NGOs and other civil society organisations involved in the verification of of GMO management procedures and their transboundary movements

II.2.19 Regional cooperation

It is important to reinforce regional cooperation on issues relating to the Protocol. This cooperation could, as far as the Comoros are concerned, rely on the existing regional cooperation frameworks. These are for example the Indian Ocean Commission (IOC), COMESA and SADC. Protocols and conventions relating to the exchange of information, building of mutual capacities such as the creation of center of excellence, inter-university exchanges, as well as the implementation of simplification agreements of the advance informed agreement for some cases, could be concluded.

III INSTITUTIONAL AND ADMINISTRATIVE FRAMEWORK

III.1 Introduction

The principles on which the national and regional structures will be based for the implementation of the national biosafety policy will be:

- A regulatory system to ensure the safe use of biotechnology
- An administrative structure that could centralise, promote the GMO information management, be it their use or handling
- Mechanisms to allow and facilitate the participation and the information of various partners (civil society, local communities, the public)

The structures will be placed at two levels

III.2 The implementation Structures

III.2.1 At national level (Union of Comoros)

These are the National Biosafety Structures (NBS), they are constituted of:

A) The national centre

The minister in charge of the environment and as a result biosafety is the main decision organ on biosafety. It engages the responsibility of the central government in its relations with the Secretariat of the Protocol and the BCH, and facilitates the exchange of information among the various concerned organs

The contact details of the national centre will be communicated as soon as possible.

B) The Scientific and Technical Committee (STC)

The functions of the STC

The STC is in charge of:

- ✓ Conducting risk assessment
- ✓ Supervising risk management
- ✓ Supplying all relevant information and provide scientific and technical points of view before any decision making relating to the introduction, the use the marketing of GMOs or product thereof.

The composition of the STC

The STC is composed of scientific researchers and experts on biosafety, the environment, especially the National Documentation and Scientific Research Centre (CNDRS), the National Research Institute on Agriculture, Fishery and Environment (INRAPE), the University of Comoros, the National Procurement Pharmacy of Comoros (PNAC)

The contact details of the Scientific and Technical Committee will be communicated as soon as possible.

C) The Competent National Authority (CNA)

The CNA is decision organ in the framework of biosafety law.

It is at the same time the decision organ and national correspondent in the framework of Cartagena Protocol in liaison, with the Secretariat of the Convention on Biological Diversity.

The National Department of Environment is the CNA. It ensures the coordination of functions of the CNA. It will be assisted by the focal point of the Cartagena Protocol or the Convention on Biological Diversity

The name and address of the focal point of the Cartagena Protocol will be transmitted once known. The address of the National Department of Environment is communicated below:

Direction Nationale de l'Environnement
BP 40 Moroni Comores
Tel 00 269 75 60 29
e-mail: mdossar@comorestelecom.km

The focal point will be the person suited to receive the information communicated by other States on unintentional transboundary movements.

The functions of the CNA

The CNA will have as responsibility to take on the functions relating to:

- ✓ The application of regulatory procedures and ensuring conformity to the Cartagena Protocol.
- ✓ Managing correspondences with the Secretariat of the Protocol (Focal point)
- ✓ Liaising with Clearing House (BCH)
- ✓ Presiding over the national biosafety committee.

The composition of the CNA

The CNA is composed of the representatives of ministries, institutions, civil societies and NGOs that have direct or indirect activities on the environment and biosafety. It is presided over by the Minister in charge of the Environment, who can delegate his/her power to the director of the environment.

The competences of the CNA

- ✓ The CNA performs the administrative activities such as the reception of requests and the notification of the importing party.
- ✓ It makes public any information relating to :
 - Any GMO and/or products thereof for which he import, the contained use, the use in open environment or the placing on the market has been authorized or refused
 - Any risk assessment report concerning GMOs and/or product that is in question.
- ✓ The CNA cannot disclose to third parties any information of confidential nature if the notifier requests the confidentiality in writing. However for reasons of general interest, the CNA can decide that some information, despite their confidentiality, can be brought to the knowledge of the public.
- ✓ In case of accident, the CNA as well as the local administrative authorities, should be informed about it within a time period not exceeding forty eight (48) hours.
- ✓ The CNA can carry out a risk assessment of any GMO development or research project independently from that performed by the user or the promoter.
- ✓ In collaboration with the territorial authorities and the decentralised technical services, the CNA ensures that there is awareness and adequate and timely information to the public, dedicated to the research, the use, the release and to the marketing of GMOs and/or products thereof.
- ✓ With the support of the STC, the CNA keeps a national biosafety register where will be recorded all relevant information relating to the use, the release and the marketing of all new substances derived from biotechnology.

D) The National Biosafety Committee (NBC)

The functions of the NBC

In collaboration with regional authorities, the NBC will have responsibility for:

- ✓ Ensuring the implementation of the national biosafety policy
- ✓ Developing the legal texts relating to biosafety and ensuring their implementation and their follow-up

- ✓ Ensuring the complementarity of texts or sector decisions with the national biosafety law.
- ✓ Establishing the national and sector priorities concerning the development of biotechnology
- ✓ Establishing and implementing a national training programme on modern biotechnology and biosafety
- ✓ Collaborating with the media for any need of communicating with the public.
- ✓ Formulating decisions to take on the basis on investigations conducted on the ground
- ✓ Establishing and appointing a coordination unit, composed of leaders of inspection in the public decentralised services with the mission of (in) inspecting the fields of experiment, of release, the distribution warehouses and (ii) detecting all anomalies and unusual phenomena.

The composition of the NBC

The NBC will be composed of representatives of governmental (ministries of agriculture, of the environment, of plan, of Finance) and non governmental organisations (NGOs, the private sector, the civil society) concerned by the issues touching biotechnology and biosafety.

The committee should:

- (i) define the criteria, norms : indications and rules necessary for the application of objectives of the biosafety law
- (ii) establish its terms of reference, its own procedure rules

The scope of the STC, the CNA and the NBC

The whole of three islands constitute the scope of activities of these entities

The contact details of the NBC will be communicated as soon as possible.

E) The National Biosafety Clearing House

The nBCH liaises with the Clearing House of the Protocol by transmitting to it all the information below. Besides the nBCH is responsible for the following tasks:

- Indicate the cases where an import could occur at the same time when the movement has been notified to it.
- Indicate to the Biosafety Clearing House the cases where an import can occur at the same time when the movement has been notified to it. Indicate to the

Biosafety Clearing House the imports of exempted from the advance informed agreement.

- Inform the Biosafety Clearing Houses if the national regulation applies to some defined imports.
- Communicate to the Biosafety Clearing House the contact details of the person suited to receive the information communicated by others States on the unintentional transboundary movements, according to article 17.
- Inform the Secretariat in case of no access to the Biosafety Clearing House and supply copies of notifications addressed to the Clearing Houses
- Communicate to the Clearing House:
- A summary of risk assessment or environmental assessments relating to LMOs conducted in application of the regulation in force and carried out according to article 15 ;
- The final decisions concerning the import or the release of LMOs;
- The reports showing the measures taken by the Union of Comoros to apply the provisions of the Protocol.
- Avail to the Clearing House the information relating to the case of illicit transboundary movements.
- Inform the Clearing House of any modification relevant to the information communicated as of Part I above.
- Take appropriate measures to notify the States effectively affected or likely to be, to the Biosafety Clearing House and, if need be, to the competent international organizations, any incident that the Party is aware of and fall under its competence and that has for result a release leading to or likely to lead to an unintentional transboundary of a LMO capable of having important negative effects on the conservation and sustainable use of the biological diversity, also taking into account risks for the human health in these States.

III.2.2 At the Regional level (*autonomous islands*)

The Public Biosafety Committees (PBC^o)

The general Department of Environment is taken over in each island by the authority in charge of the environment and biosafety.

A PBC will be implemented at the level of each island

The functions of the PBC

The PBC will be the main organs for the activities relating to the activities of public participation. They will focus mainly on the participation, awareness, information and the training of the public as far as the activities linked to biosafety

The composition of the PBC

The PBC will be composed of institutions involved in the production, the import, the contained use, the release or the placing on the market of genetically modified organisms or products thereof. The associations legally formed and working in the

field of safeguarding the environment for more than a year could be registered by the Minister in charge of biosafety, to participate in the action of PBC.

It is about promoting the committees dealing with environmental issues that exist on each island. These committees that start to be operational are composed of representatives of the department of environment and forest, of agriculture, NGOs and the civil society that carry out actions in the field of environment protection,

The competences of the PBC

Anything that concerns the public information relating to GMOs must be coordinated by the PBC

Scope of the PBC

The island constitutes the scope of activities of the PBC

III.3 How the activities will be conducted?

The national biosafety policy is based on the precautionary principle. Therefore, for any introduction, release or re-export of GMOs, there is a way to consider the risk assessment and management as well as the public information.

A) Public Participation

The participative approach complies with the country national policy in the framework of the poverty reduction strategy which is a reference paper for any activity or any programme conducted on the territory.

The strategy encourages the consultation, debates and discussions at all levels, so as to allow the public to contribute on issues related to the development, especially when they risk having some impacts (positive or negative) on the population.

The public participation should allow:

- ✓ Making biotechnology more accessible to the public which is at times sceptical even suspicious.
- ✓ The expression of various points of view and debates on biosafety by shedding lights on the main concerns of the different groups concerned whichever way you look at it on biosafety, and take a fully informed position.

For that, the following should apply:

- ✓ Identify the aspects and the reasons for which public participation is necessary

- ✓ Use the existing media (newspapers, radios, television) at the national, regional and sub-regional level to disseminate the information on the issues relating to biotechnology and biosafety that have justified the public participation.

B) The awareness, education and communication activities

They should

- ✓ Take in consideration the socio-cultural specificities of each region
- ✓ Be adapted to the ages and education levels of the target public.

At the level of villages, the information will be made during debates, discussions conducted in general in public places (le bangwé) where usually the important decisions are taken concerning the social and economic life of towns.

- ✓ The information transmitted to the public must be very precise. The advantages and disadvantages of the concerned GMO product (to introduce or use) must be clearly made explicit.
- ✓ The vocabulary used in the information must be very simple and understandable by any type of public. The use of scientific terms will be reserved for a more restricted public, more informed and directly concerned,
- ✓ According to the GMO in question, the criteria of confidentiality will be clearly defined and communicated to the public, with argued justifications.
- ✓ Any information concerning the GMO product likely to be subject of introduction in the Comoros must be availed to the focal point, of the national biodiversity structure and any other structures directly linked to the product in question.
- ✓ The collaboration with the Clearing House will be sought to have further information on the use, in other countries, of the GMO in question
- ✓ New information concerning a GMO product already introduced in the country should be inevitably communicated to the public in the case where scientific or new socio-cultural elements would indicate the existence of risks for the biological diversity and human health as for the use for the use of this product.

In summary

(i) The central authorities (national centre, TSC, CNA, PBC) will ensure the centralising and the analysis of any information coming from outside. They will disseminate at the level of islands that, in principle, ensure carrying out of activities in the field.

(ii) The public information and awareness will be therefore ensured by the PBC and the existing committees in the islands that could thus play a role of *challenge to the established authority* for any decision to take concerning the use of biotechnology and biosafety.

C) The mechanisms of public information and involvement in the decision process

The public information mechanisms will be based on the following elements:

- ✓ The awareness, through the media and other means of general information (radio, television, group meetings, debates on the bangwé place)
- ✓ The education by the broadcasting of information through specific educational programmes organised in the framework of formal and informal education.
- ✓ The public participation by the implementation of adapted mechanism of return of the opinion and of public contribution to the decision and regulatory process relating to the introduction, the handling and the use of GMOs and/or products thereof.

D) The decision-making process (cf Diagram)

- 1) The notifier (applicant) addresses a request, with all the required information annexed, to the CNA who records it.
- 2) The CNA transmits the file to the NBC.
- 3) The NBC communicates to the STC
- 4) The STC carries out the risk assessment studies and transmits its opinions to the NBC
- 5) The NBC transmits to the PBC the information given by the STC as elements of public information, awareness and education
- 6) The PBC informs the public for its opinion
- 7) The PBC transmits to the NBC the information emanating from the public
- 8) The NBC formulates a decision to take on the basis of results from the STC assessment and information coming from the PBC and transmits it to the CNA
- 9) The CNA notifies the applicant

E) The public involvement

The target public whose participation is required is composed of: consumers, agriculturalists, business people, scientific institute and others, NGOs, researchers.

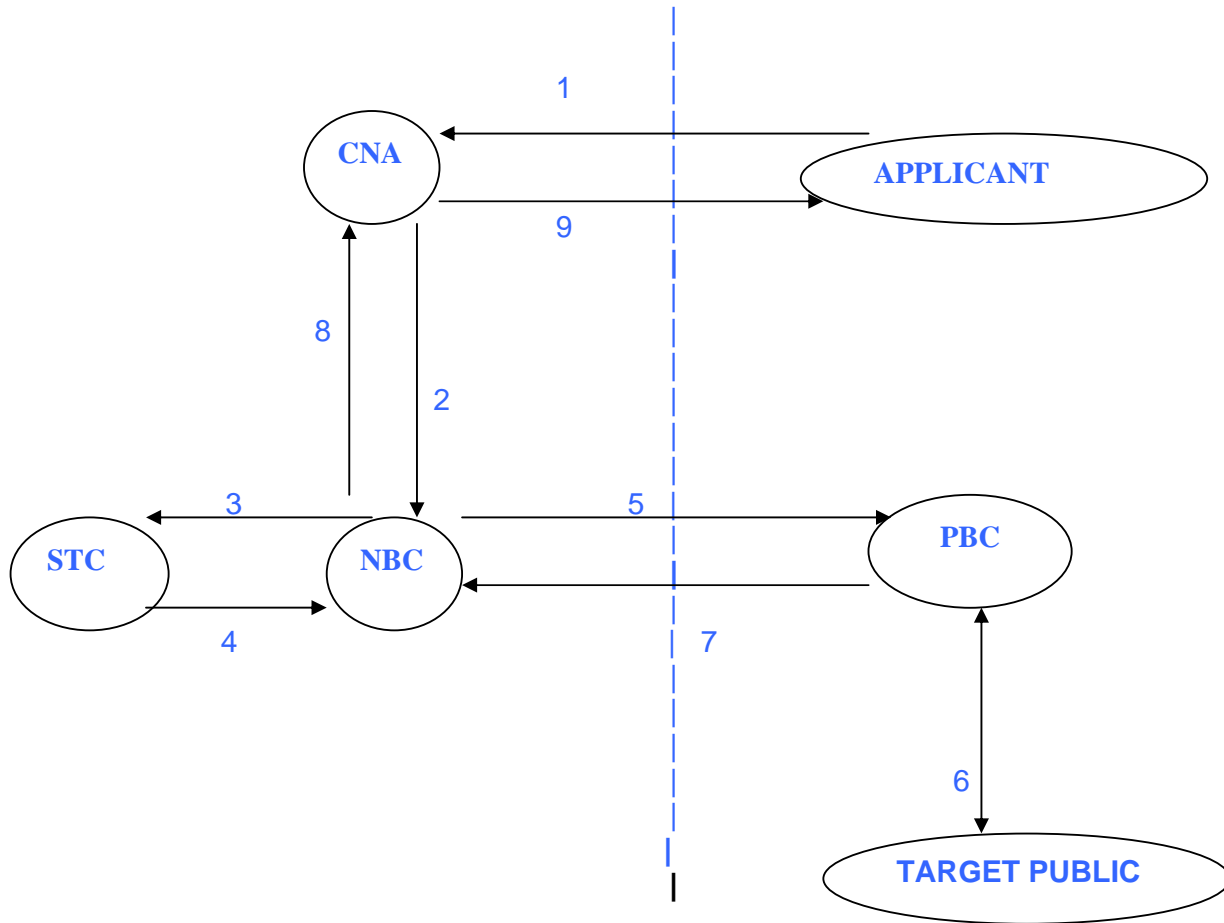
The objective sought after in the public participation is to make it in such a way that the decisions taken, relating to GMOs, be well understood and they receive the endorsement of the public.

During the exchanges with the public, the information coming from the NBC will be simplified and clarified. These exchanges constitute a plus in the public information, awareness and education process.

Level

UNION

ISLAND



IV CONCLUSIONS

The Union of Comoros (ex Federal Islamic Republic of Comoros) ratified, on the September 29, 1994, the Convention on Biological Diversity and is getting ready to ratify the Cartagena Protocol.

For a small developing multi island State such as the Comoros, the stake is not much at the level of commercially exploiting progresses of modern biotechnology, but instead at the level of promoting these processes so as to better safeguard its biodiversity and to support, eventually, growth in the agricultural sector. However, it is should not be excluded that the Comoros could benefit from the equitable share of the financial effects of an eventual industrial and commercial development of its genetic potential.

The progres of biotechnology come with a series of questions on the impacts of LMOs on the environment and on health. The national biosafety policy is premised on the precautionary principle which recommends that actions and measues be undertaken so as to protect the environment and the health of the populations, even if there is no scientific certainty.

In the framework of the Cartagena Protocol, the Union of Comoros engages itself to contribute to the building of transparency of international exchanges on matters on GMOs or LMOs and their products thereof and thus the implementation of the precautionary principle. Another stake of prime importance for the Union of Comoros is the low level of technical and material capacities needed to implement the Protocol and emphasizing the fundamental need to build capacity.

The national biosafety framework is the outcome of a participatory process that has allowed the involvement of stakeholders from the civil society, the private sector and institutions. This participation led to a series of workshops in each of the islands of the Union. The participants have underlined the importance of a national policy, as well as a biosafety legal and regulatory framework. The procedures are to define without misunderstanding and the responsibilities of the parties specified. Another concern largely shared in all the workshops is the need to build capacities at all levels. The training should be the backbone of the future implementation of the Protocol.

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ANNEXES

UNION OF THE COMORES
Unity-Solidarity-Development

MINISTRY OF RURAL DEVELOPMENT,
FISHERY, CRAFTS AND THE
ENVIRONMENT

Order N°05____/MDRPAE/CAB
on the Creation and Responsibilities
of National Coordinating Committee of
the UNEP/GEF Projet on the
Development of the National Biosafety
Framwork

THE STATE MINISTER

Given the Constitution of December 23, 2003

Given the Decree n° 04-072/PR of July 13, 2004 about members of the Government
of the Union of Comoros.

Given the framework-law n°94-018/AF of June 22, 1994 relating to the environment
modified by the law n°95-007/AF of June 19, 1995.

DECIDES ON

The Role and Organisation of the National Coordination Committee

Article 1:

It is created a National Coordination Committee (NCC) which has the role of advising
and of guiding the preparations relating to the design of the national biosafety
framework

It is in charge of:

- controlling the preparations for the implementation of the national biosafety framework.
- approving the work plan and the operational budget drawn up by the national coordinator of the project;
- mobilizing competences necessary for the achievement of goals of the national project;
- giving advice and examining the main objectives of the national project;
- making sure that information on the achievement of the national project as well as its objectives are brought to the attention of local and national authorities for the follow-up;
- also making sure that the environmental policy of the government properly reflects the project document;
- examining and approving documents relating to the development of the national biosafety framework.

Article 2:

The committee is composed of a:

- President ;
- Secretary;
- Legal expert ;
- Agronomist;
- *Economist*;
- Representative of the National Department of Environment;
- Representative of each autonomous island (3) ;
- Environmentalist ;
- Expert in Communication ;

Article 3:

The president of the committee is appointed by the members of the NCC

Article 4:

Le secretary of the NCC is secured by the National Coordinator of the Project.

Article 5:

The committee must be multidisciplinary and multi-sectoral given its role of main decision-making organ.

Article 6:

The internal rules of the NCC are annexed to this decree.

Article 7:

This decree will be entered, published in the Official Gazette of the Union of Comoros and communicated everywhere where need be.

HOU MED M'SAIDIE

UNION OF THE COMORES
Unity-Solidarity-Development

MINISTRY OF RURAL DEVELOPMENT,
FISHERY, CRAFTS AND THE
ENVIRONMENT

Order N°05____/MDRPAE/CAB
on the Nomination of members of the
of National Coordinating Committee
(NCC)

THE STATE MINISTER

Given the Constitution of December 23, 2003

Given the Decree n° 04-072/PR of July 13, 2004 about members of the Government of the Union of Comoros.

Given the framework-law n°94-018/AF of June 22, 1994 relating to the environment modified by the law n°95-007/AF of June 19, 1995.

DECIDES ON

Article 1:

In application of the decree relating to the creation of the National Coordinating Committee of the National Biosafety Framework Development Project, the following people are appointed members of the committee:

- Mohamed Bacar DOSSAR, the National Director of the Environment and agronomist;
- Ahamada Mohamed Said, the National Projet Coordinator;
- Nidhoim Attoumane – Jurist;
- XXXXXXXXXXXXXXXXXXXX – Economist;
- Saindou Kassim, Representative of the Autonomous island of Anjouan ;
- Anfani Msoili, Representative of the Autonomous island of Moheli ;
- Hachime Abderemane – Specialist in communication;
- Abiamri Midiladji – Representative of the Autonomous island of Grande Comore;
- Fatouma Ali Abdallah – Biologist;

Article 2:

When an above designated member loses during the mandate the function for which he/she was nominated, he/she is replaced for the remaining period.

Article 3:

The functions of member of the National Coordinating committee of (NCC) of the National Biosafety Framework Development project are exercised on a purely free basis and do not give right to any remuneration.

Article 4:

This decree will be entered published in the Official Gazette and communicated everywhere where need be

HOUMED M'SAIDIE

Copies

- Ministry of development
- Ministry of autonomous islands
- Interested parties
- Archives

National Biosafety Structure

National Biosafety Structure Units	Composition	Duties
The National Centre (FN) decision body	Ministry of the Environment	<ul style="list-style-type: none"> - in charge of the implementation of laws and rules; - Engages the responsibility of the government of the Union in its relations with the secretary and facilitates the information exchange with the concerned bodies.
Competent National Authority (CNA)	National Department of the Environment	<ul style="list-style-type: none"> - Responsible for the application of regulatory procedures and ensures its conformity to the Cartagena Protocol; - ensures the correspondence with the secretariat ; - Liaises with the clearing house.
National Biosafety Committee (NBC)	<ul style="list-style-type: none"> - Scientists - Professional Groupings - Representative of the civil society - Consumer Associations, - Jurist - Ministries involved in the implementation of the framework 	<ul style="list-style-type: none"> - To see to the implementation of the national biosafety policy. - To develop the legal texts relating to biosafety and see to their application. - To see to the making texts or sector decisions compatible with the national biosafety law. - To set up national and sector priorities concerning the development of biotechnology ; - To set up and implement national training programme concerning modern biotechnology and biosafety ; - Collaborate with the media for the need to communicate with the public ; - To formulate the decisions to take on the basis of investigations conducted on the ground ; - To set up and mandate a coordination unit, composed of inspection officers in the decentralized public services for the tasks of (i) inspecting experiment, release fields, distribution shops and (ii) detecting any anomalies or unusual phenomena.

<p>Public Biosafety Committees (1 per island)</p>	<p>Import/export, transport, information / awareness, NGO, civil society, agriculture. Education (of each island of the Comoros)</p>	<ul style="list-style-type: none"> - information and awareness ; - sees to the implementation of the policy; - sees to the respect of laws; - Provides the coordination with the other structures of the NBS; - Implements the training programmes.
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**MINISTRY OF DEVELOPMENT,
INFRASTRUCTURE, POST OFFICE AND
TELECOMMUNICATIONS AND
INTERNATIONAL TRANSPORTS**

Moroni, June 30, 2004

**National Department of Environment,
Forests, and agricultural Strategies**

Ref : 04- /MDRPAE/CAB

The Ministre,

Cabinet Memo

The United Nations Conference on Environment and Development devoted the engagement of the States to protect our planet. To reach this objective, the international community developed several legal instruments of which the convention on biological diversity that our country signed during this conference and ratified it in 1994.

Recently the Cartagena Protocol relating to genetically modified organisms (GMOs) has been adopted.

The Protocol aims among others at implementing at the level of each country, a policy, an administrative, institutional and legislative biosafety framework.

Our framework law on the environment is not currently able to either manage/organize the right on resources resulting from modern biotechnologies, or regulate their access and their use.

Upto now no introduction of GMO is known in our country. However the lack of information relating to the nature of imported products, the lack of technical skills, of an administrative and institutional framework specialized on the matter does not guarantee that such introduction has been avoided.

To build the technical, administrative and institutional capacities in this area, our country with the financial support of the Global Environment Facility (GEF) and the technical collaboration of the United Nations Environment Program (UNEP) carry out a "Developing a National Biosafety Framework" project for a period of 18 months for purposes of applying the Protocol of Cartagena on Biosafety.

This is the purpose of this memo which I submit to the attention of the cabinet.

HOUMED M'SAIDIE

UNION OF THE COMORES
Unity-Solidarity-Development

**MINISTRY OF RURAL DEVELOPMENT,
FISHERY, CRAFTS AND THE
ENVIRONMENT**

Moroni, 2004

**National Department of Environment,
Forests and Agricultural Strategies**

Ref : 04- _____ /MDRPAE/CAB

The Minister,

Cabinet Memo

Subject: **Membership and ratification of the Cartagena Protocol on Biosafety**

It is a great pleasure for me to come to the government so that the necessary provisions are taken as soon as possible for the ratification of the Cartagena Protocol on Biosafety relating to the convention on biological diversity.

The Rio conference in 1992 identified modern biotechnology as a promising tool capable of contributing to the objectives of sustainable development especially in the area of health, agricultural production and food security. Today modern biotechnology experiences a high development. Faced with this fast development, it appears a series of fears, questions related to the impacts that the use of the genetically modified organisms or the consumption of the products which derive from them could have in the long term on human health and the environment.

To answer to this, recently, an additional Protocol to the Convention on Biological Diversity, relating to the genetically modified organisms was adopted in Montreal in order to ensure the human safety and the environment.

The objective of the Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of GMOs that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health. The Cartagena Protocol focuses as a priority on transboundary movements.

Upto now, no introduction of GMOs is known in our country. However, the insufficient human and institutional resources specialized on the matter do not guarantee that such introduction were avoided.

To build the human, technical and institutional capacities in the area, our country with the financial support of the Global Environment Facility (GEF) and the technical collaboration from the United Nations Environment Programme (UNEP) carries out a project entitled "Development of a National Biosafety Framework" whose main objective is the capacity building by developing and implementing a legal, administrative and institutional framework for the purposes of the application of the Cartagena Protocol.

The ratification of the Protocol by our country is henceforth essential. Upto now our country neither signed nor ratified the Protocol and this situation could isolate our country from the rest of the World. Donors are laying it down more and more as a prerequisite for financing projects an international commitment of recipient countries.

Besides if our country does not ratify the Protocol and considering its insularity and its geographical position, the government could not resort to any jurisdiction, nor any international or regional competence in the event of conflict or of difficulty between the Comoros and other countries. Thus, ratifying the Protocol has many immediate advantages.

I thank the Cabinet for the attention which it devotes to this memo.

HOU MED M'SAIDIE

THE COMOROS IN SOME FIGURES

Data on the Comoros

Country	:	Union of the Comoros		
Capital	:	Moroni		
Religion	:	Muslim		
Official languages	:	Comoran, French and Arab		
Area	:	1861 KM ² of which	Grande Comore	1147 km ²
			Anjouan	424 km ²
			Mohéli	290 km ²

Climate:

Tropical Humid with two seasons:

- Hot and humid season (southern summer) November to March/April. Important maximal pluviometry from December to March. Average temperature 24 to 27.8° and monsoon winds from North to North West;
- Dry and cool season (southern winter) April/May to October. Average temperature varies between 23.2 and 27°. South East (trade) Winds.
- Average Pluviometry: between 1 500 and 5 000 mm (maxima 7 500 mm to XX).

Population: (1991)	446 817 hab	
National average density	240 hab / Km ²	
	Population	Density
Grande Comore	233.533	204 inhab/km ²
Anjouan	188 953	446 inhab/ km ²
Mohéli	24 331	84 inhab / Km ²
Total:	446 817	

Demographic growth rate (1991 estimated): 2.7%
 Population distribution (1990) Urban: 28.5% Rural: 71.5%
 Urbanisation rate: 5.1 % inhab
 Mortality rate: 1.5%
 Child mortality (1990): 151 / 1000
 Life expectancy at birth (1990) 55 years

Health:

Population-to-physician ratio (1989): 7 500
 Population-to-hospital-bed ratio (1989): 342

Education:

Net enrolment rate (1988 – 1989) Primary: 17%
 Adult literacy rate (1990) 61%.

ENVIRONMENT AND DEVELOPMENT INDICATORS IN THE UNION OF COMOROS

Main Industries:

The production is generally limited to the processing of the agricultural products. We also register sawmills, joineries, oil and soaps factories

Population:

Open-air landfills drainage of wastewater.

Water:

Access to drinking water: Urban areas: 10.7%, Rural areas 60.5%
 Drinking water supply 1993 estimate

Grande Comore	24%
Anjouan	43%
Moheli	71 %
Basic sanitation	estimation 93
Grande Comore	83. 6%
Anjouan	81.9%
Moheli	61.9 %

Energy: Wood 78%, Thermal stations: 22%

Agriculture:

Land use (1990)

Farming:	744 km ²	44.8%
Pastures:	32 km ²	1.9%
Forest and wooded areas:	665 km ²	40.1%
Other land:	261 km ²	13.2%
Total:	1.660 km²	100.0%

Main food crops: riz ; maize ; cassava, sweet potatoes, bananes, legumes et coco nuts.

Main cash crops : vanilla, clove, ylang-ylang and basil.

Animal husbandry: (1991 Estimate)

Cattle: 47 000, Sheep: 14 000, Goats: 124 000, Donkeys: 5 000

Fishing:

Small-scale fishing: 8 000 tons (1993 estimate)

Protected Zones: 1**Biological Diversity: Endemic Species**

Mammals 2 species et 3 sub- species

Birds 1 type 14 species and 35 sub- species

Reptiles 10 species

Insects 38 species

Fish 1 species

Plants 400 species

Country Basic Data**Basic Data**

Area (not including Mayotte)	1,660 km ²	
Population (1991 estimate)	480,000 inhabitants	
GDP Per Capita (1991 estimate)	518 US\$	
Land Use (1990)		
Farming	744 km ²	44.8%
Pâturages	32 km ²	1.9%
Forest and wooded areas	665 km ²	40.1%
Other land	219 km ²	13.2%
Total	1.660 km ²	100.0%
Demographic Statistics		
Population Density (1989)	289 inhab/ km ²	
Population growth rate (1991 estimate)	3.1%	
Population distribution (1980)		
Urban:	23.3%	
Rural:	76.7%	

Health	
Child mortality rate (1990) :	151 / 1000
Life expectancy at birth (1990)	55 years
Access to drinking water(1989)	
Urban areas :	10.7%
Rural areas	60.5%
Inhabitants per doctor	7,500
Inhabitants per hospital bed (1989)	342
Education	
Net enrolment rates (1988-1989)	
Primary	55%
Secondary	17%
Adult literacy rate (1990)	61%
General Remarks	
Religion:	Islam
Official Languages:	French, Arabic
Currency:	Comorian Franc (KMF)
UN Exchange rate (1991):	1US \$ = 282.25 KMF
Budget year:	January - december
Sources: - central department of Statistics - human development report, UNDP	

Evolution of external trade 1985 – 1999 (millions of FC)

	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<u>Imports</u>															
Food															
Meat and offals	613	603	651	914	840	548	1 259	1 924	1 176	1 247	1 617	1 456	2469	2350	2 512
Rice	2 156	1 822	987	2 437	2 761	2 247	2 022	2 605	1 650	2 614	5 252	3 318	3 947	2096	3 365
Petroleum products	1 873	1 579	2 516	1 061	783	1 655	1 757	1040	1793	2897	2897	1509	1384	962	1333
Cement	908	658	539	708	312	961	921	832	1020	1676	1652	880	843	813	822
Iron and steel	574	586	944	763	341	301	483	296	626	778	804	858	668	709	645
Other imports	11747	9642	11228	10389	9470	9842	11214	13107	10552	14828	13189	15828	17465	14901	16774
Total Imports	17 871	14890	16 860	16272	14507	15554	17656	19804	16817	23689	25411	23849	26776	23831	25451
<u>Exports</u>															
Ylang-ylang oils	657	633	591	744	1276	1473	992	1140	806	930	855	645	716	793	753
Vanilla	4690	5399	1272	4975	3621	2554	4482	4117	4796	2767	2320	1035	1119	1058	1788
Clove	1377	818	1552	467	629	363	1092	108	268	522	134	210	89	268	522
Miscellaneous	981	805	675	956	1508	1966	1297	1447	1047	1202	927	546	706	533	662
Total exports	7705	7655	4090	7142	7034	6356	7863	6812	6917	5421	4236	2436	2630	2652	3725

Endemic and threatened species

Taxa	Number of recorded species	Endemic species	Threatened species
Mammals	15	2	1 (lemur [lemur mongoz], roussette[Pteropus livingstonii], dugong [Dugon dugon])
Birds	100 in total 60 breeding 6 introduced breeding 34 migrating	13	7 (Otus capnopes, Otus moheliensis, Zosterops mouroniensis, Otus pauliani, Humblotia flovostris ; Dicrurus fuscipennis, Ardea humbloti)
Reptiles	34	4	2 (sea turtles [chelonia mydas, Eretmochelys imbricata])
Fish	820 marine species	1	1 (coelacanth [Latimeria chalumae])
Insects	2 000		3 ([Amauris nossima, Amauris comorana, Graphium levassri, Papilio artistophontes])
Molluscs	156 land 16 brakish water 14 fresh water	1(chiton comorensis)	0
Plants	951 known 172 pteridophytes 69 orchids	136 9 36	3

Exchange Ratios with the Outside

Percentage	1993	1994	1995	1996	1997
Imports / GDP	18,8	23,7	24,9	22,9	22,5
Exports/GDP	8,2	5,8	5,3	3	3,1
Balance of Trade /GDP	- 10,6	- 17,9	- 19,6	- 19,9	- 19,4
Current Accounts (excluding public transfers)/ GDP	- 13	- 22,9	- 22,3	- 19,1	- 15,4
Public Transfers / GDP	15,3	16,6	12,6	9,6	11,8
Current Accounts (including public transfers) /GDP	2,3	- 6,2	- 9,6	- 9,5	- 4

Sources: Department of statistics and Wold Development Indicators Database, 2000, Wold Bank

GDP Growth Structures, 1980-1999

Economic Activity	Annual GDP Growth (1990 Rate, in %)				GDP Share in 1999
	80-85	85-90	90 – 95	95 - 99	
Agriculture	4,1	3,3	0,4	- 4,8	38,7
Manufacturing sector	4	4,8	3,7	- 15,6	4,2
Water, electricity	6,4	6,2	3,6	12,6	1,5
Construction	3,8	- 18,2	17	- 2,4	6,2
Trade and tourism	1,8	1,2	3,2	3,6	26,6
Transport, Communication	7,2	6,4	1,5	3,7	4
Public Administration	10,6	0,6	- 4 ;9	- 3,4	12,4
Other services	0,9	1,8	- 1,2	- 8,1	6,4
GDP market rate	4,4	1,1	- 1	-1,6	100

Source: Department of statistics and Wold development Incators Database, 2000, Wold Bank