

# REPUBLIC OF MOZAMBIQUE

# **COUNCIL OF MINISTERS**

# DIRECTOR PLAN FOR PREVENTION AND MITIGATION OF THE NATURAL CALAMITIES



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### **ABBREVIATION**

**ACP** Annual Contingency Plans

**APREP II** Action Programme to the Reduction of Extreme Poverty

**CPNU** Civil Protection National Unit

**DDP** Development District Plans

**IRP** Internal Raw Product

**LOSL** Local Organ State Law

**MELRF** Margin Economies and Land Rehabilitation Fund

**MPCR** Ministry of Public Constructions and Residence

**NCMNI** Natural Calamities Management National Institute

**NCPAMP** Natural Calamities Prevention and Attenuation Master Plan

**NCPCD** Natural Calamities Prevention and Combat Department

**NEC** National Emergency Counsel

**RMUC** Resource and Multiple Use Centres

**TCNCM** Natural Calamities Management Technical Council

#### I INTRODUCTION

## 1 THE NATURAL CALAMITIES

Mozambique is affected by several natural phenomenons such as floods, dryness, hurricanes and earthquakes. Some of these phenomenons are cyclical while others are occasional. The hurricanes, the dryness and the floods are caused by climatic influences in the country, ruled by Indic Ocean's subtropical anticyclones, by the Inter – Tropical convergent zone, by the Southern Africa's thermal depressions and by the south's cold front passages.

Adding to these factors Mozambique has zones climacterically classified as semi – arid and arid where rain, even in the best years, is not enough for agriculture and where there is a lack of water during the whole year.

Besides the climatic disasters great part of the national territory is steady on tectonic fissures being subjected to earthquakes. The national territory with earthquakes is located in Rift Valley and Mozambique's Channel.

The Rifts Valley (which results from the separation of the African and Arabic tectonic fissures) has its origin in North of Síria and has an extension of over 5.000 Kms going to the central zone of Mozambique. The Rift Valley forms the Beqaa Valley in Lebanon and separates the Galileia Mountains and the Golan Mounts forming the Hula Valley and the Jordan River. In Africa the Rift Valley is divided into two parts, forming the East and West parts of the Rift Valley. In Mozambique the oriental part is extended from the Lake Niassa heading south, crossing through the Tete Provinces, Sofala to the North of Gaza's Province.

In Mozambique's Channel there are two zones with high rates of earthquakes being one located between the parallels 10° - 18° S; 40° - 42° E and 20° - 25° S; 37° - 41° E.

The prevalence of calamities caused by natural phenomenon shows that the Country must be structured in order to predict, attenuate and fight its effects. The present Master Plan wants to draw the main strategic lines to attenuate those calamities and to define an action programme with a 10 year term to lead Mozambique to a state of readiness and capacity of resisting and responding to the effects of natural calamities.

#### 2. CONTEXT

For many years the country is living in a permanent state of emergency caused by natural or non natural phenomenon. The longest period during which Mozambique lived in continuous emergency state was about 11 years during the war. These 11 years were simultaneously affected by dry seasons and drought. During this period the Government created the National Emergency Counsel (NEC) to deal with the situation in straight coordination with international humanitarian agencies and the civil society. Due to the magnitude of the situation the Natural Calamities Prevention and Combat Department (NCPCD) – which already existed – was mainly transformed into a logistic organ of the NEC in order to buy and distribute food to those affected by the war and by the dryness.

With the end of the war the NCPCD was restructured in order to adapt to a new situation and to be concerned more about the prevention of natural calamities effects. This was the beginning of the Natural Calamities Management National Institute (NCMNI) and the institutional inclusion of the Annual Contingency Plans (ACP) in the States General Budget.

With the consolidation of the Action Programme to the Reduction of Extreme Poverty (APREP II), the Government considers that the prevention of natural calamities effects cannot be reduced only to short term actions identified in ACP. The successful combat to natural calamities is steady in a medium and long term plan, not only to attenuate the natural calamities effects but specially to reduce the vulnerability of most exposed communities to these natural phenomenons. This is how it begins the Natural Calamities Prevention and Attenuation Master Plan (NCPAMP).

The NCPAMP is an important part of the strategic poverty combat and also part of the Government's Quinquennial Plan. In fact, in a specific way, the Government's plan to the period between 2005 and 2009 recognizes that the natural calamities and its destructive effects aggravate the situation of extreme poverty. That is why the Government defined in his plan the following goals:

- Reduce the number of human victims and loss of property;
- Consolidate the prevention aspects:
- To endow the Country with prevention and attenuation means.

So that those goals are accomplished the Government identified the following actions:

- Delimitation of risk zones;
- Reinforcement of prior warning means system;
- Mobilization resources for prevention and attenuation of natural calamities;
- Reinforcement of the inter sectarian institutional coordination of response to the natural calamities effects;

- Reinforcement of the regional and international coordination, particularly in hydrographical ponds management;
- Creation of a data bank which allows the realization of climate areas and its impacts studies;
- Promotion of construction and use of water storage system in drought areas for human and animal use and irrigation;
- Intensification of workshops and civic education.

The NCPAMP is developed in the context of the accomplishment of these and other actions.

The operational instrument of the Government's Quinquennial Programme is APREP II conceived for the period of time between 2006 and 2009. APREP II's goal is to reduce the poverty's incidence in 45% until 2009. The fight's success against extreme poverty depends on the reduction of vulnerability of people most exposed to nature's disasters and on the attenuation of the devastating effects of the natural calamities. Realizing this, the NCPAMP must be considered as a complement of APREP, specializing in risk management and reduction of extreme poverty intervention in the country. In the spectrum of the extreme poverty fight the NCPAMP specifies the instruments which materialise the pillar of APREP II having the human capital as the main ingredient in the fight against poverty, with the creation and establishment of District Centres which incentive the development of human capacities to create the self – confidence and self-esteem attitude. Like wise the NCPAMP helps to materialize the APREP II's pillar concerning the economical development. This materialization is incorporated in the surch of ways and means of production factors rehabilitation and of marginal economies in the areas most affected by the natural calamities.

In the Government's Quinquennial Plan spirit and APREP's, the NCPAMP also wishes to contribute to accomplish the Millennium Development Goals subscribed by several countries in the world under the auspices of the United Nations. In a direct way the NCPAMP contributes for the specific goals related with the water's accessibility, environment's sanitation and food security.

In a general way the NCPAMP wants to fill in the lacks identified in other Government sectors so that it can complement the materialization of the Quinquennial Plan. As a complement the NCPAMP does not want to repeat the vulnerability reduction and attenuation actions which are already planned and in course in other Government fields, such as agriculture, weather, health, hydrology, environment, construction, defence and security sectors. So, the NCPAMP must be understood along with other action in other sectors.

The NCPAMP presented here concentrates in the main strategy lines leaving the detail to be as complement attached to the main document. The matters which should appear

in a more specific way are those referring to conception of Resource and Multiple Use Centres, regulation, workshops and performance of Civil Protection National Unit, Information Management System, constitution of Land and Margin Economies Fund of Rehabilitation and the creation of food supplies in the country.

For these reasons the main lines in the NCPAMP should be treated simultaneously as transverse to all Government sectors and as specific complementary actions and directed to concrete targets and regions which need special attention

#### II STRUCTURAL STRATEGIC LINES

#### 1 ISSUE 1: HYDRIC UNBALANCE

Because Mozambique has an extreme variable climate with influence in the rain, most rivers in the country have torrential regimes with high fluxes during 3 to 4 months and very low fluxes during the rest of the year. The impact of this situation, associated with rain concentrated in a very short period coincident with the hurricane season causes a hydric unbalance having variations between flood periods with dry season periods. According to a study of the Ministry of Public Constructions and Residence (MPCR) conducted with the World Bank's assistance the unbalance causes a hydric choke with considerable costs to economy because it influences the State's Budget and the commercial scale. Several times the hydric choke forces to adaptations in the monetary and fiscal politics to respond to the inflation inducted by the choke and by the increasing of the public budget expenses due to the lowest growth of the projected Internal Raw Product (IRP). Besides the costs inflected to economy, the floods and the dryness cause human losses destroy the society, create nutritional and food insecurity and specially provokes epidemics such as malaria and cholera.

#### 1.1 Strategic Line 1: Supply water use

Mozambique has abundant hydric resources (about 12.000 m3 per capita per year). However its geographical distribution is not the same, being the South more dry than the North of the country. In the North the floods are dominant and the South suffers with dry seasons. In the South the outline and the attenuation of the hydric unbalance has to be related with the storage of water with the seasonal flux to guarantee that there is enough water during the rest of the year, while in the North we have to concentrate in the control and prevention of the floods. Nevertheless it is clear that either in the North and in the South both situations (floods and dryness) may occur with different incidence and magnitude. So, the strategic lines to skirt the hydric unbalance are:

a)	Constitution of water supplies to attenuate the effects of dryness;	
		-

b) Construction of infrastructures to control the floods.

#### Water supplies to attenuate dryness

The water constitutes the basic element of human needs and it is simultaneously the fulcral factor to eradicate extreme poverty and sustainable development. As a basic element and main ingredient in extreme poverty combat and development, water is one of the main central elements in health, industrial and agricultural production, in energy production and biodiversity maintenance and ecological balance. Without water it is not possible to reach the Millennium Development Goals neither the APREP II's goals. That is why the existence of water supplies to attenuate dryness is a priority to NCPAMP.

In the context of NCPAMP the water's availability and accessibility has to guarantee that all villages exposed to cyclic dry seasons have access to at least half of the individual needs of water defined by as medium national desirable pattern. To guarantee the accessibility the available water must be as closer as possible to the beneficiary communities. Furthermore we must take into consideration the different water functions and in some cases those functions may be competitive. Among some of those functions the NCPAMP distinguishes primarily the human and animal use, the agriculture and other sectors of the rural economy which may be considered relevant in the vulnerability reduction of the rural communities.

Once the water is available and accessible raises the problem of its management which means workshops, the right choice of the development technologies and the water sources maintenance and aspects related with sanity and hygiene. Finally we have to take into consideration that water is a basic right and so it is necessary to find ways to insure that right. We also have to consider that inside the most exposed classes, women and children are the most vulnerable and require a special attention.

For these and other reasons the construction of water supplies to attenuate the dryness effects must obey to an integrated criterion with the purpose of guaranteeing the multiple water uses in a combined and not in a quarrelsome way. For that the solutions must be integrated in such a way that it can be possible to combine small multiple use dams, small dams, wells and tanks.

The small multiple use dams would be primarily used for irrigation, pisciculture and as often as possible for recreation, especially in areas that, in spite being semi – arid have eco-tourist potential.

The small dams would be used mainly for water supply for animals and if possible for piscicultures while the wells and the tanks would be used for providing water to human consumption.

The integration defended here obligates to a interconnection in the conception, drawing and operation of the 4 sub-solutions, although these may have independent characteristics. This means that as a principle the 4 sub-solutions must be fed by rain but in case of need the biggest water reservoirs should be able to feed the smaller ones so it can be possible to continue to function making sure it will be possible to have a stronger resistance to the long periods of dryness.

#### **Control and Prevention of Floods**

The hydrographical ponds in risk of flood with severe social and economical impact are the ones in Limpopo, Incomati and Save (in the South), Buzi, Pungoe, Zambeze and Licungo (in the Centre). Besides the hydrographical ponds some cities in the country (such as Beira) are exposed to floods due to a lack of a correct drainage system or due to a lack of a correct physical urban and periurban space use plan. The MPCR has conducted a detailed study of the flood risks in the most important hydrographical ponds in the country and projected for return periods from 10 to 100 years, with probability calculations of annual exceeding and high river floods. The result of these studies allied to the easy flood capacity of some cities when associated to another study done with the World Bank's assistance shows that if we assume an annual economical growth of 5%, the economical costs resulting from the floods will reach over the US\$ 3 billion between 2005 and 2030. National economy can not support this cost and for that it is urgent the implementation of some measures already planned by the MPCR, such as:

- Built and rehabilitation of dykes in the ponds of Incomati, Limpopo, Save, Buzi, Pungoe, Zambeze and Licungo;
- Built up Master Plans for ponds management of Incomati, Maputo, Zambeze, Pungoe e Buzi;
- Construction of Moamba's dam and conduct;
- Construction of Bue Maria's dam;
- Construction of Licungo River's dam;
- Beira's city drainage improvement.

While this projects don't start it is urgent to:

- Enlarge and improve the prior warning systems;
- Map the ponds with the necessary detail for more objective risk analyses;
- Create Management Risk District Committees with communitarian involvement;
- Build small irrigations in the higher quotas of the ponds to incite the population not to live in the edges, river-sides and river islands;
- Replace the population that in Beira, Maputo and Quelimane live in swampy areas without or with deficient drainage;
- Incite the construction of better houses surrounded by water rain drainage systems even if superficial;
- Incite and compel the use of better latrines in the city forbidding and punishing the use of outdoors as toilets.

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#### 1.2 Strategic Line 2: Reforestation

One of the crucial aspects of the semi-arid zones is that as a way of attenuating the feeding deficit the population resort to firewood, coal and wood exploitation. For that they cut down existing trees taking the source of rain improvement and leaving the naked soil more fragile to erosion reinforcing the degradation of soil fertility for agriculture. Because of that the second strategic line associated to water supply consists in creating the conditions to replace the possibility of rain increasing and soil fertility maintenance. This can be arranged with a massive reforestation or with sustainable plans of existing forest resources, introduction of land rotation plans opposite to itinerant agriculture and introduction of agricultural and forest practices.

#### 2 ISSUE 2: NUTRITIONAL AND FOOD UNBALANCE

The rare rain and the practice of survival agriculture force the concentration of the agricultural production in the rain season between October and March. With rare exceptions, from April to September there is no agricultural production in the country. With an economy based on the agricultural production this situation is unbearable and deserves a special and specialised attention. On the other hand the unequal geographical distribution of the rain in the country dictates that areas with rain levels inferior to 600mm per year have a chronic food deficit while other areas, in good years of rain, have temporary exceeding food and have difficulty in storing, processing and selling the exceeding.

The paradox created by the excess and deficit of production in the same year indicates that the strategic lines to minimize the food security problem must contemplate at least the following aspects:

- Create strategic food and seed supplies in the country;
- Create and announce the variety and cultures tolerant to dryness and or with short cycle;
- "Domestication" of non conventional cultures;
- Adoption of cultures that can be used in industry and be tolerant to dryness;
- Introduction and multiplication of small irrigations;
- Change of rural economical structure of semi-arid zones;
- Introduction of conservation agriculture practices.

#### 2.1 Strategic Line 1: Food and seed supplies

The establishment of a strategic food and agricultural seeds supply would be done in a simple concept of public and private partnership with the community's involvement. The concept involves two aspects:

- (a) Agricultural commercialization and stock rotation;
- (b) Food supply net that includes (i) familiar and individual storage, (ii) district storage and (iii) provincial and/or regional storage.

The agricultural commercialization implicates that the Government facilitates the purchase of some exceeding so that it can reach the defined strategic stock supply. This purchase must be done by the private sector financed by the State and the private should keep the stock during a pre-defined period. The commercialized products will be storage for a short period from the harvest until the moment that the weather prediction shows that there is going to be dry or not in the following agricultural campaign. If it is not going to be dry the storage keeper will be authorized to send to the market all or only part of the supplies with profits near the commercialization margins. If it is predictable that there is going to be a disaster with implications at food needs then the supplies will be total or partially used for the occasion. The same concept is applicable to the seed storage except that there will have to be a participation of a specialized seed company and of the National Seed Service from the Ministry of Agriculture to guarantee the seeds quality. The detail of these concepts will have to be discussed in specific implementation projects.

For the individual storage it is necessary the technical and management food improvement which the peasants normally already do. That storage must be integrated in the after harvest agricultural management with additional elements of loss reduction and of agricultural and industrial processing (even if it is primary) to add some value, improve the quality and minimize the costs of storage and transportation.

The management and the use of food and seed supplies storaged at community, district and provincial level will be decided at those same levels while the regional supplies will be of central decision when ordered the national emergency level.

# 2.2. Strategic Line 2: Investigation and rise of short cycled varieties and cultures tolerant to dryness

The cereals, tubercles, roots, leguminosae and vegetables are the main food elements cultivated in the whole national territory. The technology associated with the culture and handling of these products is a concern in the agenda of national investigation and extension systems. However the studies for its adaptation in the driest areas in the country are incipient. For the production improvement of those cultures in semi-arid zones of the country it is important to enlarge its investigation in its genetic aspects for a better

tolerance to dryness and the utilization of varieties with short periods of physiological maturation.

The solution is the establishment and the management of specialized investigation units for this matter, taking into account that world wide there are works done and there are organizations that since the 40s are dedicated to this matter and have solutions that could be adopted to Mozambique.

#### 2.3 Strategic Line 3: "Domestication" of non conventional cultures

Every time you ear someone talk about hunger in the semi-arid zones, it is frequent to make reference to the survival of the population by using wild vegetables to feed them. This is clearly an indicator that there are vegetable species with a certain nutritional capacity adapted to the environment that they live in. The name "wild" given to them is because of the lack of scientific interest to "domesticate" them as part of agriculture and market. However there are several examples of Countries that exploit scientific and commercially local species e today they have value in the global, regional and local markets. It is important to improve the knowledge of those species and begin a process of its domestication at the same time that purchases the added value to enter the market. Who knows, maybe we are in the presence of some comparative non exploited economical advantage.

#### 2.4 Strategic Line 4: Adoption and announcement of industrial cultures

The food security as a way of reducing the vulnerability of rural communities to natural disasters effects cannot be limited to the food agricultural activity. There is to be considered agricultural cultures adapted to semi-arid zones that in spite not being eatable have a place in the market as an income culture. Among those cultures can be considered those connected to bio-fuel. In effect, with the oil crises and with the environment demands the world is choosing more and more the development and use of bio-fuel. And because the bio-fuel is produced from the renewal biomass, agriculture in general and the semi-arid zones can beneficiate from this opportunity of increasing the utilization of agricultural products in industry. Actually several plants tolerant to dryness can be adapted and cultivated in semi-arid zones for that end. The initiative of bio-fuel already exists in the country and is ruled by the Ministry of Energy. It is important to exploit this opportunity for the driest zones in the country using the species and the varieties more tolerant to dryness.

#### 2.5 Strategic Line 5: Non agrarian economical activities

The tradition of rural economy has a defect because it is based almost exclusively on agriculture, even in areas where this is not a comparative advantage. The reduction of extreme poverty and the development strategy in general must take into account that in

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several cases the rural population does not need to depend exclusively on what it is produced because exist other natural non agricultural resources that can be potentialized and placed to community's service. There are several cases in the country where areas apparently poor are gifted with potential in tourism and mine areas but the population is not taking part in that business because it is directed to the private investment. Here we want to adopt the principle that those resources are exploited by rural communities and if there is private investment it should be done in such a way that the communities are partners or that the investor fulfil his corporate social responsibilities. For that it is proposed that for each area affected by dryness be made a potential identification study be made, which can be the general conductor to development where the community is always considered (co) – owner.

#### 3 EMERGENCY MANAGEMENT AND RELATED MEANS

The reduction of vulnerability discussed above does not stop disasters caused by natural calamities from happening but allows its effects to be minimized. For that when disasters happen the citizen, the public and private institutions and the civil society have to be ready to attenuate and respond to its effects.

The emergency management requires the existence of readiness, decentralization management, surch and rescue capacity and creation of conditions to restart normal life right after the disaster.

#### 3.1 Readiness

Readiness requires, among other aspects, the following:

- Prior Warning Systems, every time it is possible;
- Information Management Systems;
- Communication Systems;
- Surch and Rescue Teams and Equipments.

#### **Prior Warning Systems**

The country already has several prior warning system instruments. Among those there is weather forecast, food and nutritional security periodic evaluation, vulnerability analyses, hydrographical ponds monitoring, etc. However these instruments have two huge limitations:

a) They are not integrated in a unique system. Because of that the information coming from those subsystems have an inadequate process and the quality is very often questionable;

b) The cover network of those instruments is very incipient, especially for more vulnerable zones.

For this it is necessary to enlarge the cover network and on the other hand to establish a data processing centre and a subsystem able to announce the processed results.

#### **Information Management System**

Practically there is not an information management system with clear definitions of hierarchy and decision centres. In many cases the information comes from different sources competent or not, creating contradictions originated by different collect, process, statistic analyses, and decision methodologies. It is important to take measures that discipline the collect, process and the information announcement as well as define the hierarchy of the decision centres.

#### **Communication System**

Despite all the great improvements done in the communication systems at national level, there are huge areas in the country that do not have efficient communication, especially in areas where natural calamities are more likely to happen. It is important to establish as a rule that the most affected areas be considered as a national priority in the expansion of non mobile phone network, especially in the district capitals. The Administrative Posts should as often as possible be temporarily covered with wireless systems until it can be replaced by mobile and non mobile net work systems. The surch and rescue teams (discussed forward) will have to be equipped with satellite phones, minimum, to respond quickly to emergency situations whenever it is necessary. This aspect can solve the communication problems from the Administrative Post to the central level. From the Administrative Post to the villages there are three lines to be considered:

- The existence of activists with appropriate means to go to local villages and communities headquarters just like the agricultural extensionists;
- The use of sound signs and flags;
- Identification, improvement and the use of communication systems used by the local population..

#### 3.2 Surch and Rescue

A very important aspect in the emergency management is the existence of surch and rescue teams trained and equipped for the effect. Except for the Defence and Security Forces and the Red Cross Volunteers THAT have some training and mandate for that, the country does not have a structured unit dedicated and specialized in surch and rescue of victims of calamities such as earthquakes, hurricanes and floods. As part of the natural calamities management strategy this unit must be created and established, functioning

with its own and specific rules. This unit would have members of the Defence and Security Forces, local education and health employees, NCMNI employees, Red Cross volunteers and other mobilized and integrated local and national wide volunteers. In case of emergency, for which this unit is called to intervene, it would have to obey to a well defined command and control hierarchy. In Ministry's Counsels Resolution nr. 18/99, from 10th of June, which approves the Calamities Management National Politic, and in the Ministry's Counsels Decree nr. 38/99, from 10 of June, this unit's duty would be, among other:

- Elaboration of Contingency Plans and execution of simulation exercises;
- Unit and its means preparation to engage during and after the emergency occurs;
- Participation in information of prior warning announcement;
- Participation in identification programmes and delimitation of risk zones;
- Participation in communities mobilization and other human means and matter for recover of civil protection infrastructures;
- Participation in Resource and Multiple Use Centres activities;
- Surch and Rescue of victims or besieged populations;
- Gathering and process information during and right after the event;
- Participation in all activities of vulnerability's reduction the identified above.

Due to the complexity in establishing this kind of force its creation will be gradual, safe and progressive obeying to priorities of higher risk rural areas, district level, cities and national level.

### 3.3 Definition of calamity and responsibilities

The perception of what is a natural calamity and what comes out of it is variable among the several intervenients in management and combat to natural calamities. With the differences of perception it is not clear the level of responsibility of those intervinients. This situation empties the emergency content and gives birth to a dependency behaviour of the affected and most important makes responsibilities disappear.

So, it is necessary in the context of NCPAMP to define and legislate:

- a) What is an emergency;
- b) What is a local, district, provincial and national emergency;
- c) At each one of those levels who declares the emergency and under what criterion;
- d) Who is responsible for answering to the emergency at each one of the authority levels:
- e) What is the roll of each institution involved and each level of management.

These definitions should be complemented with means and equipment definition to be affected at each level and the definition of when certain specific means (like air means, for example) are called to intervene. These aspects will improve a lot the emergency

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management, put in order the communication systems and the management information and cultivate an attitude of self-confidence in the resolution of emergency problems.					
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#### III ACTION PROGRAMME

The action programme that follows has as a goal to put in order and clarify the practical implementation of the strategic lines defined in the previous chapter so that it can contribute to reducing the population vulnerable to natural calamities, improve the prevention, readiness and attenuate the effects of natural calamities. The programme has the duration of 10 years and the national cover specifically in areas more vulnerable to natural calamities. The programme is structured in general goals, results and in the activities developed in order to obtain the defined results. For each result are defined performance indicators:

#### 1 **GOAL 1**

To reduce vulnerability to hunger due to dryness in areas with cyclic lack of water and with rain values fewer than 500mm per year.

#### 1.1 Result 1:

Build water reservoirs to provide the population that live in semi-arid and arid zones in the country.

#### **Activities:**

- Map the arid zones in a scale of 1:1.000.000 or other possible and sufficient scale to plan and monitorise.
- Make quick studies for the definition of places where the reservoirs should be located taking into consideration the villages, water fonts, kind of reservoirs as well as water collect.
- Constructions of water reservoirs according to the definitions (collect system, storage and water treatment by families and or publics).

#### **Performance indicator**:

Make sure that until 2013 1.200.000 people in the semi-arid zones have access to at least 50% of the water needs per capita (ideal defined as 18 m3 per year). This means that an annual indicator of availability of at least 1.4 million of m3per year and at least 4 public reservoirs by district functioning.

#### **1.2** Result 2

Guarantee that each family has at least 500m2 of water for irrigation for vegetables and fruit trees.

#### **Activities**

- Definition and implementation of irrigation communitarian management systems.
- Construction and/or rehabilitation of irrigation systems giving priority to drop to drop irrigation system or additional irrigation.

#### **Performance indicator:**

Have accomplished to build until 2013, 12.000 hectares of irrigation in the semi – arid zones. This means an annual goal of 1500 hectares in small modulus of 500m2.

#### 1.2 Result 3

Introduction of Agriculture and Humidity and Agro – Forests Conservation Practices.

#### **Activities**

- Inventory of existing agriculture, conservation and agro forest practices in the country (giving priority to the already known and practiced locally) and in other semi-arid zones in the world.
- Installation of demonstration camps being one of those in Chigubo and the other one in Chemba.
- Creation of specialized extension services.
- Expansion of those practices using demonstration centres, periodic technology revision, experiences exchange and mass communication means.
- Introduction of conservation agriculture and agro-forest practices.

#### **Performance indicator:**

Established at least two conservation agriculture experiment centres, being one of those in the South (Chigubo) and another one in the Centre (Chemba).

At least 25% of the target population must be participating in the conservation agriculture practices and at least 10% of the target population must be engaged in agro-forest practices.

#### **1.4** Result 4

Introduce ways to process and storage agricultural products.

#### **Activities**

- Identification and implementation of ways to collect agricultural products by physiological maturation to avoid losses.
- Identification and implementation of integrated ways of drying and storage of agricultural products.
- Identification and implementation of ways to process primarily the agricultural products.
- Identification and acquisition of appropriate equipment to process primarily the agricultural products.
- Identification of ways of communitarian and individual credit for equipment acquisition.

#### **Performance indicator:**

Existence of agro-industrial extension units in all districts of the semi-arid zones and distributed at least 100 agro-industrial machines.

#### 1.5 Result 5

Introduce cultures and agricultural varieties tolerant to dryness and "domesticated" cultures which today are considered as wild but having a nutritional value.

- Introduction of cultures and varieties considered as wild and tolerant to dryness, through a low cost technology and investigation.
- Identification of local and external cultural varieties which are tolerant to dryness and are of short cycle physiological maturation.
- Establishment of experiment camps that demonstrate the superiority of those varieties in local climatic and specific conditions.
- Announcement of those varieties and low cost and use technologies.

- Identification of local plants considered wild and which population use as main food in periods of dryness and drought.
- Analyses of the nutritional value of those plants.
- Selection of the most promising varieties and study of its agricultural domestication.
- Study of possible ways of processing them.
- Announcement of the results local and nationally.

Created and established an investigation station adapted to semi-arid zones and development of short cycle cultures and varieties tolerant to dryness. Cultivated at least 40 hectares of local fruit considered nowadays as wild.

#### **1.6** Result 6

Introduce ways of converting and/or integration of rural economy.

#### **Activities**

- Adoption and implementation system of the communitarian use of the land to identify other base economy resources that are not agricultural but have competitive advantages.
- Adoption and implementation of the space planning method so that it is possible to identify other development vectors that are not agricultural.
- Creation of incentives that may attract private, communitarian and familiar investments to the exploitation of the identified comparative advantages.
- Introduction of new ways of appropriate technology extension to adopt in the developing of non agricultural economical vectors.

#### **Performance indicator:**

Conclusion of the resources identification process in semi-arid zones; confusion of use planning of those resources and identified at least 20 complementary or alternative projects to agriculture, by district, of which at least 10 will be in establishment and at least 5 fully functioning. This means a successful and communitarian acceptance realization of at least 2 projects per year e per district after the 2<sup>nd</sup> year of the plan's implementation.

#### **1.7** Result 7

Introduce ways of ecological rehabilitation.

#### **Activities**

- Introduction of vegetable species to induct the natural reforestation and administration of the forests in the so called semi-arid zones.
- Establishment of nurseries to reforestation.
- Creation of incentives so that the communities, companies and public services can participate in reforestation and administration of the existing forests.
- Creation and implementation of exploitation programmes of firewood biomass to produce energy.
- Identification of zones with erosion or with potential erosion.
- Definition and implementation of ways to control the erosion.

#### **Performance indicator:**

Planted at least 12.000 hectares of forest until 2013. This means a plantation of at least 500 m2 of hectares per family and about 1500 hectares per year.

#### **1.8** Result 8

Introduce ways of Agricultural Insurance.

- Implementation of communitarian projects of agricultural insurance.
- Gathering of existing agricultural insurance experiences.
- Creation of legal and regulatory mechanisms that incentives the insurance companies and the agricultural producers to adopt the agricultural insurance.

Introduce at least 8 pilot projects of communitarian insurance to agriculture and lost goods due to natural calamities.

Introduce legislation and regulamentation that incentives the insurance companies to implemnet the agricutural insurance.

Introduce ways of incentive that force the citizen to insure his goods against natural calamties.

#### 2 GOAL 2

Reduce human losses and property destruction due to disasters caused by hurricanes, floods and earthquakes and other disasters due to calamities.

#### 2.1 Result 1

Created and disseminated information about the risk related with hurricanes, floods and earthquakes.

- Map in an appropriate scale (1:1.000.000) the areas of the country more vulnerable to hurricanes (including other strong storms) and earthquakes.
- Map or complete the map (with the necessary detail) with the hydrographical ponds and sub-ponds more likely to flood.
- Amplification of the weather forecast network in the country and the hydrometric levels measuring points and the river flood levels of the most important rivers.
- Establishment of a computer system for a more efficient use of weather, hydrographical, food security and prior warning national report systems.
- Acquisition or creation of computer products (of easy handling) to evaluate the risks and the impacts related with storms, hurricanes and floods.
- Acquisition and use of appropriate technologies and scientific investigation to improve the planning, readiness, attenuation and answering to natural calamities methods.
- Guarantee that all public infrastructures of capital interest but vulnerable to calamities have insurance against all risks.

- Guarantee that the constructions of all public infrastructures of capital interest have resistance to earthquakes, hurricanes and floods.
- Incentives to the common citizen so that he insures his property against risks related with natural calamites.
- Conception and establishment at communitarian and district level of local squeme of insurance against property destruction by hurricanes, floods and earthquakes.
- Creation of District and Communitarian Committees of Risk Management.
- Amplification and modernization of the earthquakes stations in the country.
- Surch for ways of cooperation with international institutions to have access to information that can improve the prior warning system and surch for information to a fast answering to calamities.

Established 3 Process and Prior Warning Regional Centres against floods and hurricanes being one of those in Vilanculos, another in Caia and the third one in Angoche.

Triplicate the national cover of rain and main river levels measurer.

Approved legislation related with the construction of infrastructures prepared to deal with hurricanes and earthquakes.

Established at least 3 risk management committees in each district.

#### 2.2 Result 2.

Reduce the human vulnerability to floods in the main cities in the country.

- Map or acquisition of topographical maps of all capital cities in the country to a scale reasonably large to urban planning.
- Identification of all areas those by their topographical quotes and soil nature are easily flooded.
- Identification of the population that live in the identified areas.
- Identification of possible places (with the higher quote and better drainage) for the relocation of vulnerable population.

- Design and implementation of a relocation strategy that takes into account the social, economical and cultural balances based on incentives such as better houses and less vulnerable to floods.
- Design of quality patterns to drainage systems of cities and force the municipalities to implement those patterns.
- Celebration of agreements with municipalities under the obligation of use of better latrines and construction of public toilets in strategically selected places.

Relocate all the city population that live in flooded areas.

Celebrate agreements with all the municipalities to drainage system maintenance according to the defined patterns.

#### 2.3 Result 3

Reassure the existence of surch and rescue units and emergency management plans.

- Establishment with Ministry of National Defence, Interior and Health as well as with Mozambique's Red Cross a Civil Protection National Unit (CPNU) prepared and equipped for surch, help and monitoring of the impact of natural disasters operations.
- Formulation and approval of Procedures Manual in case of Emergency with the detailed indication of the performance of each involved sector and general individuals.
- Development of CPNU in intervention, information and monitoring units in every school, hospital, neighbourhood, community, building and place of work.
- Preparation of workshops and recycling courses for every member of CPNU at all levels.
- Acquisition of basic equipment operations to CPNU at all levels.
- Guarantee that all districts, schools, hospital units, neighbourhoods, residence buildings and places of work have recent emergency plans.
- Guarantee the existence of emergency plans and permanent availability of contingency funds to quick rehabilitation of national infrastructures of strategic

interest such as energy generation and transportation system, computer networks, communication systems, transport systems, national defence systems, etc.

 Creation of legal mechanisms that force the protection forces of people and goods (including the private ones) to have education concerning ways to act in case of disasters caused by hurricanes, floods and earthquakes to improve the protection of goods and services that they are responsible for.

#### **Performance indicator:**

Create at least 3 surch and rescue training centres.

Created the Civil Protection National Unit and its functioning rules and developed its territorial insertion.

Establish a Special Contingency Fund to use in case of emergency for situations and strategic infrastructures.

# 3 GOAL 3

Minimize the population suffering caused by calamities.

#### 3.1 **Result 1**

Created conditions of quick and efficient response to damage caused by natural calamities.

- Establishment of emergency operation rooms in the Republic Presidency or in the Prime Ministry's Office, in the NCMNI, in the provincial NCMTC (Natural Calamities Management Technical Counsel) and in the District Administrator's Office more vulnerable to hurricanes and earthquakes.
- Creation of capacity for the operation room of NCMNI, the provincial NCMTC and the vulnerable districts Administrator's Office functioning 24 hours a day, 7 days a week.
- Creation of capacity so that the Presidency's operation room (or the Prime Minister's Office) be functioning 24 hours a day and 7 days a week as soon as the national emergency is declared and during the duration of the emergency.

Existence of information and direct communication channels between the province, the NCMNI and the President or the Prime Minister's offices. Each level will have a Geographical Information System and available specialists to function as consolers and conditions for emergency meetings. The information channels will be in a network and with real time available information.

#### **3.2** Result 2

Establish an organizational capacity that allows a coordinated intervention in case of emergency.

- Production of a procedure manual for all intervenient in case of emergency including Cooperation Partners.
- Identification, at all administrative levels, of a meeting point for all organization representatives that intervene in the emergency.
- Determination of what is an emergency or calamity and its consideration levels.
- Establishment of legal and regulatory mechanisms that force the members of NCMTC and CPNU, in case of emergency, at all levels, to obey to a single command voice, independent their hierarchy subordination at their place of work.
- Inventory in the whole country of means and equipments that, even destined to other ends, can be used in national emergency situations.
- Creation of cooperation legal mechanisms with the private sector so that certain material and human means can be called to emergency when this is declared and while it is occurring.
- Design of a logistic mechanism that combines the NCMNI capacities with the partners to storage, transport and distribute in time of emergency products to those in need.
- Definition in the country of operation basis for help to those in need, creating a stock network that combines landing, take off, supply and airplane assistance conditions and its integration with the sea, road and train transportation conditions.

- Help information sharing using the operation rooms and efficient information technologies.
- Availability in strategic points of campaign tents that may be used immediate and temporarily as clinical centres, schools and shelters.
- Definition of strategic points where it can be immediately available water mobile tanks and the necessary products for its treatment.

Implemented at least:

- Six annual simulations per district;
- -Three annual simulations per province.

#### 4 GOAL 4

Reassure a quick and harmonious reconstruction process.

#### **4.1** Result 1

Create conditions for a quick mobilization of resources for affected human tissue and destroyed infrastructures.

- Creation and actualization of a data base about calamities that occurred in the country.
- Creation and implementation of a preliminary evaluation system of the disaster's impact and that allows that this evaluation can be done and broadcasted until 48 hours after the end of the event.
- Based on the preliminary evaluation, send a call for international emergency help in case it is necessary.
- Management of a data base of entities and individuals with insurance against property and goods destruction caused by natural calamities.
- Guarantee that the insurance companies act fast to compensate its clients especially the most vulnerable ones.

Performance in	<u>ıdic</u> a	ator:								
Established at	the	NCMNI	of	a	specialized	unit	in	Law,	Resources	Mobilization,
Communication	and	Image.								
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### IV IMPLEMENTATION STRATEGY

The success in the implementation of the prevention action, management and attenuation of the natural calamities effects programme depend on the strategy of its implementation. Such strategy besides incorporating aspects related with costs bearable by the economy and sustainable guarantees of its positive impacts in the society, must reassure that its implementation is assumed first by the beneficiary, by the Government in its whole and by the society in general. To reassure these characteristics the implementation strategy should be based on (i) the construction of a self-confidence attitude of the communities and authorities, (ii) communitarian participation, (iii) adequate institutional arrangement and (iv) inevitable reinforcement of the district capacities.

# 1 SELF – CONFIDENCE ATTITUDE AND COMUNITARY PARTICIPATION

#### 1.1 Justification

A basic main condition to end extreme poverty is the construction of a mentality and self - confidence attitude in a way that each individual, each level of the Government and each civil society unit in general look for initiatives that take to problems solution. This has been the main Government's worry and in particular of the President's. Unfortunately this message does not find the correspondent attitude in several parts of the country and in many Government organs and in the traditional authorities. A considerable part of head families affected by poverty (and because of that more vulnerable to the natural calamities effects) grew up in an emergency war and calamities environment and are used to beg almost as a way of life. Many times the local, district and provincial authorities look for (as a first resource) the solution of problems caused by natural calamities at high levels (external to them). At a central level has been created the idea of thought and formulated solutions without the affected involvement. This is very often aggravated by the run to the international donators without first run out all the internal capacities that most of the times exist but are not used. Generally this way of living was and still is against the Government's post - independence politics of "counting with our own forces". Even though there is a great effort from the Government concerning the preoccupation of searching and implementing the internal solutions there is still a lot to do to re-establish the self-esteem, self-confidence and dignity that are a basic condition to stop extreme poverty and reduce the vulnerability to natural calamities.

To rescue the values of self – esteem and patriotism the country has created a legal and regulatory frame that establishes the bases to the most participative processes of local development. In the scope of district planning the Ministry of State Administration, Agriculture and Plan and Finance approved a document that establishes the orientations

that should be followed in the elaboration and monitory implementation of Development District Plans (DDP) that forecasts the establishment of consultation organs of civil society at local levels "through the local organs", to the administrative and district post levels. So that the wanted effects are accomplished is necessary to undertake the need of a long capacitating community process which can be slow and onerous, but reassures the fundamental bases to economical, social and cultural growth and development.

#### 1.2 Instruments

#### **1.2.1** Resource and Multiple Use Centres

The NCMNI wants to adopt the decentralization practice (according to LOSL – Local Organ State Law) so that the communities, local authorities (Governmental and traditional) and civil society is engaged in:

- Gathering and process of information related with the natural calamities;
- Surch and development of appropriate technologies that help on the reduction of vulnerability against poverty;
- Collectivity management risk;
- Exchange of experiences between individuals of the community and between different communities;
- Exchange of experiences between districts and provinces;
- Etc.

The solution for this to happen is the creation, management, development and maintenance of the Resource and Multiple Use Centres (RMUC). These centres will be established as physical places with infrastructures and means to perform the following duties:

#### a) Information

- Identify the measures (and or indicators) used locally by the communities or by the community individuals to predict the calamities, such as dryness, floods, hurricanes, etc;
- Combine those indicators with the ones of universal and modern knowledge to produce a new and more credible way of anticipating the calamities effects;
- Identify the ways and means used locally to attenuate the calamities effects;
- Identify, incentive and develop the local ways of human solidarity in cases of suffering caused by calamities;
- Show to communities the scientific and technological ways of how the weather prediction is done and the monitoring of the hurricanes and floods;
- Show the origin of an earthquake and its consequences.

#### b) Technologies

- Identify the best technologies used locally to storage and manage the water, construction of infrastructures, industrial processing, preparation of more nutritional food, etc;
- Identify technologies used outside those communities and select the ones that would adapt to the place;
- Expose physically those technologies in a visible way and enlarge the options to be used by each family, individual or community;
- Create ways to reward the best technology creators and the ones that were more notable in prevention, combat and attenuation initiatives.

#### c) <u>Risk Management</u>

- Find community volunteers to adopted risk indicators measurement, weather they are related with rain, or floods and hurricanes;
- Develop simple formulas to analyse the risk with that information and inform those communities or families that can be in danger;
- Create ways to keep a data base (graphics or numbers) that has the history of all the calamities and its impacts that occurred in that place.

#### d) <u>Experience exchange</u>

- Create conditions so that at least three times a year representative of a certain community around a certain RMUC may exchange and debate experiences relating the reduction of vulnerability and attenuation of the natural calamities effects:
- Create conditions that at least two times a year there are inter-district experience exchanges;
- At least one time a year allow the inter provincial experience exchanges;
- In a general way, create conditions so that the experience exchanges are strengthened by promoting information, technology, agricultural products, industrial processing and gastronomy exhibition fairs.

Besides the above mentioned duties the RMUC should be the first place where people will surch for help in case of unexpected natural disaster. There will be the leaderships to provide information and taken or to be taken measures. Likewise should be the place where it is kept and distributed the emergency kits. The RMUC will also have the possibility to establish, lodge and manage the communitarian communication means, such as radio, communitarian TV, periodic publications, etc. The RMUC's edification will be done in an evolutive way so that it can accommodate other functions that can be identified with its progress.

So that the RMUC is attractive e used it is necessary to be equipped as a social and cultural centre where the communities can meet to socialize, have meetings and celebrate important dates, etc..

It is expected that in time RMUC is able to feed and motivate the return of dignity and the belief that each one can participate in the resolution of society's problems and participate in the country's development. Finally, the RMUC will be the representation way of NCMNI in the district, in the Administrative Post in the area and small villages in case of need.

#### 1.2.2 Adaptation of the Formal Education Curricula

The National Education System is one of the main leadership instruments in the development of self-confidence and self-esteem spirit. By its nature education has the capacity to influence not only the current generations but also the incoming ones. It is known that society in general and the rural communities in particular expect from the teacher and the school the example of how to face life. Besides that, children are among the main victims of natural calamities. So, that why it is proposed that it is introduced and developed in the curricula (since primary school until the university) aspects related with:

- Construction and development of the self-confidence spirit. This is achievable by the introduction of practical and manual activities built and oriented to individual and collective surch of problem solutions that affect the school and the community where it is placed;
- Education in aspects related with climatic changes, nature and natural calamities dimension, prevention and attenuation of its effects.

For that to happen, it is necessary that in the teachers' workshops these matters treatment has a special and specialized attention.

#### 2 ENGAGEMENT AND PARTICIPATION OF CIVIL SOCIETY

The role of civil society in country's development and poverty combat has been such an important instrument that it becomes impossible to imagine the implementation of this plan without its active and dynamic participation. In effect, in the context of poverty combat implementation strategies, the civil society's participation has been growing especially in APREP's formulation and its impacts monitorization through the poverty observatory. Like APREP the civil society's engagement in this plan's implementation will allow solutions integration concerning other problems that affect Mozambique's society which direct or indirectly are connected to society's vulnerability. Among some of those integrated solutions one can mention HIV/AIDS epidemic, Malaria, cholera, women's role and other associated questions, environment, etc. For that it will be necessary to create an appropriate environment so that it is possible to:

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- Negotiate with civil society to have representation in the Natural Calamities Management Technical Counsel;
- Discuss this plan with civil society and undertake agreed efforts to its defence and resource mobilization;
- Integrate the civil society's activities in the implementation of this plan, every time it is necessary and possible;
- Celebrate whenever it is possible partnership agreements to implement plan components according to the needs;
- Celebrate whenever it is possible agreements with local organizations of civil society to represent NCMNI where it doesn't have representation;
- Involve actively civil society in the implementation of prior warning systems and in the constitution of CPNU.

#### 3 INSTITUTIONAL ARRENGEMENT OF NCMNI

The guarantee that the designed programme may be strictly accomplished requires a functional and simple institutional arrangement but capable of effectively coordinate. In this document it is discussed only the institutional arrangement of NCMNI and its ramifications at local levels leaving to other government sectors its own space to readjust.

The NCMNI today is a simple coordination organ resultant from the transformation of NCPCD which is a strictly logistic organ connected to emergency.

The nature of natural calamities and the programme presented here has a vertical and horizontal logic. In the vertical one it is separated the semi-arid zones of the country from the rest of the National territory. In the horizontal one it is separated the cycled and temporary natural calamities but with devastating effects. These logics incorporate the need to combine related activities with the reduction of vulnerability of the population that live in semi-arid zones, with prevention and attenuation of occasional natural calamities activities which affect the country. Obbeying to this logic it is proposed that the NCMNI perform the fundamental duties:

- As a rehabilitation authority of land and margin economies of the semi-arid and arid zones;
- As an Emergency and attenuation of its effects action's coordinator.

#### **Land and Margin Economies Rehabilitation Authority**

As it was discussed in the previous chapters the land and margin economies rehabilitation have as a main goal to reduce the poorer vulnerability to calamities caused by dryness. The land rehabilitation consists fundamentally in the activities implementation which goal is to undertake land and technological improvements that increase land's productivity. The margin economies rehabilitation assumes the surch for alternative

economies that cause profits and enough incomes to complement or substitute the survival economies which do not guarantee the community's stable development. In this plan's context the land and margin economies rehabilitation include the identification of:

- Unproductivity or associated risk factors;
- Rehabilitation solutions that may have a climatic, ecological, technological or risk management character;
- Agrarian means practices which adapt to semi arid and arid conditions;
- Other income generator activities which contribute to ways and survival means diversification and economical development.

The existence of institutions specialized in unproductive (or little unproductive) land and margin economies rehabilitation is a model followed in many countries in the world. These institutions do not replace the sectarian institutions of the Government but concentrate its attention in the recovery aspects or creation of ways that contribute to the replacement of productive capacity of the production factors. Once those production factors are rehabilitated they are placed back to normal rhythm of development and in the respective sector.

#### **Emergency and Attenuation of Its Effects Action Coordinator**

The reduction of vulnerability is not going to eliminate the need to be prepared for a local or national emergency. For that the second duty of NCMNI will be the coordination of emergency actions such as it happens nowadays but with a few organizational changes:

- a) There will be several established emergency levels with criteria still to be defined. There will be district, provincial and national emergencies. Each one of them will be declared and managed at its level based in rules to be specified. The NCMNI will act as a Technical Assessor and district and provincial emergency coordinator while at national level it has the responsibility to manage the emergency of this level by Central Government's command. Besides that, at all levels, the NCMNI is responsible for establishing quality patterns, production and prevention information expansion, surch and rescue means definition and basic needs to humanitarian help definition.
- b) There will be created a CPNU that will give birth to other levels that will obey to it. The national force of CPNU will intervene in national emergencies or when the local are not able to do it by them.

#### Programme and NCMNI's funds

The emergency management requires flexibility and quick action. The production factors rehabilitation and the reconversion of margin economies demand concentration in small and large investments with the need of communitarian participation. The more or less strict squeme of public funds utilization may limit the

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velocity that it is required both in the vulnerability's reduction as in emergency management. The current NCMNI organics considers the administrative and finance autonomy. Some organizations donate funds and equipments to natural calamities prevention and emergency management. On the other hand the NCMNI has access to some patrimony that was given by the government. In this canary it would be desirable that the NCMNI created with the material and finance means to which has access a Margin Economies and Land Rehabilitation Fund (MELRF). For that it would be desirable to add to NCMNI the patrimonial autonomy and authorization for the NCMNI to use that patrimony to feed the fund. That is why it is proposed that NCMNI have administrative, finance and patrimonial autonomy and that the State make available all the means and patrimonies under its currently given responsibility. The growth strategy of MELRF is in a separated document to be submitted to the Ministry Counsel.

#### **Institutional Integration and Organization Parameters**

Despite being a National Directorship the NCMNI by its organic nature has less authority than the most National Directorships of other Ministries in the country. Most of NCMNI actions are considered collateral and because of that concepted and implemented by several Ministries. The NCMNI does not have authority to control the execution of those activities neither the decisions taken in the scope of prevention and attenuation of natural calamities. What NCMNI does is to establish the compatibility and integration of the information received from other institutions. If we consider the nature of the duties of Margin Economies and Land Rehabilitation and the Emergency and Attenuation of its Effects Action Coordination one can understand that it is necessary to gift NCMNI with more authority so that it can be responsible towards the Government by the natural calamities prevention and combat action programme. So, it is proposed that the NCMNI respond to Ministry Counsel and be under the authority of Ministry of State Administration.

In the new format the NCMNI will have to be organized in a different way so that it can be possible to strength its capacity to perform and coordinate this programme. The previous discussion shows that the NCMNI should have the rehabilitation and emergency coordination issues in its organization. On the other hand the rehabilitation issue will have regional technical brigades that support the District Administrators in the planning and implementation district programmes process and a team responsible for performing or send someone to perform an accurate and adaptative investigation. It is important to say that the regional character of the brigades (and not district) has the advantage of considering the ecological regular zones and rationalize the institutional organization and superior education people utilization. It is also important to say that the technical brigades do not necessarily have to have the internal capacity to perform its activities. Every time it is possible should use the existing organizations of the public or private sector for that end. Its main duty is to identify what must be done, who has the capacity and the equipment to do it and make contracts with those entities and to control its implementation.

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From the organizational NCMNI's point of view the coordination mechanisms will depend on the creation and management of the strategic food supply of the country, in CPNU and in the connection to private companies in what concerns the implementation of corporative social responsibilities.						