



MALI DISASTER RISK MANAGEMENT

Country Note (DRAFT)

1. Country Disaster Risk and Vulnerability Profile

Vast Sahelian country representing 1/24th of the total area of Africa (1 241 238 sq km), Mali is exposed to multiple natural hazards, but is particularly vulnerable to drought, locust invasion and floods¹.

Its vulnerability is mainly linked to its position at the heart of West Africa surrounded by seven countries, and its Sahelian climate, dry tropical, with high variability alternating drought and intense rainfall. It is also linked, during the rainy season, to the flooding of the two great rivers Niger and Senegal and their tributaries, which form a major river system, included in large watersheds that Mali shares with twelve countries. There are considerable potential groundwater resources but difficult to access because of a very irregular spatial distribution and the water table depth.

This physical vulnerability is accentuated by socio-economic and environmental factors, mainly: The

dependence of a rain fed agriculture, key sector of the Malian economy, to a capricious rainfall.

²; A high poverty rate with an income per capita estimated at U.S. \$ 380 (in 2007) and a low UNDP's Human Development Index, ranking Mali at 175 among 177 countries (in 2006)³; People settlement in flood plains formed by river basins and beds, indicating a of land use planning and zoning⁴; And finally, environment destruction and soil deterioration⁵.



In 27 years (1980-2007), natural disasters, including drought, floods and epidemics, affected nearly 3 million people and killed about 3,300 people in Mali⁶.

Two thirds of the territory of Mali consists of arid and semi-arid areas in the North, experiencing a persistent drought since 1970⁷.

Mali is characterized by an important spatial variability of temperature and rainfall. In normal time, the temperature rises from the South-West to North-East with a maximum recorded during the year about 45 ° C, while the minimum is rarely below 10 ° C. Rainfall is decreasing from the South to the North from over 1000 mm per year, in the Sudano-Guinean Southern area, to less than 200 mm per year in the Saharan northern area.

Figure 1 : Top 5 Natural Disaster reported from 1980 to 2007

Disaster	Date	Affected (no. of people)
Drought	1980	1,500,000
Drought	2005	1,000,000
Drought	1991	302,000
Flood	2007	47,255
Flood	2007	41,603

Source of data: OFDA/CRED International Disaster Database
Data version: v11.08 *: Including tsunami
Data disaloved does not imolv national endorsement.

¹ Source : « Plan d'Action National d'Adaptation aux Changements Climatiques – Juillet 2007 ».

² It is to be noticed that agriculture contributes to 50% of GNP, to 40% of GDP and is practiced by 70% of people living in rural areas - Source : "Appui de la Banque Mondiale aux efforts de Développement du Mali" - Ministère de l'Economie et des Finances et Bureau de la Banque Mondiale ».

³ CAS World Bank : 2007-2011.

⁴ NAPA

⁵ NAPA

⁶ OFDA/CRED International Disaster Database - Data version: v11.08

⁷ National Programme of Action for Adaptation to the adverse effects of Climate Change (NAPA)

Furthermore, there is high rainfall inter annual variability resulting in recurrent dry years becoming increasingly frequent since 1968⁸. In 27 years (1980-2007), the country experienced five major drought episodes. The most important in 1980 and 2005 affected respectively 1.5 million and 1 million people with important economic consequences (fig.1). The persistent drought resulted in a significant population migration from the North to the South, but also in the practice of rain fed agriculture in the lowlands and the flood prone valleys of the rivers and creeks, especially for rice growing⁹.

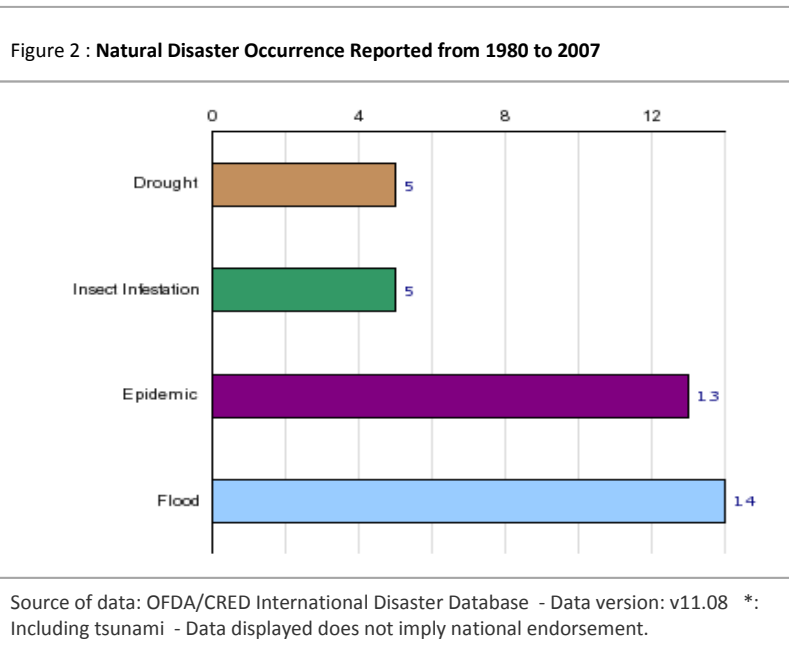
Mali suffered from regular locust invasions, the worst and most recent was in 2004.

Mali is a country of both locust invasion and locust development. If the invasion covers the whole country, locust development is located in specific areas, (outbreak areas)¹⁰ which are mainly: the Adrar Iforas (Kidal region) Timetrine (border with Algeria), the Tamesna (border with Niger), North east Tombouctou and the Tilemsi Valley¹¹. They are the ordinary locust regeneration and living spaces¹².

In 2004, some regions were heavily affected, including: Nara in the Koulikoro Segou, Timbuktu and Mopti regions. The damages were varying among the affected areas, but millet, sorghum and cowpea were the most affected with respectively 37 000, 9 000 and 3 000 tones of losses¹³. This 2004 locust invasion severely affected Mali economic growth which was 2% instead of forecasted 5%. It affected negatively agricultural production which was less 30.2% than the forecasts. Finally, it caused an increased country budgetary expenditure of 7 billion CFA francs¹⁴.

Mali experienced fifteen floods events in the last 27 years, affecting usually between 10 000 and more than 45 000 people for each event¹⁵ (Fig.2).

Occurring in both rural and urban areas, flooding is usually due to rivers and waterways overflowing and swelling combined or not with a drainage system failure. They occurred generally following a high rainfall and are usually linked to a failure of land use planning and control, leading to an uncontrolled occupation of flood prone lowland, rivers beds and floodplains¹⁶. In 2003, floods caused about 20 deaths, destroyed 6052 dwellings, flooded 12 000 ha cultivation fields, and destroyed roads and bridges¹⁷. While in 2003, floods affected nearly 10 000 people, in 2007 they affected about 88 000 people¹⁸. They main flood prone areas are located in the Delta Intérieur of Niger (64 000 sq km) which is a particular ecosystem because of the hydrography. In addition to the capital Bamako, the regions of Timbuktu, Gao, Mopti, Segou, Kayes, Koulikoro and Sikasso are among the most exposed¹⁹,



⁸ NAPA

⁹ NAPA

¹⁰ "Aires grégarigènes".

¹¹ CNLCP

¹² « Actu Criquet » Minsitry of Agriculture Web site.

¹³ Source « Leçons d'une crise alimentaire annoncée au Mali - Pierre Janin, UMR 201 « Développement et Sociétés » - UD1/IRD -Sénégal.

¹⁴ C.A. DIA – « l'Essor n°16413 - 2009-03-31 ».

¹⁵ OFDA/CRED International Disaster Database - Data version: v11.08

¹⁶ NAPA

¹⁷ « Renforcer la résilience des systèmes énergétiques et des écosystèmes en Mali » - Observatoire de la viabilité énergétique 2007 - Cheick Ahmed SANOGO.

¹⁸ OFDA/CRED International Disaster Database - Data version: v11.08

¹⁹ IFRC Information Bulletin September 2003 and Maliweb.net July 2007 « Suite aux inondations au Mali : L'Usaid offre 23 millions de FCFA au gouvernement (source : Service d'information de l'Ambassade des Etats Unis au Mali) ».

The environmental and soil degradation, with silting and erosion following deforestation and bush fires, are major underlying risk factors. Important arable soil loss has been reported: about 6.5 tons / ha / year, ranging from 1 tone in the North, to over 10 tones in the South²⁰.

Like the other Sahelian countries, Mali was facing for many years climate variability, even in normal time, and this will be continuing in the future. It consisted in alternating dry and wet periods, characterized respectively by a low rainfall compared to the normal and a relatively abundant rainfall.

But Mali is also undergoing climate change phenomenon for several decades. In fact, a downward trend of annual rainfall average was observed over the period from 1921 to 1980s. The rainfall average was about 700 mm per year between 1921 and 1941, and 400 mm per year in 1980²¹. In addition, analysis of abnormalities of reduced temperature, calculated on the basis of maximum and minimum temperatures data in 13 stations, from 1961 to 2004, showed a decreasing trend of maximum and minimum temperatures from 1961 to 1986 and an increasing trend of maximum and minimum temperatures from 1986 to 2004²².

According to climate scenarios developed for Mali, a temperature rise of over 2 °C throughout the country for the 2005-2100 periods would be expected²³. The persistent drought in 1970, has resulted in fairly significant rainfall deficits and a continuous shift of the isohyets to the South²⁴.

The average flow of the Niger River which reached 1300 m3 in 1978, was only 895 m3 in 2002²⁵. Water resources and agriculture are among the most vulnerable sectors to climate change, with a projected overall yields decline between 2005 and 2025 (maize, rice river, cotton, millet / sorghum)²⁶.

Mali has been and will be exposed, continuously, to an uncertain and inadequate rainfall, but at the same time to successive floods, which frequency seems to steadily increase²⁷.

2. Country Disaster Risk Management Framework

2.1 Policy, Institutional Capacity and Consensus Building

Created in 1998, the Directorate General of Civil Protection (DGPC) is the coordinator body for disaster and risk prevention and management interventions. Attached to the Ministry of Interior Security and Civil Protection, the DGPC's primary mission is to develop elements of the National Civil Protection Policy and to ensure its implementation. As such, the DGPC is mainly in charge of: Organizing and coordinating prevention, forecasting and relief interventions - Developing and implementing disaster management plans - Managing logistics means related to the implementation of these missions -- Coordinating and monitoring relief interventions of departments responsible of the execution of the civil protection national Policy – Undertaking rehabilitation operations following the disasters.

The DGPC acts as the Permanent Secretariat of the Permanent National Commission for Prevention and Fight against Disasters and for Relief Organization.

Sectoral institutions manage risk according to their nature. Focal points managing specific risks include the National Center for the Fight against Locust (CNLCP)²⁸, the National Commission of the Permanent Inter-State Committee for the Fight against Drought in the Sahel (CONA CILSS)²⁹, the Permanent Technical Secretariat of the Institutional Framework for the Management of Environmental Issues (STP/CIGQE)³⁰ as the focal point for desertification and the DGPC is the focal point for floods. Specialized structures address food security issues mainly the Food Security Commissariat (CSA)³¹.

²⁰ PANA – source : Bishop and Allen, 1989

²¹ NAPA

²² NAPA

²³ NAPA

²⁴ NAPA

²⁵ NAPA

²⁶ NAPA

²⁷ NAPA

²⁸ Centre National de Lutte contre le Criquet Pèlerin

²⁹ Commission Nationale du Comité permanent Inter-Etats de Lutte contre la Sécheresse dans le Sahel

³⁰ Secrétariat Technique Permanent du Cadre Institutionnel de la Gestion des Questions Environnementales

³¹ Commissariat à la Sécurité Alimentaire (CSA)

A project of law, currently under review before its submission to the National Assembly, stipulates the establishment of the Permanent National Commission for Prevention and Fight against Disasters and for Relief Organization. Attached to the Ministry of Interior Security and Civil Protection, the Commission will be responsible for developing the national plan for disaster prevention, for relief organization, and for its implementation. Chaired by the Minister of Interior Security and Civil Protection, the Commission will be composed of representatives from the Prime Minister Office and all Ministries involved in disaster and risk management but also any person or institution invited by the Commission's president, whose experience, competencies and resources are deemed necessary. At decentralized level, regional commissions (region), local (circle) and communal (commune) will be established

These various Committees would also serve as meeting and exchange forums for stakeholders at various levels, called "Platforms **for disaster prevention and management**". They promote sustainable development through interventions that promote resilience to disaster³². **A national platform and regional platforms for disaster prevention and management in Mali (temporary yet), have been developed** following process undertaken since 2005. The DGPC with PRECARICA project support³³, is currently underway to strengthen management and coordination capacity of institutions' representatives composing the Platforms.

The development of national, regional and local Plans for on the Prevention of Disasters and the Relief Organization are scheduled according to the project of law currently under review. The DGPC, with the support of its support project PRECARICA, started and are pursuing the process of developing these plans. The National Action Plan will enable an overview of the coordination activities and of the monitoring and evaluation of the country disaster risk reduction status and finally will define the strategy for integrating disaster risk reduction into both adaptation to climate change strategies and development programs and projects³⁴.

The National Programme of Action for Adaptation to the adverse effects of Climate Change (NAPA) was finalized and approved in July 2007, under the guidance of the National Directorate of Meteorology (DNM), attached to the Ministry of Equipment and Transport. Its development was conducted within a group of experts according to a participatory process. The Program identifies nineteen priority adaptation options presented through project sheets. They include the³⁵: (1) Popularization of improved varieties of major food crops adapted to the climatic conditions (millet, sorghum, maize and rice) – (2) Popularization of animal and plant species adapted to climatic conditions – (3) Promotion of income generating activities and mutual associations – (4) aquaculture development and equipping – (5) grain banks promotion – (6) Use of weather information to improve agricultural production and contribute to food security – (7) lowland development – (8) Realization of boreholes equipped with solar pump or wind powered pump – (9) Energetic valorisation of *Typha australis* – (10) contribution to the removal of barriers about the promotion of solar energy applications – (11) Capture of streaming water and restoration of water points (backwater, sick and lakes) – (12) Awareness raising and organization of people for the natural resources preservation (development of local agreements for reforestation and agro forestry). (13) Forest fire management – (14) Development of farming CES / DRS and Composting activities- (15) Development of fodder crops – (16) Development of a technology package of training for people on practicing simple adaptation to climate change activities - (17) Promotion of animal feeding banks – (18) Promotion of jatropha oil- (19) Establishing an information system on climate change related health risks.

But Mali has experienced difficulties in the effective implementation of the NAPA. The main reason would be the unavailability of sufficient funds for adaptation at global level.

However, since 2009, the situation seems to be unlocked. The project proposal submitted by Mali to the UNFCCC has been selected for a funding of \$ 5 million, for an implementation period of 5 years. Under the direction of the National Directorate of Meteorology, the country is currently formulating the related project document. This project will be directed towards strengthening the capacity and resilience of the Food Security in Mali against climate change. It is intended to implement a package of priority actions provided in several "projects sheets" of the NAPA, adopted in 2007, particularly the priority actions of the project sheets 1, 2, 4, 5, 7 and 8. The document project formulation is expected to be finished in October 2009, which will be followed by submission to UNFCCC's Board. The project implementation is expected to start in 2010.

³² DGPC and PRECARICA Prodod.

³³ CoFinanced by the Government –UNDP- DANIDA and GEF : National Capacity Strengthening in view of Disaster Risk Reduction or « Projet de Renforcement des Capacités Nationales en vue de Réduire les Risques de Catastrophes ».

³⁴ PRECARICA Prodod.

³⁵ NAPA

Several partners have been also invited to take part in the financing of priority actions of the NAPA.

But it is to be noted that, although the NAPA as such, has not been officially implemented, many climate change adaptation undertaken with Mali's technical and financial partners support, cover and contribute to the achievement of most of the priority actions identified in the NAPA³⁶.

Thus, an overview on the status of implementation of NAPA priority actions, followed by an update of priority actions on adaptation to climate change in Mali, would be needed to better guide future actions on the field.

Moreover, this exercise could serve as opportunity to integrate disaster risk reduction that is currently still treated as separate part and agenda, distinct from those of adaptation to climate change. In fact, all NAPA priority actions aim and contribute to reduction of climate-induced disasters risk in Mali, mostly the promotion of: the resilience of key sectors of agriculture and livestock (Actions 1 and 2), fighting against the underlying risks factors such as deforestation, land degradation (Actions 7, 8, 9, 10, 11 and 12) ; supporting community vulnerability reduction and preparedness (Actions 3,5,6, 11); promoting the use of information and knowledge for better disaster preparedness (6). Linking more such actions to context and specific risk profile of the specific areas, combined with more aspects on post-disaster response preparation, including rehabilitation, would be particularly relevant.

Despite the strong DGPC and sectoral actors' commitment and the significant progress made by the country, major challenges remain to address.

Several efforts have been initiated to institutionalize disaster risk reduction and management but need to be strengthened. The systematic implementation of the national initiative to develop institutional frameworks and the improvement and strengthening of the national platform will be success factors. A better clarification and formalization of the stakeholders' responsibilities will further optimize coordination effectiveness. Concrete legislative measures, including the establishment of an appropriate legal framework for disaster management by the adoption of the project of law submitted by the DGPC, will ensure effective commitment and coordination of stakeholders. It will also ensure the implementation of a National Disaster Risk Reduction Plan and the national and regional ORSEC Plans.

It is to be noted that the implementation of capacity building efforts by the DGPC is only at its beginning. The establishment of a comprehensive disaster risk management vision for Mali, commonly adopted as a Global National Strategy, will provide a reference frame and guide for of all stakeholders' interventions and will facilitate DGPC's coordination and facilitating roles.

The Mali adheres to the implementation of decentralized disaster risk management interventions and in this sense, DGPC and its decentralized structures are particularly active. Efforts are also made by DGPC, to promote authorities responsibility implementation and involvement at decentralized levels: including Governors, of Circles Commanders and Mayors, within the disaster risk management and reduction system. This seeks to ensure that the DRR/DRM system now revolves less around the DGPC and its decentralized structures, and functions also less from Bamako (central level).

Resources and skills adequacy to efficiently carry out those decentralized authorities' responsibilities and partnership optimization with the community would be critical priorities to ensure successfully this desired effective decentralization of DRM.

2.2. Disaster Risk Assessment, Monitoring and Early warning

From 2004 until now, DGPC undertakes a participatory identification of risks in all Communes of Mali in view of realizing a risk mapping and establishing an organized and dynamic database. This exercise allowed to localize the various existing risks from the ground, and to engage the local level in the planning of future risk reduction actions. The results of this risk identification were collected through the Risk Identification Form/Sheet (FICAR)³⁷ and validated. Their use will be complemented by specialized databases and satellite images use³⁸.

³⁶ See: Part 4 of this document "Key donors engagements"

³⁷ Fiche d'Identification des Risques

³⁸ PRECARICA Prodod.

Technical risks assessment and monitoring are undertaken by specialized agencies but are frequently limited to hazards assessment and monitoring, especially for flooding. The National Center for the Fight against Locust (CNLCP) evaluates and continuously monitors the locust invasion risks.

Using modern facilities, radar and advanced transmission techniques combined with field monitoring by agents in the fields base and support points, with support from population through standby locust brigade, the National Center for the Fight against Locust (CNLCP) real-time and permanent monitoring of the locust threat. From a technical view, locust risk assessment and monitoring are well secured. The limiting factor is the fact that it is not possible, for now, to physically cover the entire country. In fact, ground displacement of monitoring teams in certain locust outbreak areas in the northern part of the country, is still difficult even impossible, because of major security concern.

The National Meteorology Directorate continuously evaluates and monitors rainfall and temperatures, and makes forecasts, especially for locust invasion, drought and floods prone areas. But the lack of observation stations that do not exist in all circles as required, could affect the forecasts quality and accuracy. Improvement in some characteristics of the used radars could improve the institution's performance.

The National Hydraulics Directorate assesses and monitors the levels of rivers and major waterways, through observatories. But even if this monitoring is continuously undertaken, it provides information only two times a day, in the morning and evening. Setting up a multifunctional platform for data collection would improve this continuous monitoring by enabling information availability at more frequent intervals, even hourly.

The National Hydraulics Directorate also carries out behavior modeling of the major rivers and waterways, and mapping based on these behaviors assessment and monitoring. However, a spatial vulnerability analysis of exposed elements (geo-referenced), combined with a potential socio-economic impact analysis would provide a complete flood risks assessment and mapping.

It could be said that with regard to Early Warning System, Mali has a good experience in terms of risk assessment, detection, monitoring and prediction of the two hazards that are the locusts and drought. But a **number of needs have to be addressed, for flooding risk assessment, monitoring and mapping.** The hazard analysis and mapping already done should be supplemented by a vulnerability analysis and mapping of the main assets at risk, including their inventory (geo referenced) and the consideration of their level of vulnerability (exposure level - level of resistance to destruction). It should also include the probability and degree of potential socio-economic damage and losses caused by floods according to the various probable scenarios. Spatial flooding risk analysis and assessment should be extended to other highly exposed areas including the city of Bamako to guide all decisions and future planning. Finally, to ensure the reliability of the mapping generated from the participatory identification data (FICAR), their combination with technical and scientific risks evaluation data is needed. A geographic information system on disaster and risk management (for floods, but would be extended to other hazards later), dynamic, easy to use and regularly updated, with open access, should be established and capitalize the substantial experiences existing in the different sectors. The material capacity of both the National Meteorology Directorate and the National Hydraulics Directorate is to be strengthened by setting up multifunctional platform for data collection and synoptic observation stations in some priority areas. This would optimize the national coverage and enhance the quality of the rainfall, temperature and water level forecasts.

For the three hazards (locust invasion, drought, and flood), alerts communication and dissemination to concerned technical institutions and to the public are ensured at all times. The National Center for the Fight against Locust (CNLCP, regularly disseminates information on the locust situation through newsletters. The CNLCP can, at any time, react and disseminate warnings to technical agencies, authorities or to populations if necessary, for the implementation of response actions in case of emergency.

The National Meteorology Directorate ensures the regular transmission of information and warnings through newsletters, TV and radios (daily, weekly, etc) but also the National Hydraulics Directorate about water levels in rivers and waterways.

Information on hazards (location, intensity, evolution) and some instructions on measures and attitudes to be adopted, are issued.

The current problem lies in monitoring the effective use by populations, of the transmitted information and alerts. Field verification missions are carried out but they are usually far too late (a few weeks after release) in

order to ensure proper and timely use of information. The lack of feedback about the adequacy of transmitted information content to targeted recipients' needs on the ground, is one of the constraints raised by the technical institutions.

The media, particularly local radios, plays also an important role in transmitting information and warning to the population. But sometimes, information and alerts are not adapted to real needs of the population (content and format), and did not provide any options as a reaction to the alert, besides the fact they are often not translated in local languages. This often encourages people to rely on traditional warning measures and response system to deal efficiently with the situation. However, their effectiveness is rather limited at present, because that younger generations do not know these codes and organizations traditionally in place within their communities. Moreover, their inclusion and integration into official (state) warning system at local level is not yet ensured.

The important efforts undertaken towards the early warning system would need to be strengthened, particularly for rapid onset hazards such as flooding. Coordination of the various existing early warning systems, mainly for messages content, format and transmission monitoring, for the coverage and the effective use by the final recipients, needs to be permanently maintained (monitoring system) though an appropriate mechanism. The system and mechanism for transmission, reception and use of warning at the community level need to be strengthened, through a well defined organization and adequate equipments. Strengthening traditional measures of alert and response at community level would maximize the effectiveness of the early warning system. The existence of a food security early warning system (SAP) is crucial whatever the natural hazards nature. for management of all kind of risks, particularly those related to slow-onset hazards such as drought and locust invasion. But its place within the mechanism for managing rapid-onset hazards such as flooding, particularly its implication in the relief operations triggering should be streamlined.

The SAP is a central element for the management of slow-onset disaster risk, such as drought and locust invasion. But it is also a key mechanism for the disaster impacts assessment and monitoring, for rapid-onset such as flooding. However, in this last case, to optimize the celerity of post-disaster food emergency response implementation, the level of SAP involvement in the decision making process to trigger relief operations, might be more rationalized.

2.3. Knowledge and Capacity Enhancement for DRM

From this year 2009, the DGPC will organize national and regional training seminars on disaster and risk management. They will target high level administrative officials and elected officials at both central and local levels, and finally key stakeholders within the National Platforms for Disaster Prevention and Management. These seminars aim at disseminating disaster and risk management knowledge, but also the knowledge by the stakeholders of their respective roles and responsibilities as defined in the laws and regulations. Training booklets will be produced and distributed to participants³⁹.

Training on Civil Protection is organized annually by the DGPC. Open to the public, it is realized with the support from the International Civil Protection Organization (OIPC)⁴⁰.

Awareness booklets for pupils and teachers have been developed by the DGPC during the Global Campaign for Disaster Prevention 2008-2009. Despite this relevant initiative, the disaster risk management and reduction, is not yet included in school curricula. At university level, there is no specific disaster risk management training, but aspects and themes relating to the issue are treated and integrated into courses conducted in the various university departments. The development of such a specific university training is not yet currently an expressed country priority or need.

Researches contribute to disaster risk reduction in Mali. Generally, a research unit or institution is attached to a line Ministry for supporting the implementation of its mandate and achieving its work program. The Center is also involved in disaster risk reduction actions such as the Institute for Rural Economy (IER)⁴¹. This is attached

³⁹ PRECARICA Prodoc.

⁴⁰ Organisation Internationale de la Protection Civile.

⁴¹ Institut d'Economie Rurale

to the Ministry of Agriculture and is working on the production, testing and extension seeds adapted to extreme events including recurrent drought. But like the institutional "sectoriality" of the disaster risk management in Mali, the research also appears generally fragmented and sectoral. It is to be noted that the Ministry of Environment is one of the key ministries which have not yet an attached research center.

Many actions and exciting initiatives such as TV and radio programs, workshops and conferences are implemented by the authorities to raise public awareness. However, awareness of available options in the field of disaster and risk management is generally restricted at the population level. This is partly due to weak communication means and channels used by disaster managers to inform and educate public about potential hazards, the ways to reduce their impacts and to cope with. The media are actively involved in the promotion and awareness within the population through special broadcasts and news bulletins. But in some cases, topics include subjects not of much interest about daily risks experienced. Otherwise, often they are translated in only one to two local languages (among about ten local languages).

Despite these efforts, gaps are to be filled in the dissemination of knowledge and increasing public awareness. In the case of Mali, where resources are limited, community participation in managing and reducing disaster risk is crucial. This requires awareness and adoption of the required adapted way of life. In this regard, the establishment of a more comprehensive and systematic communication and public awareness raising plan is needed. The adequacy of the messages content, the used methodology and approach to the targets' needs and specificities, should be strengthened. Cooperation with local radio stations and NGOs with experience in this field should be promoted⁴². The integration of the disaster risk reduction in the primary and secondary education curricula is recommended, to establish a good foundation for the future, in collaboration with the National Education Center⁴³, which shown its enthusiasm. Multisectoral research on disaster and risk reduction, and climate change carried out by multidisciplinary teams and coordinated by the National Center for Scientific and Technological Research (CNRST)⁴⁴ should be promoted to fill the potential limitations of the sectoral research approach in the domain.

2.4. Disaster Preparedness and Recovery:

The Directorate General of Civil Protection DGPC is in charge of coordinating, at the national level, the disaster response. Equipped with an Operational Center, the DGPC is particularly responsible for coordinating and monitoring relief operations and for implementing post-disaster rehabilitation operations⁴⁵. Crisis management is carried out through the Permanent National Commission for the Prevention, the Fight against Disasters and the Relief Organization. At decentralized levels, crisis and disasters are managed through the Regional, Local and Municipal Permanent Commissions for the Prevention, the Fight against Disasters and the Relief Organization.

The ORSEC Plan (Relief Organization Plan) is the main disaster response tool. The ORSEC Plan includes a sequential interventions programming of public and private predetermined means, whose intervention is envisaged, given the speed and efficiency imperatives⁴⁶. ORSEC Plan exists at national, regional, local (circle) and communal levels. At the national level, the Minister responsible for Civil Protection is in charge of launching alert and triggering the ORSEC Plan implementation, once he has the necessary information to identify and assess the danger, its importance and its immediate consequences. Similarly, the Governor, the Prefect and the Mayor are in charge of triggering respectively ORSEC Plans implementation at regional, local and municipal levels.

The DGPC is currently continuing its effort, undertaken since 2004, to develop ORSEC plans for the various regions of Mali, with the support from the PRECARICA project.

⁴² Islamic Relief's Experience.

⁴³ Centre National de l'Éducation.

⁴⁴ Centre National de Recherche Scientifique et Technologique

⁴⁵ Ordonnance N°98-026/P-RM du 25 August 1998, ratified by the Law N°98-057- 17December 1998, modified by the Law N°06-004 - 06 January 2006

⁴⁶ Projet de Décret fixant les modalités d'élaboration et d'application du Plan National, des Plans Régionaux et Locaux relatifs à la prévention des calamités et à l'organisation des secours, actuellement en cours d'examen au niveau Ministériel avant sa soumission à l'Assemblée Nationale.

The DGPC was initiated in early September 2009, the development of a National Contingency Plan based on three scenarios: floods, drought and cholera. It is also planning to proceed to the development of Regional Contingency Plans.

The DGPC is planning to carry out three disasters simulation exercises annually, during the next three years. These exercises will be conducted based on scenarios that will be defined later. But they will address the major risks the country is facing, mainly: floods, drought, locust invasion, avian flu and industrial accidents. These exercises will be carried out with PRECARICA project support, following the various training seminars.

Despite these achievements, significant needs should be addressed, particularly related to the implementation of post-floods recovery. In reality, the practice of post-disaster recovery is a relatively new experience for most of the authorities at municipal level as well as at central and regional levels. Knowledge, guidance and reference models (examples and practical experiences) on the implementation of recovery are great needs expressed by these authorities.

The recovery needs assessment is usually carried out, one to two weeks after the emergency needs assessment needs, but the same evaluation form is used for both types of evaluation.

Strengthening system and capacity for Post-Disaster Needs Assessment (PDNA) and medium and longer term recovery response, would be indicated. It would include strengthening of needs assessment and recovery planning and implementation mechanisms, but also know how enhancement.

In terms of recovery needs assessment methodology, it would be necessary to include the standard DALA methodology (Damage, Losses and Needs Assessment)⁴⁷ among available assessment tools for Mali. In fact, it will also allow strengthening the risk exposure data, that can be used as a basis for probabilistic risk assessment, hazard mapping and financial risk transfer (especially insurance if needed).

2.5. Disaster Risk Reduction and Financing

Interventions contributing or aiming specifically at reducing underlying natural disaster risk factors, are implemented in Mali, particularly in the areas of: environment and natural resource management, soil management and land use planning, energy and food security.

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These interventions are performed mainly through the implementation of the National Environment Policy, which is composed of nine National Action Programs: land use planning program; natural resources management program ; water resources management program; life environment improvement program ; o the; development new and renewable energy resources program; environmental information management program ; environment information, education and communication program; monitoring of conventions implementation program ; and the fight against desertification and environmental protection research program.

Disaster risk reduction activities are also conducted through the implementation of the Agricultural Orientation Law (LOA)⁴⁸ which establishes elements of the Agricultural Development Policy in Mali, in particular, through its objectives which are: economic and social promotion of women, men and young people in rural and suburban areas; country sovereignty and food security; reduction of rural poverty; modernization of family farming and industry development; environmental protection and sustainable natural resources management ; increasing of the rural sector contribution to economic growth ; and balanced and coherent agricultural development planning of the country.

While risks associated with drought are widely addressed, the long-term reduction of flood risks is only partially addressed. An enhanced land use control and a better sites development planning should be ensured to avoid that flood plains are used for settlement in urban, suburban and rural areas. But as in Mali, many people are already living in flood plains formed by rivers beds and basins, especially in Bamako and in the Delta of Niger, it is crucial to invest in strengthening the resilience of infrastructure and houses in these areas. The establishment of appropriate drainage and sanitation systems is also needed particularly in urban areas, such as Bamako, where rains, often short but intense, may cause rapid flooding of low level located areas.

⁴⁷ Developed by UN ECLAC.

⁴⁸ Loi d'Orientation Agricole.

Land use and urbanization plans and schemes exist but are often facing with difficulties for practical implementation. The main stated reasons include the failure of laws and regulations implementation. But this is also due in some cases, the inadequacy of these plans and schemes to the real situation requirements, in the concerned areas. Measures to strengthen enforcement of laws and regulations relating to planning, land use and urbanization should be adopted. Measures to ensure the technical quality and adequacy of developed plans and schemes, particularly through better understanding and mapping of risk prone areas (especially in flood prone areas in case of flooding, should be also taken.

In several regions of Mali, people is already living in flood areas formed by rivers and streams beds and basins, especially in Bamako and in the Niger Delta. To protect life and mitigate future disasters, measures aiming at increasing people awareness about the risks they face and encouraging them to leave these threatened places to get into more secure areas should be undertaken.

Meanwhile, measures (temporary) to strengthen the homes resilience in these areas at risk, at accessible costs to the public, should be taken to avoid injuries and casualties in case of the disasters occurrence.

Although interventions currently undertaken, in the fields of environment and natural resource management, land management and land use planning, energy and food security, undoubtedly contribute to reduce risks in general, it seems necessary to strengthen them with actions addressing more specifically and systematically the reduction and the management of each risk⁴⁹ that Mali faces, including the climate change dimension. Moreover, the protection of those actions themselves against the effects of natural disasters is not systematically considered and should be ensured. The implementation of pilot action incorporating all of these sectoral and multisectoral measures, dimensions and approaches to achieve a systemic and integrated reduction flooding risk, would be recommended for reference.

The disaster and risk management financing mechanism is not yet sufficiently developed and adapted.

The Agricultural Orientation Law provides for the establishment of a National Fund for Agricultural Development, amounting about seven billion CFA francs, which includes a component designed to be used as a National Risks and Disasters Fund. The Government is still undertaking in depth reflections on how to establish and make it operational. The modalities of implementation of its National Risks and Disasters Fund component are not yet known at present⁵⁰.

The establishment of an Emergency Anti Locust Invasion Fund⁵¹ is currently under study. Expected to be about \$ 500 million CFA francs, this fund would be dedicated to manage the beginning of a locust invasion. It would not exist at this time any designed financial provision or mechanism to ensure its relay⁵².

A Fund for the Fight against Locust Invasion is in place but it seems to cover only the preventive aspect. No financial mechanism dedicated to carry out response actions in case of locust invasion exists.

A National Solidarity Fund exists but it is exclusively dedicated to the implementation of specific social protection interventions. A Food Security Fund also exists.

To carry out response to potential disasters such as floods, the mechanism currently in place is the use of funds from the state budget, by reallocation or creation of relevant budget lines. Each ministry also has budget lines that could be mobilized for response as well as municipalities which have funds for relief needs. The call for international partners' funds in case of State capacity overwhelming is part of the financial response strategy of Mali⁵³.

Despite the efforts made so far, significant challenges need to be addressed.

To optimize the disaster response, appropriate financial arrangements, flexible and easy to mobilize, providing funds for multisectoral needs of various natures is necessary. The multisectoral and multi-hazard nature of disaster response and the required speed of funds mobilization, generally call for the establishment of an independent fund managed at high level. For a country like Mali continually confronted to permanent natural hazards, a good disaster risk financing and risk transfer strategy and mechanism is a key element of a successful disaster risk management Strategy. To accompany the country, a support providing the government officials

⁴⁹ The nature of risk varies according to the concerned areas and can be related to floods, drought and locust invasions, with a specific context

⁵⁰ Ministry of Agriculture

⁵¹ Fonds d'Urgence anti Acridienne

⁵² CNLCP

⁵³ State Secretary in charge of Budget

with the knowledge and information about existing experiences and options, and helping them to explore and thus identify the appropriate mechanism for Mali would be recommended.

3. Integration of DRM in Development Strategies

Disaster and Risk Management, and Civil Protection are stated but very discreet priorities in the GPRSF / Growth and Poverty Reduction Strategy Framework (2007-2011). They are not strategic nor priority sectors nor cross-cutting issues themselves, but they are strategic pillars of the crosscutting theme "Peace and Security" of the GPRSF. Strategic pillars under this theme include: disaster management strategy strengthening; capacity strengthening for interior security and civil protection forces; establishment of an effective interior security and civil protection governance; strengthening the prevention and management of community conflicts. But the systematic mainstreaming disaster and risk reduction in the planning and implementation of GPRSF priority sectors is not clearly specified.

The exposure of the Malian economy to external shocks, including natural disasters, is raised in the World Bank Country Assistance Strategy to Mali (CAS 2008-2011), but no specific action was planned in this regard. In the economic prospects and challenges analysis, it is reminded that the vulnerability to rainfall and desertification and other exogenous factors, are perpetual challenges for the Malian economy. It is also told that the budget does not contain provisions for the fiscal impact of these exogenous shocks. The Bank also recommends that special attention should be paid to urban areas, which are facing failure and lack of roads, drainage and basic services (water, sanitation and electricity) while the urban population produces 50% of the country's GDP. But the Bank's interventions contribute to disaster and risk reduction, particularly through actions in the "Rural Development and Environment" sector and the "Energy and Transport" sector. Promoting sustainable land management, the reduction of agricultural pressure on natural resources and promoting the use of alternative sources of energy to wood are among the actions undertaken in this framework.

Disaster and risk management is a priority intervention within the UNDAF (2008-2012)⁵⁴. It is part of the UNDAF outcome number 4 "The most vulnerable rural areas benefit from the food security and sustainable development strengthening, the provision of sustainable alternative energy services and the job creation", in the following Country Programs Result: "The national system for the prevention and management of food crisis and other natural disasters is strengthened." The UN system is planning the implementation of interventions strengthening and operationalizing the early warning system, allowing to monitor the food situation and to timely warn in case of crisis. The system will support the development and implementation of strategic plans for natural disaster prevention and response, which will be strengthened through establishment of efficient coordination mechanisms.

Despite the apparent priority given to disaster and risk management, its systematic integration into the planning and implementation of GPRSF priority sectors should be clearly stated. Its appropriate anchorage within the GPRSF document and more information provided about the country's vision for its effective implementation, also appear necessary to allow its effective transversal integration into GPRSF sectoral priority policies and programs priority sector the GPRSF. This will finally, give the opportunity to partners to officially integrate it, considering its required importance, within their cooperation strategies and programs with Mali.

⁵⁴United Nations Development Action Framework or Plan Cadre des Nations Unies pour l'Aide au développement

4. Key Donor Engagements

Ongoing Projects and Organizations	Indicative budget, years	HFA activity area(s)
WORLD BANK PROJECTS/STUDIES		
Study for the Public Expenditures Review/ Cost Benefice Analysis of Sustainable Land Management (GDT).	\$200 000 2009 – 2010	3,4
ML-BioCarbon Fund MASPP & Biomass : Promotion of Accacia Senegal Plantation, Arabic gomme production, and Carbon sale.		4
Agriculture and Producers Organization Project(PASAOP)	\$175.4 million 2008-2011	1,3,4
Agricultural Competitiveness and Diversification (PCDA)		3,4
Conservation and Valorisation of Gourma Biodiversity (PCVB-GE)		3,4
Domestic Energy and Acces to Basic Facilities in Rural Area (PEDASB)	FCFA 37.55 milliards 2004 - 2012	3,4
Study on the Cost Assessment of Climate Change Adaptation through Local Institutions	2009 – 2010	1,4
Senegal River Basin Multi-Purpose Water Resource Development Project-APL2 (regional: Guinea, Mali, Mauritania, Senegal)	\$ 200 million (from 2010)	4
Niger Basin Water Resources Development and Sustainable Ecosystems Management Program-APL2 (regional: Niger River Basin Authority Member Countries)	\$ 200 million (from 2011)	1,4
Strengthen capacity of beneficiary countries to implement their Integrated Disease Surveillance and Response Strategies (regional: ECOWAS countries plus Mauritania)	\$60 million (starting 2009)	1,4
Africa Emergency Locust Project (regional: Burkina Faso, Chad, Gambia, Mali, Mauritania, Niger and Senegal)	\$60 million 2004-2010	1,5
MULTI DONOR PROJECTS		
WB-FIDA-EU-FEM : Agricultural Productivity Increasing Project (PAPAM)	\$130 million (planned)	1,3,4
SELECTED DONOR PROJECTS		
UNDP – DANIDA – FEEM – Government: National Capacity Strengthening in view of Disaster Risk Reduction (PRECARICA)	\$1.5 million 2008-2011	1,2,3,4,5
GTZ: « Community management of crop diversity to enhance resilience, yield stability and income generation in changing West African climates »	EUR1.2 Mio 2008-2010	3,4
GTZ : Support Project to the Environmental Policy (PAPE)	2008-2011	4
GTZ : Climate Change Adaptation Policy and Strategies Strengthening	EUR 800 000 2009-2010	1,4
GTZ : Climate Hazard Insurance Pilot Project	EUR 70.000 2009	4
GTZ : MDP's capacity strengthening (sub regional approach : Mali, Sénégal, Ruanda, Benin, Burkina Faso)	EUR 75 000 2009	3,4
EU: Tropical Forests and Climate Change Adaptation or CIFOR/TroFCCA for three regions (West Africa: Mali, Burkina, Ghana -. Central America, South east Asia)	Euro 1.000.000 (Total budget for West Africa: Euro 80.000	1,4

	/year/per country) 2005-2009	
DANIDA: Green Facility CDM Project	FCFA 88 million 2008- 2009 (will be probably followed by a second phase from 2009 to2010)	1,4
DANIDA : Capacity Strengthening for Decision Makers, Technical Departments, and Local Actors, for a better consideration of Climate Change	FCFA 440 million 2008-2010	1,4
DANIDA : Development of the « pourghere filière “ in Mali Project	FCFA 440 million 2007-2010	1,4
DANIDA : Temporary Renewable Energy Resources Map of Mali Project	FCFA 399 million 2007-2011	4
Inter Cooperation Suisse : Project proposal : Reduction of local actors' vulnerability to disaster risks and climate change in the regions of Sikasso, Tombouctou and Mopti	FCFA 800 million (planned)	2,3,4
Inter Cooperation Suisse : Integrated Agriculture and Breeding for Food Security Project	350 million FCFA (en vue)	3,4
Inter Cooperation Suisse: Country Study on « Climate Change and in Forest Sector Governance in Mali ».	FCFA 8 million From 2009	1,4
UNDP : Second National Communication on Climate Change	\$405.000 2008-2009	2,3,4
UNDP-FAO-LCDF: Strengthening Food Security against Climate Change in Mali	\$200.000 Project preparation fund starting 2009 Future Project amount : \$5 million (2010-2015)	2,4
Sweden/SIDA :New Climate Change Initiative-ICC	FCFA 5.1 milliard (2009-2011)	2,4

5. Towards a Disaster Risk Management Action Plan

UNDP (in collaboration with the GEF and DANIDA), through PRECARICA project, is the main actor in the specific area of disaster and risk management and reduction (DRM/R). The other actors are more involved in adaptation to climate change and in reducing sectoral disaster risk, mainly in the following areas: environment, sustainable natural resources management (soil, land, forests, and water), rural development and food security.

The table below, based on the priority of the Hyogo Framework of Action (HFA), helps identify where GFDRR is best placed to provide its resources and expertise, particularly in relation to PRECARICA project's interventions⁵⁵ and to existing adaptation to climate change interventions.

This table also shows the extent to which, interventions proposed to GFDRR funding, fit with the priorities and dynamics of DRM/R and Adaptation to Climate Change implementation in Mali, and complement with the main interventions already undertaken or planned in these areas (Government and Partners).

HFA Priorities	Main partners	Comments
1. Policy, Strategy and Consensus building		
Master Plan, Policy, Strategy, Regulations	UNDP - DANIDA - GEF, World Bank – GTZ GFDRR	* UNDP / DANIDA / GEF will finance: the development and monitoring of a National Action Plan for Disaster and Risk Management and Reduction (DRM/R) - and the establishment of an adequate DRM/R legal framework. * GTZ will finance: Support for mainstreaming climate dimension in Strategic Environmental Assessment. * World Bank (/ CALI) supported: the analysis of the institutions in adaptation. * GFDRR will finance: The Development of a National Policy and Strategy for DRM/R, upstream to the National Action Plan above-mentioned - and The additional support for the development of this planned National Action Plan for DRM/R.
Mainstreaming DRM/R and Adaptation into Development	UNDP - DANIDA - GEF – World Bank – UE GFDRR	* UNDP / DANIDA / GEF will finance: national and regional training seminars on DRM/R, which may include mainstreaming. * The World Bank (/ CALI) supports: the development of recommendations for adaptation policies at micro and macro levels. * EU supports the integration of adaptation and forests management in development policies. * DANIDA funds: information, training and support to several key ministries involved in environmental and socio-economic issues, for the consideration of the climate change impacts into their projects and programs. * GFDRR will finance capacity building and support for the practical implementation of the DRM/R mainstreaming at all levels.
Coordination enhancement	UNDP - DANIDA - GEF GFDRR	* UNDP / DANIDA / GEF fund: capacity strengthening of DGPC and local governmental authorities by the provision of technical assistance (a project coordinator) to support DGPC's interventions implementation. * GFDRR will finance: ..Support for DRM/R institutional mechanism strengthening. ..Support for DGPC's organizational, technical and material capacities strengthening. ..Support for operational capacities strengthening of decentralized authorities at communal level, for the implementation of their DRM/R missions and mandates.
2. Risk identification, Assessment and Monitoring		
Climate trends and hazard risks	ICRISAT - UNDP – GEF – DANIDA – SIDA GFDRR	* ICRISAT funded a study on the characterization of climate variability and change patterns and trends for smallholders' agriculture. * UNDP supports: studies on vulnerability and adaptation to Climate Change (CC) in different sectors: agriculture, livestock, health, water, wetlands in relation to the NAPA *SIDA will support for: The fulfillment of a collection study of climate projections made on Mali, in particular by the IPCC and the proposition of related support

⁵⁵ co financed by the Government, UNDP, DANIDA and GEF.

		<p>projects / programs - The development of statistical climate change data collection and analysis tools.</p> <p>* UNDP / DANIDA / GEF is funding: participatory local risk inventory (at communal level) in all communes of the country (using FICAR sheet).</p> <p>* GFDRR will finance: technical and scientific risk assessment (especially floods), with different scenarios (forecasts), combining: hazard analysis and vulnerability analysis with the losses probabilities according to scenarios.</p>
Risk mapping	<p>UNDP -</p> <p>DANIDA -</p> <p>GEF - Inter</p> <p>Coopération</p> <p>Suisse</p> <p>GFDRR</p>	<p>* UNDP / DANIDA / GEF finance: The establishment of an online and dynamic database with mapping of risks identified at the local level (FICAR).</p> <p>* GFDRR will fund:</p> <p>.. The development of a geographic information system on DRM/R, with the mapping of technical risk assessment (Atlas).</p> <p>.. Capacity strengthening of DRM/R key institutions; especially: the National Directorate of Meteorology and the National Directorate of Hydraulics, for the detection and monitoring of hazards.</p>
Early warning system	<p>UNDP -</p> <p>DANIDA -</p> <p>GEF</p> <p>GFDRR</p>	<p>* UNDP / DANIDA / GEF funding: transmission equipment for the DGPC's regional structures.</p> <p>* GFDRR will fund:</p> <p>..Support for DGPC's technical capacity strengthening, mainly for coordination and monitoring of alert release and the reaction following its release.</p> <p>..Support for warning system strengthening (organizational, technical and material) at communal and community levels (warning of the population).</p>
3. Education and awareness to build a Culture of resilience		
Stakeholders awareness	<p>ICRISAT -</p> <p>UNDP -</p> <p>DANIDA -</p> <p>GEF – SIDA</p> <p>GFDRR</p>	<p>* ICRISAT provides: support to strengthening adaptation capacities of stakeholders, including policy makers at the local level through a regional network of learning and a community of practice.</p> <p>* DANIDA supports: The strengthening of skills and level of information on the climate change related risks and the climate change and adaptation measures to be adopted (policy makers and administrative officers, technical services at national and regional levels, grassroots actors (local officials, private sector and civil society) – The promotion of maximum access of the populations to climate change information - The inventory and dissemination of local adaptation to climate change knowledge and practices.</p> <p>* UNDP / DANIDA / GEF fund: information, awareness raising and training of populations on DRM/R, through the organization of official events (Civil Protection World Day, DRR International Day) and policy makers awareness raising through national and regional seminars.</p> <p>* SIDA will support the strengthening of the NGO Network on Climate Change and their field initiative.</p> <p>* GFDRR will support: The development and implementation of systematic stakeholders awareness raising interventions (including: policy makers, technicians, population and civil society at all levels).</p>
DRM/R Education, Training and Research Programme	<p>UNDP</p> <p>GFDRR</p>	<p>* UNDP will finance: the development of an information, advocacy, education, training and research programme in the framework of preparation of the Mali second national communication on Climate Change (CC).</p> <p>* GFDRR will fund the integration of DRM/R and climate change adaptation (CCA) in the educational curriculum at the primary and secondary education.</p>
4. Reduction of underlying risks		
Land use planning, zoning, urbanization	GFDRR	<p>* GFDRR will fund:</p> <p>..Capacity strengthening of the National Directorate of Land Use Planning and Management (DNAT).</p> <p>..Support for the improvement of zoning, land use planning and urbanization schemes and plans, in vulnerable areas (through the pilot project below).</p>

Revision of hazard norms	GFDRR	* GFDRR will finance: support for the definition of improved standards of dwelling construction locally made, more resistant to flood, in the flood prone areas (technical construction, location, layout) and demonstration (through the pilot project below) .
Sustainable Land Management (GDT)	GTZ – World Bank – SIDA GFDRR	* GTZ finances: support for the elaboration and implementation of the "Sustainable Land Management" Investment Strategic Framework - and the analysis and the systematic capitalization of experiences related to the process. * The World Bank supports: the fulfillment of a study on Public Expenditure Review and the cost benefit analysis in the field of Sustainable Land Management. * SIDA will fund a project for the rehabilitation of degraded ecosystems in the "Niger Interior Delta" (REDDIN). * GFDRR will support related actions under the integrated project below.
Natural resources management and protection	DANIDA – World Bank – UNDP – GEF – SIDA	* The World Bank (/ PEDASB ⁵⁶) supports: the use of modern energy in rural and suburban areas, the promotion of community-based forest management, the support to the inter-fuel substitution and energy economy initiatives. * DANIDA supports: the politico-strategic framework strengthening in the field of renewable energy, through the development of a national strategy for the development of biofuels (jatropha industry) .- And the achievement of temporary of renewable energy resources in Mali. * UNDP / GEF / PMF ensure the financing of rehabilitation micro projects. * SIDA will provide support to the adaptation measures of the Decentralized Forest Management Program (GEDEFOR) and bio Camp - And The Water Resources Integrated Management. * GFDRR support related actions under the integrated project below.
Agriculture and fisheries adaptation	Multi Bailleur/ PAPAM – Inter Coopération Suisse GFDRR	* A multi-donor financing (/ PAPAM ⁵⁷) will support the consideration of climate change impacts on agricultural productivity. * Inter Cooperation will finance a integrated livestock farming for food security project, aiming at reducing the vulnerability of smallholder farms in the region of Segou. * GFDRR will support related actions under the integrated project below.
Integrated management of Natural hazards	Inter Coopération Suisse GFDRR	* GTZ supports: the reduction of climate risk in sectoral investment programs for a sustainable natural resources management * Inter Cooperation will finance: A country study on "climate change and governance in the forestry sector in Mali" - and a project to reduce the vulnerability of local actors with regard to disaster risks and climate change in regions 3 regions (Sikasso, Timbuktu and Mopti): risk assessment, capacity building, integration into planning, integration "disaster risk-climate change-food security", watershed protection and management, and sustainable agriculture. * GFDRR will finance: a pilot project for vulnerable communities protection, through hazards "integrated management" (floods, drought and locust invasion) at communal and community levels.
DRM/R and adaptation financing	GTZ - World Bank GFDRR	* GTZ: funded the fulfillment of insurance products testing and the design of a concept note paper on possible "climate" insurance. * World Bank is funding the evaluation of adaptation to climate change costs through Local Institutions (CALI). * GFDRR will finance support for the identification of an improved mechanism of DRM/R financing (and flexible risk transfer if necessary, including the exploration of disaster insurance mechanisms).
5. Strengthening disaster preparedness for effective response		
Emergency preparedness	UNDP - DANIDA - GEF	* UNDP / GEF / DANIDA will finance: the development national and regional ORSEC plans, contingency plans and their testing (simulations). * GFDRR will fund, through the pilot integrated natural hazards management, the

⁵⁶ Projet Energie domestique et accès aux services de base en milieu rural (PEDASB)

⁵⁷ Programme d'Appui à la Productivité Agricole au Mali (PAPAM)

	GFDRR	implementation of measures enhancing preparedness at communal and community (authorities and community).
Post- disaster Needs Assessment	GFDRR	* GFDRR will fund: strengthening of post-emergency damages and needs assessment system and the recovery responses implementation mechanism: mechanisms and knowledge for the needs assessment and planning and implementation of response interventions.

Classified by priority order, the eight (8) indicative proposed actions for GFDRR funding, are listed in the table below:

Rank	Priority proposed actions
1	Strengthening Disaster risk management and reduction institutional framework.
2	Strengthening key institutions' capacities
3	Fulfilment of a systematic stakeholders' awarness raising
4	Strengthening post-emergency assessment and recovery implementation system.
5	Development of a National Policy, Strategy and Action Plan for disaster and risk management and reduction (DRM/R)
6	Implementation of a pilot project for vulnerable communities protection through a intergrated disaster risks management (floods, drought, locust invasion).
7	Support for strengthening disaster risk management and reduction financing mechanism.
8	Integration of Disaster risk management and reduction, and adaptation to climate change ⁵⁸ in primary and secondary school curriculum.

These actions have been classified and scored according to the five (5) following criteria:
 1 - If the action is not implemented, it implies negative impacts on the on-going DRM/R interventions in the country.

2 - The action implementation improves the quality of current and future DRM/R interventions in the country.

3 – The quality of the other DRM/R actions proposed to GFDRR funding depends on the implementation of this action

4- The implementation of the action will have a positive impact on populations.

5 - The action implementation will have a positive impact on the economy at national and decentralized levels.

Each action has several components covering various aspects of the Hyogo Framework ofr Action (HFA) presented in the above table. For each proposed action, components, indicative budget, partnerships that can be established for its implementation, the priorities of the Framework Hyogo covered and an overview of potential outputs and any other comments are presented in the table below.

⁵⁸ Adaptation to C limate Changes

Proposed actions for GFDRR funding	Potential partnership	Indicative budget for GFDRR funding (USD)	Potential outcomes and comments	Hyogo Framework of Action (HFA)
(1)- Strengthening Disaster risk reduction and management institutional framework.	DGPC – UNDP - DANIDA – GEF – GTZ – UE – all concerned Ministries – all concerned decentralized authorities	250 000 (2010-2015)	<p>..will include :</p> <ul style="list-style-type: none"> * a comprehensive institutional analysis of the Mali DRM/R system and the proposition of a more appropriate and clear institutional scheme, involving all stakeholders. It will be followed by a DRM/R legal framework analysis, in order to strengthen its support to the effective implementation of the proposed DRM/R institutional framework. *Support to administrative authorities, at all levels, for the practical implementation of DRM/R mainstreaming. <p>.. financing for: technical assistance - workshops – documents production. ..to be undertaken through a participatory and iterative validation process at all levels.</p>	HFA : 1, 2, 3, 4, 5
(2)- Strengthening key institutions' capacities	DGPC – UNDP – DNM – DNH – DNAT – ICM (Mapping Institut of Mali or Institut cartographique du Mali) – IER (Institut d'Economie Rurale) - DANIDA – GEF - SIDA – Inter Cooperation Suisse.	2.400. 000 (2010-2015)	<p>..will include:</p> <ul style="list-style-type: none"> * Directorate General of Civil Protection (DGPC) capacity strengthening * National Directorate of Meteorology (DNM) capacity strengthening * National Directorate of Hydraulics (DNH) capacity strengthening * National Directorate of Land Use Planning (DNAT) capacity strengthening. * Risk assessment strengthening and implementation of a dynamic, geographic information system on disaster risk management and reduction. <p>.. financing for: technical assistance – workshops - purchase of priority materials and equipments - specialized training.</p>	HFA : 1, 2, 3, 4, 5
(3)- Fulfilment of a systematic stakeholders' awarness raising	DGPC – UNDP STP/CIGQE – UNDP – DANIDA – GEF – SIDA	250 000 (2010-2015)	<p>.. will include: developing and supporting implementation of a systematic plan for stakeholders awareness raising (authorities, populations, civil society, private sector)</p> <p>.. is to finance: technical assistance – workshops - production of awareness raising materials and devices.</p>	HFA : 1, 2,3,4,5
(4)- Strengthening post-emergency assessment and recovery implementation system.	DGPC – UNDP	300 000 (2010-2015)	<p>..will mainly include: strengthening knowledge and mechanism for (1) post-emergency damage and needs assessment (for recovery), and (2) response interventions planning and implementation.</p> <ul style="list-style-type: none"> * financing for: implementation of training on Post-disaster needs assessment according to the standard DALA methodology (Damage, Losses and Needs Assessment - DALA / UNECLAC) and other specialized training on 	HFA : 1, 2,3,4,5

			recovery ⁵⁹ , identified through the situation diagnosis.	
(5)- Development of a National Policy, Strategy and Action Plan for disaster and risk management and reduction (DRM/R)	DGPC – UNDP - all concerned Ministries – all concerned decentralized authorities – all financial and technical partners involved in the field: DANIDA – GEF – GTZ – UE – Inter Cooperation Suisse – SIDA –UN Agency – NGO.	250 000 (2010-2015)	.. is to include: a situation diagnosis - the identification and proposition of strategic pillars/axes and priority actions – the development of the National Policy, Strategy for DRM/R and the support for the National Action Plan formulation process. .. financing for: technical assistance - workshops – documents production. .. to be carried out through an iterative participatory validation process, at all levels.	HFA : 1, 2,3,4,5
(6)- Implementation of a pilot project for vulnerable communities' protection through a intergrated disaster risks management (floods, drought, locust invasion).	DGPC – Autorités locales (Cercles et Communes) – STP/CIGQE – CNLC - All concerned Ministries – all concerned decentralized authorities – DNAT (National Directorate of Land Use Planning) - all financial and technical partners involved in the field: DANIDA – GEF – GTZ – UE – Inter Cooperation Suisse – SIDA –UN Agency – NGO.	1.150 000 (2010-2015)	.. The pilot project will cover all risk management phases of the three major hazards (floods, drought and locust invasion): prevention, preparedness, risk reduction, emergency response and recovery (so all the 5 HFA). It will include actions addressing underlying risk factors, related mainly to the following sectors: environment and natural resource management, land use planning and management, land management, energy and food security. Finally, it will include actions strengthening dwellings resistance in flood prone areas. ..financing for: technical assistance – some defined activities such as equipment purchase – training – workshops – documents production – technical studies.	HFA : 1, 2,3,4,5
(7)- Support for strengthening disaster risk management and reduction financing mechanism. mechanism strengthening.	DGPC – Ministries in charge of Finance and Budget – Ministry in charge of Social Development	250 000 (2010-2015)	..will include: presentation of existing and available financial mechanisms and options worldwide (by an international expert) - analysis of the current DRM/R financial mechanism – proposition of model adapted to the Mali case - support to launching its implementation – studies on disaster and risk insurance mechanisms which can be implemented in Mali (feasibility, interests, constraints, and recommendations). .. financing for: technical assistance and documents production.	HFA : 1, 2,3,4,5
(8)- Integration of Disaster risk management and reduction, and adaptation to climate change ⁶⁰ in primary and	DGPC - Ministry of Education – all financial and technical partners involved in the field : GTZ, DANIDA, SIDA, EU,	300 000 (2010-2015)	..will include: design of training modules – elaboration of students and teachers' manuals - training of trainers. .. financing for: technical assistance – workshops – documents production. A description of each proposed priority action is provided in the series of "action sheets" in	HFA: 1, 3, 5

⁵⁹ They will be provided to DGPC, decentralized authorities and nongovernmental Platforms' members.

⁶⁰ Adaptation aux Changements Climatiques

secondary school curriculum.	UNDP, GEF, Inter Cooperation Suisse		the next section of this document.	
Montant Total du Financement Demandé au GFDRR		5 150 000 (2010-2015)		

A description of each proposed action is provided in the series of “Action sheets” presented in the second part of this document.

6. Proposed priority actions description

Action Sheet 1:

Action title	(1) Strengthening Disaster risk reduction and management institutional framework.
Location/coverage (indicative)	<p>- National Coverage: in terms of action implementation process and scope of its results.</p> <p>- The action will involve all levels: central, regional, local (cercle) and communal levels.</p>
Actors/ Beneficiaries	<p>- Actor and beneficiary, in charge of coordinating the action: Directorate General of Civil Protection (DGPC), as the DRM/R coordinator in Mali.</p> <p>- Actors and beneficiaries, stakeholders in the implementation of the action: Ministries - decentralized authorities (administrative and elected) – governmental institutions focal point for the management of specific disaster risk (natural and non natural) - governmental institutions (departments, directions, units, offices, centers) involved in the implementation of various DRM/R aspects – stakeholders involved in various aspects of Adaptation to Climate Change implementation - Civil society, including all active NGOs and associations in the field of DRM/R - Private Sector, mainly industries and firms potentially affected by hazards and/or that might be involved in post-disaster response implementation.</p>
Justification	<p>Disaster and Risk Management and Reduction (DRM/R) is everybody's business and requires expertise and resources pooling to succeed. The effective involvement and participation of all stakeholders, governmental (administration - collectivities - others), civil society, private sector, and community, is thus required. DRM/R is to be addressed together through an actors' coalition, with their respective capacities to implement all DRM/R phases and aspects⁶¹.</p> <p>A clear institutional mechanism, formally established, functional, known and adopted by all stakeholders, is the basis for an effective DRM/R implementation. It will provide a clear established organization, with a clear definition and allocation of roles and responsibilities of institutions included in the coalition. It will also allow setting up clear communication links and modalities between the institutions involved in DRM/R. It will thus strengthen the stakeholders' commitment and coordination, both vertically and horizontally, at different levels: central, regional, local (cercle), municipal and community.</p> <p>This strengthened institutional mechanism, will also ensure a clear separation between coordination and operations implementation, strengthening the technical sovereignty of specialized technical institutions carrying out the various aspects of DRM/R (champions), under the strong DGPC's leadership and its greater mobilization and facilitation capacity. To maintain sound and strong, functional DRM/R mechanism, appropriate legislation and regulation supporting the DRM/R system and its functioning, should be established through a consistent and appropriate legal framework.</p> <p>In Mali, several efforts have been initiated in this direction, to institutionalize the Disaster and Risk Management and Reduction (DRM/R) and they need to be strengthened. Support for the systematic implementation of the national initiative aiming at developing DRM/R institutional and legal frameworks, led by CPB, will increase the effectiveness of DRM/R interventions and will establish an effective stakeholders coordination.</p>
Global objective	Optimize DRM/R stakeholders' engagement and coordination.
Specific Objectives	<p>OS1: Develop an appropriate institutional framework, adopted by all stakeholders</p> <p>OS2: Develop an appropriate legal framework supporting the implementation of the adopted institutional framework</p> <p>SO3: Set up the adopted and validated DRM/R institutional framework</p>

⁶¹ Include : prevention, risk assessment, early warning system, preparedness, damage and needs assessment, emergency responses, recovery responses, DRM/R mainstreaming into development policies, strategies, plans, programs and projects.

<p>Expected Results</p>	<p>OS4: Support the functioning of the established DRM/R institutional framework.</p> <p>For OS1: A suitable DRM/R institutional framework is developed and adopted by all stakeholders.</p> <p><i>Indicators:</i> - <i>Strengths, weaknesses and improvement needs of existing institutional mechanisms are identified (source: institutional diagnostic analysis report).</i> - <i>An improved DRM/R institutional scheme, stating the organization, the operating mechanism, roles and responsibilities of relevant structures/institutions and their anchor, links and communication arrangements, is proposed and validated (Sources: institutional diagnostic analysis Report - validation workshop Report).</i></p> <p>For OS2: An adequate legal framework dedicated to the setting up and implementation of the adopted DRM/R institutional framework is developed.</p> <p><i>Indicators:</i> - <i>Strengths and weaknesses of the existing legal framework and needs towards the establishment and implementation of the adopted DRM/R institutional arrangements, are identified (source: legal and regulatory framework diagnostic analysis Report).</i> - <i>An improved legal framework to set up and implement the adopted institutional framework, presenting legislative texts to be modified and or created, is proposed and validated (source: legal and regulatory framework diagnostic analysis Report - validation workshop Report).</i></p> <p>For OS3: The improved, validated DRM/R institutional scheme is formally established.</p> <p><i>Indicators:</i> - <i>Proposed legislation designed to establish and implement the improved institutional framework, are developed and submitted to the competent authorities (Source: List of law drafts under consideration at the National Assembly)</i> - <i>Legislative texts dedicated to set up and implement the improved institutional framework, are proposed and were adopted. (Sources: Official Journal).</i></p> <p>For OS4: - Actions dedicated to present and disseminate, among stakeholders, information on the new institutional arrangements are carried out.</p> <p><i>Indicators: Number of workshops or meetings carried out to present the adopted legal and institutional frameworks - Number of information materials distributed. (source: DGPC's annual activities report)</i></p> <p>- Interventions dedicated to harmonize the understanding of DRM/R basic concepts are conducted among stakeholders.</p> <p><i>Indicators: Number of workshops or meetings carried out to present DRM/R basic concepts - Number of information materials distributed. (source: DGPC's annual activities report)</i></p>
<p>Components / Activities</p>	<p>- For Component 1: Development of an appropriate DRM/R institutional arrangement, adopted by all stakeholders: - Fulfillment of a institutional analysis of the DRM/R system in Mali. Will include the existing system diagnosis and the proposition of an improved institutional scheme and framework. The process will include consultation with all stakeholders categories involved in DRM/R.</p>

	<ul style="list-style-type: none"> - Conducting workshops for discussion and validation of the institutional analysis results (diagnosis and proposal). - For Component 2: Development of an adequate legal framework designed to set up and support implementation of the developed institutional framework: <ul style="list-style-type: none"> - Carry out a diagnostic analysis of the existing DRM/R legal framework. Will include the diagnosis of existing legal framework and the proposition of an appropriate legal framework which will allow establishing and implementing the improved DRM/R institutional framework. - Conduct workshops for discussion and validation of the diagnostic analysis results and the proposal. - For Component 3: Setting up of the adopted institutional scheme: <ul style="list-style-type: none"> - Preparation of legislative text proposals for the official establishment of the improved DRM/R institutional framework - Submission of the draft legislative texts to the competent authorities and monitoring the adoption process. - For Component 4: Support of the improved DRM/R institutional framework functioning <ul style="list-style-type: none"> - Design, development and dissemination of reference materials (documents and/or CD) containing all information on the new institutional mechanism/framework: organization, operations, functioning, institutions structures and mandates, laws, etc.. - Design, development and dissemination of materials (documents and/or CD) on the basics of DRM/R concepts and the implementation of DRM/R mainstreaming. - Fulfillment of a series of information workshops for central and decentralized actors, presenting the adopted DRM/R institutional mechanism, the related legal framework and all other organizational and operational aspects of DRM/R in Mali.
Duration	Two (02) years
Financial cost	250 000 USD