Country: SUDAN

Project Document

Project Title	National Disaster Risk Management Programme in Sudan
UNDAF Outcome(s):	Outcome 2: Populations vulnerable to environmental risks and climate change become more resilient, and relevant institutions are more effective in the sustainable management of natural resources
Expected CP Outcome(s):	Populations vulnerable to environmental risks and climate change become more resilient, and relevant institutions are more effective in the sustainable management of natural resources
Expected CP Output:	Climate resilience of communities and ecosystems strengthened
Executing Partner (s):	Ministry of Finance and National Economy - International Cooperation Directorate
Implementing Partner (s):	United Nations Development Programme (UNDP)
Responsible Partner(s):	Higher Council for Disaster Management

Brief Description

The Government of Sudan is keen to address disaster risks where they are likely to occur in order to protect often fragile development. Sudar suffers serious losses from disasters triggered by droughts and floods, particularly. In addition it also experiences severe desertification, soi erosion, sand-storms, pest-infestation and epidemics. The projections by scientific research institutions of Sudan indicate that climate change is worsening the frequency, severity and spread of different hazards; e.g. desertification, droughts and soil erosion, which is enhancing losse: and social vulnerability. Therefore addressing disaster risks in the context of climate change adaptation is an important cause of concern ir Sudan.

The purpose of the programme is to improve disaster preparedness capacities of Sudanese institutions and enhance resilience of high risl states, and men and women in local communities against most common natural hazards of flooding and droughts. The Programme will assis the government of Sudan to improve their systems based upon global best practices in the areas of coordination, planning, risk analysis anc early warning, as well as innovative approaches to disaster risk reduction; e.g. integrated water resources management, and community basec disaster preparedness.

Programme Period: October 2013- September 2016

Key Result Area: Crisis Prevention and Recovery

Atlas Award ID:

Atlas Project ID: 00087264

Start Date: 01 October 2013

End Date: 30 September 2016

PAC Meeting: July 2013

Management Arrangements: UNDP Direct Implementation (DIM)

AWP Budget:

Total Resources Required: $ $ 2,270,005

Total Allocated Resources: $

- UNDP Sudan: $ 311,000
- BCPR: $ 300,000
- UNEP
- ISDR
- Other
    - Donor (s)

Unfunded Budget:

In kind Contributions:

Signatures:

Signed on behalf of	Name	Signature	Date
Ministry of Finance and National Economy	Yousif El Husseiw		29th Sept. 2013
Higher Council for Disaster Management – Ministry of Interior	HASHIM HUSSAIN	30.9.2013	
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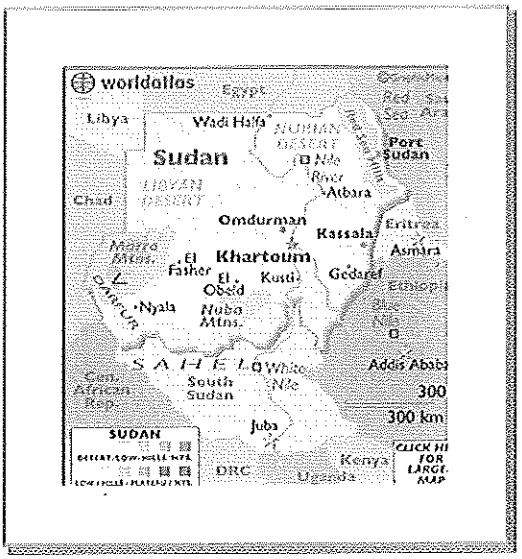


Background and Disaster Risks

Geographically, Sudan is the second largest country in Africa. Its area is comprised of arid lands and desert. Throughout much of the country, water resources are limited and soil fertility is low. The country is divided into 26 States and its topography can be characterized as comprising vast plains interspersed by several widely separated ranges of hills and mountains. Traditional subsistence agriculture dominates the Sudanese economy, with over 80% of the population dependent upon crop production and/or livestock husbandry to support their livelihoods. Agricultural activities account for nearly half of GDP. 40 % of the population lives below poverty line.

Sudan's population is about 32 million with an annual growth rate of 2.63 percent. Off this 43 % is urban, with a growth rate of 4.3 per annum. Though overall population density is about 10 people per square kilometer, density per square kilometer of arable land is considerably higher – 63 people per square kilometer – and higher still on cultivated land where there are about 370 people per square kilometer. Much of the population is clustered in central Sudan and along the Nile River.

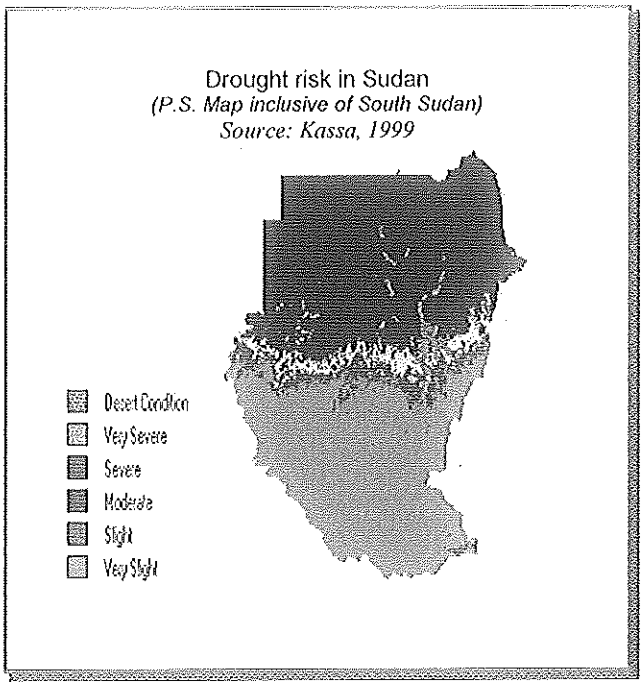
Arid and semi-arid ecosystems in the northern and central parts of country represent over 50% of total area, while the southern parts represent *flood prone ecosystems*. The rainfall increases from north to south, ranging from *zero milllimeters* in the extreme north of the country, rising to *500 mm* in central Sudan, to more than *1250 mm* in the extreme southwest of the country. The northern parts of Sudan depend on the irrigation system from provided from the River Nile, but still this region is vulnerable to floods caused by the River Nile. The studies of Sudan Meteorological Authority over the past 50 years show a variation in rainfall trends in Northern Sudan, however in southern parts, the performance of rainfall through the 50 years seems to be more stable.

Natural Hazards in Sudan

The disasters in Sudan are primarily hydro-meteorological in nature, which have a significant correlation with climate change and environmental management. Droughts and floods are two most common and widely experienced disasters in Sudan. These are followed by other hazards including desertification, soil erosion, sand-storms, pest-infestations, heat-waves, and landmines. In the years between 1940-2007 drought has been the largest killer disaster in Sudan, with total fatalities of about 150,000, while affecting 23 million people in 7 drought events. This is followed by flooding with 22 events, killing 415 people and affecting about 7 million people, while epidemics killing about 10,384 people while affecting about 1985512 in 30 incidents. The areas which are frequently affected by droughts and floods are:

i) Western Sudan (Kurdofan and Darfur States) is affected mainly by drought and localized floods;
ii) Areas along the Blue Nile and the main Nile River including the Northern State, Naher El Neil State, Khartoum and Gazera are affected mainly by riverine floods;
iii) Eastern parts including Kassala state and Red Sea State affected by drought and river El Gash floods;

Chronic drought is one of the most important climate risks facing Sudan, which is widespread in Western Sudan, moderate in Eastern and Southern part and lesser in central Sudan. Recurring series of dry years has become a normal occurrence in the Sudano-Sahel region. In Sudan, drought is threatening the existing cultivation of about 12 million hectares of rain-fed, mechanized farming and 6.6 million hectares of traditional rain-fed lands. Pastoral and nomadic groups in the semi-arid areas of Sudan are also affected. In recent history Sudan has experience major droughts in years 1886, 1967-1973, 1980-1984, and 1985-1993.



Successive years of drought in certain parts of the country caused severe shortage of food, soil erosion, reduced agricultural productivity, social disruption, migration, conflicts and widespread health and nutritional problems. For example, in 1984 drought, 8.5 million people were affected and 7.8 million livestock were lost. Conflicts are both a causes and effect of drought disaster in Sudan, particularly in pastoralist, agro-pastoralist communities in arid and semi-arid areas, where the denial of access to natural resources to opponent communities can exacerbate drought conditions or efforts by different communities to get control over water and other natural resources could lead to conflicts. Frequent drought also afflicts savannah areas, where it compounds problems of overgrazing, soil erosion, and outbreaks of public health epidemics such as malaria.

A trend of decreasing annual rainfall and increased rainfall variability is contributing to drought conditions in many parts of Sudan. Rainfall patterns in different ecological zones for the periods 1941-2000 show that the average annual rainfall has declined from about 425 mm/year to about 360 mm/year and the variability of rainfall shows an increasing trend, suggesting greater rainfall unreliability. The variability in rainfall is most serious in the arid northern parts of the country where the average variability now exceeds 100%. At the national level, there is a trend of greater rainfall variability in Sudan, increasing at a rate of about 0.2% per year. The hardest hit areas are in the western and northern parts of Sudan within the semiarid portions of the Nile Basin. Drought problems in Sudan will increase if the above trends continue without efforts to adapt.

Sudan has experienced many devastating **Floods** during the past several decades. These events have led to widespread loss of property, damage to irrigation facilities and water services and the spread of waterborne diseases. There are two major types of flood event that regularly plague Sudan. The first type of flood occurs during torrential rains when high levels of water overflow the Nile River and its tributaries. The discharge of water from the upstream Ethiopian Plateau during exceptional wet periods could give rise to large-scale flooding due to overflowing of the rivers of Blue Nile, Atbara and Sobat. This type of flood occurs mainly during the rainy season (around autumn). These floods were reported in 1946, 1988, 1994, 1998, 1999 and 2001. The other type is flash flooding, which occurs from heavy localized rainfall during the rainy summer season or over the Red Sea area in winter season due to mountain runoff. These floods were reported in 1946, 1952, 1962-65, 1978-79, 1988, 1994, 1996, 1997, 1998, 1999, 2001, 2002, 2004, 2006, 2008 and 2009.

The areas around the main and Blue Nile river and its tributaries are most susceptible to damage by riverine floods. These include, Northern State, River Nile State, Khartoum, Sinnar, Gazeera, and Blue Nile States. Besides the area prone to flash flooding include Kassala, while Nile and N. Kurdofan states. Kassala is the most vulnerable state to flash flooding due to its location at the base of Ethiopian Plateau. Capital, Khartoum has experienced many floods caused by river Nile or sometimes the torrential rains cause floods or coincided with the River Nile floods. In Khartoum state, the frequency of receiving excess rainfall (150%) goes up to 4 years out of 30. The excessive rainfall coupled with floods of river Nile cause catastrophic disasters. The flooding also leads to outbreak of disease amongst human and livestock population.

Desertification is thought to be a major factor behind drought disasters and a major contributor to soil erosion. Sudan has lost considerable forest cover due to deforestation resulting from desertification. This affected the country's rangelands and pastures and led to serious reduction in wild-life population. Deforestation occurs for many reasons; including use of trees for charcoal, land clearing for pasture for livestock, intensive cultivation of farm plots, collection and marketing of fodder, climate variability, strong Saharan winds, population growth leading to expanded settlements and demands for wood. Conflicts have exacerbated desertification process through over exploitation of the available sparse pastures by large number of ruminants grazing in the area. The loss of vegetation cover has resulted in a loss of biodiversity and wildlife.

Scientific projections in the Sudan National Communication to UNFCCC, and the National Adaptation Programme of Action (NAPA) indicate that **Climate Change** will have severe impact upon Sudan in terms of its exposure to extreme events like droughts and flooding and the vulnerability of water, agriculture and public health sectors. Key impact in water sector include: reduced groundwater recharge due to decreased precipitation or faster evaporation, decline in soil moisture, high variation in rainfall and high evaporation. In agriculture sector: desertification of arable lands, shifting of agro-climatic zones southward, rendering north unsuitable for agriculture, reduction in crop production, decrease in arable land, reduced yield in cereals including sorghum and millet. In public health sector: increase risk of malaria and transmission potential. Socio-economic impact of climate change include: more droughts, limitation of natural resources leading to more conflicts like the case of 1983/84 drought and 1990 drought which forced people to migrate, lack of food security leading to famines, followed by displaced people and migration of people to highland as happened from flooding in 1988, 1992, 1998, 1999 and 2007.

Table (1): The extreme weather and climate events in Sudan

Event		*Type of Occurrence*	*Vulnerable areas*	*Affected sectors*	*Negative Impacts*
1	Floods	Frequent	Areas within the River Nile basin and low areas.	Agriculture, livestock, water resources and health.	Loss of lives, crops and livestock, insects and diseases (plants), epidemic and vector diseases, decline in hydroelectric power and damage in service infrastructure and settlement areas.
2	Drought (desertification)	Frequent	North of Western Sudan (North Kurdofan and Darfur), Kassala State and some parts of the rain-fed areas in central Sudan.	Agriculture, livestock, water resources and health.	Loss of crops and livestock (food shortage), decline in the hydroelectric power, displacement wildfire.
3	Dust storms	Frequent	Central and northern parts of Sudan.	Transport (aviation and land traffic).	Air and land traffic accidents and health.
4	Thunder- storms	Infrequent	Rain-fed areas in Sudan	Aviation	Loss of lives and properties.

5	Heat waves	Rare	Northern, central parts of Sudan besides the Red Sea State.	Health, agriculture & livestock.	Loss of live, livestock and crops.
6	Strong winds (High gusting)	Rare	Central and north central Sudan.	Settlements and service infrastructure	Loss in lives and properties and damage in the infrastructure systems (electricity and telephone lines.

Disaster Vulnerability

Geographically the northern and western Sudan states are highly vulnerable to experiencing droughts, desertification, soil erosion and stand storms, while the southern and central Sudan is more vulnerable to riverine and flash flooding. The states that are described as the most vulnerable states by national stakeholders include: North Darfur, North Kurdofan, Northern State, Red Sea State and Kassala state.

The sectors that are most vulnerable to disaster impact in Sudan include: agriculture (crop production), livestock, water resources and health (both human and livestock). Droughts, flooding, storms, desertification lead to severe adverse consequences in the form of reduced crop production, death of livestock, epidemics, and enhanced soil erosion etc.

The country's inherent vulnerability may best be captured by the fact that food security in Sudan is mainly determined by rainfall, particularly in rural areas, where 70% of the total population lives. Changes in drought and rain cycles could cause shifts in the productive capacity of rain-fed agriculture, and thus, in the security of the nations' food supply. In case of flooding, the location of settlements within the riverine and flash flood prone areas, lack of maintenance of dikes and levees and poor housing construction materials contribute to increase social vulnerability.

The social groups that are most vulnerable to disaster and climate risks include pastoralists, nomads and traditional rain-fed farmers. The past droughts have caused large-scale human suffering from hunger among these groups, including forced migration from rural areas, and the death of livestock herds. Flooding also causes widespread losses to crops and livestock. The most vulnerable groups to riverine and flash flooding are those living in low lands and along the riverbanks. The above vulnerable groups have least coping capacities due to the extreme poverty coupled with limited household income-generating options, which are highly reliant upon climatic conditions. Floods are causing increased erosion of the banks of the Nile and consequently a loss of farmland.

The trend of high rural-urban migration triggered by recurring droughts, major civil conflicts, budget cuts, and declining developmental investment in the rural areas is resulting in migration of men to cities, while leaving women to experience the adverse consequences. Male migration and displacement (both ecological and political) have increased the number woman-headed households.

Sudan is been shaped by multiple ethnic, religious and socio-economic divides. These divides, exacerbated by the competition for scare natural resources (about 80% of Sudan's population is directly dependent on the natural environment for survival), serve as the underlying drivers for the country's main conflicts since its independence in 1956 Conflict is widely recognized as an important source of poverty and risk to rural communities living on the rain lands of Sudan (around 50% of the country's total population) (CPAP Sudan, Draft Jan 2009).

Sudan's vulnerability to disaster and climate risks could jeopardize national development efforts, which is already posing serious challenges to development priorities in agriculture, forestry, and water resource management.

Disaster and Climate Risk Management System in Sudan

Till recently, the Disaster Risk Management System in Sudan revolves around the following institutions: 1) the High Council for Civil Defence (HCCD), 2) the Humanitarian Aid Commission (HAC) and 3) the Higher Council for Environment and Natural Resources (HCENR). The Ministries of Agriculture, Environment, Water Resources and Health also have a critical role in the endeavour.

A new Council for Disaster Management has been established under the Ministry of Interior to be responsible of all Disaster Management in Sudan. The above stakeholders will be part of this Council. The council will be the responsible partner for the project. In this regard, a Letter of Agreement (LOA) will be signed between UNDP (as implementing partner) and the Council to act on its behalf and assist in the delivering project outputs. Roles and responsibilities will clearly be identified in the letter.

The National Council for Civil Defence (HCCD) is an important organ for disaster management according to 1990 and 2005 Civil Defence Act. The Minister of Interior Affairs acts as the HCCD President and all government ministries have a presence in the Council. The membership of HCCD also includes the Sudan Council of Voluntary Agencies (SCOVA). The HCCD serves as a decision making body during the emergencies and adopts the disaster management policies for the country. The key mandates of the HCCD includes: i) coordination of plans and Civil Defence Operations at federal level, ii) targeting national efforts towards disaster management, iii) approval of national plans and budget for Civil Defence, iv) establishment of similar institutions at the state level, v) issue necessary regulations, decrees and orders whenever needed.

Below the HCCD, the Civil Defence Department serves as its secretariat and implementing arm. The Civil Defence is a professional force present throughout the country with more than 76 stations in different states. At state level, Civil Defence has a Steering Committee working through the Ministry of Planning, which is supported by a State Operations Chamber. The Civil Defence mainly deals with flood response, which includes: i) flood warning to communities, ii) flood awareness in schools and communities, iii) relocating villages susceptible to flooding, iv) flood control plans to provide flood protection, v) and community involvement in flood protection works. A Central Operations Chamber is comprised of technical experts of different ministries. The main role of the Chamber is to implement decisions and policies of the HCCD. The state level Operation Chambers are chaired by the State Wali and feed information from the ground up to the Central Operations Chamber. A system of contingency planning exists in the Civil Defence network. Each State submits its Contingency Plan in consultation with state-level line ministries, to the Central Operations Chamber, which after clearing submits to the NCCD for its approval.

Humanitarian Aid Commission (HAC) was established in 1986 to coordinate humanitarian response, relief and rehabilitation of disaster/crisis affected populations with the support of government, civil society and international organizations. Its other responsibilities include preparing plans, evaluate state of disaster preparedness, disseminating early warning and promoting disaster prevention and mitigation. The voluntary and Humanitarian Work (Organization) Act, 2006 further delineates the responsibilities of the HAC.

HAC also coordinate a Higher Technical Committee (HTC) headed by Minister of Interior Affairs, which provides technical advisory and ensure participation of multiple agencies. At the State level HAC has 15 sub-offices headed by State Commissioners responsible for the coordination of State Steering Committees for Disaster Risk Management.

Given the fact that disaster risks in Sudan are climatic in nature, the role of **Higher Council for Environment and Natural Resources (HCENR)** is extremely important in promoting longer term climate and disaster risk reduction. Established in 1992, the HCENR coordinates line ministries, research bodies and NGOs to monitor and enforce the legal framework related to environmental protection as well as to implement international conventions.

There are special units relating to biodiversity and climate change. Over the years it has demonstrated its ability to design, implement, and oversee complex climate change projects. The HCENR's work has maintained a consistent focus on climate change activities, as briefly described below.

- Sudan's first National Communication under the UNFCCC (1998-2003);
- Scientific contributions to the work of Intergovernmental Panel on Climate Change (IPCC);
- Sudan's national Adaptation Programme of Action (NAPA) – 2004-2007;
- Assessing and communicating existing community-level resilience-building measures for climate change adaptation in Sudan. The HCENR coordinated a multi-year research to explore existing local level measures to cope with drought (2002-2005;
- NAPAssess: A Decision support Tool for Use in the NAPA process (2003-2005);
- Sudan's second National Communication (SNC) under the UNFCCC (2007-11);

The **Ministry of Environment** is an important stakeholder due to its role in environmental management, climate change and control and prevention of industrial pollution. The MoE is also the mother ministry of the Sudan Meteorological Authority (SMA) and thus has a critical role in disaster risk analysis and early warning systems. The Ministry receives real-time satellite imagery from EU space stations, which could be useful for hazard monitoring and show crop, water, vegetation, land degradation, rainfall, dust and air-pockets. The Ministry is responsible for formulation and management of the National Adaptation Programme of Action (NAPA), the National Adaptation Plan of Action (NAP) and the National Communications to the UNFCC, all of which have close bearing upon disaster risk reduction in Sudan with regards to droughts, floods, desertification, soil erosion and sand-storms amongst others. It also coordinates with IGAD. The Ministry is implementing a 4 million dollar Risk Insurance project with funding from IFAD and GEF.

The Ministry of Agriculture is very important due to its role in promoting local level risk reduction strategies through introducing efficient irrigation technologies, drought resilient cropping practices and dealing with issues of food security, soil erosion and desertification control. The Ministry is already implementing an Executive Programme for Agricultural Revival, within which the Ministry deals with food insecurity through agricultural production addressing drought, floods and migratory pests. The Ministry also hosts a Drought Studies Centre which conducts research about issues arising from droughts and aridity with regards to the agricultural production and suggest approaches for drought risk reduction in the farming sector. The Ministry is also hosts the Directorate of Women and Agriculture, which will be an important stakeholder in promoting gender-sensitive disaster risk reduction in agriculture sector.

The **Ministry of Water Resources and Energy** has the mandate to manage the riverine and ground water sources; e.g. rivers, dams and Wadis. The Ministry is home to two very important departments, namely; i) the Nile Waters and Dams Department of the Ministry of Irrigation and Water Resources, ii) and Groundwater and Wadis Department of the Ministry of Irrigation and Water Resources. Since an important entry point for disaster risk reduction in Sudan is the effective management of water resources therefore the Ministry has a crucial role in any endeavours related to drought and flood risk reduction, including soil erosion due to river intrusion. The Nile Water and Dams Department also has an important role in flood monitoring and warning. It maintains a network of 50 stations to monitor river floods. An important problem the Department is facing is with regards to data-sharing with Ethiopia. The lack of sharing of data from the Ethiopian authorities about upstream rains leads to uninformed flooding downstream in Sudan.

The **Strategic Reserve Authority (SRA)**, which was established in September 2000 under the Ministry of Finance has an important mandate with regards to food security during drought periods through contingency planning. It is an autonomous body answerable to the Minister of Finance and National Economy. Its key objectives are to build a strategic reserve of commodities, collecting data on production, estimate consumption and determine surplus/deficits, provide services on the basis of cost recovery, contribute to national income, and invest in

neglected services. However, the SRA has been ineffective in achieving these objectives due to the lack of a clear strategic vision, a shortage of funds, and a lack of a transparent system to allocate scarce food stores among competing entities

At the state level, the structures of HCCD, HAC and HCENR are replicated, which operate either under the supervision of the Wali (Governor) or the state Department of Planning, or the state Department of Environment.

At the village level, there exist the Village Development Committees (VDCs) which are operational in some parts of the country. There are also committees which have been formed under projects supported by international community and humanitarians; e.g. UNDP, FAO, UNICEF.

The academic institutions and civil society organizations have a critical role in research, education and community mobilization. In Sudan a number of universities already offer modules or courses on disaster risk management; e.g. the University of Rabat, the University of Sudan. The universities also have good outreach capacities through their applied research programmes and community based internships for students. The University of Khartoum hosts two important institutes; the Desertification and Drought Studies department and the Remote-sensing Research Centre, which have crucial role in promoting disaster risk reduction and early warning systems.

International Organizations and United Nations

A number of international organizations are supporting the efforts of Sudanese government in the areas of environment, climate change and disaster risk reduction. A brief description of key organizations is as below.

UNEP has been working with Sudanese government and communities to improve national capacities for environmental management and climate change adaptation. At present it is supporting the Ministry of Environment to formulate the National Adaptation Plan to Climate Change (NAP), which is a priority under the UNDAF. The NAP would help to expand interventions to about 15 states in the sectors of agriculture, water and health as part of support on climate change adaptation. UNEP is implementing an eco-system based approach to disaster risk reduction, where it has introduced integrated catchment management in drylands of Sudan. UNEP has also been working with the UNCT to integrate water resources management considerations in the UN humanitarian and early recovery programme in Darfur and to raise awareness of IWRM approach. It included participatory catchment management in a number of degraded Wadi basins, formulation of IWRM policy, institutional strengthening of IWRM stakeholders with particular focus on Ground Water and Wadis department.

Practical Action

Many dams in North Darfur which were built in 1970-80 were silted and thus their storing capacities reduced. In some cases, the combination of peak flows and siltation had led to their collapse, causing flood and loss of precious water in a drought prone area. Practical Action has introduced innovative technologies for dam rehabilitation and de-silting. Practice Action in 1990s introduced a simple device, the sluice gate to allow users to flush out silt during times of Wadi flow. Practical Action has rehabilitated 6 dams which have helped to promote food security, income and employment benefits, embankments promote multiple indirect livelihoods impact and drought risk reduction.

World Bank

The World Bank is supporting the Ground Water and Wadis Department of the Ministry of Agriculture to improve the water catchments in Eastern Nile Apra region through the.

UNDP

UNDP has supported the development of the National Adaptation Programme of Action (NAPA). It is also implementing a project to implement NAPA recommendations in five States representing the different ecological settings of Sudan (Gedarfif, North Kurdofan, River Nile, Eastern Equatoria, and South Darfur). The project is benefitting 40 rural communities. Through support from the UNDP Drylands Centre, UNDP is supporting the establishment of a state Council for Natural Resources management in South Kurdofan. Recently it has formulated a new project on Climate Risk Finance for sustainable climate resilient rain-fed farming and pastoral systems (2012-16). This project will support local communities through micro projects to implement local solutions for adaptation to climate change. UNDP has also supported the capacity development of the Drylands Unit at the Ministry of Agriculture.

Other UN

Under the UNDAF 2013-16, a number of other UN agencies have indicated their interest to work on climate change adaptation and disaster risk reduction initiatives at local, state and national levels. They include ILO (disaster/climate resilient livelihoods), FAO (DRR training to communities), IFAD (environment/DRR awareness), WHO (environmental policies), UNHCR (reforestation), and HABITAT (awareness of urban communities about climate and disaster risks).

Strengths, Weakness and Needs for disaster risk management

In terms of **strengths** of the Sudanese system, the Civil Defence Act 2005, the Voluntary and Humanitarian Work Act, 2006 and the National Adaptation Programme of Action (NAPA) amongst themselves provide a strong policy basis for disaster risk reduction and preparedness. Therefore the formulation of a new policy to strengthen disaster risk reduction is not an urgent requirement. At the institutional level, the Civil Defence has a widespread presence in the country through its local stations, and so as far as disaster preparedness is concerned, the network of Civil Defence can provide an important institutional foundation. Also Sudan has a large humanitarian community with presence in most vulnerable states and communities. This network could be tapped to promote disaster risk reduction and preparedness approaches. National ministries; e.g. agriculture and international organizations like UNEP, Practical Action and UNDP have gained experience in introducing innovative approaches for disaster risk reduction through better agricultural, farming and water resources management practices. Vulnerable communities also use multiple coping strategies some of which could be replicated at larger scale to enhance disaster resilience. The existence of disaster risk management education programmes in certain Sudanese universities also provides an opportunity to develop technical capacities and human resources. Sudan has a range of scientific and research centres existing under various ministries and universities that can provide guidance on innovative approaches and technologies for disaster risk reduction and climate change. In regards to multi-disciplinary coordination, a flood task force also exists, which is co-chaired by HAC and OCHA which includes 9 ministries, UN, NGOs and CBOs. This can be transformed into a National Platform.

In terms of **weakness and gaps**, a key weakness exists with regards to the overlap of mandates, particularly between the Humanitarian Aid Commission (HAC) and the High Civil Defence Council (HCCD) and to an extent the High Council for Environment and Natural Resources. At present both HAC and the HCCD assert to be the national bodies concerned with coordination of disaster preparedness and response, although in terms of actual practice, the HCCD takes a more leading role on flood preparedness/response, while the HAC takes a stronger role in case of drought, conflicts and other disasters. HAC has recently been moved to the Ministry of Interior Affairs, thus now both HCCD and HAC are hosted at one ministry. This should help to resolve the issue of *mandate overlap* between the two bodies. HAC has moved a proposal to transform the High Council for Civil Defence (HCCD) into a Higher Council for Disaster Risk Management. If this happens it will greatly help to reduce

duplication of mandate and streamline institutional arrangements. HAC has also proposed to setup National and State Platforms for DRM as technical and operational coordination bodies.

The country lacks a culture of preparedness and risk reduction. Therefore despite the existence of three high-level coordinating bodies, the regular coordination amongst ministries and planning remains weak. The HCCD and the HAC normally meet during an emergency. What needed is the establishment of an operational level multi-disciplinary and multi-sectorial network to improve coordination, cooperation and planning for disaster preparedness and disaster risk reduction. The HAC could take lead on setting up such kind of a forum, in the form of a National Platform for Disaster Risk Reduction.

The country suffers from a poor risk analysis and early warning system. Although national scale hazard maps have been produced for drought and flood under the NAPA, however, the state and local level hazard mapping is absent, thus hampering the identification of hot spots. The availability of such mapping and analysis could help in advocating for national and international investments in the high risk areas and communities. Similarly the early warning system is weak on all counts; including from hazard monitoring and forecasting, to data-analysis and warning dissemination to users and communities. SMA has 26 weather stations, but they are mainly located in the urban centres and can't monitor rainfall outside a 50 kilometre radius. The SMA doesn't have sufficient number of rain-gauges, weather stations and weather radars to monitor rainfall, air temperatures, winds speeds etc, thus reducing its ability to forecast flash flooding in upstream areas, and droughts in the Northern and Western regions. The SMA also needs to enhance its technical capacities in using remote-sensing, satellite and GIS data. However, the biggest weakness in early warning system lay in the area of dissemination. The SMA puts out its warning messages on its website, and shares the information with HAC, Civil Defence and some other ministries. The supply of this information to at-risk communities in remote areas is almost non-existent, with a few exceptions in the case of flooding where Civil Defence stations might warn the respective communities to evacuate.

The officials also suffer from a lack of technical capacities in the areas of disaster risk reduction and related approaches; e.g. water resources management, drought resilient cropping, efficient irrigation technologies. However, the most important deficits exist in the area of actual implementation of disaster risk reduction approaches and the financing of disaster risk reduction. This includes complete lack of community preparedness. The consultations with stakeholders indicate that although the NAPA and other environmental frameworks have laid out details of innovate approaches for disaster risk reduction, but the application of such frameworks and approaches remains non-existent, barring a few exceptions, where international agencies like UNEP, UNDP or Practical Action have implemented projects in some local areas. A key reason behind this is the lack of public financing for disaster risk reduction.

The **urgent needs** with regards to disaster risk management in Sudan include: i) improving institutional arrangements for multi-disciplinary and multi-sectorial coordination and policy development, ii) improving clarity on departmental/ministerial roles, iii) strengthening disaster risk information systems, iv) increasing education and awareness, v) implementing structural and non-structural solutions at state and community levels and mobilizing finances for disaster risk reduction.

The improvement in institutional arrangements at national and state levels requires the revamping of the HAC and the HCCD to transform them into 1 entity, so as to reduce overlap and confusion. The proposal from HAC to transform the HCCD into a Higher Council for DRM is worthy of consideration. If this transformation happens, it will help to combine the organizational resources and capacities of the HAC and the Civil Defence department, reduce overlap, and improve planning, early warning, disaster preparedness, response and recovery significantly. Till the time this happens, the formation of a National Platform on DRR under the leadership of HAC (including Civil Defence) can greatly help to facilitate better coordination, information sharing and

collaboration. The clarity on ministerial/departmental roles can certainly be enhanced by developing clear set of standard operating procedures (SoPs) and disseminating them to all concerned. The capacities for disaster risk analysis and early warning are scattered across various departments, research centres and ministries in Sudan. Also the information existing within different stakeholders is not available to all institutions. There is a need to setup an institutional mechanism to improve coordination and information sharing amongst different stakeholders related to disaster analysis and early warning. Also the development of a GIS based database will provide a facility to integrate the information from multiple sources and create hazard and vulnerability maps on periodical basis. Although few higher level educational programmes exist in Sudanese universities however the technical capacities of government officials needs to be enhanced in different specialized areas of disaster risk reduction. Therefore short-term training courses needs to be organized on different subjects. Such courses also need to be integrated into the training and educational curriculum for purpose of sustainability. All of the above elements builds a support system for disaster risk reduction, however, the actual risks can't be reduced unless structural and non-structural risk reduction measures are implemented at local levels. The structural measures may include measures to improvement water resources management, agricultural management, environmental management (e.g. rangelands, forests) to reduce risks of flooding, droughts, desertification, soil erosion and storms etc. The non-structural measures may include improving state and community level capacities through community training and awareness, micro-credit schemes for livelihoods, food and fodder banks, flood resilient housing practices, contingency planning, drills, warning dissemination systems and evacuation capacities amongst others. The implementation of structural and non-structural measures can't be undertaken unless sufficient funds are available. This is an area of serious concern in Sudan, where the government doesn't provide any funding for such interventions. While the international community can help to implement some small scale schemes in selected high risk areas, serious advocacy is required to be undertaken with the national and state governments to allocate resources for disaster risk reduction.

III. RATIONALE FOR ESTABLISHING THE PROGRAMME

National Commitment

The 2011 drought and famine in the Horn of Africa (HoA) and the drought in Sahel, both of which intersected with Sudan, are important reminders of the exposure and vulnerability of Sudanese society to such disaster shocks. At the same time however such disasters have increased awareness of Sudanese government officials and other stakeholders about the need to change their approach from a short-term relief oriented response towards disaster risk reduction and preparedness. The consultations conducted during the formulation of this project document indicated an acute awareness of the problem amongst middle to senior level officials in ministries and departments.

The Humanitarian Aid Commission (HAC) has been advocating for integration of disaster risk reduction into development planning for the past few years. It has produced a paper, "Disaster Risk Management – role and Perspective", which calls for revamping of the institutional structure for DRM, by transforming the current High Civil Defence Council (HCCD) into a Higher Council for Disaster Risk Management (HCDRM). The HAC has been recently moved to the Ministry of Interior Affairs, which indicates an awareness and understanding on the part of government to improve coordination between the HAC and the HCCD, the two bodies currently chaired by the Minister of Interior. The HAC has requested UNDP to assist in strengthening national capacities for disaster risk reduction.

UNDAF 2013-16

The Sudan UNDAF has four inter-related pillars of cooperation: (1) Poverty Reduction, Inclusive Growth and Sustainable Livelihoods, with particular attention to youth, women, needy groups and communities at most risk of the impacts of climate change and recurrent disasters; (2) Basic Services, focused at both the policy and

service delivery levels; (3) Governance and Rule of Law, including broad institutional strengthening and deepening of basic rights and justice for all; and (4) Social Cohesion, Peace Consolidation and Peace Dividends, with high-level efforts at the centre complemented by comprehensive development initiatives at local levels.

The Pillar 1 addresses issues of inclusive growth, employment, livelihoods, and the importance of environmental management and climate change adaptation for the sustainable socio-economic development of Sudan. While the first outcome focuses on creating opportunities for decent work and livelihoods for youth, women and other needy populations through revitalization of agriculture, industry and strengthening of the private sector, it is the Outcome 2, which calls for making development sustainable and enhancing social resilience against environmental degradation, climate change and disaster risks. The Outcome 2 reads as "Populations vulnerable to environmental risks and climate change become more resilient, and relevant institutions are more effective in the sustainable management of natural resources". The UNDAF sees environment management and disaster risk management as key drivers behind reducing poverty in Sudan.

The UNDAF prioritizes strengthening of resilience of populations to environmental risks and climate change, along with improved effectiveness of relevant institutions for sustainable management of natural resources, including water, forests, biodiversity and land. It pledges to support evidence-based water resources policy and planning at federal and state levels including catchment management approaches, improved community rangelands and reforestation. It pledges UN support to develop a National Adaptation Plan for Climate Change, as well as a National Disaster Risk Management Strategy that embraces climate change adaptation and the National All Hazard Emergency Preparedness Programme. It commits to training on Disaster Risk Reduction (DRR)/Disaster Risk Management (DRM), including for drought and flood mitigation and health risks in disasters, so as to increase response and mitigation capacities among Government and communities alike.

UNDP Sudan Country Programme Document: 2013-16

In accordance to the UNDAF Outcome 2 of the Pillar 1, the component 5 of UNDP CPD focuses upon *Environment, Energy and Natural Resource Management.* The component states that UNDP will scale up its support to national, state and non-state partners to address environmental degradation and natural resource management. It will aim to reduce vulnerability and strengthen resilience of rural/urban communities to climate change, by multiplying local adaptation and risk reduction measures. It will support programmes to protect biodiversity and improve coastal zone management, agriculture productivity, drylands and integrated water resource management. The key indicators of UNDP CPD that relate to environment, climate change adaptation and disaster risk reduction are as following:

(1) Number of environmental strategies with sound action plans for implementation in place;
(2) Number of vulnerable, especially female headed, households adopting climate change adaptation measures;
(3) Number of communities with access to alternative sources of renewable energy based services;
(4) Number of states with functioning early warning systems, including flood and drought preparedness systems;
(5) National disaster risk reduction (DRR) policy/strategy approved.

UNDP Sudan Interim CPR Strategy July 2011 - July 2013

UNDP CPR strategy acknowledges that environmental degradation caused by climate change (increasing aridity) and misuse of natural resources increasingly poses a significant stress factor on those whose livelihoods depend on access to natural resources. Ineffective legal frameworks and deep gender disparities in land tenure and weak institutional arrangements for natural resource management, has further increased the livelihoods

vulnerability of rural and semi-urban communities. The skewed natural resource exploitation and environmental degradation constitute underlying factors of insecurity and increased exposure to natural disaster risks.

It also recognizes that recurrent floods, droughts and epidemics hold back development and undermined efforts to achieve the Millennium Development Goals. At the same time, climate change is likely to entail increased climate variability, particularly of rainfall, and the incidence of droughts and floods, which have been occurring increasingly in Sudan since the 1970s. Sudan does not have a strategy to address natural disaster risks beyond short-term humanitarian responses to disaster events. National and regional disaster risk management is characterized by lack of coherent policies and legislations, weak institutional capacities, absence of effective coordination mechanisms between different actors and lack of understanding of gender disaggregated impact of disasters.

The CPR strategy revolves around three programme components, which are: (i) Peace-building and Social Cohesion; (ii) Livelihoods recovery and reintegration; and (iii) Environment, energy and climate change adaptation.

The third component which aims "To mitigate longer-term risks to development and local stability through promoting clean energy, adapting to climate change and reduce conflict over natural resources", pledges to contribute to following key results:

- Improved water harvesting, access and management in target communities.
- Increased use of alternative energy and technology–particularly for construction and domestic use, in target communities.
- National level gender sensitive climate/disaster risk management strategy developed and national institutional capacity needs assessed.

UNEP

Due to the fact that the most important disasters in Sudan are closely related to environment and climate change, UNEP has a strong interest to support Sudanese government and communities in reducing their vulnerability and enhancing resilience through promoting better water resources management practices. It has already implemented small scale initiatives in this regard, and learning from the positive impact of those initiatives it intends to expand such interventions to other areas.

UN-ISDR

UN-ISDR works with Arab countries with regards to reporting on Hyogo Framework of Action (HFA). It is also implementing a Making Cities Safer Campaign, to which about 270 Arab cities have enrolled. Recently is has supported some Arab countries to prepare national disaster databases. Given the high vulnerability of Sudan to disasters UN-ISDR is interested to provide support with regards to national disaster risk assessment.

IV. PROJECT STRATEGY

The project strategy consists of a number of interrelated activities at different levels with the overall aim of strengthening overall capacity in the Government and selected states to prepare for future disaster impacts triggered by largely natural events and to reduce the risk of potential future events occurring, thereby attempting to protect development goals and building resilience in at-risk communities. The components of the project will be:

I. Facilitate the development of a National Disaster Management Plan through comprehensive consultation and awareness-raising of key national stakeholders;
II. Prepare a National Disaster Risk Profile with analyses of hazards, exposure and vulnerabilities, and to develop a disaster risk assessment database;
III. Strengthen national early warning systems by improving the monitoring infrastructure, analytical capacities of the meteorological and hydrological departments and enhancing warning dissemination capacities of different stakeholders;
IV. Implement innovative flood and drought risk management approaches at the state and community levels in 3 states;

The total duration of the project will be three years, starting July, 2013 till June 2016.

Geographic Focus

The Project will work both at national and state levels. The outputs related to development of the National Disaster Management Plan, the National Disaster Profile and the National Disaster Risk Assessment database will be implemented at the national levels. The outputs related to Early Warning Systems and drought and flood risk reduction will be implemented at national, state and community levels.

The Project will work in Kassala state for flood risk management, while it will work in two (2) other states for drought risk reduction. These states may include: North Darfur, North Kurdofan, Northern State or Red Sea State depending upon the stability and security situation. These five states were identified by participants of a national consultation workshop, as the high priority states for local level implementation of DRR interventions.

Partnerships

Effective disaster risk management can only be achieved through active multi-stakeholder partnerships implying the importance of establishing these early in the life of the project.

Government Institutions: Other Government ministries and departments rather than the responsible partners will be involved in project implementation. Thus, central to the success of the project is cross-sectoral government engagement coupled with good coordination and a strong enabling environment with different government ministries and departments taking the responsibility for different aspects of the process. The Ministries of Water Resources and Electricity, Agriculture, Science and Technology and Finance will play key leadership role within the programme. Also Ministries of Social Welfare, Animal Resources, Health, Education, Local Government and Administration and others will participate actively in project activities according to their mandate and area of technical expertise. The active participation of state level institutions is equally important for the local level success of project interventions; e.g. early warning systems and the flood and drought risk reduction including integrated water resources management.

This international coordination will gain much from the involvement of IGAD in the broad area of disaster risk management. IGAD already have established relations with the MoHA in areas of disaster risk reduction and management. The project should establish strong partnership and coordination with IGAD to avoid duplication and strengthen synergies.

UN Agencies: The project is a partnership between UNDP, UNEP and ISDR. The three agencies will contribute to the project according to their mandates and organizational strengths. The UNDP will perform the function of implementing agency as well as leading the technical process for implementation of the National Disaster Management Plan, training and the early warning systems.

UNDP will make financial contribution to implementation of the National Disaster Management Plan, the early warning systems, the training and gender integration. ISDR will lead the process of formulation of a National Disaster Risk Assessment database and the production of a national risk assessment profile. ISDR will also organize funding for the national risk assessment interventions. UNEP will provide technical leadership for implementing local level integrated water resources management approach as a strategy for drought and flood risk reduction. UNDP and UNEP will jointly mobilize resources for local level implementation. IOM will be very closely involved in the implementation of national risk management database, which will be set up within the existing humanitarian database at IOM. Other UN agencies will be kept aware about the project implementation.

World Bank: World Bank is extensively involved in major recovery and development action in Sudan through initiatives such as the Nile Basin Initiative and the Eastern Nile Watershed Management Project, elements of which relate closely to the objectives of this project. Given the World Bank involvement in disaster risk management through its Global Facility for Disaster Reduction and Recovery, the project will maintain a close relationship with the GFDRR counterpart for Sudan.

National Research Institutions/Universities: The Ahfad University of Women will be a key partner in implementing the Project output on integration of gender concerns into disaster risk management activities. The national Research institute, drought studies centre, National University of Ribat, University of Khartoum will also be closely involved in the national disaster management plan, national risk assessment, early warning systems, and training and education activities. The engagement of the research and educational institutions at different universities and ministries would help to ensure sustainability of project interventions.

Higher Council for Environment & Natural Resources (HCENR): Issues of adaptation to climate change are key component in this project and therefore the HCENR would be a key partner in this respect.

Regional And International Research Institutions: The project will benefit from exchange of experiences, best practices and wealth of databases available on technical and DRR issues. In this regard, the project will access international experiences with the help of UNDP, UNEP and ISDR regional offices, as well as it will support partnerships between the Sudanese institutions and the League of Arab States and IGAD.

CBOs/NGOs: Output from this project will focus on ensuring that vulnerable communities are more able to build resilience and address their disaster risks. NGOs and CBOs frequently work extensively at community or local levels and often are representative of the vulnerable communities. Thus, their role is important in the roll-out of programme benefits.

Communities: The ultimate development objective of this project is to promote resilience among communities vulnerable to disasters by establishing projects and programmes aimed at reducing and managing disaster risk. The contribution and participation of communities is therefore vital to the effectiveness of the project as communities both possess vital knowledge and experience of addressing risks but also they will be instrumental in the final delivery of disaster risk management which will need to be based on and take account of actual community priorities and build on community knowledge and coping strategies.

Programming Principles

The project will be guided by the following principles:

1. Hyogo Framework for Action: The Hyogo Framework for Action (HFA) 2005-2015, endorsed by over 150 countries in January 2005, including Sudan, defines five priorities for action. The project will contribute to these priorities through its interventions. In the first phase, the project will start with few interventions however it intends to expand its scope in the next phase and overtime contribute to capacity development against all priorities of the HFA. The five HFA priorities are:
   - Ensure that disaster risk reduction is a national and local priority with a strong institutional basis for implementation.
   - Identify, assess and monitor disaster risks and enhance early warning.
   - Use knowledge, innovation and education to build a culture of safety and resilience at all levels.
   - Reduce the underlying risk factors.
   - Strengthen disaster preparedness for effective response at all levels.

   The project will put strong emphasis on national ownership, and all activities will be carried out in close consultation with government partners and community members, both at central and national level.

2. Mainstreaming Disaster Risk Reduction: The project is committed to promoting the mainstreaming of disaster risk reduction:
   - Integrating disaster risk reduction into other priority development areas such as poverty reduction and governance as well as into other cross-cutting issues such as climate change and gender.
   - Developing capacities to integrate disaster risk reduction on strategic planning processes at the national and local levels through the development of tools such as tailored training packages and practical case studies.
   - Promoting the harmonisation of disaster risk reduction approaches with key stakeholders.
   - Implementing disaster risk reduction in a way that takes account of any actual and potential interface with conflict and developing approaches to programming in such a context.

3. Capacity Development: Across the five priorities of the HFA, the project will concern itself principally with ensuring that capacities are developed at all levels, related to both individual and organisational capacities as well as the general enabling environment, and to both technical and functional requirements. This will be done through the ongoing provision of tools, guidance and materials, the facilitation of the work of national and local mechanisms as well as those of the UN system and its partners, advice on the provision of continued capacity development and the promotion of information gathering and networking.

4. Climate Change Adaptation: Climate change is one of the most critical global challenges of the current period. The implementation of this project assumes that adaptation to climate change is fully integrated into actions taken to reduce disaster risk. Climate related risks will not necessarily affect everyone equally but judging by the increase in climate-related disasters in developing countries, the poor are facing a possible substantial increase in their exposure and vulnerability to climate-related hazards. Integral to the project is the appreciation that in the face of actual and potential climate change, Sudan can take actions to reduce vulnerabilities and

prevent the loss of life and livelihoods through managing disaster risks comprehensively. Addressing climate change assumes that:

- The national government is working to implement sustainable public spending that incorporates disaster risk reduction, particularly reduction of climate-related risks.
- Affected communities know how to protect themselves from climate variability and change, requiring both technical and financial support to implement measures to reduce risks through planning, use of appropriate construction standards and early warning systems.
- Other stakeholders understand that disaster risk management is the key strategy for reducing the negative consequences of climate variability and change.

5. Gender in Disaster Risk Management: Disasters triggered by natural events often place an undue burden on women who are mainly responsible in most societies for providing food and water for households. Women can also be at a greater risk of violence and inequity during recovery from disasters while the death rate from disasters is often higher than that for men. This project is committed to promoting implementation consistent with UNDP's Eight Point Agenda for Women's Empowerment and Gender Equality in Crisis Prevention and Recovery, which offers a comprehensive approach to address the needs of women and girls and gives them a voice in the disaster risk management process. Specifically, it addresses the following issues:
    - Women's unique needs must be incorporated in analyses of disaster risk and post-disaster assessments.
    - As community structures crumble and violence escalates, steps must be taken to prevent increased vulnerability of women and girls.
    - Women's economic potential are often not realized as their interests are not factored into the recovery effort.
    - Temporary housing often denies women privacy, increases their vulnerability to exploitation and discrimination and marginalizes widows.
    - Women's experience and knowledge must be valued and incorporated in any plans or policies.

    The proposed project is aiming to address these issues in a balanced and sensitive manner. Special attention will be given to:
    - Integration of a gender perspective in National DM Plan, identifying women and men as participants in risk reduction activities and equal beneficiaries of these activities;
    - Inclusion of a gender analysis and a detailed vulnerability assessment in disaster risk profiles;
    - Integration of women's organizations and networks in the early warning system;
    - Mainstreaming of gender in proposed capacity development activities and promotion of women's participation in planned trainings and workshops;

The Project will establish partnerships with a number of important institutions to promote gender integration. Some of them include: Ahfad University of Women, Women and Agriculture Directorate of the Ministry of Agriculture, Directorate of Women and Child Affairs, Ministry of Social Affairs and Sudanese Women Union – an NGO.

6. Conflict Sensitivity: UNDP, UNEP and ISDR will work with national partners to ensure that project interventions are guided by in-depth understanding of the sources of conflict and that the project contributes to conflict prevention, conflict resolution and peace building.

V. PROGRAMME OBJECTIVES AND OUTPUTS

The purpose of the programme is to improve disaster preparedness capacities of Sudanese institutions and enhance resilience of high risk states and men and women in local communities against most common natural hazards of flooding and droughts. The Programme will assist the government of Sudan to improve their systems based upon global best practices in the areas of coordination, planning, risk analysis and early warning, as well as innovative approaches to disaster risk reduction; e.g. integrated water resources management, and community based disaster preparedness. The programme objectives will be achieved through following outputs:

Output 1: A gender-sensitive National Disaster Management Plan developed through a consultative process, and technical capacities of national institutions to implement the plan enhanced;

The objective of this output is to provide policy guidance for management of disasters and disaster risks in Sudan. At present no document exists in Sudan that defines the disaster context, the key strategies required and the stakeholder roles/SoPs. The plan will serve as a common reference point about the nature of disaster risks in Sudan, the strategies for disaster mitigation and preparedness, as well as the roles of different departments and stakeholders. The project will support the formation of the Disaster Management Plan, its endorsement by all relevant stakeholders and its approval by relevant authorities; e.g. the High Council for Civil Defence or the Humanitarian Aid Commission (HAC).

To provide a consultative platform for the development of national disaster management plan, a National Task Force will be formed with participation of all relevant ministries, departments, selected states, and including selected specialized women's organizations. The representatives of civil society organizations and academia will also be invited as members of the National Task Force. The National Task Force will be led by the HAC. The Task Force will meet periodically. The Task Force will organize consultations with other stakeholders; e.g. private sector, women's groups, media, United Nations and international organizations etc. The National Task Force will define the scope and components of the plan.

Throughout the process, special attention will be given to integrate gender concerns into various sections of the Plan; e.g. situation analysis, SoPs, strategies for disaster management and departmental roles. The project will work towards enhancing women's capacities for disaster risk management. In this regard the project will partner with the Ahfad University of Women to design educational and training programmes on disaster risk management for female students, so as to produce a female cadre of disaster risk management experts.

In order to achieve this output following actions will be implemented:

- Formation of a National Task Force by the MoI/HAC;
- Hold training courses for members of the National Task Force on disaster risk management to enhance their technical knowledge and skills;
- Hold regular meetings of the National Task Force,
- Hold consultations with broader group of stakeholders, including national, state and non-governmental stakeholders, during the planning process and on the draft plan;
- Recruit a consultant to assist in the drafting of National Disaster Management Plan;
- Facilitate the approval of National Disaster Management Plan and its dissemination;
- Design modules on disaster risk management and integrate them into the Masters' curriculum of Ahfad University of Women;
- Conduct specialized training courses for women's organizations into order to enhance their capacities in disaster risk management, including the faculty of Ahfad University of Women;

- Ensure that women's organizations are invited to all training courses organized under the project on different subjects;

Output 2: A gender-sensitive National Risk Assessment conducted including the production of a National Disaster Risk Profile and a National Disaster Risk Assessment Database;
The purpose of this output is to provide an evidence-based analysis on the risk situation in Sudan and to develop a system for regular disaster risk assessment. The national risk assessment will help to enhance understanding of decision-makers about the problem and it would provide guidance for better DRR planning and safety of public and private investments. More accurate disaster risk assessment will also support the improvement of early warning in order to reduce live and livelihoods losses.

At present scattered information does exist about hazards, their geographical spread, the exposure and vulnerabilities of populations, livelihoods, infrastructure and economy, and the capacities that exist to effectively address disaster risks. Such information is available with different stakeholders; e.g. the Meteorology Authority, Nile Water and Dams Department, Drought Studies Centre, Ahfad University for Women, Ministry of Agriculture, Ministry of Environment, Faculty of Environmental Studies and Disaster Science (National University of Ribat), civil society organizations, united nations agencies and the media.

The project will help to collate and analyse such information to produce; i) a National Disaster Risk Profile, ii) a disaster risk assessment database. In addition consultations will also be organized with disaster prone communities, local officials, civil society organizations, women's groups and academic experts to seek their views on the nature of disaster risks facing Sudan. A Disaster Risk Assessment Committee will be formed with membership from above institutions and experts to achieve the outputs. The Committee will be led by the Sudan Meteorology Authority.

In addition a consultant will be recruited to work with the Committee to produce the National Disaster Risk Profile, which will include hazard maps for flood and drought, analysis of societal and economic vulnerabilities in at least five high risk states and the key infrastructure across Sudan; e.g. airports, hospitals, schools, government offices etc.

The project will strive to ensure that the National Disaster Risk Profile include gender-based analysis to the extent possible. In this regard, the project will organize specialized studies about the impact of recent disasters upon men and women.

Key actions under this output include:
- Form Disaster Risk Assessment Committee and recruit risk assessment consultant;
- Training of the Task Force members on disaster risk assessment methodology and tools;
- Task Force define scope and methodology for the National Disaster Risk Profile;
- Task Force define scope and methodology for the Disaster Risk Assessment Database;
- Data collection and analysis – collecting existing data (including historical data) and establishing mechanisms for the future regular review and revision of data- regular meetings of the Task Force to discuss the collected data and make analysis;
- Produce (gender-sensitive) disaster risk profile identifying key hazards, vulnerabilities by location and infrastructure;
- Disseminate the disaster risk profile; through Civil Defence, state governments, civil society organizations, media and academic institutions;
- Setup the (gender-sensitive) disaster risk assessment database.

- Handover the disaster risk assessment database to national institutions; e.g. civil defence, HAC, MoI, SMA etc;
- Train the national host institutions about the application and management of the database;
- 2 studies on the differential impact of 2 recent disasters upon men and women;

Output 3: Early warning systems strengthened in a gender-sensitive manner, through enhanced capacities for hazard monitoring, data analysis and warning dissemination to communities and stakeholders;

An effective early warning system comprises upon four elements as below:

- Hazard monitoring infrastructure and warning service;
- Capacities for analysis and warning generation;
- Dissemination and communication of warning messages, and
- Action by government, communities and other stakeholders;

The performance of these functions is dispersed amongst various departments in Sudan. The departments that are concerned with hazard monitoring and analysis include: the Sudan Meteorology Authority, the Nile Water and Dams Department, the Drought Studies Centre, National Research Centre, and the Ministry of Environment amongst others. While the stakeholders that are related with dissemination and communication include: HAC, Civil Defence, Ministry of Agriculture, Ministry of Water Resources and Electricity, state governments, universities, extension workers, media, civil society organizations, and United Nations Agencies.

The early warning system in Sudan suffers from deficiencies in all four aspects. The Sudan Meteorological Authority lacks sufficient hazard monitoring infrastructure e.g. rain-gauges, weather stations, weather radars, or ocean buoys, satellite capacities. At present it has only 26 weather stations which are mainly located in the state capitals or other cities and so they can't capture the rainfall data beyond a radius of 20 Kilo-meters. The rain-gauges are also not in sufficient quantities. Also it suffers from the lack of an effective network of volunteers to report the rainfall data from the field based upon reading of rain-gauges. The Ministry of Environment (the mother ministry of Meteorological Authority) receives remote sensing and satellite data through regional cooperation with ICPAC and others, but the capacities of staff Meteorological Authority are limited to interpret that scientific data.

The country also lacks effective dissemination and communication capacities. Normally the technical departments publish the warning data on their websites or share it with HAC and other ministries. But this information doesn't flow down effectively to men and women in local communities. The media, the Civil Defence, the extension services and civil society organizations are important mechanisms for dissemination of warning information, however there is a gap of information sharing with them from the national departments. Also the capacities and outreach of these organizations on their own is limited. It is important that the organizational network of all these organizations is engaged for effective dissemination of the warning information. These networks can also be used as volunteers for the Meteorological Authority to monitor rain-gauges and send reports to Khartoum.

The project will help to improve the early warning system by: i) sharing good practices on early warning systems, ii) improving the infrastructure for hazard monitoring, iii) enhancing technical capacities for using modern technologies; e.g. remote sensing, satellite, GIS, iv) provide equipment for better dissemination of early warning, and v) improving the outreach networks for dissemination of warning to men and women in disaster prone communities;

In order to improve the early warning system, the project will implement following actions:

- Form a multi-sectorial National Early Warning Committee to discuss issues of early warning and provide policy advice and technical guidance, inclusive of representatives of specialized women's organizations;
- Orientation of the National Early Warning Committee about good practices and global resources;
- Training of the Meteorological Authority, the Nile Water and Dams Department, the HAC and other departments on new technologies and data interpretation; e.g. remote sensing, satellite, GIS with the help of ICPAC and similar institutes etc.
- Facilitate consultations amongst stakeholders to identify bottlenecks in dissemination of warning information to men and women, and identify mechanisms for sending warning through multiple channels; e.g. HAC, state governments, academic institutions, media, Civil Defence, civil society organizations, UN Agencies;
- SoPs prepared on dissemination of early warning to men and women in disaster prone communities, and roles of different stakeholders elaborated in a written document;
- Training of SMA volunteers about weather data reporting;
- Facilitate consultations between the Sudan Meteorological Authority and other stakeholders to identify volunteers from amongst teachers, imam mosques, extension workers, farmer's unions, students, civil defence staff to monitor and report rain and weather data to the Meteorological Authority;
- Procure and install 2000 rain-gauges in states at high risk of flood and drought disasters;
- Provide warning dissemination equipment and technologies to the Civil Defence offices in at least 5 high risk flood prone states; such equipment may include; mega phones, HF, VHF radios, satellite phone and others;
- Provide necessary equipment to the Early Warning Unit of the HAC to enhance its capacities for production of warning messages and their dissemination; e.g. scanners, printers, computers;
- Provide a cluster computer to Sudan Meteorological Authority to help improve its capacities for fast track weather analysis and make projections;

Output 4: Flood and drought risk reduction strategies implemented at state and community levels to enhance resilience in a gender-sensitive manner;

Both drought and flood are disasters of water. More water causes flooding, while less water causes drought. The population growth, expanded irrigation/agriculture, urbanization and industrialization are contributing to increase water demand, while it is projected by scientists that reduced rainfall due to climate change is going to cause severe water shortages in the Arab States region. The climate change is also expected to affect the rainfall patterns in the form of more concentrated rains in short periods thus leading to flash flooding, a fact which has been validated by the Sudan Meteorological Authority (SMA). Therefore effective management of water resources is the primary strategy for flood and drought mitigation, including adaptation to the impact of climate change. This includes effective approaches to management of riverine water, rain-water harvesting and including recycling of urban and industrial waters and efficient management of agricultural water.

Integrated Water Resources Management (IWRM) is an innovative approach which takes a multi-sectorial approach to water resources management. IWRM analyses the multi-sectorial water demands and the water supply from different sources and then proposes options for efficient management of water demands and harvesting of multiple sources of water supply to maximum effect. The

implementation of IWRM is a participatory process, which requires involvement of multi-disciplinary stakeholders. In the context of Sudan, the UNEP has already introduced the IWRM approaches on a pilot basis in Darfur. The project will use the lessons learnt from the UNEP experience and it will implement the IWRM approach in the 3 other states for purposes of effective flood and drought risk reduction. The interventions under this may include participatory catchment management, rehabilitation and construction of dams, water-efficient irrigation technologies, family and community level rainwater harvesting schemes. The related agricultural and environmental activities may include: community-based forests, converting land-use from agriculture to livestock, drought resistant seed varieties, poultry and fish production, rehabilitation of rangelands and forests, construction of shelterbelts to reduce windstorm impact etc. The target states will include: Kassala, North Kurdofan and North Darfur. The Northern State and Red Sea State are also high risk states that will be considered for IWRM interventions, provided the security situation in N. Kurdofan and N. Darfur doesn't remain conducive for local level implementation. The project will focus upon flood mitigation in Kassala while upon drought mitigation in N. Kurdofan and N. Darfur.

Additionally the project will work on state and community level disaster preparedness in accordance with the recommendations of the IWRM plans. This will include improving state level coordination systems, contingency planning, early warning, technical capacities and similarly at the community level it would include community training, drills, awareness-raising and community level drought and flood mitigation schemes. The project will ensure that the preparedness at state level is inclusive of gender concerns. The project will also ensure that community level interventions address both men and women. The project would implement following actions for disaster mitigation at state and community levels:

- Form a state level multi-sectorial DRR committee to lead the process for state and community level preparedness and the implementation of IWRM approaches. In addition to others, the committee shall include amongst its members specialized women's organizations;
- Assist the State level DRR Committee to formulate its purpose, terms of reference, membership and schedule etc;
- Organize gender-sensitive DRR training for the state committees;
- Assist the State DRR Committees to prepare the state IWRM plans and Contingency Plans, which are sensitive to gender concerns;
- In accordance with the IWRM plans, identify high risk locations for implementation of structural solutions on flood and drought mitigation;
- Support the State DRR Committees in implementation of state level structural and non-structural preparedness strategies in line with the IWRM Plans;
- Implement community level preparedness activities in consultation with the state committees, targeting both men and women;

VI. MANAGEMENT ARRANGEMENTS

The project will be implemented under the direct management of the UNDP Country Office. The Head of The Environment Unit will monitor and supervise a Project Manager based in Khartoum but with frequent visits to participating States. A UNDP Programme Officer of The Environment Unit will ensure the smooth implementation of the project activities and backstop the Project Manager and will resolve obstacles that may arise. The Programme Officer will also monitor and provide quality assurance. The project will also have access to a Project Adviser at key periods as specified in the Annual Work Plan during implementation as well as the technical input of sections of BCPR where relevant. The Regional

Advisor for Disaster Risk Reduction based in Cairo will also be available to support the Project Team in delivery of different activities.

Because of the multi-sectoral nature of the activities and the importance of mainstreaming, the Ministry of Interior (MOI) represented by the Higher Council for Disaster Management and the Ministry of Environment (MoE) represented by the Sudan Metrological Authority will have effective roles in the implementation of the project based on their mandates. Thus, central to the success of the project is cross-sectoral government engagement coupled with good coordination and a strong enabling environment with different government ministries and departments taking the responsibility for different aspects of the process according to their established mandate and area of technical expertise. It is equally important for state level institutions to be effectively engaged during all implementation processes of the project. The project should also establish strong partnership and coordination with IGAD, LAS, IOM and other relevant international bodies to avoid duplication and strengthen synergies.

This coordination role and responsibility of maintaining linkages between the states and the various institutions and line ministries at central government level will be facilitated by the Humanitarian Aid Commission (HAC) of the MoI to ensure smooth implementation and management of the project activities and delivery of outputs. HAC will also provide office space and furniture to the project team to facilitate their interaction and promote teamwork.

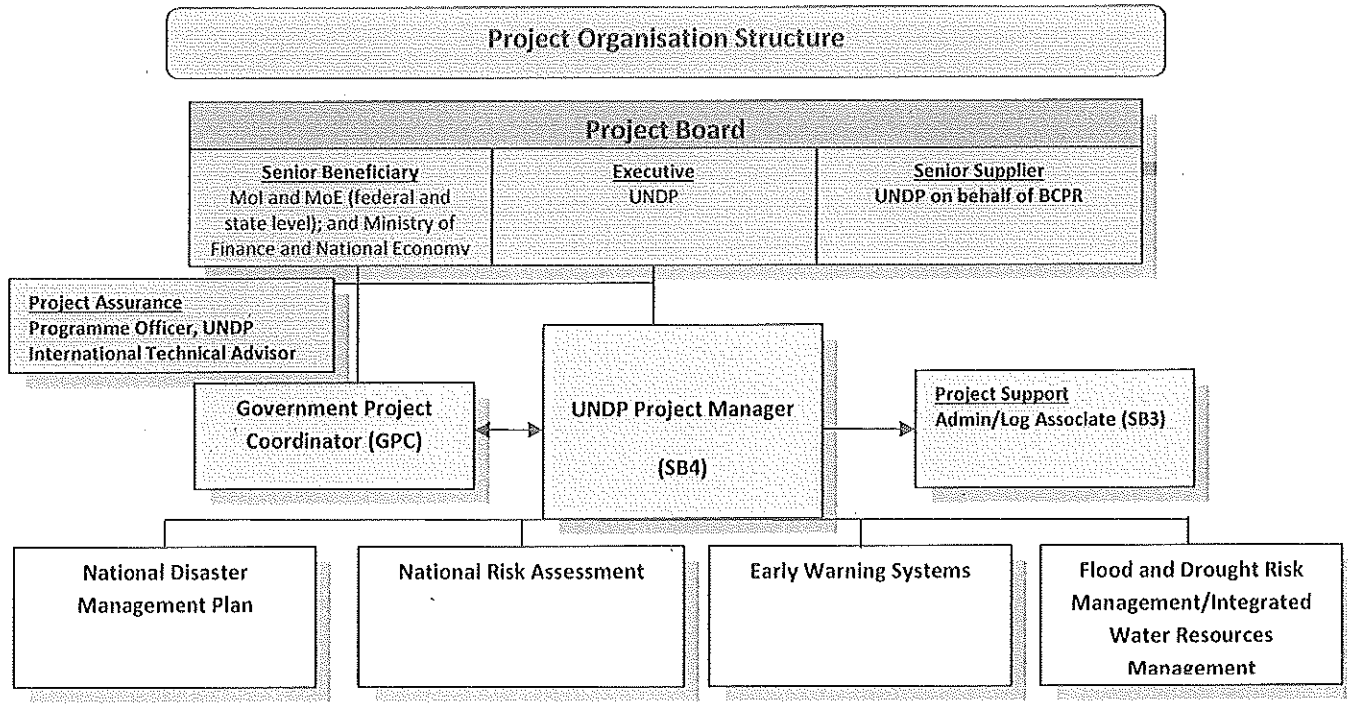
The Environment Unit programme staff will liaise with Operations and support the project with procurement, project payments and logistical issues. Where appropriate and supportive of effective project implementation, coordination between this project and other UNDP projects will be provided by the Country Office through the creation of effective linkages and synergies in the field while ensuring that duplication is avoided as far as possible. The Environment Unit will also ensure that regular reporting is made to BCPR and lead the evaluation of the project and fund-raising efforts.

Project Management and Staffing Structure

The project will be staffed with a UNDP Project Manager based in Khartoum but with frequent travel to participating States. The UNDP Project Manager will be responsible for day-to-day management and decision-making for the project including reporting to the Project Executive Board (PEB - see below). The UNDP Project Manager will oversee the implementation of all project activities and be responsible for all project finances. An International Project Adviser will be available to the project on an intermittent basis (as agreed) during the initial phases of project implementation as specified in the AWP.

A UNDP Programme Officer (in the Environment Unit) will backstop the project, provide quality assurance and ensure that the project's activities are in line with the Annual Work Plan (AWP) and the project Results and Resources matrix. The Project Staff will interact with local counterparts, generate sub-project proposals, monitor implementation, ensure timely payments and coordinate and perform the final acceptance of the sub-projects. The bulk of the project will be implemented by the Implementing Partner under the supervision of the executive management of the PEB and the UNDP Project Manager.

In addition to day-to-day project management and technical support the UNDP Project Manager will be responsible for capacity development of national programme staff who will eventually take over aspects of management of and technical support to the project in the long-run.



A Government Project Coordinator (GPC) will be identified by MoI to play the role of institutional focal point and to maintain substantive linkages with the UNDP Project Manager. The Government Project Coordinator will be engaged in developing joint work plans that enables delivery of the project outputs; plays the institutional coordination role between the project and the states as well as with respective line ministries and relevant institutions. He/She will also coordinate with the project team in planning and implementation of the necessary capacity development activities for the government institutions and staff.

The UNDP project manager is responsible for day-to-day management and decision-making for the project. The UNDP Project Manager's prime responsibility is to ensure that the project produces the results (outputs) specified in the project document-, to the required standard of quality and within the specified constraints of time and cost.

The Project Executive Board (PEB) will supervise the overall management, monitoring and evaluation of the project. The PEB will comprise one senior representative of HAC at central level, one senior representative of the Ministry of Environment, the Minister of Water Resources and Electricity, the Ministry of Agriculture, Ahfad University of Women, the Head of UNDP, UNEP, ISDR and donor representatives. The PEB will convene on a bi-annual basis (every six months). The PEB will guarantee the national ownership of the project and will bear ultimate responsibility for making executive management decisions, including approving potential project AWP and revisions. The PEB will supervise and guide the UNDP Project Manager. The PEB may co-opt other representatives from key ministries and key agencies. Management arrangements will be discussed with stakeholders to reach consensus before the project begins implementation.

VII. MONITORING FRAMEWORK AND EVALUATION

In accordance with the programme policies and procedures outlined in the UNDP User Guide, the project will be monitored through the following:

Within the Annual Cycle

- On a quarterly basis a quality assessment shall record progress towards the completion of key results based on quality criteria and methods captured in the Quality Management table (see below).
- An Issue Log shall be activated in Atlas and updated by the International Project Manager to facilitate tracking and resolution of potential problems or requests for change.
- Based on an initial risk analysis submitted, a risk log shall be activated in Atlas and regularly updated by reviewing the external environment that may affect project implementation.
- Based on the above information recorded in Atlas, Project Progress Reports shall be submitted by the International Project Manager to the PEB through Project Assurance, using the standard report format available in the Executive Snapshot.
- A project lessons-learned log shall be activated and regularly updated to ensure on-going learning and adaptation within the organisation and to facilitate the preparation of the lessons-learned report to be submitted at the end of the project.
- A Monitoring Schedule Plan shall be activated in Atlas and updated to track key management actions/events.

Annually

- *ANNUAL REVIEW REPORT.* An Annual Review Report shall be prepared by the International Project Manager and shared with the PEB and the Outcome Board. As a minimum requirement the Annual Review Report shall consist of the Atlas standard format for the QPR covering the whole year with updated information for each above element of the QPR as well as a summary of results achieved against pre-defined annual targets at the output level.
- *ANNUAL PROJECT REVIEW.* Based on the above report, an Annual Project Review shall be conducted during the fourth quarter of the year or soon after to assess the performance of the project and appraise the Annual Work Plan for the following year. In the last year, this report will be a final assessment. The Review is driven by the PEB and may involve other stakeholders as required. It will focus on the extent to which progress is being made towards outputs and that these remain aligned to appropriate outcomes.

As part of the project start-up activities, UNDP, in collaboration with UNEP and ISDR, will develop a monitoring and evaluation plan which outlines a set of performance outcome and output indicators, giving detail on indicators definitions and data sources, research methodology and who will be responsible and involved at each stage of monitoring and evaluation ensuring availability of baseline information for all interventions. At the start of the project a baseline study will be conducted based on an agreed set of indicators for each component.

A final evaluation (and audit) will be conducted at the end of the project to compare achievements with the objectives and document lessons learned and good practice. This will feed into planning for any future phase of the project.

VIII. LEGAL CONTEXT

This document, together with the CPAP signed by the Government and UNDP which is incorporated by reference, constitute together a Project Document as referred to in the Standard Basic Assistance Agreement (SBAA) and all CPAP provisions apply to this document.

Consistent with Article III of the SBAA, the responsibility for the safety and security of the implementing partner and its personnel and property in the implementing partner's custody, rests with the implementing partner.

The implementing partner shall:

a) Put in place an appropriate security plan and maintain the security plan, taking into account the security situation in the country where the project is being carried out;
b) Assume all risks and liabilities related to the implementing partner's security and the full implementation of the security plan.

UNDP reserves the right to verify whether such a plan is in place and to suggest modifications to the plan when necessary. Failure to maintain and implement an appropriate security plan as required hereunder shall be deemed a breach of this agreement.

The implementing partner agrees to undertake all reasonable efforts to ensure that none of UNDP funds received pursuant to the Project Document are used to provide support to individuals or entities associated with terrorism and that the recipients of any amounts provided by UNDP hereunder do not appear on the list maintained by the Security Council Committee established pursuant to Resolution 1267 (1999). The list can be accessed via http://www.un.org/Docs/sc/committees/1267/1267ListEng.htm. This provision must be included in all sub-contracts or sub-agreements entered into under this Project Document.