Flood Preparedness & Early Warning (FPEW-II)

Revised Project Implementation Manual

Ver. 3.11

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List of Abbreviations

ANRS	Amhara National Regional State
CBO	Community Based Organization
CFMG	Community Flood Management Group
DPPA	Disaster Prevention and Preparedness Agency
ENSAP	Eastern Nile Subsidiary Action Programme
ENTRO	Eastern Nile Technical Regional Office
ERCS	Ethiopian Red Cross Society
EU	European Union
FFC	Flood Forecasting Center
FPEW	Flood Preparedness and Early Warning
GFDRE	Government of the Federal Republic of Ethiopia
HEP	Hydroelectric Power
ICRC	International Committee of the Red Cross
KDC	Kebele Development Committee
KFMG	Kebele Flood Management Group
M&E	Monitoring and Evaluation
MoFED	Ministry of Finance and Economic Development
MWR	Ministry of Water Resource
NBI	Nile Basin Initiative
NFPEWG	National Flood Preparedness and Early Warning Working Group
NGO	Nongovernmental Organization
NMA	National Meteorology Agency
ORDA	Organization for Rehabilitation and Development in Amhara
PASDEP	Plan for Accelerated Sustainable Development to End Poverty
PMU	Project Management Unit
PFT	Project Facilitation Team
RBO	River Basin Organization
RFMG	Regional Flood Management Group
WFMG	Woreda Flood Management Group

Proposal for Phase I FPEW-II Project Implementation

Name of Project: Flood Preparedness and Early Warning Phase II (FPEW-II)

Total Cost: US$ 6.0 million

Summary of Components:

Project Summary Logical Framework

Component	Outcomes	Outputs	Activities
1. Government Capacity-Building and expanded flood mitigation infrastructure investments **1.1 Data acquisition and management** **1.2 Flood forecasting and analysis** **1.3 Increased use of flood forecasting information for managing floods** **1.4 Support for community flood mitigation measures** **1.5 Establishment and expansion of urban flood mitigation structures in Gambella town**	• Enhanced capacity of government institutions (MWRD, NMA, Abbay Basin Authority, Regional Bureaus of Water Development, DPPA) to manage, coordinate and cooperate with other Eastern Nile countries in flood forecasting, mitigation and response activities • Reduced vulnerability of urban dwellers to flood induced displacement and damages	• Ability to collect and analyze flood forecasting information enhanced. • Improved flood forecasting, early warning information gathered • FPEW methods harmonized • Collaboration fora organized and operational-ized • Effective coordination mechanisms established within government • Increase length of protective dikes along banks of Baro River in Gambella town	1.1 Acquire satellite imagery and develop govt. capacity to analyze data 1.2 Develop River Gauge Networks 1.3 Develop NMA Rain Gauge Network 1.4 Enhance Capacity for Lake Surveillance 1.5 Build forecasting and analytical capabilities of a central Flood Forecasting Center (FFC) 1.6 Develop flood information dissemination system 1.7 Support coordination of community flood mitigation actions 1.8 Undertake preliminary investigations for expanding flood control infrastructure 1.9 Contract construction firm to undertake construction of works
2. Community Flood preparedness and early warning **2.1 Non-structural measures for increasing community flood preparedness**	• Increased flood preparedness and mitigation capabilities of affected communities and enhance their ability to harness benefits	• Staff trained in cooperating institutions at Federal, Regional, Wereda and Kebele levels • Clear mechanism	Non-structural activities: 2.1 Establish Community, Kebele and Wereda Flood Management Groups 2.2 Form Flood Management Partnerships

2.2 Structural measures for increasing community flood preparedness	of floods through non-structural (sub-component 2.1) and structural (subcomponent 2.2) measures	for passing flood warning information from community to regional and federal levels • Clear mechanism for supporting community flood preparedness and mitigation activities • Effective system of disseminating flood preparedness and early warning information to communities • Improve physical infrastructure to reduce danger posed by environmental hazards and facilitate evacuation access to flood-prone areas • Ensure efficacy of compensation levels and procedures for people affected by involuntary resettlement in Gambella town	2.3 Provide training in Flood Risk Management and Contingency Planning 2.4 Support health hazards prevention and control activities 2.5 Public Awareness and Education Structural Activities: 2.6 Establish entry-point initiatives 2.7 Develop flood mitigation structures (2.7.1) construct Waterway Structures; (2.7.2) construct access roads in targeted areas; (2.7.3) provide clean water & sanitation points; (2.7.4) strengthen health, education, & multi-purpose community facilities
3. Regional level coordination	• Enhanced ability to learn from experiences of Tana Beles FPEW activities, both within regions in Ethiopia and between EN countries	• Mechanisms established to facilitate exchange of information between project areas and within EN region	3.1 Document experiences of Tana Beles FPEW 3.2 Share lessons learned through national and regional workshops

Section One - Project Background

1.1 Introduction

Flood Preparedness and Early Warning Phase II (FPEW II) is a collaborative undertaking of the Nile Basin Initiative (NBI), the World Bank, the Government of the Federal Democratic Republic of Ethiopia (GFDRE) and beneficiary communities in the Tana Beles Basin and Gambella town. NBI is a collaborative partnership of the riparian states of the Nile which aims to harness benefits from the peaceful and sustainable development of the waters of the Nile for the citizens of riparian nations. The long-term objective of FPEW II is to reduce human suffering from floods and to enable the inhabitants of the Eastern Nile Basin to capture the benefits of floods for the enhancement of their livelihoods. FPEW II will be active in Amhara, Beni-Shangul Gumuz and Gambella Regions of Ethiopia. As flooding in the Eastern Nile portions of Ethiopia's river basins is concentrated around the Lake Tana area and Gambella town most of the project's activities will be focused in these locations. However, the project has deliberately been designed to amplify institutionalization of flood preparedness and early warning best practices so Ethiopia can use the acquired knowledge to shape flood prevention and management frameworks for river basins outside the Eastern Nile system. There is also a Regional component to FPEW II in which cross-country experiences are to be captured.

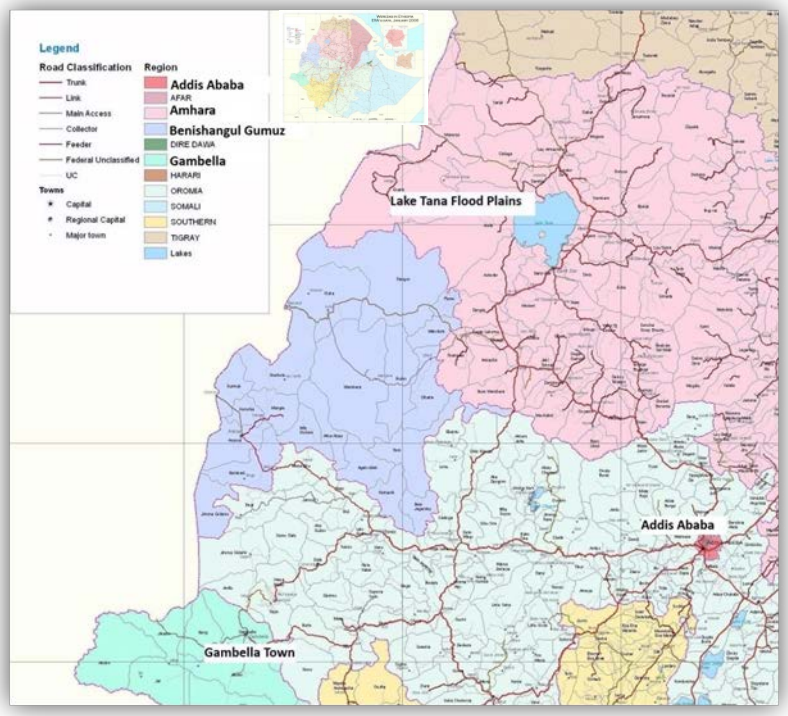
Flood Preparedness and Early Warning (FPEW) is one of the priority areas identified for 'fast-track' implementation under the Eastern Nile Subsidiary Action Program (ENSAP) of NBI. NBI first conceived of involvement in flood preparedness in 2002. Much of the technical groundwork for the current proposal was developed under the first phase of NBI's Flood Preparedness and Early Warning Project (FPEW-I) which also produced annual flood reports. The transition from the stage setting to the expanded delivery phases of NBI's Flood Preparedness and Early Warning Projects was originally conceived as a continuum. Consequently, elements of the government capacity building component of the project will be spread over both phases of the project and some stock will need to be taken of the status of the individual activities in the component before final implementation is put into effect.

Of the three river basins in Ethiopia which fall in the boundaries of the Eastern Nile – the Abbay, Baro-Akobo and Tekeze – flooding is a problem in the river flood plains surrounding Lake Tana of the Abbay river basin and in areas around Gambella town in the Baro Akobo river basin. See Map 1 overleaf for location of the project areas.

1.2 Project Location

Map 1: Project Area: Addis Ababa, Gambella and Lake Tana Floodplains

Core project activities will be located in three locations. The Project Management Unit (PMU) will be placed in the capital at the Federal Ministry of Water Resource Development in Addis Ababa with options to set project offices in Bahir Dar and Gambella towns respectively for overseeing field level implementation activities. Flood monitoring, early warning data collection and community level works will be concentrated around Lake Tana where private and NGO subcontractors will undertake community mobilization and community level structural works. Expansion of urban flood protection infrastructure will be concentrated in Gambella town in south western Ethiopia.



Tana Beles growth corridor is composed of two sub-basins in north-west Ethiopia. The Tana sub-basin lies in six *weredas* around Lake Tana, the largest lake in the country (3042 km^2). Lake Tana's waters drain from the highlands of Gojjam and Gondar in Amhara National Regional State. Seasonal torrential rains have historically inundated the floodplains around the lake. The black cotton soils of the floodplains have traditionally benefited from the flood's stowage of alluvial soils, but the benefit is under threat because heavy erosion of the topsoil in the highlands increasingly causes the rivers to transport rocks and debris to productive land in the floodplains.

The Beles sub-basin is a large tributary of the Abbay River (Blue Nile) which is shared between Amhara and Beni-Shangul Gumuz Regional States. The Beles basin lies at a lower elevation to the south-west of the Lake. The basins are soon to be linked by an underground tunnel that will power and hydroelectric power (HEP) turbine with capacity to generate 84 MW of electricity. Floods are most hazardous in the floodplains surrounding Lake Tana. The Beles sub-basin is better protected from flooding than the Tana sub-basin because of investments in the underground tunnel and structural facilities for controlling water flow. Both basins are areas of relatively high and stable rainfall.

Gambella town is the capital of Gambella Region. It sits ashore the only navigable river in the country, the River Baro. Gambella town is administered by a city municipality and the majority of residents live small-town lives employed as traders, civil servants and in the services. However, links to rural life are very strong. The main ethnic groups in Gambella Region are the Anuak, the Nuer and settlers from the highlands many of whom were relocated to the Region under the infamous resettlement program of the previous Derg regime. The river is a critical source of water, fish, and means of transport and center of social activity.

Large numbers of the town's residents are highlanders settlers from Amhara, Tigray and Southern Ethiopia. Though large numbers of the town's residents are employed as civil servants, traders and other urban-based livelihoods the river is an important source of fish, lakeside irrigated agriculture and cheapest form of transport to rural villages with which the social and economic ties are very strong. The town lacks permanent control structures to protect it against floods and periodically suffers devastating economic losses, displacement and deaths due to floods.

1.3 Livelihoods in the Floodplains Around Lake Tana and Flood Affected Parts of Gambella Town

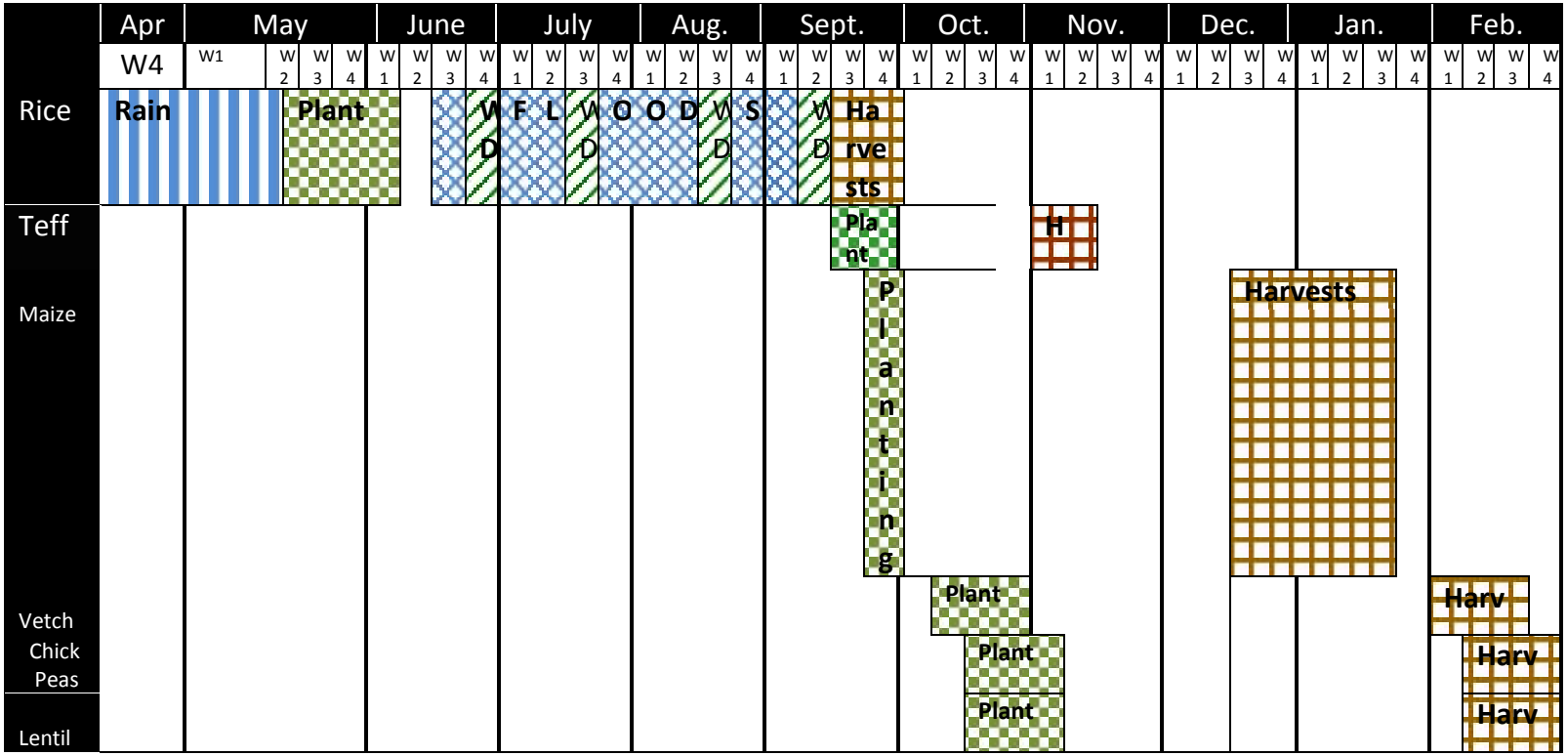
The communities in the flood plains around Lake Tana lead smallholder agrarian livelihoods, growing grains and breeding livestock. Some practice pump-based small-scale irrigation. However, the contribution of irrigation to aggregate agricultural output, though rising, is still modest.

Arguably, the most flood-prone of the six flood-affected weredas in the Lake Tana area is Fogera wereda, which is caught between the confluence of the Ribb and Gumera rivers. Rice is the main grain produced in the Fogera floodplains. The lives of Fogera's farmers have been transformed by the grain. It was first introduced in the 1960s but farmers failed to adopt it. A second attempt, aided by South Korea in the 1990s was instrumental in igniting widespread farmer-to-farmer uptake of rice production. Soils in the floodplains are thick black vertisols that have poor drainage, and are prone to cracking and difficult to plough in the dry season. Therefore, rice production in the floodplains relies on light showers in the short Belg rains (April – May) for moisture for land preparation. The timing of the rains is critical to synchronizing planting and plant growth with seasonal flood levels. No fertilizers or chemical inputs are used.

The ideal pattern is for rains in late April/early May and planting in mid- to late May. Early planting allows the rice to grow high enough (25 – 40 cm) to withstand and benefit from seasonal flooding. Farmers use the seasonal flooding to circulate water in their rice paddies. Water is rotated (discharged and replaced with fresh flood water) every 15 to 18 days to avoid contamination form stagnant water. The labor requirements for weeding and watering the paddies is higher than most families can cope with so the seasonal demand for hired farm labor for rice production also peaks in the flooding season. Most farmers conduct three rounds of weeding before harvesting the rice. Rice yields (45 – 50 quintals/ha) are more than double the yields for wheat which is what farmers used to grow in the floodplains. Crop residues from rice plants are used for livestock feed and are significantly higher than comparable grains. This fodder is critical to seeing livestock through the zero-grazing flooding season. The variety of rice grown (*Jigna*) in the floodplains is a 150 day maturing hybrid developed by Ethiopian researchers. There is vast potential for Ethiopian rice growers to benefit from international rice research.

Farmers supplement their rice production with an early yielding (60 day maturing) variety of *teff*, the popular Ethiopian staple food. *Teff* is planted using receding and residual flood moisture and is a critical ingredient in raising the palatability of rice *injera*, a staple flat-bread, for local populations. Maize is also grown for sale and consumption using residual flood moisture. Vetch (a leafy green vegetable), chick peas and lentils are also grown in small amounts.

Table 1.1: Annual rain-fed cropping calendar for Fogera floodplains, Lake Tana area



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Gambella town has a population of …. Most of its residents derive their living from employment in trade, civil service and the services sector. Very diverse forms of livelihoods prevail in Gambella. Fishing, hunting gathering, nomadic slash and burn agriculture, nomadic animal rearing and mixed-crop livestock farming are practiced by the various ethnic groups. The Baro River lies at the center of most of the livelihoods systems in and around Gambella town. Many of the town's residents supplement their incomes from the sale of fish, fruits or firewood gathered from along the banks of the river. The river is a crucial means of transporting their heavy burdens to the markets in town. Traders also carry their wares in boats for sale to downstream communities.

1.4 Impact of Floods on Livelihoods of Affected Populations

The populations inhabiting the floodplains around Lake Tana have adapted their livelihoods to the annual seasonal flooding of the Ribb, Gumer and Megech rivers. Floods are an integral part of their livelihoods and communities are reluctant to undertake even temporary resettlement during flood events. Seasonal flooding is especially important for rice production which is the main food and cash crop produced by farmers in the area. The variety of rice currently being produced in the floodplains requires high labor inputs including daily workers during the peak flooding season. This is one cause of the communities' reluctance to be permanently resettled or temporarily relocated outside high flood risk areas. Tenure insecurity is another source of resistance to even temporary relocation to reduce the suffering caused by floods. Even though the regional government and its international development partners have gone far in trying to allay fears of land tenure insecurity through land certification and a region-wide moratorium on rural land redistributions, farmers are still fearful that relocation to avoid floods will expose them to permanent eviction or unwieldy land boundary disputes within the communities. Consequently, most communities prefer to suffer the consequences of the 80 -100 days of full flooding in their individual homesteads and to tackle the challenges with their own means than to relocate or resettle and wait out the floods on higher ground elsewhere.

Prolonged flooding causes considerable human suffering in the floodplains. The submergence of the floodplains in nearly half a meter of water and the slow recession of the waters creates ideal breeding conditions for mosquitoes. Some of the highest incidence of malaria in the country occurs in the floodplains as a direct consequence of flooding. In recent year effective malaria control interventions, including spraying, distribution of chemically treated nets and community ditch clearing campaigns have been put in place however, floodplains populations still bear considerably higher risks of malaria infection than other communities because of their proximity to stagnant pools of water and the prolonged periods of flooding.

Floodplain communities have developed time-tested methods for protecting themselves and their assets from floods. Traditional methods include reducing mobility during floods, use of modified housing and storage structures and adaptation of cropping systems to seasonal flooding patterns. However the traditional strategies employ low-levels of technology which limits their effectiveness. Floodplains communities rely on traditional sticks and mud-mortar structures to build their homes and suspend their grain and assets on lofts elevated by wooden stilts to protect them from flood damage. The weak structures expose grains and other assets to damage from high levels of humidity and reduce the quality of agricultural outputs. Flooding disrupts most households' access to clean drinking water from hand-dug wells because the wells become submerged and there is a high risk of the walls caving in. This forces households to seek alternative sources of water but because of the difficulties of hauling clean water long distances in the floods, most households succumb to using polluted flood waters for drinking, cooking and cleaning as a result of which they are exposed to life-threatening water-borne diseases. Sanitary facilities are also sources of serious pollution both because they are few in number and because of the structural weaknesses of the facilities. The health hazards caused by flooding in the floodplains are therefore considerable and their solutions often require investments beyond the capacity of the poor communities.

Extreme events of flooding also occur in the Lake Tana floodplains and often result in loss of human and livestock lives. Human deaths are under-reported because of the difficulties of travel to health care facilities during flood times and because they are scattered among seasonally isolated communities. Livestock also die due to drowning and over confinement in inundated *kraals* (paddocks) where they are unable to lie down.

Flooding also costs the communities considerable losses in economic opportunities. Physical isolation causes loss of market opportunities. Construction costs in the floodplains are prohibitively high because of unstable alluvial soils and the problem of groundwater inundation. The lack of all weather roads and communication infrastructure hinders evacuations in extreme events of floods and leaves the floodplain communities perpetually disadvantaged in attracting infrastructure investments and development projects.

In Gambella, flooding causes severe and unpredictable damage to the livelihoods of affected populations. The flooding of the Baro River exposes affected people to the loss of human and livestock lives as well as to the loss homes, businesses and property. The loss of shelter and livelihoods exposes affected populations to displacement and reliance on emergency assistance. Often the damage to property is so intense that there is little salvage value in whatever is recovered after the flood recedes. Flooding also disrupts peoples economic activities as mobility on the river becomes dangerous due to floating debris and the inability of the frail traditional crafts to cope with the dangers of collision. Fishing, fruit gathering and riverside agriculture is also disrupted by the floods. The Ethiopian Red Cross maintains a significant presence in Gambella town and has provided support to victims of flooding in the past.

Section 2 - FPEW II Outline and Implementation

This proposal covers the activities to be completed in FPEW-II. It builds upon work begun under FPEW-I, particularly the establishment of regional institutional arrangements, the identification of technical and institutional knowledge gaps, the development of critical baseline information for the FPEW and related projects, the piloting of selected interventions in flood preparedness and response at community levels, and the strengthening of existing coping mechanisms in order to provide a foundation for further development.

The main components of FPEW-II focus on building the capacity of Ethiopian government bodies to provide flood monitoring and early warning as well as to expand investments in flood mitigation infrastructure, developing structural and non-structural activities at community level to enhance preparedness and mitigate vulnerability to flood events, and to coordinate these activities with other initiatives in the Eastern Nile region.

2.1 Overall Objectives

The overall objective of the FPEW project is to reduce human suffering from floods and increase the ability of risk-bearing communities to capture the benefits of floods. The project will help relevant government institutions to provide timely, accurate and relevant flood early warning information to populations at risk as well as increasing the government's investments in dikes and flood control infrastructure. Communities that bear the highest risk of being affected by floods will also be assisted in increasing their ability to avoid, withstand and capture the benefits of floods.

2.2 Project Cost and Flow of Funds

2.2.1 Note on Project Costs

The total project cost for full implementation of the project is USD 14, 843, 200. However the bulk of project costs are accounted for by the Government Capacity Building Component (approx. USD 4 million) and there are significant savings to be made in this component because there is considerable overlap in the activities under this component between the first phase of the project (FPEW I) and the proposed second phase. Several of the activities to have been completed by FPEW I have not yet been completed and those items can eventually be reduced from the final FPEW II budget after verification of the expenditures and confirmation of the completion of activities.

The communities component of the budget does not constitute a request for additional resources over and above previous estimates by SMEC. Funds allocated for international and local labor and associated costs were reallocated to the 'Funding for community level initiatives' to enhance the budget line for this activity.

Funding for the Gambella component remains unchanged save for the inclusion of funding to cover the cost of the Project Facilitation Team (PFT) and a Baseline Survey.

Table A1: Project Costs – Capacity Building Component

	Item	unit	no.	Unit cost	Total cost
A1.1	**Capacity Building at MWR**				
	ADCP	unit	5	35,000	175,000
	Standard current meters	unit	8	2,000	16,000
	IT equipment		1	36,000	36,000
	Other field equipment				30,000
	Software		1	25,000	25,000
	Vehicles	no.	3	80,000	240,000
	Labor - International	month	15.5		261,500
	Accommodation	month	15.5	2,300	35,650
	Travel	trip	6	3,000	18,000
	Labor - Local	month	10.5		39,500
	Government contribution Labor	month	21		46,500
	Sub-total				**923,150**
A1.2	**Capacity building for DPPA**				
	Vehicles	no.	1	80,000	80,000
	IT equipment	station	1	8,000	8,000
	Office renovation	station	1	20,000	20,000
	Software		1	10,000	10,000
	Communications equipment	site	1	12,500	12,500
	Travel	trip	8	3,000	24,000
	Labor - Local	month	8		33,000
	Government contribution Labor	month	171		343,500
	Sub-total				**531,000**
A1.3	**Capacity building for NMA**				
	Vehicles	no.	1	80,000	80,000
	IT equipment	station	1	8,000	8,000
	Office renovation	station	1	20,000	20,000
	Software		1	10,000	10,000
	Communications equipment (new & upgraded stations)	site	20	12,500	250,000
	Direct internet satellite linkage - Installation		1	10,000	10,000
	Direct internet satellite linkage - Services	months	48	4,000	192,000
	Travel	trip	8	3,000	24,000
	Labor - Local	month	8		33,000
	Government contribution Labor	month	171		343,500
	Sub-total				**970,500**
A1.4	**Capacity building at NMA / MWR Regional**				
	IT equipment		1	36,000	36,000
	Software		1	25,000	25,000
	Vehicles	no.	2	80,000	160,000
	Lake surveillance motherboat and equipment	no.	1	200,000	200,000
	Lake surveillance light boats	no.	12	15,000	180,000
	Lake surveillance boat - Crew, O&M	annual	5	10,000	50,000
	Labor - International Environmental Specialist	month	18	8,000	144,000
	Accommodation	month	18	2,000	36,000

	Labor - International Social Safeguards Specialist	month	12	8,000	96,000
	Baseline survey - local consultants	month	4	15,000	60,000
	Accommodation	month	12	2,000	24,000
	Travel	trip	5	3,000	15,000
	Labor - Local	month	7.5		28,500
	Government contribution Labor	month	288		468,000
	Vehicle O&M	annual	0.15		60,000
	Sub-total				**1,582,500**
A1.5	**Network of rain and river gauge reporting stations**				
	Satellite service	Year	3	20,000	60,000
	Vehicles		2	80,000	160,000
	Communications equipment	station	75	8,000	1,200,000
	Instruments/installation/rehab.	station	25	15,000	375,000
	Site survey	site	5	1,500	7,500
	Construction, new sites	site	5	12,500	62,500
	Central station		1	12,500	12,500
	Maintenance contract	site-years	225	1,000	225,000
	Labor - International	month	35.5		608,000
	Accommodation	month	35.5	2,300	81,650
	Travel	trip	12	3,000	36,000
	Labor - Local	month	71		231,000
	In-country travel	trip	3	1,000	3,000
	Government contributions Labor	month	196		367,000
	Satellite service	Year		20,000	
	Site servicing	Sites/Year	75	480	108,000
	Sub-total				**3,537,150**
A1.6	**Establishment of flood forecasting center**				
	in Addis Ababa				
	Vehicles	no.	1	80,000	80,000
	IT equipment	station	1	50,000	50,000
	Office renovation	station	1	125,000	125,000
	Software		1	50,000	50,000
	Communications equipment	site	1	12,500	12,500
	Labor - International	month	48.8		811,000
	Accommodation	month	48.8	2,300	112,125
	Travel	trip	12	3,000	36,000
	Labor - Local	month	41.8		167,750
	In-country travel	trip	3	1,000	3,000
	Government contributions Labor	month	260		558,500
	Sub-total				**2,005,875**
A1.7	**Capacity building at regional & wereda**				
	IT equipment		1	12,000	12,000
	Software		1	10,000	10,000
	Communications equipment	site	4	12,500	50,000
	Travel	month	9.75	2,300	22,425
	Accommodation	trip	6	3,000	18,000
	Labor - Local	month	26		104,000
	In-country contributions labor	trips	16	800	12,800
	Government contribution Labor	month	30		55,000
	Sub-total				**284,225**

Table A2: Project Costs – Community Flood Mitigation Component

	Item	Unit	No.	Unit cost	Total Cost
	Training materials				15,000
	Funding for community initiatives				2,600,000
	Radio-telephones	no.	4	1,500	6,000
	Vehicles	no.	3	80,000	240,000
	Travel	trip	12	3,000	36,000
	In-country travel	days	50	200	10,000
	Government contribution Labor	month	22		47,500
	In-country travel	trip	8	200	1,600
	Sub-total				**2,956,100**

Table A3: Project Costs – Gambella Capacity Building and Flood Infrastructure Expansion

Item	unit	No.	Unit Cost	Total Cost
PFT Labor - Local	month	60		49,500
PFT-IT Equipment	unit	3	3000	9,000
office accommodation, Gambella	months	4	750	3,000
office equipment, a-c, etc.				10,000
communications equipment	unit	1	2,000	2,000
Baseline socio-economic survey (National consultants)	month	3	12,000	36,000
Travel	trip	2	3,000	6,000
In-country travel	days	80	120	9,600
Per diems	days	115	20	2,300
Government contributions Labor	month	1		2,500
Resettlement	month	4	2,000	8,000
Sub-total				**137,900**
Gambella Flood Protection Works: Construction contract design & construction				
Dikes	km	3.8	200,000	760,000
Survey and Design		1	60,800	60,800
Evacuation/storage	m3	50,000	2	90,000
Pump Station	site	1	350,000	350,000
Pumps	unit	2	25,000	50,000
Drainage		1	35,000	35,000
Vehicle		1	80,000	80,000
Bank Protection	m3	6,000	80	480,000
Office, Gambella	months	12	750	9,000
Sub-total				**1,914,800**
Grand Total				**14,843,200**

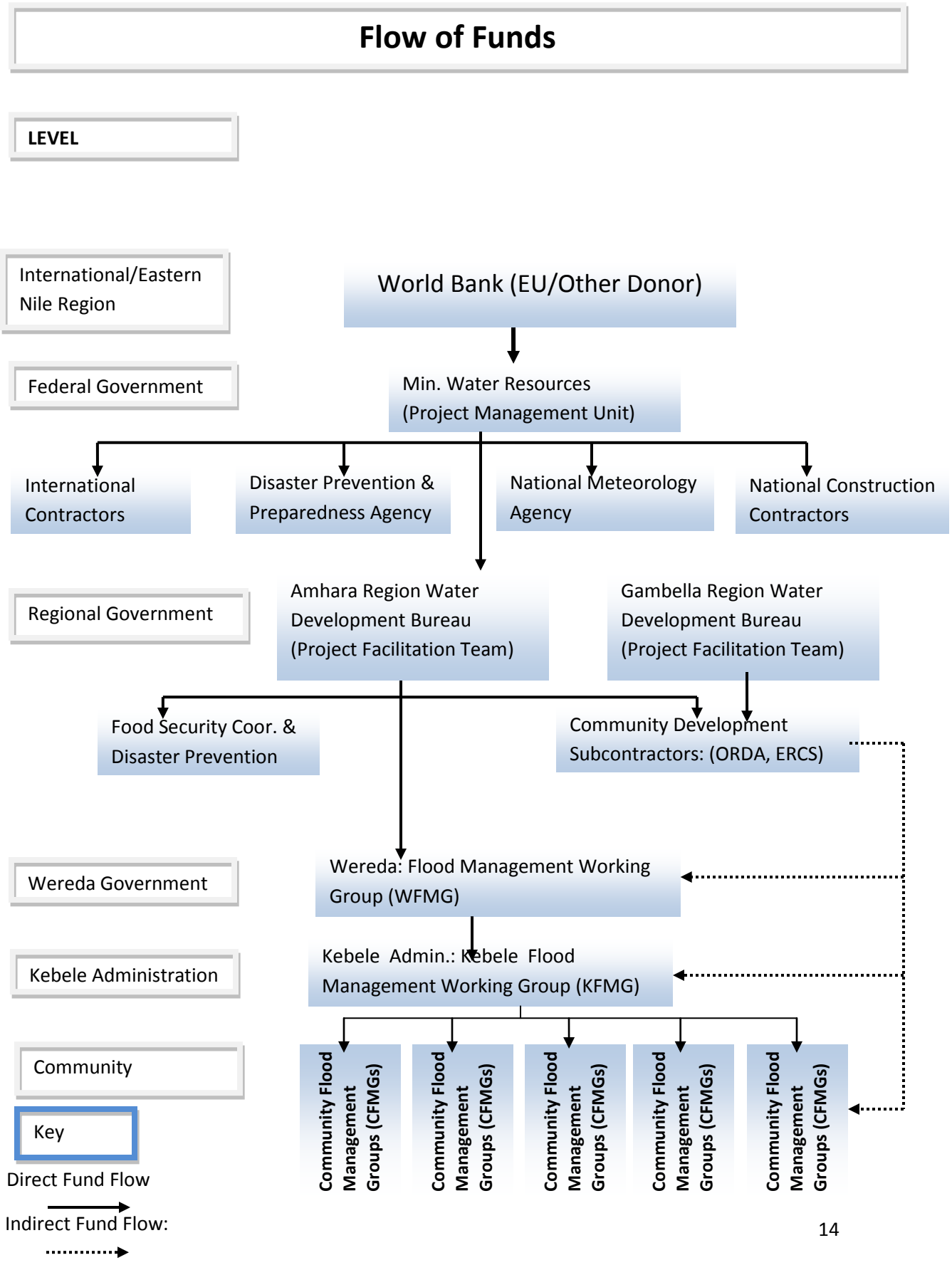
2.2.2 Flow of Funds

Financial management arrangements for the project will follow the standards set forth by past multilateral agreements between the GFDRE and the World Band. A vary with the source and conditions governing donor funding for the project. The most ideal financing arrangements for the project's institutional composition would be to access funds from both international loan credits to the government and grants to the NGOs and participating communities. The project is currently expected to be funded through a World Bank Credit with financial support from the European Union (EU). In Ethiopia the directives that govern the use of monies acquired through international loan credits are very rigorous. One feature of the rigors of the system is the practice of budget off-setting by which regional governments that receive international donor funding are obligated to relinquish a proportionate share of annual budgetary allotments from the Federal Treasury. Though the practice is applied flexibly, it can cause resistance from the regional governments in engaging with internationally-funded projects. The directives are generally more supportive of the use of loans for investments with tangible outputs and given the project's emphasis on less tangible outputs (training and capacity building, community driven development, Eastern Nile Regional collaboration) there is a need for concerted negotiation efforts to ensure a smoothness of the fit between the directives of the Finance Ministry and the objectives of the project. To accommodate the operational constraints that could arise from strict adherence to the directives, the structure of the flow of funds proposed for the project, summarized in Figure 6.1, uses the standard Government of Ethiopia structures for funneling project funds through the Ministry of Finance and Economic Development (MoFED) where it will be identifiable by a separate budget-line for three of the components (government capacity building, regional component and project management component). Disbursement and management of funds earmarked for the community component, which will be executed by NGOs, has been devolved to the Regional Government level where there is an established (though still evolving) experience of Government/NGO partnerships and where it will be possible to transparently manage the performance of the grants. Discussions have already been held with the leadership of ANRS allowing for sub-contracting the community component to NGO development partners.

The most ideal funding mechanisms would be for the project components to be financed through a mix of grants and loan credits. As ENTRO is mandated to seek and secure grant funding for NBI projects, it would be possible to use the funds more flexibly and to engage NGO and private sector contractors for the project at all hierarchical levels of the project.

Disbursement and Auditing Mechanisms will conform to the World Bank standards with which there is considerable experience in the Ethiopian Ministry of Finance and Economic Development. Other participating implementing agencies (including Regional Government counterparts and the NGOs) will need training and support in complying with World Bank procurement and financial management procedures. Arrangements will be made for the agencies to receive the required training before the disbursement of funds and to offset the potential risk of loss of capacity due to staff turnover or other unforeseen factors the training will be provide at the beginning/close of each fiscal year for the first three years of the project.
See Fig 1.1 for a description of the proposed Fund Flow mechanism.

Figure 1.1: Structure of the Flow of Funds



Section 3 – Proposed Project Components and Outputs

3.1 Overview

The FPEW-II phase of the overall Flood Preparedness and Early Warning Component is comprised of 3 components:

Component 1 - Government capacity building, which consists of four sub-components:

a. Data acquisition and management

b. Flood forecasting and analysis

c. Increased the use of flood forecasting information for managing floods

d. Support for community flood mitigation measures

Component 2 - Community flood preparedness and early warning, consisting of two sub-components:

e. Non-structural measures for increasing community flood preparedness

f. Structural measures for increasing community flood preparedness

Component 3 - Regional level coordination

Section 4 – Component 1: Government Capacity Building

4.1 General Overview and Current Transitional State of Coordination Arrangements

Flood early warning is first and foremost a *government* service. Enhancing the technical and managerial capabilities of government institutions can have a profound effect on the livelihoods of flood-affected communities.

This component of the Tana Beles Integrated Water Resource Development Project (TBIWRD) will provide direct technical and managerial capacity building support to the Ministry of Water Resource Development (MWRD), the National Meteorology Agency (NMA), the Disaster Prevention and Preparedness Agency (DPPA), the Amhara Region Water Resource Development Bureau and the Food Security Coordination and Disaster Preparedness Office of Amhara National Regional State. Support may shift to the River Basin Organization as and when their operational directives are articulated and the mandates of the currently targeted institutions change.

This proposal has been developed at a time of major transitions when the GFDRE is de-centralizing responsibilities for water resource development to River Basin Organizations (RBOs). Proclamations have already been passed by the House of Representatives legalizing the establishment of 12 river-basin authorities. The restructuring will entail changes in the division

of responsibilities between the Federal Ministry of Water Resource Development, Regional Bureaus of Water Resource Development and the newly formed RBOs. The exact divisions of responsibilities will be defined in a set of government directives that will govern the operations of the new institutions and amend the mandates of existing government water resource regulators and developers. To avoid the project's fragmentation by future restructuring and to facilitate ease of adjustment to changing institutional arrangements, a functional approach to institutional analysis is adopted throughout this document.

The component on capacity building of government institutions seeks to secure three outcomes in advancing capabilities of the targeted government institutions:

1. To introduce and institutionalize advancements in flood data collection, storage and management capabilities.

2. To enhance systems for analyzing flood data and introducing and mentoring government professionals in the use of top of the line flood forecasting techniques.

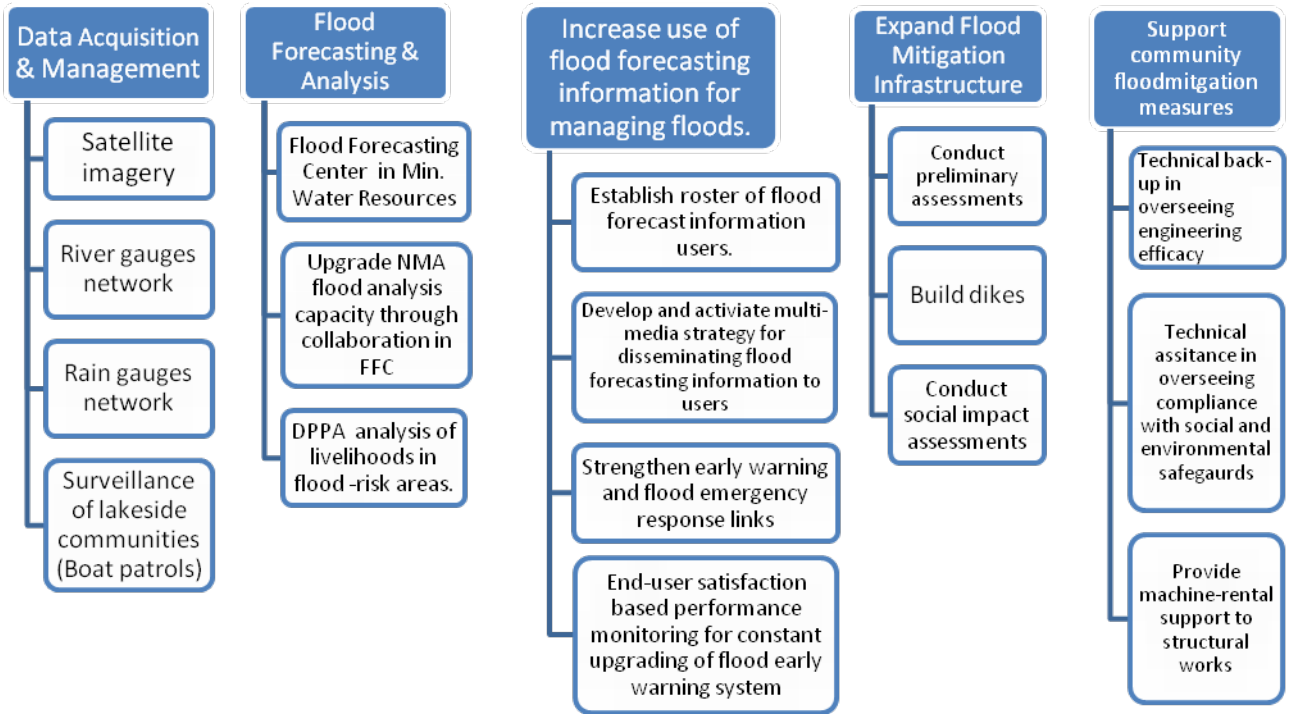
3. To expand the use of flood early warning information to support flood emergency management and help communities mitigate negative effects and harness the positive benefits of floods.

Figure 4.1 depicts the composition of the Government Capacity Building component of Flood Preparedness and Early Warning component of the Tana Beles Integrated Water Resource Development Project.

4.2 Upgrading Flood Data Acquisition and Management

The FPEW component of TBIWRD will invest in upgrading the flood data collection, assembly and storage capabilities of pertinent government institutions. Data acquisition and management is to focus on four areas: acquisition, collection, storage and management.

Fig. 4.1: Functional composition of the government capacity building and flood control infrastructure expansions sub-component.



Activity 1.1 Acquire Satellite Imagery and Develop Capacity to Analyze the Data

The first area of data acquisition and management will be the procurement, or access through alternative means, of satellite imagery data for the high-risk *kebeles* in the six weredas that share the Lake Tana shoreline and other high flood-risk locations in the project area. The project will establish formal linkages with providers of satellite imagery data, equip the Ministry of Water Resources with the computer hardware and software to use and store satellite images/data and train the Ministry's staff in analyzing and interpreting satellite data for flood forecasting and early warning. Investments will also be made in calibrating satellite data to increase its accuracy through ground-truthing exercises. Both expatriate and local consultants may be involved in upgrading the government flood forecasting system to use satellite data in flood forecasting. Satellite data will be the main source of secondary data to be used in the flood forecasting and early warning system.

Activity 1.2 Develop River Gauge Networks

The project will have three tiers of primary data collection. The first will be through a newly established network of river gauges which will have the ability to transmit real time data to

centralized processors in Addis Ababa. The transmission of real time data is critical to increasing flood response lead time which is very short in Ethiopia and especially short in the Lake Tana area. This system for acquiring hydrological data is new to the country. It will involve installation of river gauges in up to 30 sites in the Tana Beles basins. Staff will be required to augment on-site logging of data with manual observations. Satellite communications (satellite phones) are proposed for transmitting data from remote sites to the processing units. The river gauge network will be operated by the Flood Forecasting Center to be established in the Ministry of Water Resource Development in Addis Ababa in collaboration with the Water Resource Development Bureaus in Amhara and Beni-Shangul Gumuz Regions. The project will finance the establishment of the network and cover costs of its operation for the project duration. MWRD will inherit and operate the system upon termination of the project.

Activity 1.3 Develop NMA Rain Gauge Network

The second tier of FPEW II primary data collection will be through expansion of the NMA rain gauge network in the project area. NMA has an estimated 30 Grade 1 Meteorological stations in the Abay River Basin. Only a select few have real time reporting capabilities mainly because of a lack of communications equipment. With support from FPEW II the NMA will establish an additional 10 rain gauge stations with real time reporting capabilities and will upgrade another 10 existing stations to develop real time reporting capabilities. Capacity building at NMA head quarters will include upgrading of internet connectivity with the lease of a direct internet satellite connection for the Operational Numerical Weather Prediction Unit at NMA. The project will pay for installation of the hardware and for connection fees for 36 month period after which NMA will support the upgraded operations from its regular budget.

Activity 1.4 Enhance Capacity for Lake Surveillance (Monitoring Patrol Boats)

The third tier of FPEW primary data collection will be through monitoring the socio-economic impact of floods on lakeside communities. The operations will be mounted from both the lake and the land surface with use of monitoring patrol boats and ground assessments teams. The Amhara Region Food Security and Disaster Prevention Coordination Office will play the leading part in building Lake Community Surveillance capabilities. The Surveillance system will enable the DPPA to monitor the onset and progression of floods and their impact on the livelihoods of high-risk communities in the Lake Tana area. Livelihoods-based assessments will build on the work done by the DPPA's Livelihoods Integration Unit (LIU), which already considers fluctuations in access to food and income sources as well as expenditure levels throughout Amhara region (see http://www.dppc.gov.et/Livelihoods/livelihoodhome.htm). Not all flood disasters will require activation of the national response system. The boat patrols will enable the Amhara Food Security and Disaster Prevention Coordination Office to conduct modest emergency rescues during surveillance of localized extreme flood events. The activity will feature procurement of a thirty-foot life-boat (mother ship) and 12 lighter crafts (2 rubber dinghies/wereda bordering the Lake) fitted with outboard motors for mobility in shallow flood waters. Surveillance data will include hydrological as well as livelihoods assessments of

lakeside/riverside inhabitants in flood-risk areas. Analysis of Lake Surveillance (patrol boat) data will also be concentrated in the Amhara Region Food Security and Disaster Prevention Coordination Office. Lake Surveillance capabilities will offer flood preparedness and early warning professionals from outside the region with a full learning experience and help realize the project's ambitions of making the Tana Beles Flood Preparedness sub-component a key national facility for applied training on the subject. The Regional Food Security Coordination and Disaster Preparedness Office will take over Lake Surveillance activities at project closeout and will be responsible for financing operational costs beyond the project's closeout.

Activity 1.5 Build Forecasting and Analytical Capabilities of a Central Flood Forecasting Center (FFC)

This is one of the activities in which there is some overlap in the continuum between the two phases of the flood project. Prior to finalization of the project agreement there will be a need to sort out the activities that have been completed under FPEW I from those that must be executed under FPEW II. FPEW II's investments in building government analytical capabilities in hydrology will be concentrated in the establishment of a central Flood Forecasting Center (FFC) in the Ministry of Water Resource Development (MWRD) in Addis Ababa. MWR will provide office space and recruit, or provide from its existing staff, the core personnel for staffing the FFC. The core staff will include a Flood Forecasting Center Manager/Coordinator, hydrological engineers to be trained and mentored in top of the line flood forecasting and computer simulation techniques and support staff for FFC. MWR staff and space contributions will be valued as GFDRE's budgetary contributions to the overall FPEW II component in the project. The National Meteorology Agency and the Disaster Prevention and Preparedness Agency will also be requested to provide counterpart focal persons for engaging in the activities of the FFC. FPEW II will procure furniture and equipment for the FFC including computer hardware and software for managing flood data and two vehicles for supporting field work. The FFC will be responsible for operating the network of river gauges along the Lake Tana shoreline and high-risk locations in the Tana Beles area. The FFC will collate and analyze real time data from the river gauge network.

The project will also invest in strengthening operational links between the FFC and the DPPA which is the government body with the legal mandate to declare emergencies (including flood emergencies) and invoking responses. The DPPA has vast experience in conducting livelihoods assessments and the purpose of strengthening operational links will be for the FFC to tap into this knowledge base as well as for the DPPA to access more accurate hydrological information on the risks of floods and to use the information for early warning. The DPPA will also be instrumental in linking the project with institutional users of flood early warning information and in helping the FFC better meet their information needs.

Activity 1.6 Develop Flood Information Dissemination System

Effective flood early warning can provide the lead time necessary to save human lives. Building the capacity of national early warning systems to acquire, analyze and disseminate high quality flood early warning information in time for relevant actors and affected populations to make

life-saving decisions is a critical benchmark of the project's success. The project will therefore invest in building an efficient flood information dissemination system. Multi-media communication formats will be used for dispensing flood information to institutional users. The chief institutional users are expected to be DPPA and the line Ministries of the Federal Government, national and international donors, NGOs and CBOs active in helping vulnerable populations and private sector stakeholders.

The project will devise an innovative system of color coded flag poles painted with rulers for measuring water depth to signal flood levels to at-risk communities. Other forms of public communication through both formal and informal channels will also be employed to ensure communities and affected populations have access to regular flood monitoring information. Informal dissemination will include highlighting project activities/key messages at community social gatherings, such public celebrations, religious feast days, weddings and other community events.

The system will also tailor flood early warning and preparedness information to the needs of EN regional partners and will form forums for regular and timely exchange of information on flooding. The exchange of flood information between EN countries forms a key benchmark for showcasing the spirit of collaboration on which NBI is formed and will be an important focal area of activity for the project's Regional component.

Activity 1.7: Supporting the Coordination of Structural and Non-Structural Community Flood Mitigation Actions

The main ground level activity of the government capacity building component of the project will be to provide support to community actions for managing floods. A core project team will be set up in the Bureau of Water Resources in Bahir Dar which will coordinate and support structural and non-structural measures to improve flood preparedness and management in the flood plains. The technical support to be provided under this sub-component will include the overseeing of the technical soundness of the structural interventions to be implemented by NGO and private/public sector sub contractors. The core project team in the ANRS Bureau of Water Resources will be responsible for approving engineering designs and overseeing the compliance of subcontractors with the required standards for undertaking publicly funded construction works. The team will further be responsible for ensuring the necessary environmental and social safeguards are in place for undertaking community level structural and non-structural flood mitigation activities. The core project team will be supported by both international and national technical resource persons in discharging these technical support responsibilities. Implementing agencies will also benefit from the procurement of international and national technical expertise on environmental and social impact assessments as well as in engineering and design of structural schemes by deputation of the expertise to the implementing partners and by participating in training and mentoring activities.

Undertaking structural activities in the floodplains is an expensive and physically challenging task. This is because of the problems of lack of appropriate construction materials, ground

water inundation of foundation works, the need for deep excavation of unstable soils and the inability of communities to cope with the cost and physical demands for putting up robust structures in the floodplains. Consequently one of the most highly prioritized areas of support in flood management to emerge from the communities was requests for machine-assistance in pre-season maintenance of community maintained flood mitigation structures. One of the areas of government support to community flood management initiatives will be in providing earth moving and compaction equipment to support community level structural activities. The support will be provided in the form of hours of machine rental and will be outsourced to public and private service providers in compliance with the pertinent edition of the *World Bank Guides for Procurement of Goods and Works*. The support services can either be embedded in implementation subcontracts with the participating NGOs or can be administered separately by the core TBIWRD project team in the Amhara Region Bureau of Water Resources.

Activity 1.8: Conduct preliminary assessments for the expansion of flood control infrastructure in Gambella town

The project will undertake preliminary assessments of the physical and institutional requirements for building flood protection dikes in vulnerable parts of Gambella town. The assessment will include a baseline survey of the social, economic and livelihoods status of the populations at risk. The baseline survey will be used to monitor the socio-economic impact of the investments and to ensure that compensations for those who suffer involuntary relocation are adequate enough to re-instate them to their pre-project levels of welfare. The baseline survey will be conducted by national consultants.

Preliminary assessments will also lay the ground work for the establishment of Involuntary Resettlement Groups (IRGs) to ensure the voices of those directly affected by construction and involuntary disruptions to their livelihoods are heard. The IRG will act as a community structure for communications with the project.

Activity 1.9: Build flood protection dikes in Gambella town

The project will finance the construction of flood protection dikes in Gambella Town. Currently plans are to build 3.8 kilometers of dikes to protect the town from seasonal flooding. Construction will be outsourced to eligible local contractors and the Ministry of Water Resources will be responsible for overall supervision of the outsourcing process and the actual construction of the works. Construction will entail both temporary and permanent relocation for affected residents. Provisions will be made for compensating those affected under the provisions of Ethiopian law which allows for people displaced by the allocation of land to alternative public uses with land in other locations and cash payouts for the value of the demolished structures.

Section 4 – Component 2: Community Flood Preparedness and Mitigation

4.1 General Approach

The project's community flood preparedness and early warning component will be concentrated in the floodplains around Lake Tana. The target communities have suffered from floods for centuries. They have coped using their own knowledge, material and financial resources with little external assistance even in the face of extreme flood events. The communities do not rely on formal flood early warning systems; they have developed strategies for predicting floods and wrapped their livelihoods around historical patterns of flooding.

The project's investments in showcasing Eastern Nile Regional collaboration, increasing the effectiveness of Federal and Regional Government organizations and creating synergies with NGOs and civic organization groups all seek the ultimate end of reducing the suffering of flood-affected communities. There is a need for the project to meld the best of the traditional flood early warning activities with the efficiencies of its investments in the modern and formal flood early warning and preparedness capabilities of state and public institutions. The community-level flood preparedness and mitigation interventions designed by the project are intended to support and not supplant traditional systems for coping with floods. The project's assistance to the communities will be based on principles of:

- Pursuing the goal of universal participation and universal access to flood preparedness and mitigation services by *all* affected communities and *all* community members in the Lake Tana floodplains
- Demand-driven prioritizing of community-level interventions
- Achieving defined outcomes that can be handed-over and operated by host communities and supported/regulated by local government in the long-term

Supporting and upgrading the capacity of communities to actively mitigate and manage floods is central to the success of the project. The project will employ a two-pronged approach to building community flood preparedness and mitigation capabilities. It will employ both structural and non-structural measures to increase flood preparedness and reduce human suffering from floods. Figure 4.1 summarizes the sub-components.

Fig. 4.Structure of the community flood preparedness and early warning component.

4.2 Non-Structural Measures for Increasing Community Flood Preparedness

The non-structural community level activities to be supported by the project are mostly concerned with overcoming the challenges of organizing communities to benefit from project support and building the project's interface with grassroots actors as well as investing in the long-term sustainability of the structures and activities completed by the project.

Activity 2.1: Establish Community and Kebele Flood Management Groups

One of the challenges in engaging with affected communities in the floodplains is the absence of socially-inclusive and representative community organizations that are dedicated to the specialized task of helping the whole community prepare against and mitigate the effects of floods. The first non-structural activity of the project will therefore be to help form 'Community Flood Management Groups' (CFMGs) in the target communities.

The CFMGs members are to be formed from the government Kebele Development Committees (KDCs), CBO leaders such as *Kiries, Edirs, Equbs and Mehabers,*[1] elders, youth and community leaders. To maximize the project's geographic outreach, CFMGs will be organized at the *Gott* or *Attbia* level so each locality can assign a warden/captain for (i) mobilizing the communities to undertake collective actions; (ii) disseminating flood information; (iii) managing a color coded network of flag masts for displaying flood levels at key locations and (iv) supporting rain/river gauge networks. The CFMGs are designed to be social groups for local action against floods and will not be structured to receive or manage money transfers directly. The CFMGs will be

[1] These are traditional associations established by communities to communally manage savings, burial, marriage, and other socio-economic activities and life events.

responsible for mobilizing communities and community contributions and for overseeing the compliance of communities and community groups with agreements on setting and achieving defined outcomes to prepare against and mitigate the impacts of floods in individual localities. The project will help establish the CFMGs and will finance key start-up activities but the CFMGs will be self-financing and independent community structures that will continue their functions voluntarily after the project's closeout. Members may receive per diems for attending project activities or honorariums where they take active parts as instructors in public education events organized by the project but will not be salaried staff of the project.

In Gambella, the project will support the establishment Involuntary Resettlement Groups (IRGs) to ensure smooth consultation with those who are involuntarily resettled as a result of the construction of the dikes. Membership will consist of primarily of groups that will be forced to permanently re-locate their businesses or habitation but will also include those whose livelihoods have been temporarily disrupted by construction. The IRGs will serve as conduit for regular interaction between the project and affected communities.

Activity 2.2: Form Flood Management Partnerships

Flood Management Partnerships between the host communities, NGO and private sector sub-contractors (Ethiopian Red Cross Society [ERCS] or Organization for Rehabilitation and Development in Amhara [ORDA]) and government institutions already exist in many of the weredas in the Lake Tana flood plains. The partnerships have evolved out of emergency responses to past flood disasters and NGO interventions are at varying stages of completing post-flood rehabilitation activities. There is a need to consolidate the partnerships so they focus on the common purpose of increasing preparedness and institutionalizing flood early warning among affected communities. There is also a need to expand the outreach of these partnerships to all affected communities in the floodplains.

The project will need to sequence its engagements with the different weredas. Even though the use of two implementing NGOs should allow for the engagement of all affected weredas in project activities, in the first year of operations it will not be possible to extend the outreach to every kebele in the affected weredas. Selection of target weredas will be based on assessments of the levels of flood risk. Weredas with higher risk ratings will be targeted with higher levels of resource and earlier inclusion in project interventions. Wereda selection will be completed in consultation with and the full endorsement of the Regional Government.

Selection of target kebeles will be based on similar assessments of risk at the wereda level. A Wereda Flood Management Group (WFMG) will be formed from relevant line bureaus, NGO representatives and CBOs. The group will decide on the sequencing of the project's engagements with affected kebeles and will endorse the community's choice of priority interventions.

Kebele Flood Management Groups will also be formed to oversee activities at the individual community level. The KFMG, in consultation with the implementing NGO and after consultation

with a general assembly or general meeting of community members, will decide how many Warden's areas or Community Flood Management Group areas to create within the kebele. The Kebele Flood Management Group will provide the legal umbrella under which to interact with individual Community Flood Management Groups. The CFMGs will have geographically defined areas of operation and will aim to align outreach with *Gott* or *Attbia* level of institutional structures. The CFMGs will be responsible for assisting the project in performing its non-structural flood preparedness functions and will facilitate community participation in structural interventions.

Community Flood Management Partnerships will be the basis for undertaking non-structural interactions to reduce suffering from floods at community level. Non-Structural functions will be undertaken in three kinds of activities: flood risk management and contingency planning; health hazards prevention and control; and public awareness and education.

Activity 2.3: Conduct Flood Risk Management and Contingency Planning

Community level information will be gathered and fed into the project's early warning and response system. The Flood Risk Mapping exercise will provide the information on which it will be possible to physically delimit high-risk areas and to identify options for emergency safe havens. It will also identify potentials and constraints of structural mitigation facilities at the local level. The outcome of Risk Mapping exercises will be communicated to affected communities and capacity of local/regional government institutions to undertake Flood Risk Mapping will be boosted so Flood Risk Maps can be periodically updated. Community level Flood Emergency Contingency Plans will be developed on the basis of the information from the Flood Risk Mapping exercise. Implementing NGOs with the participation of pertinent KFMG, WFMG, RFMG officials will help communities convert the risk mapping information into the basis for building an emergency flood management contingency plan. The plans will detail options for evacuation, relocation, protection of assets and strategies for Flood Early Warning information dissemination at community-level.

Activity 2.4: Health Hazards Prevention and Control

Health Hazards Prevention and Control is a priority activity cluster for community level non-structural actions. Community action under this cluster will focus on organizing collective pre-season actions to clear waterways, mend embankments and prevent mosquito breeding pools of stagnant water from forming near residential areas and to take preventive measures in this vein. Attention will also be given to the management of water sources and sanitary facilities to eliminate pollution and facilitate ease of access to clean drinking water during the flooding season. The KFMG, implementing NGOs and project stakeholders will assist the health campaigns with technical and material support as required and will use their positions to leverage the extensive involvement of local health professionals and health institutions.

Activity 2.5: Public Awareness and Education

Public Awareness and Education is the third but most fundamental of the project's three non-structural intervention clusters. Under this cluster the project will provide target communities with training and information on a broad range of issues. One of the issues on which the Regional Water Bureau is keen is that of emulating Egyptian efforts at embedding an appreciation of the value of the uniqueness of the Nile Water Resource on the psyche of user communities. The lessons on embedding appreciation for the value of the unique resource were something the Regional Water Bureau professionals learned on their study tour to Egypt, which was facilitated by ENTRO. Other areas of public awareness will focus on educating communities about flood risks and value of collective prevention actions, basic health and hygiene education and other topics of priority that will be defined in the course of implementation.

4.3 Structural Measures for Increasing Community Flood Preparedness

In the interest of sustainability and meeting the most pressing needs of the target communities, community driven prioritization of community-level project investments has been given the highest possible priority. A wide ranging menu of activities is offered in the PIP in order to allow communities to set their priorities for community level investments in flood mitigation structures. The construction of flood mitigation structures is to be preceded by a satisfactory period of community mobilization by implementing local government agencies and subcontractors (NGOs) in order to ensure that the important message of the rationale behind the project's financing and support for the activity is well understood by target communities. Depending on the complexity of the structures, construction can be undertaken either directly by the NGO subcontractors or through outsourcing to qualified construction contractors.

The activities are clustered in the four broad categories described below .

Activity 2.6: Expand investments in communally owned facilities for use as service centers during flood events

This category of investments will consist of facilities such as schools, health facilities, multi-purpose halls, stores, markets which are not directly related to monitoring or mitigating floods except during extreme events when the facilities can be used as temporary shelters or to support other mitigation activities. The investments will play an important political role as the benefits can be shared evenly by the entire community without reducing their special usefulness to populations at risk of being affected by floods. Activities under this category may include the construction of new facilities or the upgrading of existing facilities to a standard which will enable them to perform the perceived flood monitoring, mitigation or management functions.

The principles governing selection of interventions in this category must include:

- Demonstrated community ownership;
- Demonstrated community support for the investment and awareness of the FPEW II's association with the investments;
- Compliance with World Bank and GoE procedures for undertaking structural interventions, including procurement procedures, environmental and social safeguards.

Activity 2.7: Develop surface transport networks

One of the critical elements of the exposure of vulnerable populations to human and livestock deaths during extreme flood events is the lack of safe passage to shelters on higher ground. This is because the surface transport networks in the floodplains consist only of footpaths and none of the footpaths have been elevated to clear flood waters. The lack of surface transport facilities and lack of markings to denote flood depths was identified in community focus group discussions as the leading cause of mortality during extreme flood events. Consequently communities place a high priority on constructing elevated footpaths and access roads to provide rapid retreat and temporary safe havens during extreme flooding and to serve important economic functions in the dry season.

Access roads are critical to flood preparedness in the floodplains as the reported leading cause of human and animal deaths from flooding was drowning during evacuations. The communities, with the assistance of the NGO subcontractors and local development officials, will select the routing of the access roads. Formal surveys will be conducted using staff or sub-contractors of the implementing NGO in informing the route selection. The surveys will ensure that the best routes are selected for safe passage during floods. In order to facilitate ease of access during floods the surveys will take measures to ensure that project financed access roads are integrated with the network of animal tracks and foot paths that the communities have traditionally used. Both the project-financed access roads and community footpaths/animal tracks will be lined with color coded flag poles so communities can monitor flood levels.

> Communities in Fogera wereda are keen on securing project support for building a road connecting the peninsular tip of the wereda's Lake Tana shores with the main Wereta-Bahir Dar highway. The road would help save lives as the communities between the highway and the Lake are among the most vulnerable to rapid onset flooding with few options for evacuation. The potential economic benefits are also very high both because of the thriving agriculture of the floodplains as well as the tourism potential of a string of 12th Century monasteries (*Kristos Samra* and *Degua Estifanos)* located on the Lake. This project idea has the strong backing of the Regional Administration.

The Ethiopian Road Authority's RR 10 standard of road is the standard most commonly adopted for community level (labor-based) construction. However it is woefully inadequate for the flood plains because of its vulnerability to destruction from flooding. For this reason it is proposed

that the project elevate its minimum access road standard to RR 30 standard. It is further proposed that the project fulfill the host communities and Regional Government's expressed need for a road dissecting the Fogera floodplains by supporting the upgrading of the 30 kilometer track between the Bahr Dar – Wereta Highway and the Lakeside monasteries of *Kristos Samera* and *Degua Estifanos* with an RR 50 standard gravel road. The road would form the centerpiece of the project's involvement in access road construction and would be a highly visible contribution to the advancement of the growth-pole. As can be seen in Table 4.1 below, traffic on this road has been increasing steadily in recent years.

Table 4.1: Annual Average Daily Traffic – Bahir Dar to Wereta (2001 – 2006)

Year	Cars & Station wagons	Buses	Trucks	Truck & Trailers	Total
2001	51	38	169	36	294
2002	73	44	193	53	363
2003	90	41	223	67	421
2004	63	54	175	56	348
2005	64	95	239	83	481
2006	93	148	267	84	592

Source: Ethiopian Roads Authority

Activity 2.8 Construct Waterway Structures (embankments, canals and ditches)

Waterway structures such as embankments, ditches and canals have a direct bearing on the scale and velocity of flooding in the floodplains. High levels of soil erosion in the highlands have 'bottomed-out' the rivers that inundate the floodplains as a result of which it is very common for all three rivers (Ribb, Gumera and Megech) to break their banks and veer off course once they reach the floodplains. The impact on communities is tremendous. The breaking of river embankments is the most potent source of rapid onset flood disasters in the floodplains. The occurrence of such disasters can be remedied through efficient pre-season surveying and through reinforcing embankment structures. Floodplain communities use labor-intensive techniques for reinforcing embankments. However labor -intensive techniques for reinforcing embankments are of limited effectiveness because of shortage of appropriate construction materials and problems with compaction which expose the structures to repeated rupturing. Consequently, most communities identified machine assistance (excavator and compactor) as a leading priority area for project assistance. To meet this community-felt need, it is proposed that the project provide 100 hours of machine rental per wereda for supporting communities that are actively engaged in building or maintaining flood mitigation structures and for activities (heavy excavation or compaction) which cannot be efficiently completed by hand. The Wereda Flood Management Group, in consultation with the implementing NGO, will be responsible for approving selection of sites for machine assistance. The implementing NGO will be responsible for ensuring the appropriate pre-construction environmental and social safeguards are fulfilled

prior to issuing procurement orders for machine rental services. The host communities will be responsible for contributing a share of the labor-intensive structural work.

Activity 2.9 Provide Clean Water and Sanitation Points

Lack of access to clean water and protected sanitary facilities are the cause of tremendous human suffering in the flood plains. The project will invest in expanding the availability of protected water points. The project will support expansion of protected hand-dug wells and will also support the sinking of shallow wells and drilling of boreholes in rural towns and village centers. Selection of sites for shallow wells and hand-dug wells will be determined by the implementing NGO in collaboration with the Wereda Flood Management Groups. Selection of sites for drilling permanent deep wells or boreholes will be negotiated by the implementing NGO at Regional Water Bureau level.

4.4 Environmental and Social Safeguards for Community Investments

Community Investment	Potential Environmental Impact	Potential Social Impact	Mitigation Measures
1. RR 50 standard access road linking communities between Kristos Samera Monastery and main Bahir Dar Wereta Highway – to increase rapid evacuation in disasters and capturing enhanced economic benefits in normal years	E1.1 Disruption to patterns and rates of water recession E1.2 Disruption to wetland habitat	S1.1 Land evictions due to increased private investor derived demand for land S1.2 Loss of cultivable land to individual producers S1.3 Imbalanced economic benefits between scattered settlements	E1.1 Road design will include culverts/fords every 300-500m (in frequent intervals) to sustain flooding balance and rate of recession E1.2 Flood retention will maintain habitats (alternative uses of roadway will be banned by social contracts) S1.1 Compliance with ANRS Region land compensation practices and monitor community satisfaction with rates and forms of compensation S1.2 Define a community-based compensation mechanism acceptable to all stakeholders. S1.3 Design for maximum access and encourage village settlements
2. Increase number and capacity of clean water and sanitation points **- Hand dug wells** **- Shallow wells** **- Boreholes** **- Better waste management in flooding season**	E2.1 Surface water contamination – vector/haven for water borne diseases and mosquito breeding E2.2 Groundwater contamination	S2.1 Uneven physical distribution of facilities S2.2 User conflicts	E2.1 New hand-dug wells will have sealed gates and old ones will be upgraded to protect mouth of wells E2.2 Water user training will customize lessons on how to avoid contamination of both ground and surface water resource user points
3. Better health for humans (esp. women and children) – both preventive and curative		S3.1 Health education infringes on social taboos and customs S3.2 Conflicting community views on social health issues	S3.1 Engage community in info. Education and knowledge message development. Understand change is process and adjust pace of campaigns to community's readiness S3.2 Engage traditional conflict resolution mechanisms to convince not coerce

Section 5 – Component 3: Strengthening Eastern Nile Regional Linkages

From its inception, the flood preparedness project was identified by ENSAP as a fast track implementation investment of the Eastern Nile countries and it is imperative for the project to have a strong interface at the Eastern Nile Regional level. However, even beyond its political justification, effective flood preparedness in Tana Beles is of huge significance to flood preparedness in the whole Eastern Nile because it involves controlling a significant share of the waters of the Eastern Nile the waters at their highest points of elevation and because such controls will yield huge benefits for downstream users of the Nile. Effective flood preparedness in Tana Beles is also hugely significant in facilitating national learning on flood control and management because the FPEW II is an advanced model of what the Federal Government aspires to create in other river basins with the emerging River Basin Organizations.

Activity 3.1 Document experiences of FPEW II

To fulfill its obligations to the Shared Vision of NBI and its instrumental role in increasing national learning, the FPEW II will invest in rigorous information and knowledge management systems. In addition to sharing data with parallel institutions in the Eastern Nile Region the project will produce three reports a year to document and share its experiences in flood preparedness and mitigation in the Lake Tana floodplains. The three reports will be time-sensitive and will be conducted to cover three seasonal themes. The first theme will be a Pre-Season Flood Preparedness Assessment Report which will assess the extent to which pre-season structural and non-structural flood preparedness activities are completed in the vulnerable areas. The assessment will include monitoring of the time dissemination of flood forecasting information as well as running a proxy inventory of the sufficiency of construction and maintenance on flood mitigation structures for withstanding the impacts of seasonal floods. The pre-season assessment will help flag potential areas of high vulnerability and will complement the baseline information to be generated by the Flood Risk Mapping exercise.

The second report to be produced by the project will be a synthesis of its flood monitoring reports. This report will highlight actual incidents of flooding as well as experiences in which preparedness and early warning yielded returns in averting loss of human life or damage to the livelihoods of the floodplain populations.

The third report to be generated for consumption by Regional and National counterparts will be a post-flood season lessons learned report. This report will include assessments of the accuracy of the forecasting and early warning system. The project in collaboration with flood preparedness projects in the other Eastern Nile countries will provide a platform for annually exchanging lessons learned and experiences gained in flood preparedness and mitigation. The project will organize two international (Eastern Nile Region) conferences for promoting learning among Eastern Nile partners and for promoting the shared vision objective of the Eastern Nile partnership.

Activity 3.2 Share Lessons Learned through Annual Flood Preparedness Workshop Series for River Basin Organizations (RBOs)

In order to share its learning with national institutions, the project will organize a platform for learning among the national water resource development institutions including the twelve emerging River Basin Organizations (RBOs) in the form of an Annual Tana Beles Flood Preparedness Workshop series. The workshops will be organized around annually selected themes.

Section 6 - Institutional Arrangements

6.1 Overall Coordination

The overall responsibility for coordination and implementation of the project will lie with Ministry of Water Resource (MWR). The Federal Ministry of Water Resource (MWR) will lead the formation of a National Flood Preparedness Working Group on which other participating line bureaus and ministries will be represented, including the Ministry of Finance and Economic Development (MoFED), National Meteorology Agency (NMA), Disaster Prevention and Preparedness Agency (DPPA) and as appropriate the representatives of the River Basin Organizations (RBOs) and participating NGOs. The NFPEWG will hold quarterly review meetings to monitor progress towards achievement of the projects objectives, approve annual budgets and help manage major transitions such as the project's positioning with the emerging River Basin Organizations (RBOs) or other strategic challenges.

Execution of the Government Capacity Building and Expansion of Flood Mitigation Infrastructure component will be led and managed by the PMU within the MWR. The PMU with the approval of the NFPEWG will also manage disbursement of funds for implementation of the community component. The communities component will be implemented through subcontracts with ORDA and the ERCS. The subcontractors will be awarded performance-based contracts for the implementation of project activities. Prior to implementation of the community component the subcontractors will undertake baselines survey and participatory flood mitigation planning with the target communities to arrive at a final decision on the types of structural works to be undertake in specific localities and to provide the basis for monitoring the impact of project interventions on the target communities. The PMU will bear responsibility for overseeing the performance of subcontractors and the attainment of project objectives. Initial contracts will be for a three-year implementation period with possibilities for extension into year four and five. Financial disbursements will be based on annual budget submissions by the subcontractors and replenishments through submission of statements of expenditure.

Table 6.1 presents a summary of the institutional arrangements and the roles and responsibilities of the principal partner agencies.

Table 6.1: Project Institutional Arrangements – Roles and Responsibilities of Main Institutional Partners

Level	Organization	Constitution	Role	Responsibility
Eastern Nile (Regional)	ENTRO	Headed by ENTRO Regional Coordinator in Addis Ababa and project support staff – international procurements, finance, human resource managers, subject-matter specialists	Facilitator of EN Region collaboration	Coordinating EN Region activities for national partner agencies Recruitment and deployment of international and national consultants for Technical Assistance
	Flood Preparedness and Early Warning Project Coordinator(ENTRO)	Headed by FPEW II Regional Coordinator, supported by Country Coordinators in each member state and subject-matter specialists in hydrology, environmental and social sciences	Overall EN Regional level project management	Coordinate flood preparedness and early warning activities in all three EN countries Build and service platforms for collaboration and experience sharing on flood preparedness and flood management among EN countries Build synergies with other NBI project activities

Level	Organization	Constitution	Role	Responsibility
Ethiopia (National)/ Federal	National Flood Preparedness Working Group	Headed by Minister for WRD. Members include MWRD, NMA, DPPA, Amhara Region WRD Bureau, Beni-Shangul Region WRD Bureau, Abbay River Basin Authority – Head, other RBO Heads	Policy formulation, support and compliance Overall guidance Approval of replication of lessons learned/FPEW II best practices by other RBOs Streamlining inter-agency activities and procedures Overall coordination of project activities and oversight of operations.	Apex level, project management for overall performance of all four components of the project Financial Management-Review and approval of annual budgets for all component Dissemination of best practices to national water resource institutions
	MWR:**Project Management Unit (PMU)**	Headed by Country Coordinator FPEW II. Supported by Finance and Procurements Officer, Monitoring & Evaluation Officer, core project management team.	Build flood forecasting, preparedness, early warning and management capabilities of government institutions	Management of project operations – selection and oversight of subcontractors.
	Min. WR Hydrology Dept. – Flood Forecasting Unit **DPPA – Early Warning Unit** **NMA – Rainfall Monitoring**	Headed by MWRD Hydrology Dept. Head and supported by Flood Forecasting Unit Team Members – including MWRD Hydrology Engineers, Deputations from DPPA and NMA	Analyze real-time flood data and disseminate reports to primary users.	Establishing Flood Forecasting Office in Hydrology Dept. of MWRD Management of rain and river gauge networks Mainstreaming of technical methods acquired from the project into standard flood forecasting & monitoring procedures of MWRD/DPPA and NMA
Regional (Amhara)	Amhara Region Flood Preparedness and Management Working Group	Headed by Bureau Head – Amhara Region Bureau of Water. Members include Regional Admin., Food Security Coordination and Disaster Prevention, NGO, NMA, Finance Bureau, Regional Admin.	Amhara Region Coordination-synergies with other 'growth pole' investments Approval of wereda targeting Financial management Project management	Selecting which weredas are included in the project Approving investment plans NGO grant funds management Internal monitoring of project performance
	FPEW II Project Facilitation	Headed, FPEW II Field Office Coordinator.		Coordination & control of project activities in Amhara

	Team	Core Project Team.		Region(Tana RB).

Level	Organization	Constitution	Role	Responsibility
Wereda	Wereda Flood Preparedness and Management Group	Headed by Wereda Administrator, members Wereda Water Bureau, Bo Agriculture & Rural Dev., Rural Roads Desk, Implementing NGOs, Women's Group, Youth Group	Wereda level coordination	Selection of target kebeles Approval of annual flood preparedness and early warning plans Support to pre-, post and flooding season assessments
Kebele	Kebele Flood Management Group	Headed by Kebele Administrator or representative. Members, Development Agents, Health Workers, Elders, Youth Groups, Women's Group, CBOs – Kiries, Edirs	Lead flood preparedness, early warning and management at community level.	Selection of target areas (*Gotts or Attbias*) Mobilization of community material and in-kind contributions to project investments Mobilization for mass education
	Informal Community Groups (Kiries, Edirs, Women's Groups	Voluntary membership organizations	Community mobilization, cultural sensitization of project t proposals Opinion setting and advocacy for project activities within the communities	Sustaining community engagement in project activities Bridging traditional and modern divides in flood management
	NGOs	Formal development organizations (Ethiopian Red Cross and Organization for Rehabilitation and Development in Amhara)	Facilitate and execute community flood preparedness and management component	Identification of community level activities and securing community approval for investments Technical support in complying with procurement, social and environmental standards/safeguards for implementing community level investments Educating and mobilizing communities to act collectively against floods

6.2 Project Management

6.2.1 Implementing Agencies

The principal implementing agencies for the project are the Federal Ministry of Water Resources and the Amhara Region Water Resource Development Bureau. A Project Management Unit (PMU) which will be responsible for the day to day operations of the project is to be established within the Ministry of Water Resources. The PMU will be lead by a Country Coordinator for FPEW II, one of three parallel positions in the EN countries. The coordinator will be supported by a core project management support team of a financial officer, procurements and contracts officers and a logistics/operations manager. The core project team will be responsible for managing and controlling subcontracts and ensuring that project implementation complies with the directives of the World Bank and GFDRE.

Project Facilitation Teams (PFTs) will be set-up in Bahir Dar and Gambella towns. The PFTs will play the part of regional liaison for the PMU and will be responsible for facilitating, monitoring and reporting on the progress of works at the field level. The PFT in Amhara will house Long-Term (LT) consultant working on building the capacity of government and partner institutions in assessing and compliance with environmental and social safeguards, facilitating training in real time flood data collection and analysis, training in international procurement procedures of the World Bank and other project activities. It is suggested that PFTs be seated within the Bureau of Water Resources in Amhara Region.

The two NGO subcontractors – Ethiopian Red Cross Society and the Organization for Rehabilitation and Development in Amhara (ORDA) are also, by deputation, implementers of the community component of the project. ENTRO will provide project management support as required.

The Ethiopian Red Cross Society (ERCS) has identified as one of two leading candidates for implementing the community component. It has recently increased its presence in the floodplains area because of the floods of 2006. The use of ERCS offers the advantages of tapping into its successful history of working to mitigate the impact of floods with affected communities. It further offers the advantage of leveraging and procuring technical support on flood management from its international apex institutions such as the International Committee of the Red Cross (ICRC) and International Federation of Red Cross and Red Crescent Societies (IFRCS) which both have vast technical experiences in flood emergency response. The ERC is currently assisting flood affected communities in the Lake Tana floodplains with post-flood rehabilitation and prevention activities including the construction of clean water points and sanitary facilities. ERCS also offers the advantage of being able to spread learning and best practices to river basins outside Lake Tana and the Amhara Region.

The Organization for Rehabilitation and Development in Amhara (ORDA) was originally formed as the Ethiopian Relief Organization in response to the 1984 famine. In 1997 it undertook a paradigm shift away from relief towards development and confined its geographic areas of intervention to the Amhara National Regional State. It is currently the largest endogenous NGO working in the Region with programs in water resource development, rural infrastructure, water shed management, agricultural development, environmental protection, forestry, disaster prevention and community capacity building. It operates in forty weredas (districts) in the region including two of the six floodplain weredas in the Tana Beles basin and several of the upstream weredas in highland Gojjam and Gonder from which the flood originate. The programs are funded by international donors and its annual funding level is in excess of Birr 80 Million (Birr 82 Million in 2006).

ORDA management and support services are organized into six service coordination unit – Planning, monitoring evaluation, Finance, Human Resources, Logistics, Public relations, Legal, Audit and Inspections units. ORDA has its headquarters in Bahir Dar and maintains a Liaison Office in Addis Ababa. ORDA uses computerized accounting software and its financial procedures have been assessed and approved to meet the standards required by international donors such as the European Union.

ORDA has an established relationship with the Regional Government of Amhara including financial subcontracting relationships in which it has received Regional Government grants to undertake emergency and rehabilitative works on flood control and flood rehabilitation activities. Preliminary discussions have already been held and an agreement has been reached, in principle, with the Government of ANRS to subcontract part of the community component to NGO partners including ORDA and the Ethiopian Red Cross. Using ORDA as an implementing agency offers the advantage of their established financial and project sub-contracting relationship with regional government, the sustainability offered by their permanent presence in vulnerable parts of the region, as well as the leverage it offers for spreading learning, best practices and replication throughout the Amhara Region.

6.3 Monitoring and Evaluation

Overall monitoring and evaluation will be managed by the Ministry of Water and Resource Development. As needed, support may be provided by ENTRO, but it is not envisioned that ENTRO will have a continuous or long-term M&E function.

The Monitoring and Evaluation Matrix (Annex A) shows the elements of monitoring and evaluation associated with each of the project components and outputs.

Annex A – Monitoring and Evaluation Matrix

Component/Sub-component	Activity	Key Performance Indicators	Monitoring and Evaluation	Critical Assumptions
1. Government Capacity-Building and Expansion of Flood Mitigation Infrastructure **1.1 Data acquisition and management** **1.2 Flood forecasting and analysis** **1.3 Increased use of flood forecasting information for managing floods** **1.4 Support for community flood mitigation measures** **1.5 Preliminary assessment of Gambella structural works** **1.6 Construction of Gambella dikes**	1.1 Acquire satellite imagery and develop govt . capacity to analyze data 1.2 Develop River Gauge Networks 1.3 Develop NMA Rain Gauge Network 1.4 Enhance Capacity for Lake Surveillance 1.5 Build forecasting and analytical capabilities of a central Flood Forecasting Center (FFC) 1.6 Develop flood information dissemination system 1.7 Support coordination of community flood	• Increased lead time for planning flood responses and flood management • Expansion in breadth and depth of data used for flood forecasting and early warning • No. of MWR staff trained and mentored in advanced hydrological modeling for flood forecasting • No. of staff trained in cooperating institutions at Federal, Regional, Wereda and Kebele levels • Value of materials and equipment provided to support advanced technical capacity needs • No. and regularity of institutional users of flood forecasting information • Data reception to forecast report generation turnaround time • Turnaround time for disseminating flood forecasting	• Independent impact evaluation • Proceedings reports on regular meetings of EN Flood Mitigation Group • Special Thematic (Technical) Conventions and Reports on Flood Forecasting and Early Warning	• Full engagement (technical and political) of Eastern Nile partners in building an enabling and cooperative development environment • Amicable professional exchange • Effective management of any perceived or real conflicts that may deter full engagement of partners • No overlap in mandates between current partner institutions and emerging RBOs

	mitigation actions	information to communities • Volume, depth and regularity of feedback from flood forecast users • Timeliness and innovativeness of project response to user needs		• Restructuring of government institutions will not make the project's capacity building investments redundant and will allow simple and transparent alignment of project's institutional development activities with newly mandated RBOs and existing target institutions. • Stable staff turnover at project, partner government and partner NGO institutions • Partner institutions will be able to retain and sustain new capabilities and will set up systems of sustaining

				institutional memory of the knowledge and skills transferred by the project
2. Community Flood preparedness and early warning **2.1 Non-structural measures for increasing community flood preparedness** **2.2 Structural measures for increasing community flood preparedness**	Non-structural activities: 2.1 Establish Community, Kebele and Wereda Flood Management Groups 2.2 Form Flood Management Partnerships 2.3 Provide training in Flood Risk Management and Contingency Planning 2.4 Support health hazards prevention and control activities 2.5 Public Awareness and Education Structural Activities: 2.6 Establish entry-point initiatives	• No. of Community Flood Management Groups (CFMGs) organized. • No. of partnership agreements between communities, NGOs and government. • No. of beneficiaries engaged (reached) in public awareness campaigns	• Self-assessment by beneficiaries, NGOs, local government and other partnership stakeholders • NGO quarterly (regular) and annual reports • Regional government annual reports • Local government annual reports • Assessments of training (efficacy) impact on work performance • Reports on analysis of data transmission logs against 'real-time' reporting parameters	• Community user conflicts successfully managed by traditional mechanisms • Expansion of private sector investments in floodplains are executed without jeopardizing smallholder livelihoods and any conflicts of interest are amicably and equitably solved • Socially inclusive community development and full community engagement and participation in flood early warning and

	2.7 Develop flood mitigation structures (2.7.1) construct Waterway Structures; (2.7.2) construct access roads in targeted areas; (2.7.3) provide clean water & sanitation points; (2.7.4) strengthen health, education, & multi-purpose community facilities	• No. of Entry Point Structures constructed • No. of waterway structures constructed • Kilometers of roads constructed • Volume of vehicular traffic on community access roads • Volume of non-vehicular traffic on community access roads • Water points developed • Sanitation points developed		management activities
3. Regional level coordination	3.1 Document experiences of Tana Beles FPEW • 3.2 Share lessons learned through national and regional workshops	• Time taken to complete lower tier cooperation contracts • Efficient recruitment and deployment of project management staff • Efficient and effective procurement of project furniture and equipment • Appropriate ate of compliance with WB regulations for loan management and host country	• Independent M&E study • Bank review missions • Implementing agency reports	• Government and NGO staff will stay in position and be able to engage with the project on a consistent basis

		regulations for managing development projects • Regular engagement of partner institutions from village to EN Regional level • Timely and full reporting and information sharing		

Annex B1: Organizational Profile – Ethiopian Red Cross Society

Name:	Ethiopian Red Cross Society (ERCS)
Address	Ras Desta Damtew Avenue, P.O.Box 195, Addis Ababa, Ethiopia Tel.:(251) 011 551 5847/ 551 9364/ 551 9144/ 515 9074/ 550 3906 Fax.: (251) 011 551 2643 e-mail: ercs@ethionet.et or erc.pr@ethionet.et Website: http://www.redcrosseth.org
Legal Status	Independent Organization constituted through national charter. Charter last revised by parliament in 1999.
Governance by President, Vice President and national board.	**President** Ato Shimeles Adugna **National Board Members:** 551 **Vice President** Ato Kebour Ghenna **Secretary General** W/ro Fasika Kebede **Deputy Secretary General** Ato Takele Jemeberu
International Affiliations	Member International Red Cross and Red Crescent Movement.
Organizational Structure	Executive is lead by a Secretary General with four departments, Planning Project Formulation and Monitoring, Essential Drugs Program, Internal Audit and Communications and Information Services as direct reports. Two Deputy Secretary Generals and eleven Regional Branches also report directly to the Secretary General. FPEW II has been developed in consultation with the Head of the Disaster Management Department under the Deputy Secretary General of Operations.
History	The ERCS was established on 08 July, 1935 in response to the second Italian invasion of 1935-41. ERCS was officially recognized as the 48th member of the League of International Red Cross Societies the predecessor to today's International Federation of Red Cross and Red Crescent Societies in September 1935. The first charter of the ERCS was created in October 1947 and it has since been revised four times in 1970, 1981, 1990 and 1999 respectively. ERCS has played a pivotal role in helping Ethiopia cope with manmade and natural disasters.

CORE Programs	Emergency Drugs Program – low-cost provision of essential drugs Food Security, Disaster Preparedness and Response, Health and Health Related Initiatives, HIV/AIDS, Promotion of Humanitarian Values

Annex B2: Organizational Profile – Organization for Rehabilitation and Development in Amhara (ORDA)

Name:	Since 1997 - Organization for Rehabilitation and Development in Amhara (ORDA). Formerly Ethiopian Relief Organization (ERO)
Address	P.O.Box 132,Bahir Dar, Ethiopia Tel.:(251) 058 220 0985 Fax.: (251) 058 220 0987 e-mail: orda-1@ethionet.et
Legal Status	Non-Governmental Organization registered with Ministry of Justice
Governance by General Assembly and Board	**General Assembly** 121 **National Board Members:** 11
Organizational Structure	Executive is lead by an Executive Director. ORDA has six service coordination units – Planning, Monitoring and Evaluation, Human Resources, Finance, Logistics, Public Relations, Legal Affairs and Audit and Inspections. ORDA has five program components – Water Resource Development, Agriculture and Environmental Protection, Forest Resource Development, Disaster Prevention and Rehabilitation and Capacity Building and Community Participation Programs. It has 12 project offices and 9 relief coordination centers at wereda level. ORDA has 600 employees.
History	ORDA's predecessor the Ethiopian Relief Organization (ERO) was established in 1984 in response to the devastating drought that affected northern Ethiopia that year. The organization focused on relief food distributions during the famine and later

	provided seeds and hand tools for rehabilitation in the post drought period. In 1997 ORDA was born as result of a paradigm shift from relief-to development and it has since been executed a broad range of integrated rural development programs in the most vulnerable parts of Amhara Region.
CORE Programs	Water Resource Development. Agricultural Development and Environmental Protection, Forest Resource Development, Capacity Building and Community Participation.
Past Performance on Flood Mitigation	Decades of experience in water-shed management. Flood mitigation subcontractor for building levees on Borkena River near Kombolcha and maintaining structures around Kobo town. Strong engineering capabilities in water resource development unit.

Annex C1: Illustrative Cost Schedule for Community Component – Access Road Construction

Item	Quantity	Unit	Cost/Unit	Total Cost
Materials:				
Skilled Labor: (PDs of Assessments, Studies)				
Unskilled Labor:				
Machinery and Equipment: (Hours of rental)				
Supervision/Management & Overhead:				

Annex C2: Illustrative Cost Schedule for Community Component – Footpath Construction

Item	Quantity	Unit	Cost/Unit	Total Cost
Materials:				
Skilled Labor: (PDs of Assessments, Studies)				
Unskilled Labor:				
Machinery and Equipment: (Hours of rental)				
Supervision/Management & Overhead:				

Annex C3: Illustrative Cost Schedule for Community Component – Canal Construction

Item	Quantity	Unit	Cost/Unit	Total Cost
Materials:				
Skilled Labor: (PDs of Assessments, Studies)				
Unskilled Labor:				
Machinery and Equipment: (Hours of rental)				
Supervision/Management & Overhead:				

Annex C4: Illustrative Cost Schedule for Community Component – School

Item	Quantity	Unit	Cost/Unit	Total Cost
Materials:				
Skilled Labor: (PDs of Assessments, Studies)				
Unskilled Labor:				
Machinery and Equipment: (Hours of rental)				
Supervision/Management & Overhead:				