



Empowered lives,
Resilient nations.

United Nations Development Programme

Country: Uganda

PROJECT DOCUMENT¹



GEFSEC PROJECT ID: 00088073; GEF AGENCY ID: PIMS 5094; AWARD ID: 00076999

Title: Strengthening climate information and early warning systems in Africa for climate resilient development and adaptation to climate change – Uganda

UNDAF Outcome 2: Vulnerable segments of the population increasingly benefit from sustainable livelihoods and in particular improved agricultural systems and employment opportunities to cope with the population dynamics, increasing economic disparities, economic impact of HIV&AIDS, environment shocks and recovery challenges by 2014.

Agency outcome: 2.2 Vulnerable communities, Government, civil society and the private sector are sustainably managing and using the environment and natural resources for improved livelihoods and to cope with the impact of climate change.

UNDP Strategic Plan Primary Outcome: Adaptation to climate change promoted

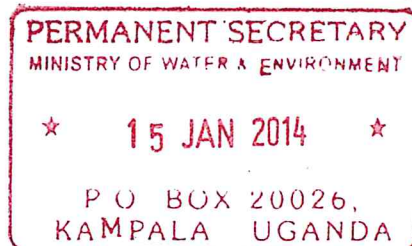
UNDP Strategic Plan Secondary Outcome: Environmental finance mobilized

Expected CP Outcome: Natural and Energy resources are used and managed in a manner that is sustainable and contributing to growth and poverty reduction.

Expected CPAP Outputs: i) Number of institutions integrating environment, Climate Change and energy access in development plans; (Disaggregated by level i.e. National/ Local government); ii) % of targeted Environment, natural resources management and Climate change adaptation/ mitigation pilot initiatives (innovative practices) implemented %; and iii) Number of policies and strategies reviewed/ developed to draft stage.

Executing Entity/Implementing Partner: Ministry of Water and Environment (MWE)

Implementing Entity/Responsible Partners: Department of Meteorology (DoM)/Ugandan National Meteorological Authority (UNMA), Department of Water Resource Management (DWRM), Department of Relief, Disaster Preparedness and Management (DRDPM)/Office of the Prime Minister (OPM), and Ministry of Agriculture, Animal Industries and Fisheries (MAAIF).



Empowered lives
Resilient nations

¹For UNDP supported GEF funded projects as this includes GEF-specific requirements

Brief Description

Uganda is particularly vulnerable to the increasing frequency and severity of droughts, floods and severe storms (hail, thunder, lightning and violent winds), and their impacts on sectors such as agriculture, fisheries, as well as infrastructure. Such climate-related hazards are having increasingly adverse effects on the country and future climate change is likely to further exacerbate the situation. A large proportion of the Ugandan population has a low capacity to adapt to climate change. Climate change impacts are likely to be particularly negative on Uganda's rural population because of their high dependence on rain-fed agriculture and natural resource-based livelihoods. Uganda's capacity to adapt to climate-related hazards should therefore be developed to limit the negative impacts of climate change and address the country's socio-economic and developmental challenges effectively.

One way to support effective adaptation planning – in particular for an increase in intensity and frequency of droughts, floods and severe storms – is to improve climate monitoring and early warning systems. For Uganda to improve the management of these climate-related hazards it is necessary to: i) enhance the capacity of hydro-meteorological services and networks to predict climatic events and associated risks; ii) develop a more effective and targeted delivery of climate information including early warnings; and iii) support improved and timely responses to forecasted climate-related risks. Barriers that need to be overcome to establish an effective EWS in Uganda include the following: i) weather and climate monitoring infrastructure is obsolete and inadequate, which limits data collection, analysis and provision of meteorological services; ii) knowledge and capacity to effectively predict future climate events is limited as a result of an acute shortage of technology and skilled human resources; iii) systematic processes for packaging, translating and disseminating climate information and warnings do not exist; iv) long-term sustainability of observational infrastructure and technically skilled human resources is not guaranteed; and v) community level usage of climate information and responses to received warnings is poor.

This LDCF financed project, implemented by the Ministry of Water and Environment, will: i) establish a functional network of meteorological and hydrological monitoring stations and associated infrastructure to better understand climatic changes; ii) develop and disseminate tailored weather and climate information (including colour-coded alerts – advisories, watches and warnings – for flood, drought, severe weather and agricultural stresses, integrated cost-benefit analyses and sector-specific risk and vulnerability maps) to decision makers in government, private sector, civil society, development partners and local communities in the Teso and Mt Elgon sub-region; and iii) integrate weather and climate information into national policies, annual work plans and local development including the National Policy for Disaster Preparedness and Management, and district and sub-county development plans in priority districts in the Bukedi, Busoga, Elgon, Teso, Acholi, Karamoja and Lango sub-regions. The project is expected to be completed by December 2017.

Programme Period:	<u>2013-2017</u>
Atlas Award ID:	<u>00076999</u>
Project ID:	<u>00088073</u>
PIMS #	<u>5094</u>
Start date:	<u>September 2013</u>
End Date	<u>September 2017</u>
Management Arrangements	<u>NIM</u>
PAC Meeting Date	<u>31 July 2013</u>

Total resources required	<u>US\$ 27664000</u>
Total allocated resources:	<u>US\$ 27664000</u>
• GEF	<u>US \$ 4,000,000</u>
• Government	<u>US\$ 17,800,000</u>
• UNDP	<u>US\$ 3,900,000</u>
• Other	<u>US\$ 1,960,000</u>

Agreed by Government Executing Agency (**Ministry of Finance, Planning and Economic Development**):

KEITA MUHAMMAD M. Kiballang 09-01-13
 NAME SIGNATURE Date/Month/Year

Agreed by Implementing Partner (**Ministry of Water and Environment**):

C. ESIMU OCUROA [Signature] 20/1/2014
 NAME SIGNATURE Date/Month/Year

Agreed by (UNDP):

ALMAZ GEBRU [Signature] 23/1/2014
 NAME SIGNATURE Date/Month/Year



4. TOTAL BUDGET AND WORKPLAN

Award ID:	00076999	Project ID(s):	00088073
Award Title:	Natural Energy and Resource Management		
Business Unit:	UGA10		
Project Title:	Strengthening climate information and early warning systems in Uganda for climate resilient development and adaptation to climate change		
PIMS no.:	5094		
Implementing Partner (Executing Agency)	Ministry of Water and Environment		

SOF (e.g. GEF) Outcome/ Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Don or Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	See Budget Note:
OUTCOME 1:	Ministry of Water and Environment	62160	GEFLDCF	74100	Contractual Services	65,000	101,800	29,500	26,500	222,800	a
				71300	Local Consultants	14,400	23,640	11,000	1,000	50,040	b
				74200	Audio Visual and Print Prod Costs	9,500	3,500	3,000	3,000	19,000	c
				72300	Materials and Goods	81,000	1,085,760	968,260	30,500	2,165,520	d
				75700	Training, Workshops and Conferences	8,000	81,000	25,000	18,000	132,000	e
				71300	Local Consultants	18,000	18,000	18,000	18,000	72,000	f
				Total Outcome 1					195,900	1,313,700	1,054,760
OUTCOME 2:	Ministry of Water and Environment	62160	GEFLDCF	74100	Contractual Services	107,000	67,950	110,250	91,000	376,200	g
				71300	Local Consultants	7,400	11,225	30,900	30,325	79,850	h
				74200	Audio Visual and Print Prod Costs	2,500	4,500	52,530	56,000	115,530	i
				72300	Materials and Goods	52,500	15,000	-10,000	151,000	228,500	j
				75700	Training, Workshops and Conferences	86,500	79,000	32,500	78,560	276,560	k
				71300	Local Consultants	18,000	18,000	18,000	18,000	72,000	l
				Total Outcome 2					273,900	195,675	254,180
PROJECT MANAGEMENT COSTS/UNIT	Ministry of Water and Environment	62160	GEFLDCF	71300	Local Consultants	29,000	29,000	29,000	29,000	116,000	m
				71600	Travel	3,500	3,500	3,500	3,500	14,000	n
				74500	Miscellaneous	15,000	15,000	15,000	15,000	60,000	o
				Total Project Management Costs					47,500	47,500	47,500

PROJECT TOTAL	517 300	1 556 875	1 356 440	569 385	4 000 000
----------------------	------------	--------------	--------------	------------	--------------

Summary of Funds:⁷⁴

GEF	517 300	1 556 875	1 356 440	569 385	4 000 000
UNDP	900 000	1 000 000	1 000 000	1 000 000	3 900 000
Government of Uganda	3 925 000	3 925 000	3 925 000	3 925 000	15 700 000
Government of Uganda/World Bank	525 000	525 000	525 000	525 000	2 100 000
GIZ	250 000	250 000	250 000	250 000	1 264 000
ACTED			200 000	200 000	400 000
ITU/UCC			150 000	150 000	300 000
TOTAL	6,117,300	7256875	7406440	6619385	27664000

Budget Note	Description of cost item
a	<ul style="list-style-type: none"> • Cost of region-based technical support to be provided to the project from a pool of project staff supporting this and other EWS projects in the UNDP-GEF multi-country initiative on EWS/CI (262days @ \$550/day +7 flights @ \$2,000 +45days DSA @ \$200/day). Note that the full cost of the Technical Support is covered by all 10 projects participating in the GEF/LDCF financed EWS multi-country initiative. This will be managed separately. • M&E expert (16 days @ \$550/day +1 flight @ \$2,000 +5days DSA @ \$200/day). • Cost of 4audits @ \$3000each prorated at the Outcome level @\$6000 (i.e. total for LDCF project: \$12000). • Cost of an Independent Mid-term evaluation@ \$30000 prorated at the Outcome level @ \$15000. • Cost of an Independent Terminal evaluation @ \$45000 prorated at the Outcome level @ \$22500.
b	<ul style="list-style-type: none"> • National hydrological specialist (81 days @ \$200/day +2 flights @ \$200 +6days DSA @ \$100/day). • National meteorological specialist (89days @ \$200/day +3 flights @ \$200 +10days DSA @ \$100/day). • National training and workshop facilitator (15 days @ \$200/day). • National Communications and ICT specialist (50 days @ \$200/day +1 flight @ \$200 +3days DSA @ \$100/day).
c	<ul style="list-style-type: none"> • Cost to strengthen existing and/or develop, implement and maintain coordination protocols and agreements between DWRM and DoM . • Edit, print and publish protocols, handbooks, and/or guidelines for DoM and DWRM including manuals for AWSs, AWLSs and manual stations as well as other remotely accessible resources regarding the observation network quality control and maintenance toolbox developed.
d	<ul style="list-style-type: none"> • Cost of procuring and installing 8 Synoptic Automatic Weather Stations at Jinja, Tororo, Gulu, Arua, Masindi, Kasese, Mbarara and Kabal synoptic stations @\$11000each. • Cost of procuring and installing17 Agro/hydro-met Automatic Weather Stations in Mityana, Masaka, Hoima, Rubirizi, Bundibugyo, Rukungiri, Kisoro, Sembabule, Buliisa, Packwach, Pader, Nebbi, Kalangala, Kapchorwa, Nwoya, Amuru and Moyo districts @\$11000each. • Installation and construction costs (including weather fencing @ \$3500) for 25 AWSs @\$5500each. • Cost of procuring and installing16 Automatic Water Level Hydrological Stations @\$18000each. • Installation and construction costs for 16 Automatic Water Level Hydrological Stations @\$10000each. • Rehabilitation of 40 manual Hydrometeorological stations including procurement and replacement of gauge plates, installation and civil works @\$700each. • Rehabilitation of 5 AWLSs including instalment of solar panels, batteries and wind sensors @\$1000each. • Cost of procuring and installing1 Acoustic doppler current profile @\$60000 (or an equivalent alternative). • Cost of procuring and installing AWLSs spare parts and equipment.

⁷⁴Summary table should include all financing of all kinds: GEF financing, cofinancing, cash, in-kind, etc...

	<ul style="list-style-type: none"> • Purchase telecommunications infrastructure including computers, computer servers and software, radiotelephones, portable telephones, GSM/GPRS/GSM/GPRS modems and other equipment for internet access. • Upgrade 32 manual stations - including thermometers, Stevenson screens, manual wind and solar sensors with digital sensors and calibrate thermometers and barometers @\$5260each. • Installation and construction costs for 32 manual stations, including stabilizing power supply with solar panels, batteries and inverters and upgrading weather fences @\$5000each. • Replace barometers in 12 manual stations @\$700each. • Upgrade 5 AWSs - replacing the unit @\$4000each. • Upgrade 5 AWSs - replacing sensors on units @\$1500each. • Upgrade 19 AWSs - replacing data loggers on units @\$800each. • Relocate 5 AWS stations, including installation of new weather fencing @\$5500each. • Stabilise power at 32 AWSs through the provision of dry cells, upgrading solar panels, and batteries @\$2300each. • Calibration and installation costs for 32 AWS upgrades including fieldtrips to sites @\$3000each. • Procure equipment (hardware and software) and ensure connectivity (internet modems and access) for 22 modern forecasting workstations to support NMC at Entebbe and synoptic stations @\$4000each. • Cost to purchase data rescue and digitization equipment for DoM and DWRM archives. • Cost to develop, host and maintain an integrated hydro-meteorological database and information management system including costs for upgrading/updating the national DoM database and information system from CLICOM/ASCII to an appropriate modern system and link to DWRM's water and management information system. • Cost to develop, host and maintain a platform and database to operationalize protocols and agreements between DoM and DWRM. • Procure vehicles for technical hydro-meteorological staff for field visits and other project activities related to ensuring the effective operation and maintenance of all equipment installed.
e	<ul style="list-style-type: none"> • Provide in-country national technical hydrometeorological operation and maintenance training (2 weeks) for 5 meteorological and six hydrological technicians. • Facilitate regional training workshops at synoptic stations and water management offices (refresher training at the regional level conducted by individuals trained at a national level). • Facilitate 5 trainers to conduct training (5 days) of 50 weather observers at Soroti, Kasese, Gulu and Masaka regional training sites @\$800each. • Cost of 4 training sessions (5 days) for 50 weather observers at Soroti, Kasese, Gulu and Masaka regional training sites @\$2404each. • Cost of an Inception workshop @ \$10000 prorated at the Outcome level @ \$5000. • Equip 4 training facilities with reference quality sensors and demonstration equipment at Soroti, Kasese, Gulu and Masaka synoptic stations (4 @ \$15000each). • Develop and promote an observation network quality control and maintenance toolbox, including remotely accessible and online calibration and training courses, handbooks and manuals for AWSs, AWLSs and manual stations. • Promoting protocols and agreements developed between DoM and DWRM.
f	<ul style="list-style-type: none"> • Local consultants support for organising and conducting equipment surveys/reports, identifying and liaising on procurement of equipment with line ministries and facilitating NHMS etc. training programs.
g	<ul style="list-style-type: none"> • Cost of region-based technical support to be provided to the project from a pool of project staff supporting this and other EWS projects in the UNDP-GEF multi-country initiative on EWS/CI (379days @ \$550/day +8 flights @ \$2,000 +40 days DSA @ \$200/day). Note that the full cost of the Technical Support is covered by all 10 projects participating in the GEF/LDCF financed EWS multi-country initiative. This will be managed separately. • Costs of data collection and/or VRA for informing early warning systems established in Teso and Mt Elgon sub-regions and training undertaken in Bukedi, Busoga, Elgon, Teso, Acholi, Karamoja and Lango sub-regions. • Conduct a study on the costs and benefits of accurate, timely and accessible weather and climate forecasts (including tailored forecasts and alerts). • Conduct a market analysis of the need for improved forecasting and other services and products by the CCA, private sector and government institutions – and the fees/reimbursements these entities are willing to pay. • International economist (35 days @ \$550/day +1 flight @ \$2,000 +5days DSA @ \$200/day). • International M&E expert (16 days @ \$550/day +1 flight @ \$2,000 +5days DSA @ \$200/day). • Cost of 4 audits @ \$3000each prorated at the Outcome level @\$6000 (i.e. total for LDCF project: \$12000). • Cost of an Independent Mid-term evaluation @ \$30000 prorated at the Outcome level @ \$15000. • Cost of an Independent Terminal evaluation @ \$45000 prorated at the Outcome level @ \$22500.
h	<ul style="list-style-type: none"> • National meteorological specialist (13 days @ \$200/day) • National policy and strategy advisor (25 days @ \$200/day +1 flight @ \$200 +2days DSA @ \$100/day) • National climate change modeller to undertake a risk and vulnerability assessment and mapping (28 days @ \$200/day +1 flight @ \$200 +4days DSA @ \$100/day) • National adaptation, early warning system and disaster management consultant (70 days @ \$200/day +2 flights @ \$200 +5days DSA @ \$100/day)

	<ul style="list-style-type: none"> • National training and workshop facilitator (20 days @ \$200/day +1 flight @ \$200 +10days DSA @ \$100/day) • National economist (16 days @ \$200/day +1 flight @ \$200 +3days DSA @ \$100/day) • National Communications and ICT specialist (28 days @ \$200/day +1 flight @ \$200 +3days DSA @ \$100/day) • Employ 2 Regional Focal Points at Teso and Mt Elgon (365 days ea @ \$50/day)
i	<ul style="list-style-type: none"> • Develop a national weather and climate information and early warning system communication and coordination strategy. • Develop, implement and maintain coordination protocols and agreements for data and information exchange and dissemination among DoM, DWRM, DRDPM, CCU and related institutions. This will cover costs of research, DSA, travel (including fuel), meetings/workshops for developing protocols and agreements. • Develop tailored weather and climate alerts including colour-coded advisories, watches and warnings for flood, drought, severe weather and agricultural stresses by integrating and customising standard forecasts. • Implement a two-way SMS-based alert and feedback system for floods, droughts, severe weather and other agricultural advisories for local farmers and vulnerable communities in Teso and Mt Elgon sub-regions. This will cover the costs of building on baseline projects and promoting the importance of cooperative responsibility of service providers; and include meetings, planning, establishing relationships and agreements, travel, and other costs needed including additional equipment and consultants not covered under materials and goods and contractual services budget codes respectively – see budget notes g, h and j). • Edit, print and publish protocols (among DoM, DWRM, MAAIF, DRDPM, CCU), policy and information briefs (based on reviews on five sector-specific policies, investment plans and annual budgets), and remotely accessible handbooks –training packages and toolkits– for assisting trained meteorologists and hydrologists build in-house capacity in the respective institutions.
j	<ul style="list-style-type: none"> • Procure 2 Satellite phones @\$2500each. • Establish 4 hotlines/call centres @\$1250each to cover the costs of equipment and training at the DRDPM. • Procure 30 cellphones for DDCMs and/or community champions @\$1250each. These will be integrated into the two-way SMS-based alert and feedback system for floods, droughts, severe weather and other agricultural advisories by building on baseline projects in particular the alert system being implement by ITU/UCC and the DoM pilot mobile alert platform projects for farmers in the Kasese district and fishers using Lake Victoria. • Procure and install signs for colour-coded signs for alerts - advisories, watches and warnings to support the two-way SMS-based alert and feedback system. • Procure 8 Communication Facility Radio Transceivers @\$3000 each and 60 supporting two way radios @ \$100. • Purchase airtime, TV, radio spot messages. • Cost of developing, hosting and maintaining a climate and early warning platform and database at the national Early Warning Data and Documentation Center in DRDPM. This will cover the costs of database and platform development and maintenance (including software, hardware and any consultants required). • Procure vehicles for disaster management offices for field visits, and other project activities. • Procure 2 computer workstations/laptops (including internet connection) for the DRDPM.
k	<ul style="list-style-type: none"> • Train 4 senior national hydro/meteorologists on state-of-the-art region-specific weather and climate forecasting and in-house capacity building. • Train 4 national junior hydro/meteorologists on state-of-the-art region-specific weather and climate forecasting and in-house capacity building. • Provide 2 NMHS internships (6 months) @\$45000each. • Train MAAIF and DDMPR personnel to produce climate risk and vulnerability sector-specific maps. • Train the national early warning committee to facilitate inter-sectoral sharing of climate early warning and related disaster risk reduction activities. • Train sub-county/DDMCs in the Bukedi, Busoga, Elgon, Teso, Acholi, Karamoja and Lango sub-regions to integrate weather and climate information into 30 development plans at a district and/or sub-country level. • Cost of an Inception workshop @ \$10000 prorated at the Outcome level @ \$5000. • Costs of developing training packages and toolkits for assisting trained meteorologists and hydrologists to build in-house forecasting and capacity and enhance collaboration in the DWRMA and DoM. This will include costs associated with materials and goods, consultants, DSA and travel required. • Costs of developing promoting EWS dissemination national and local 'toolbox' and trainer, SOPs, protocols and agreements among DoM, DWRM, DRDPM, CCU, MAAIF, handbooks and policy and information briefs. This will include costs associated with materials and goods, consultants, DSA and travel required. • Develop and implement a community awareness campaign in the Teso and Mt Elgon sub-region. This will include materials and goods, consultants, DSA and travel required.
l	<ul style="list-style-type: none"> • Local consultants costs to monitor the utility of forecasts/predictions for end-users and the efficacy of the Standard Operation Procedure for alert communication. Organise workshops, meetings and feedback sessions from users of forecasts and SOPs
m	<ul style="list-style-type: none"> • Employ a financial/administrative officer • Employ Project manager

n	<ul style="list-style-type: none">• Project Manager travel and other internal flights.• Project team travel and local transport around regions and district.
o	Miscellaneous cost such as Insurance, bank charges and other sundries for project coordinating unit.