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Preparing for Disaster: UNEP Early Warning System Initiatives

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Zinta
Zommers,
Nina Raasakka
UNEP



UNEP's approach

- UNEP believes in an Ecosystem-based Disaster Risk Reduction (Eco-DRR) approach
- Promotes ecosystem management as a key strategy to reduce disaster risk, increase local resilience and adapt to a changing climate
- UNEP is also a core founder of the Partnership for Environment and Disaster Risk Reduction (PEDRR)
- 'Disasters and Conflicts' is one of the priority areas for UNEP's Regional Office for Africa (ROA)

DEWA – WHAT?

- Division of Early Warning and Assessment (DEWA) provides timely scientifically credible, environmental analyses and alerts
- E.g. GEAS
- CLIM-WARN Project –seeks to identify ways to improve communication of warning to the vulnerable, and ensuring they can act on warnings



Figure 1 NASA MODIS Aqua image of Tropical Cyclone Phasin circling over the Bay of Bengal, moving west towards India, on October 10, 2013. (Credit: NASA MODIS Rapid Response Team in Gifu, 2013; visualization by UNEP/GRID-Southern Falls)



WHY?

- Outside of the community of experts, many people cannot access the forecasts;
- Many people who access the forecasts can't understand them;
- Many people who understand the forecasts do not trust them;
- Many people who understand and trust the forecast do not know what to do with it;
- Finally many who know what to do after receiving a forecast lack the resources to act

WHERE?

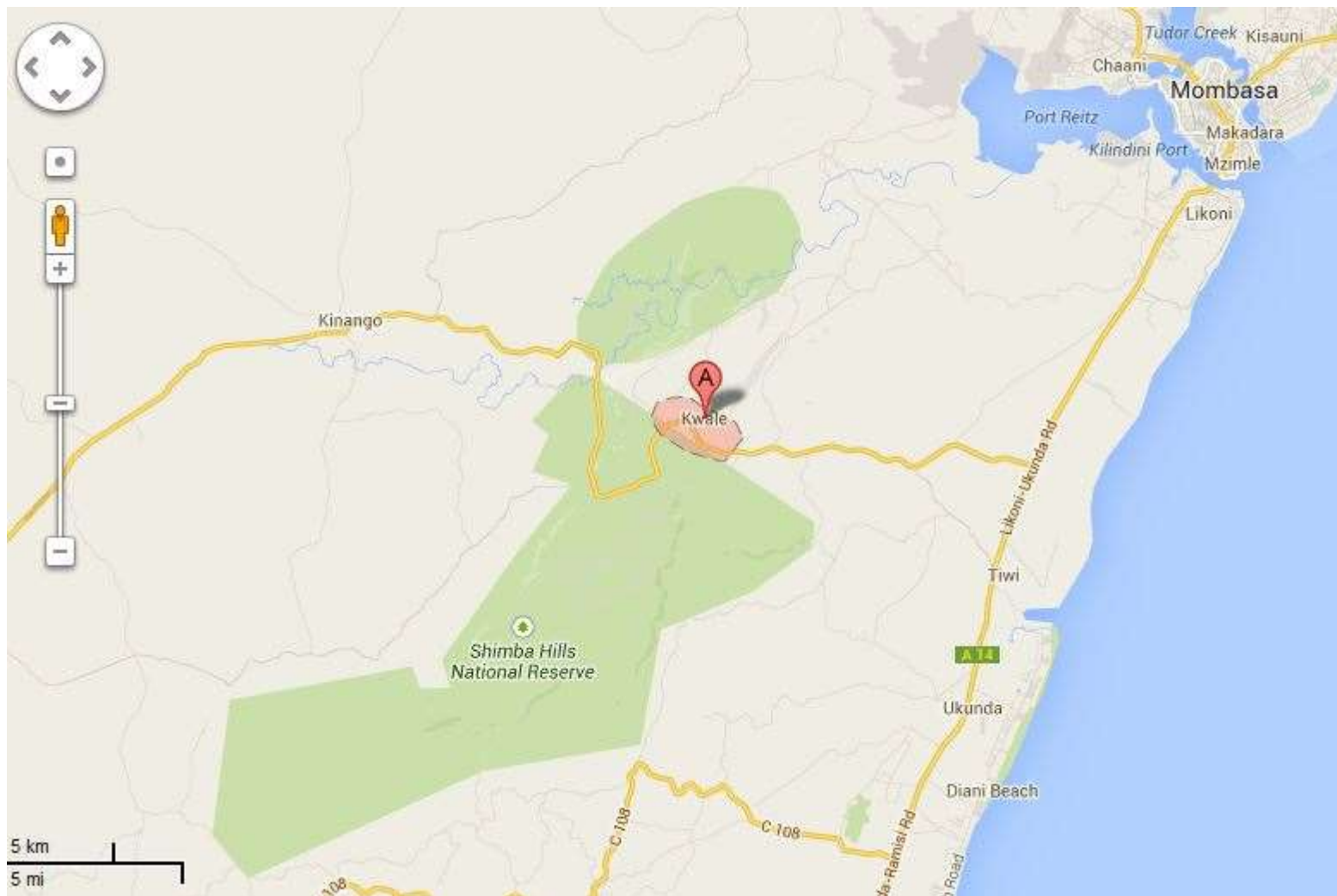


Working in three case study countries

- Kenya
- Ghana
- Burkina Faso

Recently started work in Kogi State, Nigeria

Pilot - Kwale





WHO?

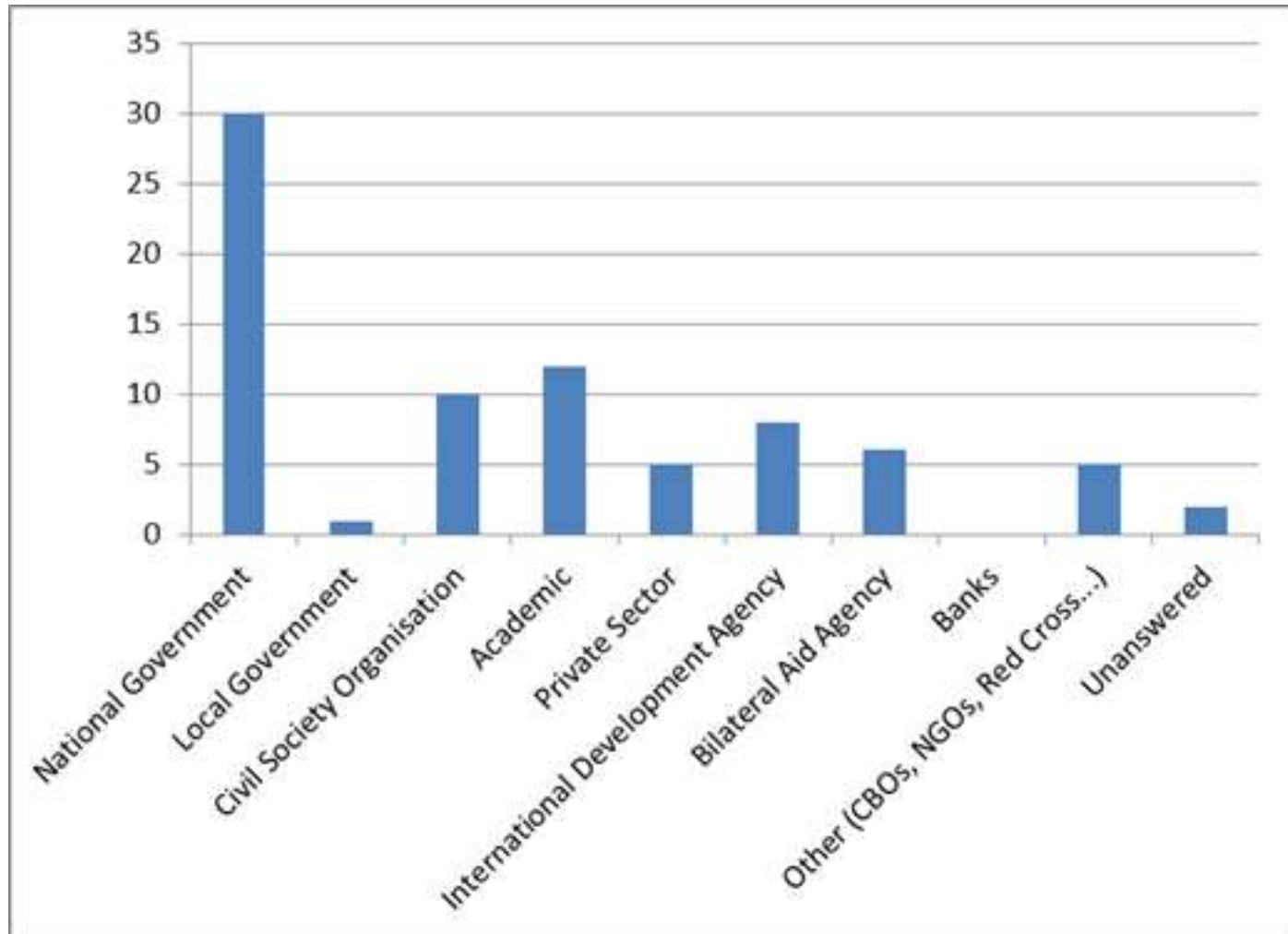


- Funding from German Government and from Kogi State;
- Working in partnership with organizations in the case study countries including:
 - National Drought Management Authority (Kenya)
 - World Vision (Kenya)
 - University of Ghana (Ghana)
 - National Disaster Management Authority (Ghana)
 - SP/CONASUR (Burkina Faso)

WHO?



Meeting participants by sector across three national meetings



WHEN? HOW?

- CLIM-WARN started in 2013 and will run until early 2015. In Nigeria work will continue longer
- National meetings have been held in each country, as well as a regional meeting
- Currently conducting field work/ meetings in vulnerable communities
- Planning second national meeting and a design workshop

Focus Group



Hope to deliver:

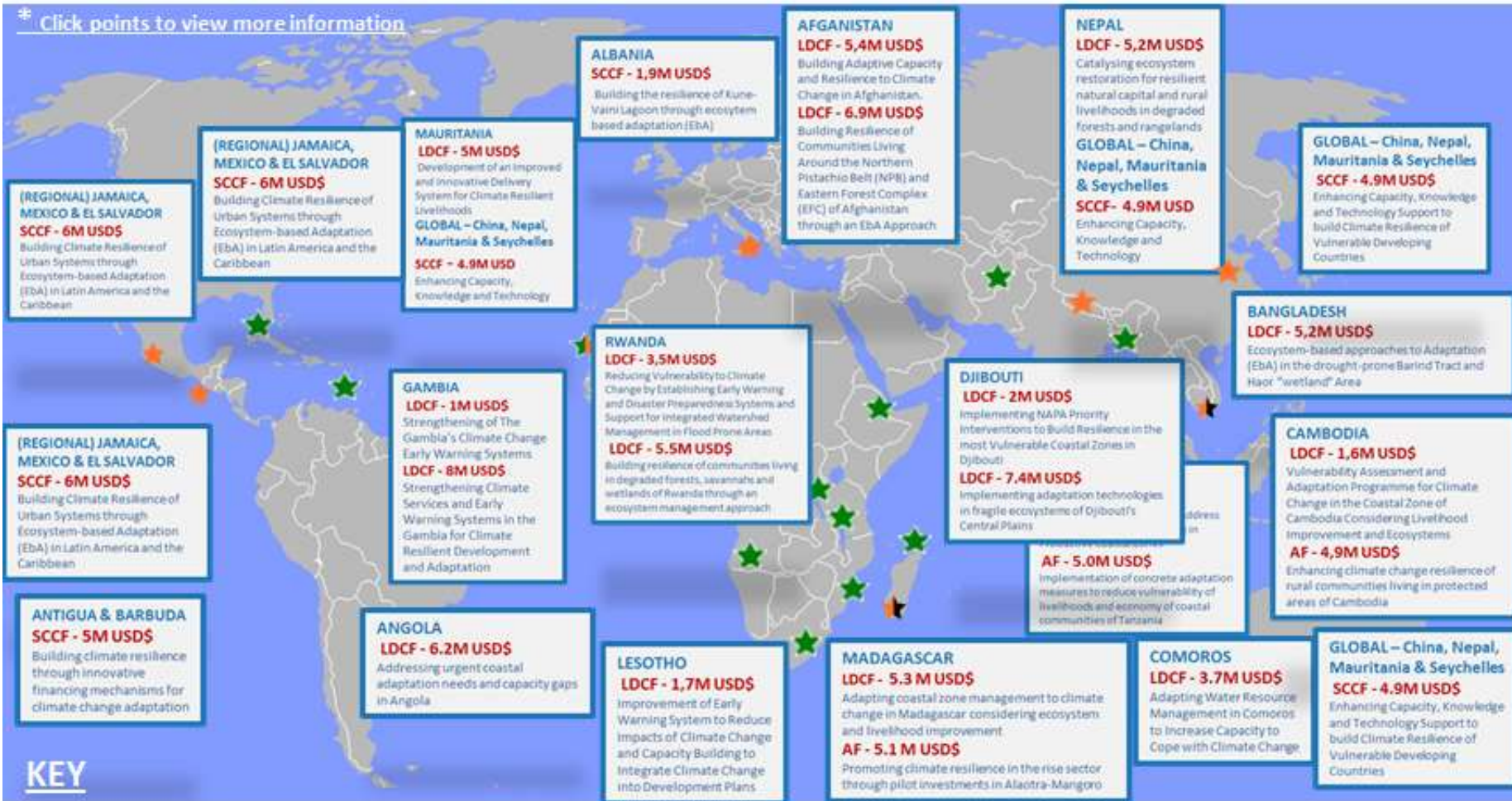
- Systematic review of best practice in early warning system communication and response, published as peer reviewed article
- A series of multimedia reports with recommendations on communication and prototype response plans for different groups
- A decision making tool or early warning system design document (prototype) for policy makers

UNEP GEF CC ADAPTATION PORTFOLIO– WHAT?

- UNEP GEF Climate Change Adaptation Portfolio – over 25 projects in 20 countries funded through LDCF, SCCF and AF
- Overall portfolio worth US\$114 M
- Areas of intervention: assessments, policy and mainstreaming, capacity building, knowledge sharing, early warning systems, ecosystem-based adaptation
- General objective is to support LDCs access funds for implementing their NAPA priorities and developing countries to address long and short-term adaptation activities in line with their national policies

Portfolio – geographic distribution

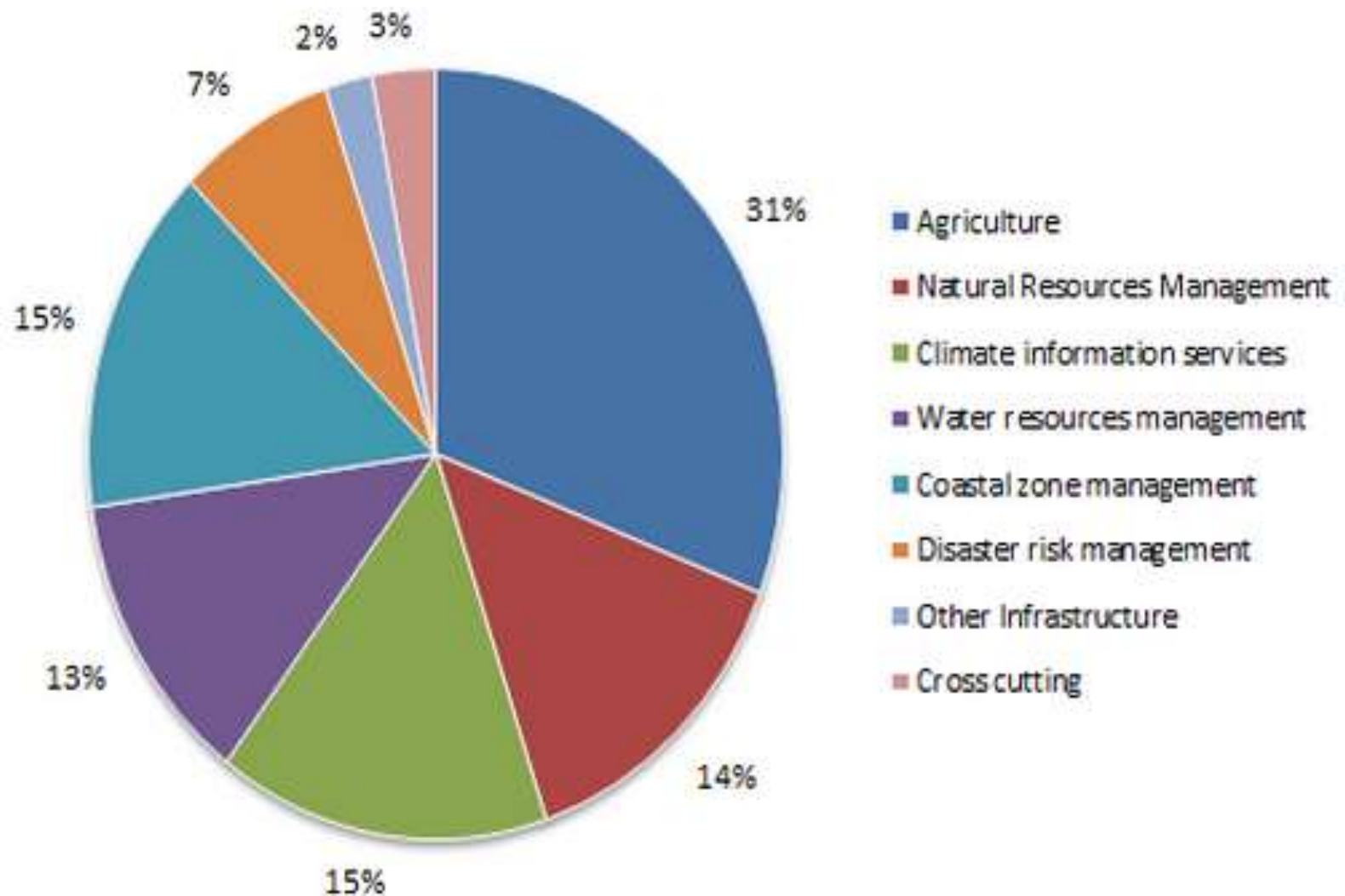
* Click points to view more information



KEY

- ★ LDCF
- ★ SCCF
- ★ LDCF & SCCF
- ★ LDCF & AF

LDCF Distribution by primary sector



Source: <http://www.thegef.org/gef/LDCF>

WHY?

- **UNEP's comparative advantage:**
 - a proof of concept, the testing of ideas, and the best available science and knowledge upon which it can base its investments (GEF Council paper C.31/5)
 - developing and using climate information to effect changes in relevant sectoral policies based on climate science (GEF Council paper C.28/18)
- **UNEP's mandate:** to analyze the state of the global environment, assess global and regional environmental trends, provide early warning on environmental threats.
- Through DEWA, link to Global Climate Observing Systems (GCOS), WMO, as well as the UNEP-supported Environmental Outlook for Africa and Program of Research for Vulnerability Impact and Adaptation (PROVIA).

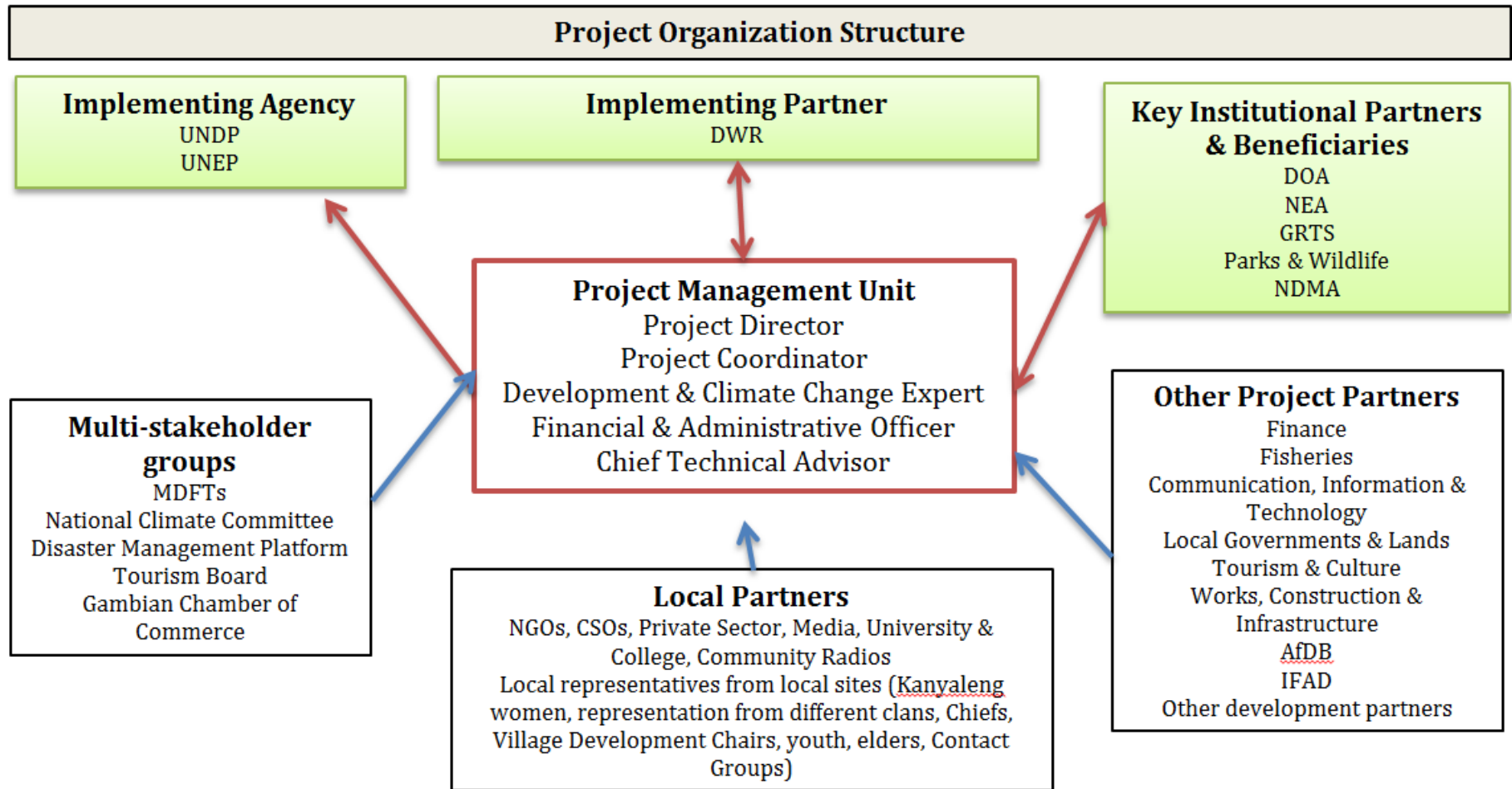
UNEP GEF CC ADAPTATION PORTFOLIO– WHAT?

- 9 projects that include early warning/climate or hydrological monitoring-related elements :
Comoros, Djibouti, The Gambia (2 projects),
Lesotho, Madagascar, Rwanda, Afghanistan,
Myanmar

THE GAMBIA: WHERE and WHO?

- 2 LDCF projects in The Gambia:
 - **LDCF1:** Strengthening The Gambia's CC Early Warning Systems (**US\$ 1,028,500**) **UNEP**
 - **LDCF2:** Strengthening climate services and early warning systems in the Gambia for climate resilient development and adaptation to climate change (Phase 2 of UNEP/GOTG/LDCF project) (**US\$ 8 M**) **UNEP/UNDP**
- Both projects are executed by the **Department of Water under the Ministry of Fisheries and Water Resources**
- **Multiple partners:** ministries, CSOs, community organizations, media, universities, international organizations

Example of partners involved in project organization structure



HOW?

LDCF1: August 2011- July 2014

3 outcomes:

1. Enhanced capacity of hydrometeorological services and networks for predicting CC events, risk factors and issuing early warnings
2. More effective, efficient and targeted delivery of climate information including early warnings
3. Improved and timely preparedness and responses of various stakeholders to climate linked risks and forecast vulnerabilities

HOW?

1. Completed assessment of **equipment, capacity-building needs** of hydrometeorological services and **training needs**
2. Procured and installed **early warning equipment** from Väisälä – 1 AWS at the Central Weather Forecasting Office in the Banjul International Airport, thus enhancing accuracy of measurements at the airport and in the Greater Banjul Area.
3. Supplied and successfully installed **Water Level Recorder** at the Bansang Hydrological Station and flow measurement equipment (baby current meter) at Basse – Prufu Bolong Flow Gauging Station. This saw the commencement of the generation of flow data on the River Gambia.

HOW? (cont'd)

4. **18 sub-professional technicians trained** in 2012 and a current team of 14 technicians has graduated in December 2013 from the Water Resources Training School.

5. **Media training sessions** have seen the participation of almost all the media institutions in The Gambia to engage and use the press for raising awareness on climate change and its potential impacts

HOW?



THE GAMBIA: FROM LDCF1 to LDCF2

The needs assessments (equipment, training, capacity building) completed in the LDCF1 project have determined that the Gambia's needs are beyond the scope of the LDCF1 project, leading to the development of a subsequent LDCF project.

WHEN & HOW?

LDCF2: July 2014 (tentative) – June 2018

- **Outcome 1:** Gambia National Meteorological Services supported in its transition to becoming a financially sustainable Meteorological Agency
- **Outcome 2:** Hydro-meteorological infrastructure is upgraded / installed and maintained that will cover the full needs for 'optimal performance of EWS' as identified by recent needs assessment reports in the Gambia
- **Outcome 3:** A critical mass of skilled human resources is able to operate the Gambia Early Warning System and perform medium and long-term climate adaptation planning beyond the project
- **Outcome 4:** Efficient and effective use of hydro-meteorological and environmental information for making early warnings and long-term development plans

HOW?

Main deliverables:

1. **Comprehensive business plan** for deployment of effective hydro-met service
2. **Effective, timely and accurate** flood warnings
3. Increased availability of **real time climate data**
4. Operational **marine meteorological station network**
5. Upgraded **water quality monitoring system**
6. Comprehensive data base and **data management system** established and centralized
7. A cadre of **certified maintenance and repair technicians** exists within the NHMS
8. A **recruitment and retention strategy** is developed
9. Establishment of certified hydromet professionals is established

HOW? (cont'd)

Main deliverables:

10. **Targeted climate products** produced for sectoral institutional partners
11. **Early warnings and climate change risk information** in 14 sites disseminated and taken up
12. Underserved communities **receive** early warning messages
13. Climate change issues **integrated** into local development plans in 14 sites
14. **Knowledge, data and information on climate impacts** on local biodiversity is available
15. **Knowledge management structures** for effective feedback and incorporation of lessons learned are created

Thanks!

zinta.zommers@unep.org

nina.raasakka@unep.org

