



# Turning tragedy into opportunity: water management solutions for flood-recession and dry season agriculture in Nigeria

Inception workshop, Transcorp Hilton Hotel, Abuja, 08 July 2014



# Goals and Objectives

Goal

Increased agricultural production and food security achieved through sustainable water management that allows smallholder farmers to profitably engage in flood recession and dry season agriculture



Objectives

Establish fact-based evidence on historical flood inundation patterns to guide decision making and development of AWM solutions

Develop AWM solutions that will improve dry season farming



# Outputs

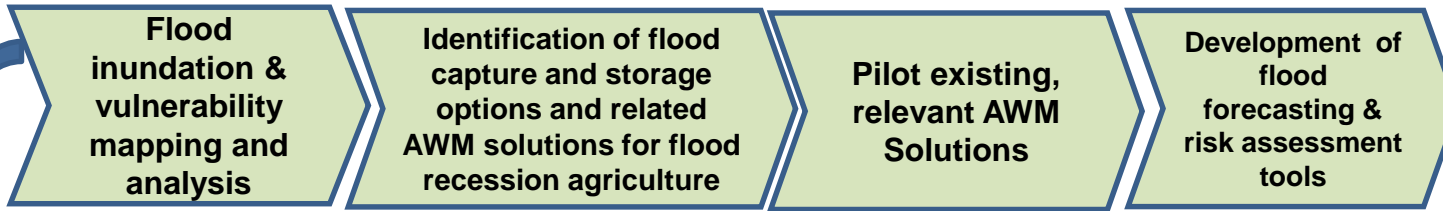
- **Land and water management maps** at river basin and state levels
- **Tools** to support flood forecasting and estimate potential impacts along Niger and Benue rivers
- **Agricultural land and water management solutions** (e.g. rain water harvesting, surface ponds and tanks, pump irrigation, land leveling, narrow and stable dug wells, vertical drains, etc.)
- **Maps of AWM solution suitability, livelihood patterns** and number of beneficiaries (hectares and people)
- **Proven business models** for implementation of AWM solutions



# Work Packages

# Outputs

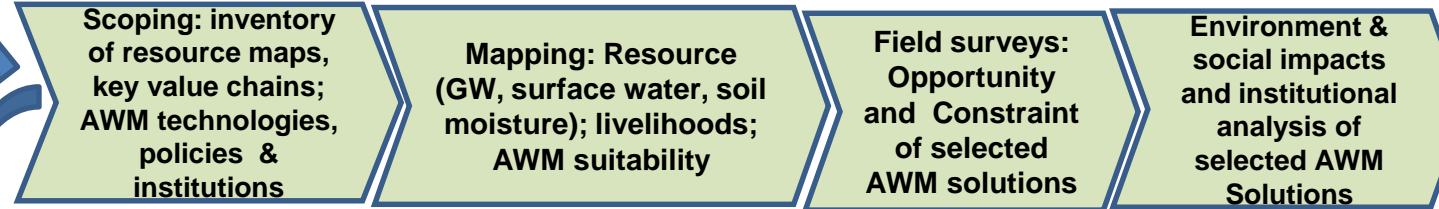
## WP 1: Flood Vulnerability and Recession Analysis (national/basin/state level)



Flood inundation and vulnerability maps

Flood assessment and forecasting tools

## WP 2: AWM Situation and Opportunity & Constraint Analysis (national/state/local)



AWM analysis and needs assessment

Resource and livelihood maps; AWM suitability and potential

Refined assessment methodologies

## WP 3: Business Model Targeting and Refinement (national)



Refined AWM solutions and targeting maps

Refined business models

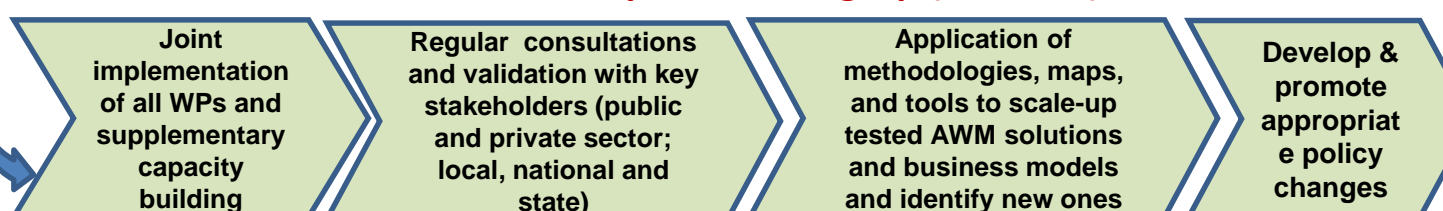
## WP 4: Implementation and Monitoring of Business Models (state/local)



Proven AWM solutions and field tested business models

Suite of scalable AWM Solutions & business models

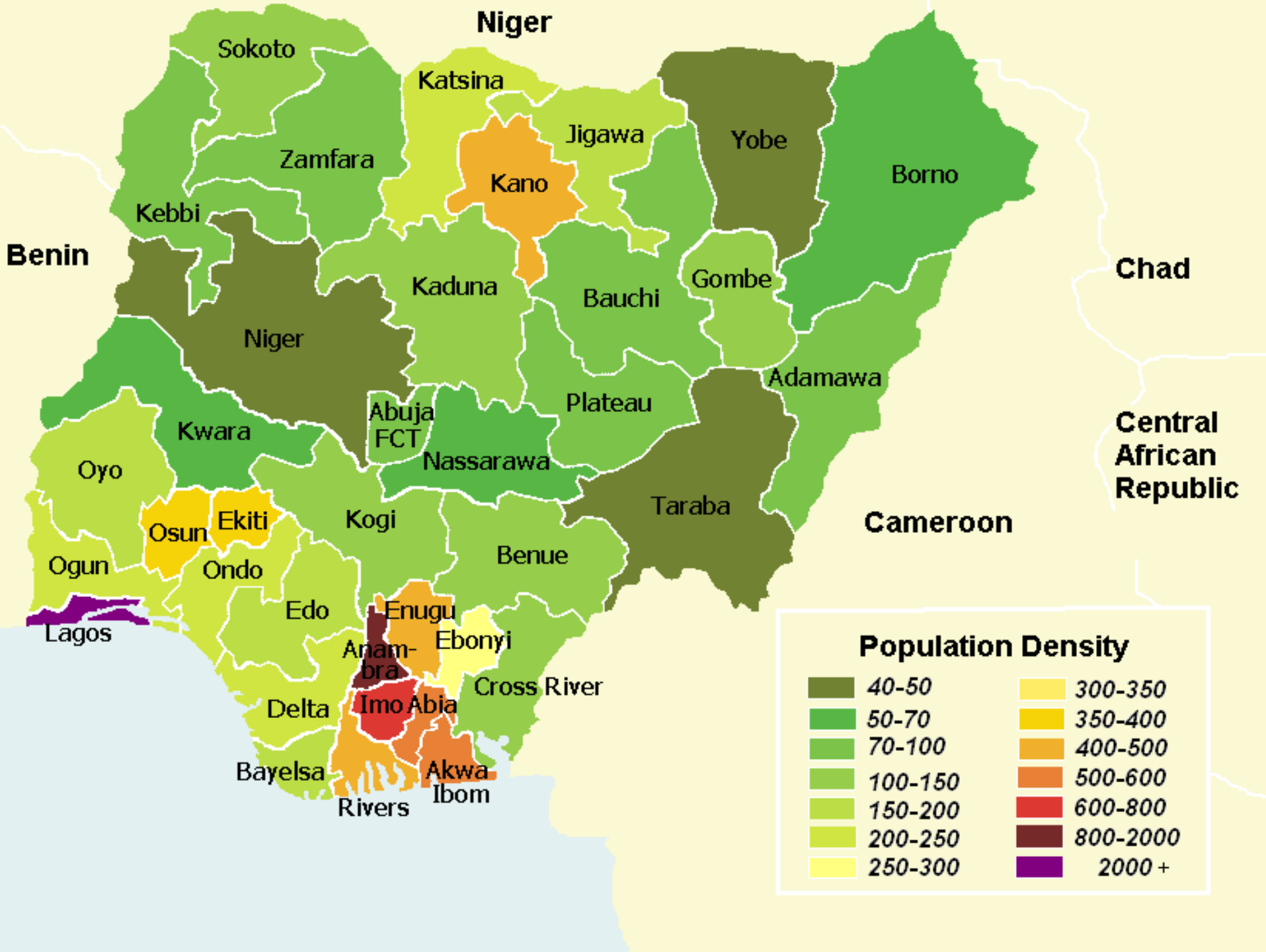
## WP 5 & 6 Consolidation, Ownership and Scaling Up (national)



Strengthening of local capacity to design/implement solutions

Evidence-based recommendation for policy changes





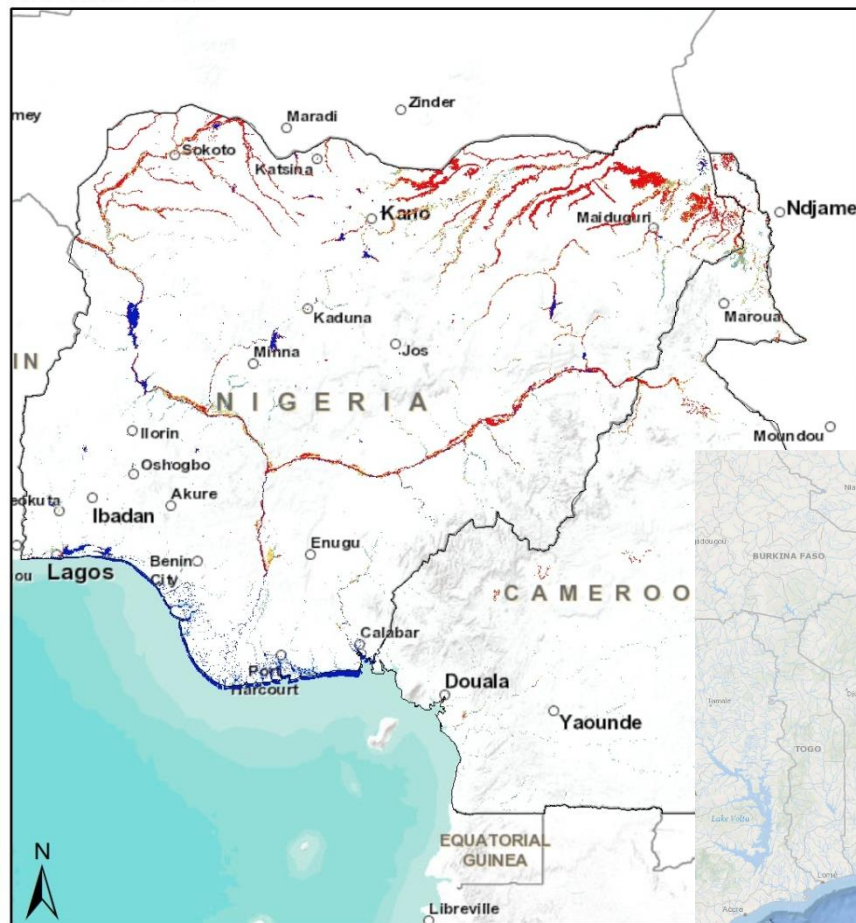
# FOCUS ON FLOOD ASSESSMENT AND RISK ASSESSMENT



# Flood Mapping Products (Initial Results)

## Time-Series MODIS TERRA Flood Occurrence Maps (2012 & 2013)

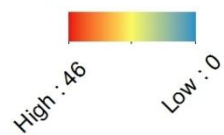
2012 Flood Product



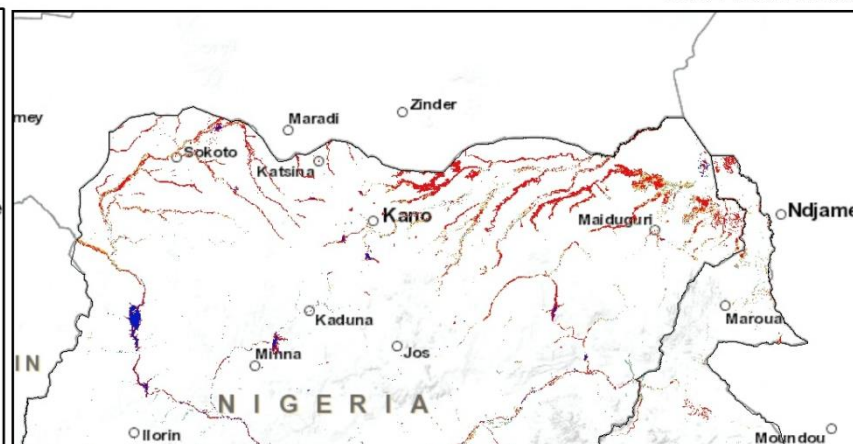
Source: IWMI

Legend

Value



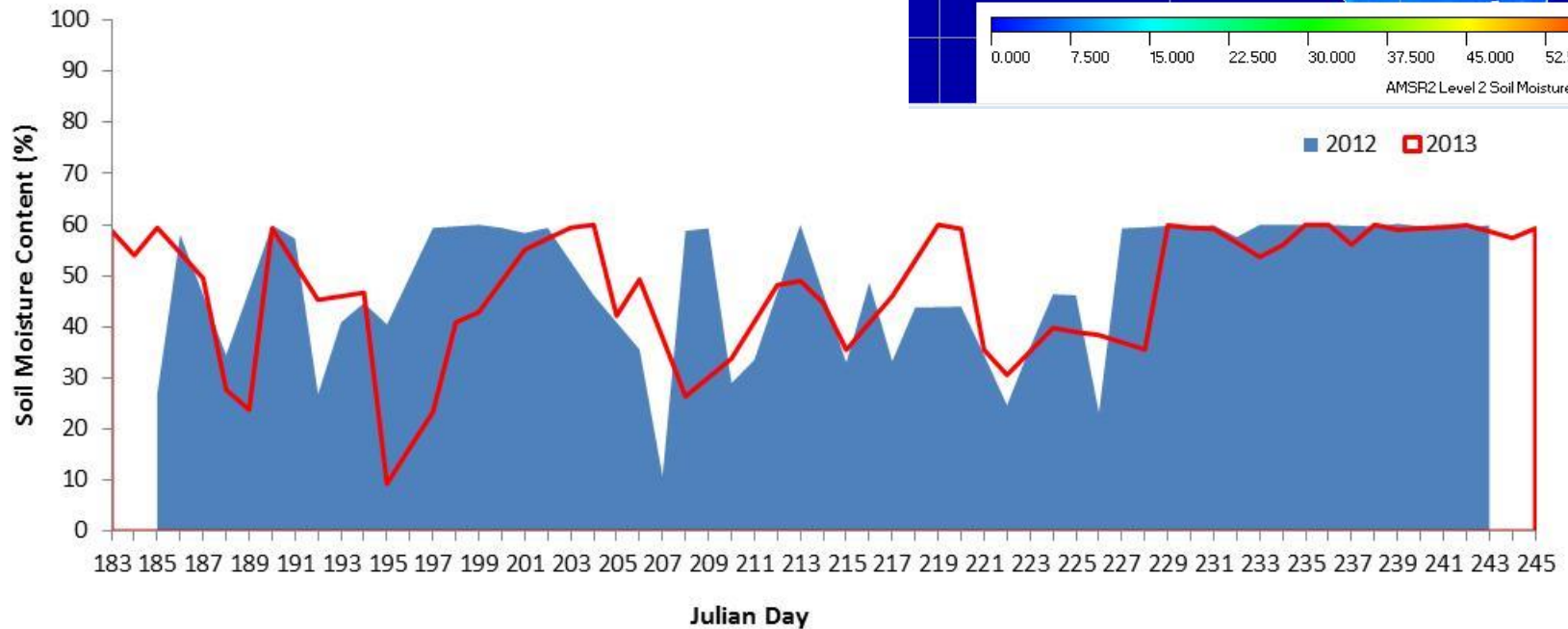
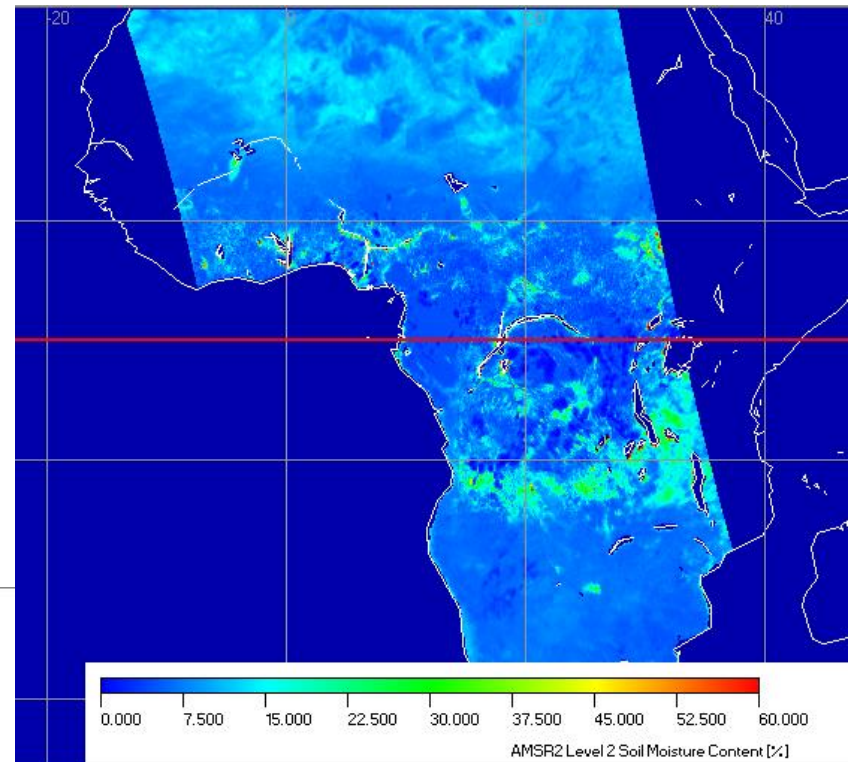
2013 Flood Product



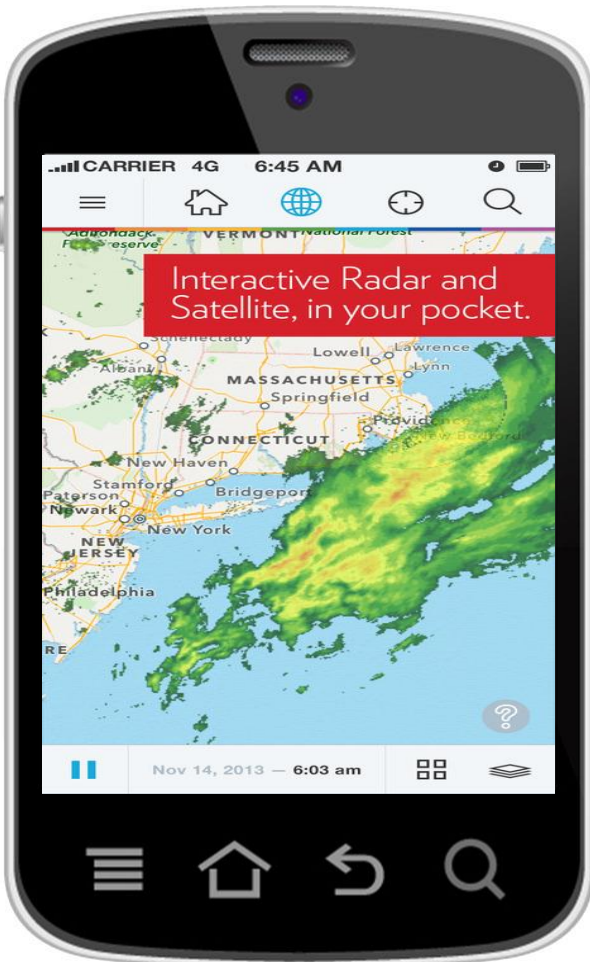
# Soil Moisture Products

## Application in Flood Recession Agriculture

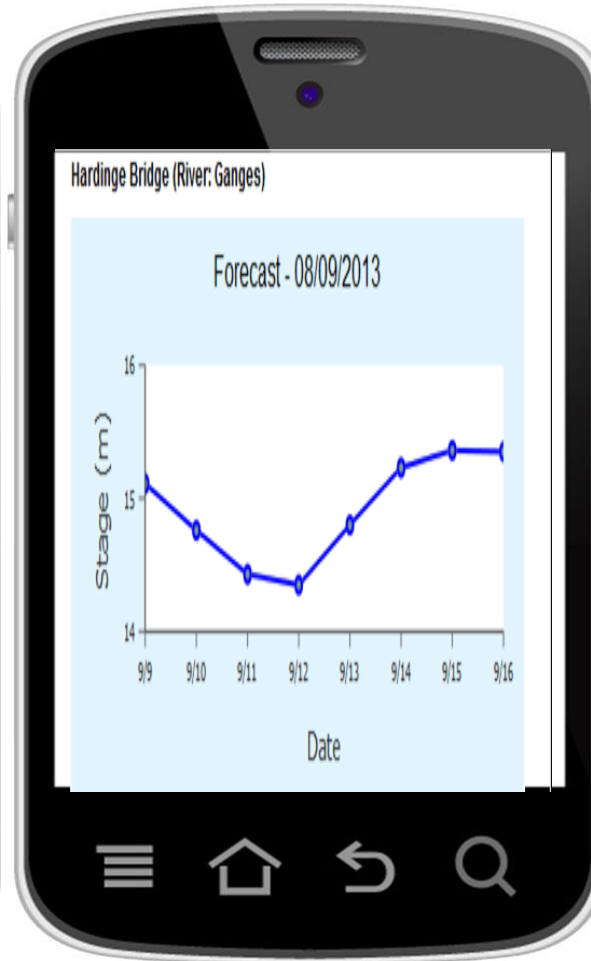
- Soil Moisture important input in flood recession areas detection
- On a daily basis day/night SM will be provided



# Mobile Apps– Operational Flood Information Management



Liquid Rain



Liquid River

***“Project outcomes to target thousands of farmers get access to right information at right time on flood risks and opportunities from flood recession agriculture”***



# FOCUS ON AGRICULTURAL WATER MANAGEMENT





Small, cheap motorized pumps have increased smallholder irrigation, reducing dependency on rainfed agriculture



**The Irrigation Service Provider Model – Pump Rental <sup>Plus</sup>**

# Imagine this



# Irrigation Service Provider Business Plan



# Outcomes

- **Improved food security** through better knowledge of Nigeria's water resources and their management to improve crop planning and increase cropping intensity.
- **Enhanced rural incomes** through expanded dry season and flood recession farming coupled with new opportunities for rural employment (particularly for the youth) through the introduction of irrigation service providers and other AWM business models.
- **Smallholder farmers profitably participate in food crop value chains.**
- Improved **adaptation to climate change** and more **resilient** farming communities.



# Partners

## **Nigeria**

- Federal Ministry of Agriculture and Rural Development
- Federal Ministry of Water Resources (NIHSA)
- Nigerian Meteorological Agency (NIMET)
- Anambra, Benue and Kogi State Governments
- Universities.

## **International:**

- International Food Policy Research Institute (IFPRI)
- Food and Agriculture Organization of the UN (FAO)



# FOCUS ON IWMI



# International Water Management Institute (IWMI)

- One of 15 international non-profit scientific research centers
- Member of the CGIAR Consortium (global partnership of research centers and funders)
- Works in partnership with countries, international and national research institutes, universities and other organizations
- Develops water management solutions (policies, practices, technologies and tools) that contribute to poverty reduction, livelihoods and food security

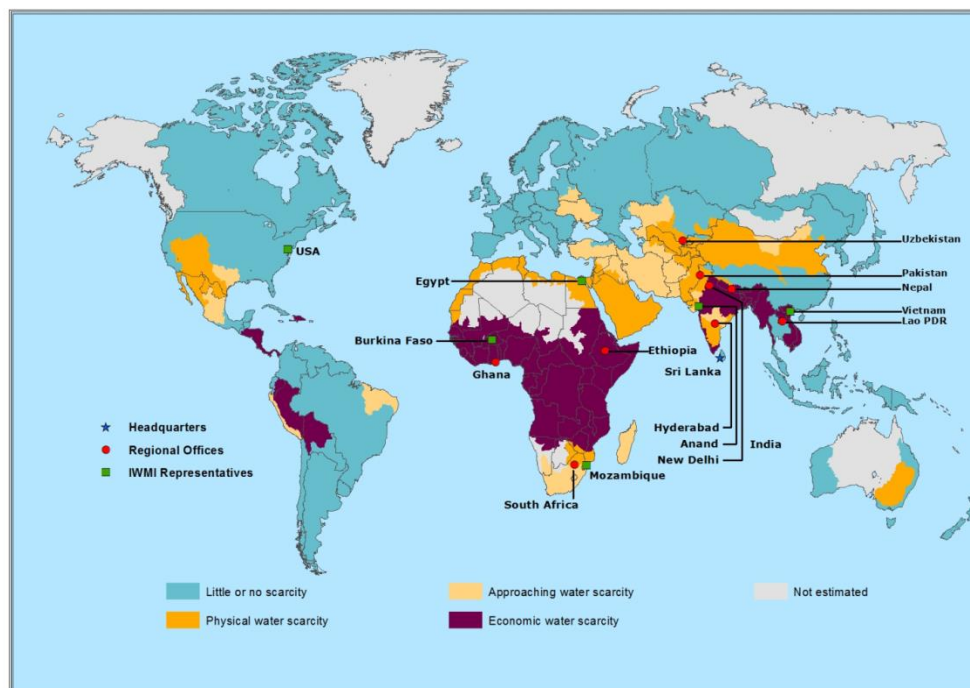


## IWMI Vision

## IWMI Mission

Water-secure world

Provide evidence-based solutions to sustainably manage water and land resources for food security, livelihoods and the environment



## IWMI staff

- 330 employees in 10 countries
- 64% from developing countries
- 75% of researchers in the field



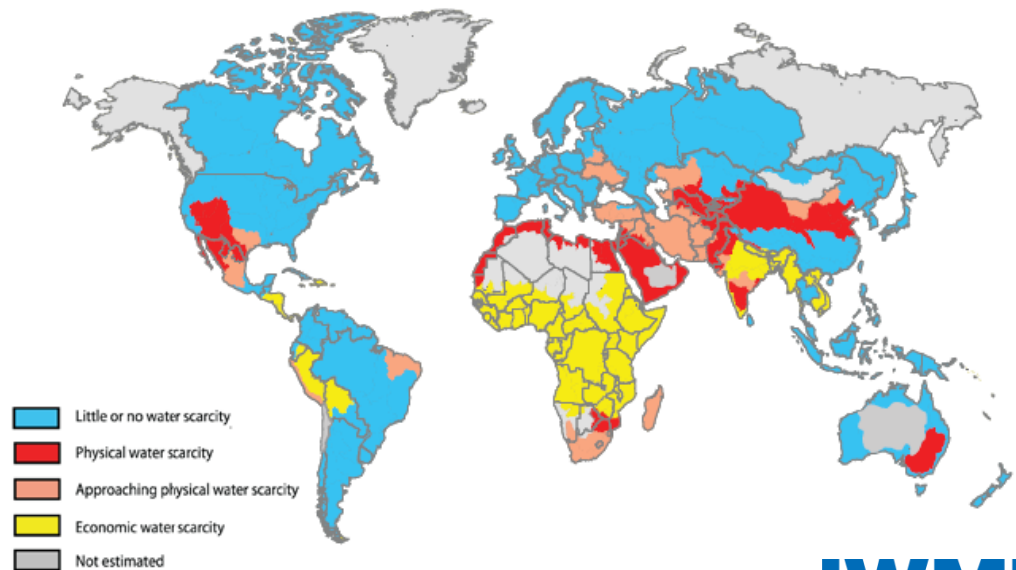


## IWMI in Africa – Informing the development of innovative water management solutions

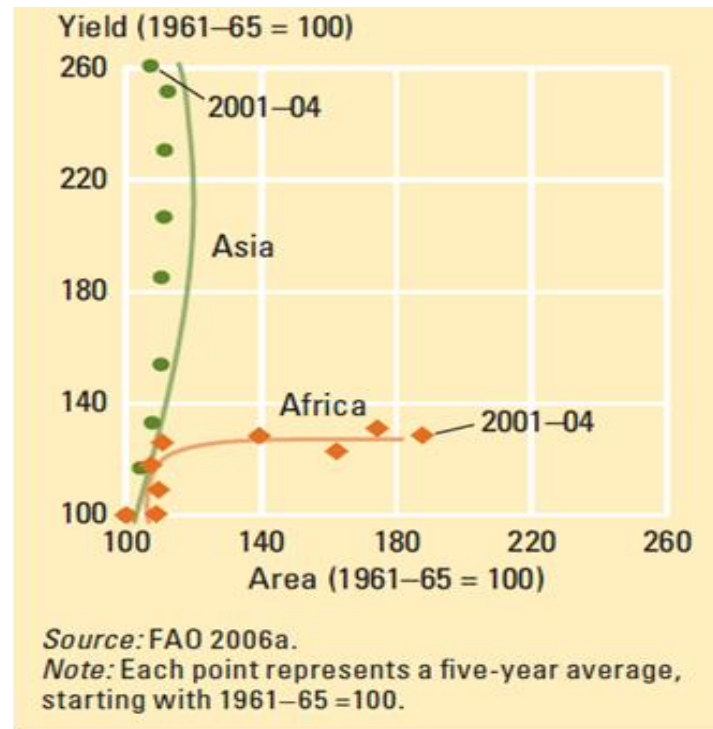
Photo: David Brazier/IWMI



## What does this mean for Africa?



## Context: African extensification compared with Asian intensification



# Agricultural and water issues in Africa: opportunities

- A large underutilized **endowment** of water resources.
- Huge potential for expansion of area under irrigation.
- Increased demand for high value products responsive to agricultural water management solutions.
- Renewed public and political interest in food security, agriculture and environmental sustainability.
- Acceptance by political decision makers that market-based principles must guide development decisions.
- IWMI's research capability and presence through 5 main offices spread across Africa in Ghana, Ethiopia, South Africa, Egypt and Burkina Faso.



# THANK YOU FOR YOUR ATTENTION

