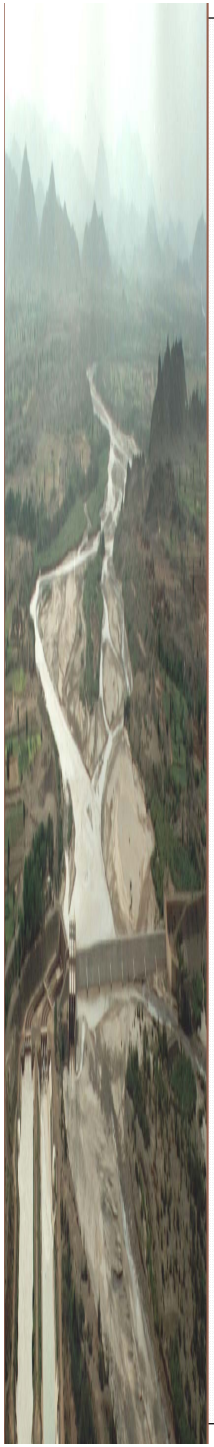


Flood-based Farming Systems From Subsistence to Significant Contributors for Food Security and Enhanced Ecosystem Services

The Journey we have travelled and the road ahead

Dr. Abraham Mehari Haile
Senior Lecturer and Researcher in Land and Water Development
Co-convener Spate Irrigation Network

Launch Workshop: Harnessing Floods for Enhanced Livelihoods and Ecosystem Services
Mekelle, Ethiopia, 17 March, 2015

Phase I: 2002 to 2006

The Challenge

Spate Irrigation "largely" dismissed as unreliable systems merely supporting subsistence farming

The Approach

Establishing a network

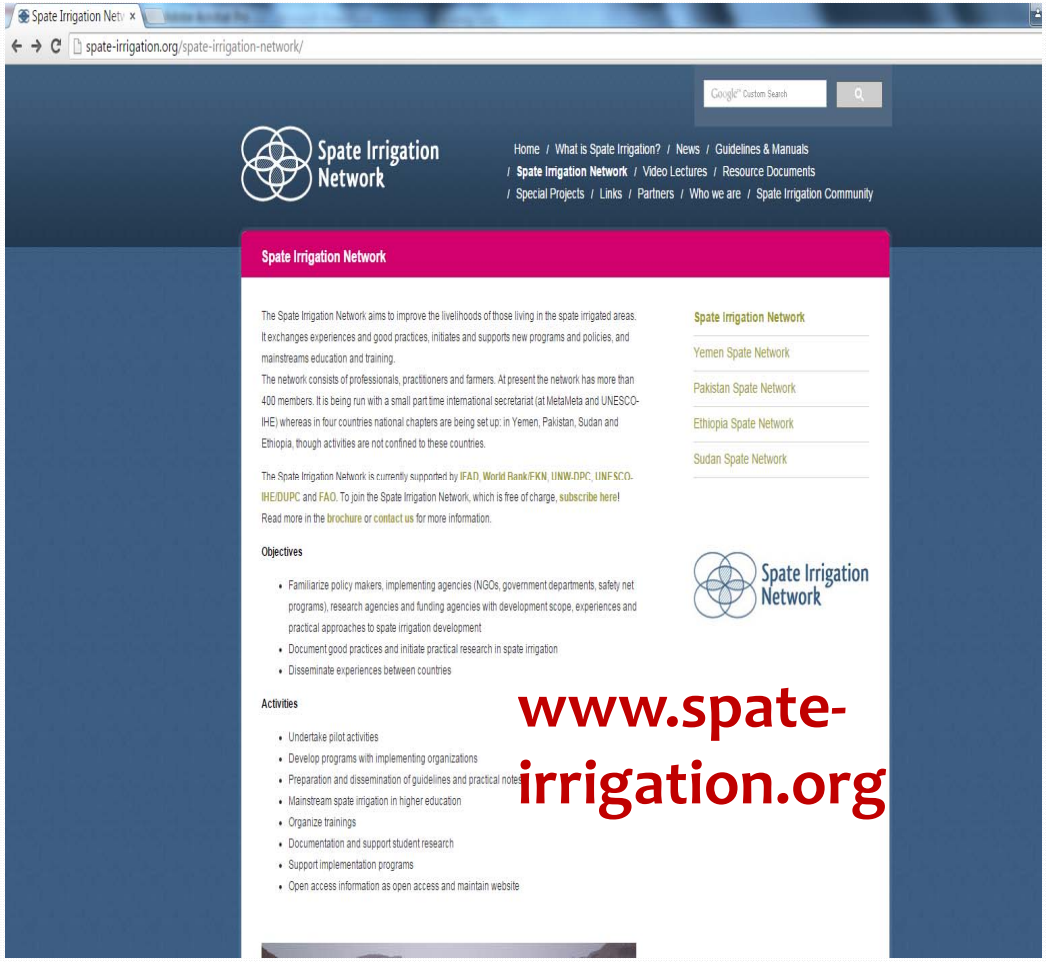
create platform for knowledge and experience sharing

Document bright spots – success stories

The Overarching approach

Working in partnership with varied stakeholders "Agents of Change"

Spate Irrigation Network Born in 2002



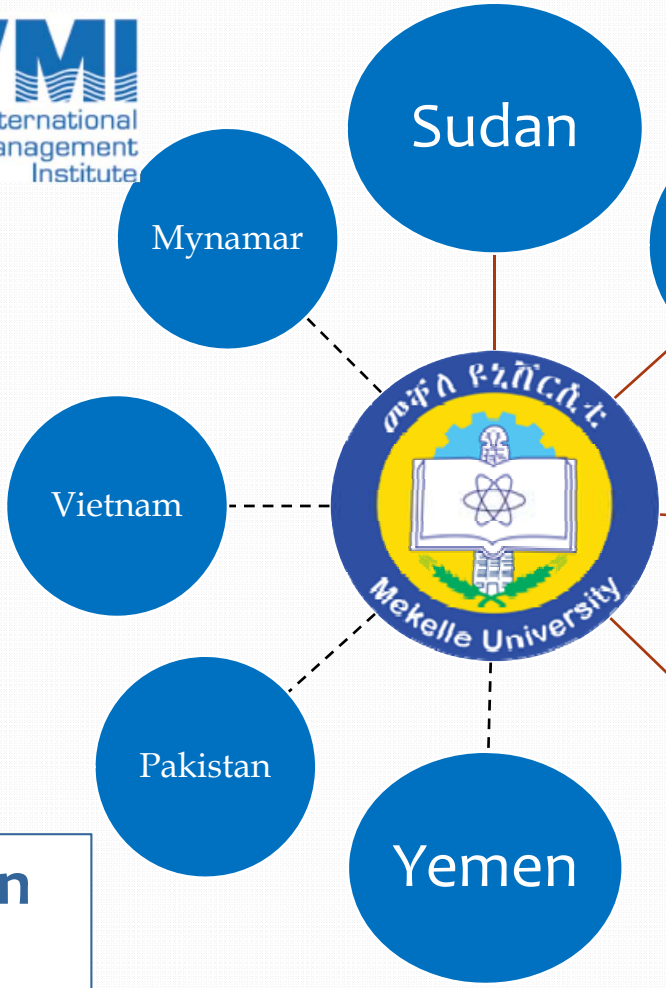
Familiarize policy makers, implementing agencies, research and educational institutions, donors with development scope, experiences & practical approaches to spate irrigation development

Was all about visibility

2. Establish country bases

3. Don't wait for invitations, show-up at major events with powerful messages!!

Mekelle University played key role form the very start



IWMI International Water Management Institute

UNESCO-IHE Institute for Water Education

CGIAR RESEARCH PROGRAM ON Water, Land and Ecosystems

META

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Spate Irrigation Network Foundation

IFAD Investing in rural people

Tigray region Instituions

Guguf spate irrigation scheme, Raya Valley

Rehabilitating/stabilizing eroded river beds, farmers-led designed check-dams

Sorghum yield: 5 ton/ha

FBFS are productive

First harvest :
4 ton/ha

Second harvest (ratoon):
2 ton/ha

Konso spate irrigation, SNNP

FBFS are productive – there are bright spots?

Chick pea yield:

- Rainfed: 0.4 to 0.6 ton/ha
- Conventional irrigation: 2- 5 ton/ha
- FBFS: up-to 3.5 ton/ha

Fogera Flood plain - Flood recession:
North West Ethiopia, East of Lake Tana

Phase I: 2007 to 2011

The Challenge

Where is the technical know-how to develop FBFS

Where are the credible technical references

The Approach

Solutions oriented scientific research

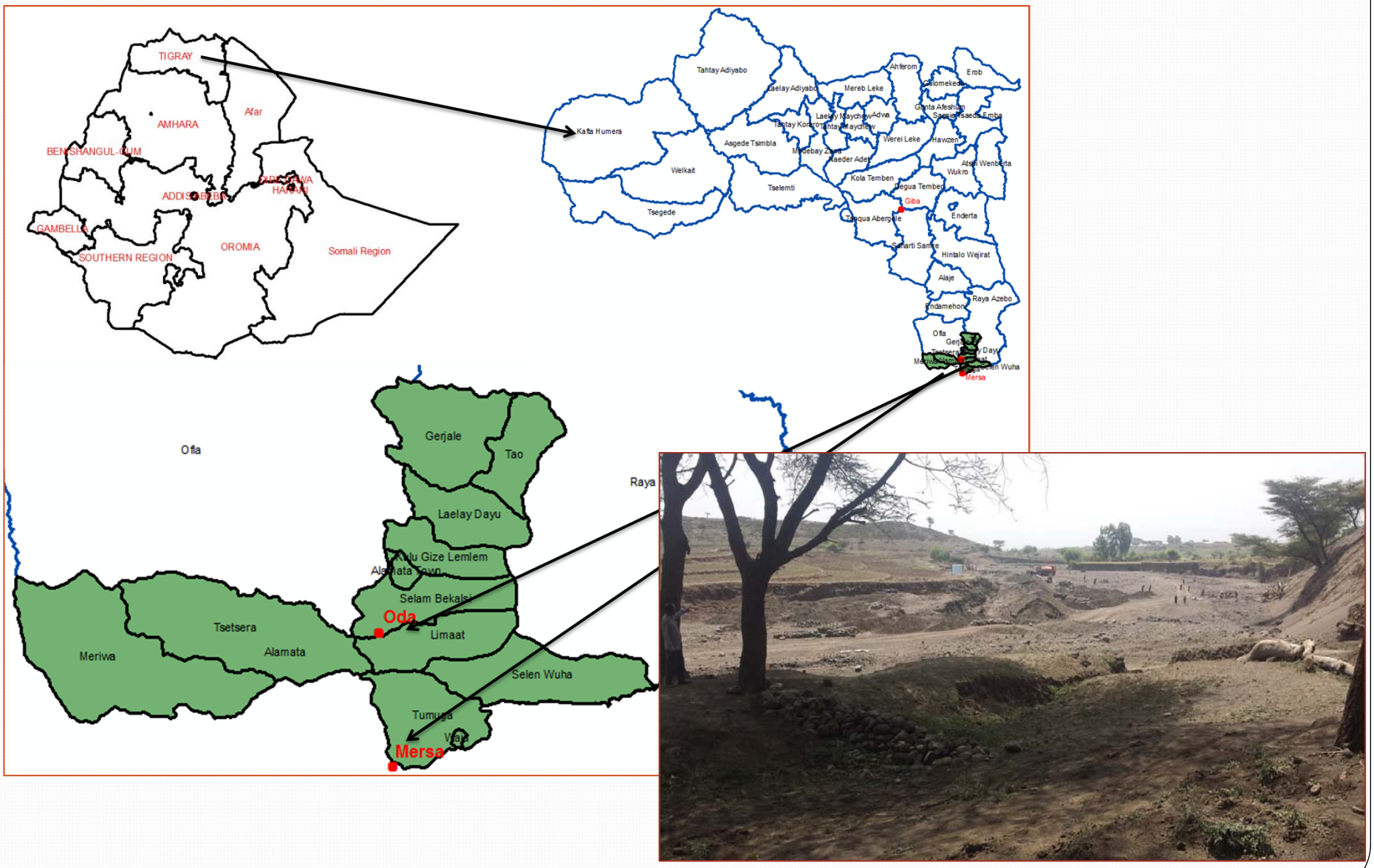
Institutionalizing Spate Irrigation

Creating platform for knowledge-sharing platforms

The Approach

Working in partnership with varied stakeholders "Agents of Change"

Innovation from Ethiopia: Hybrid Design

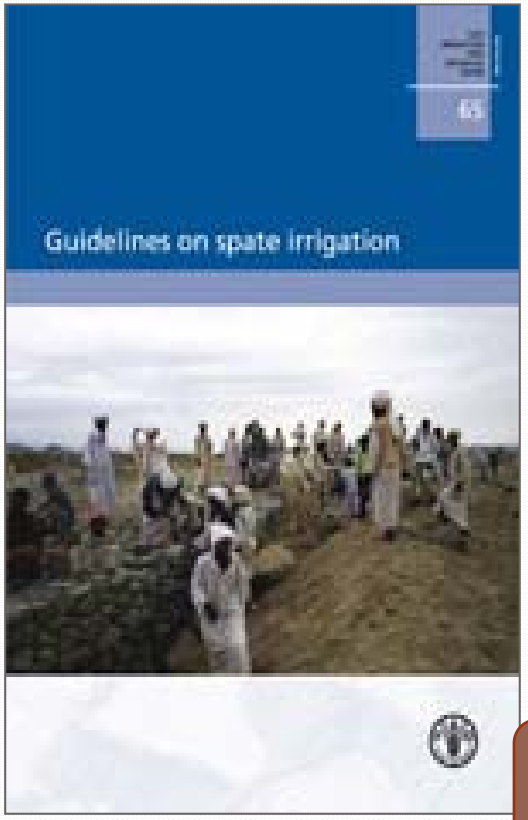


Innovation from Ethiopia: Hybrid Design

Traditional	Modern
Partially open – less liable to sedimentation as it avoids the full diversion of large floods	Diverts the designed (required) flood only
0.2 m high at the entrance and 0.6 m high at their ends - create small disturbance to the natural flow conditions	diversion ratio – 5 % at peak flood and 100 % when it recedes
Oriented at 135^0 or 45^0 diversion angle – helpful in fully diversion of the small floods	Made of Concrete +Masonry and has cutoff and apron structures, river protection structures

Innovations from Pakistan: Porous Spillway

Some achievements at Global, Regional Level



IFAD Large Grant:

Spate Irrigation for Rural Economic Growth and Poverty Alleviation: Ethiopia, Sudan, Yemen and Pakistan

Short course on Spate Irrigation at UNESCO-IHE, the Netherlands launched in 2009

Phase 3: 2011 to 2015

The Challenge

Embedding FBFS in national policy and strategy documents

Integrate FBFS into national curricula

Strengthened outreach to farmers

The Approach

Invest into local champions

Invest in strengthened country knowledge centers

Engage policy makers and farmers – communication toolkit

The Approach

Working in partnership with varied stakeholders "Agents of Change"

Stockholm 2012

Model Farmer from Ethiopia

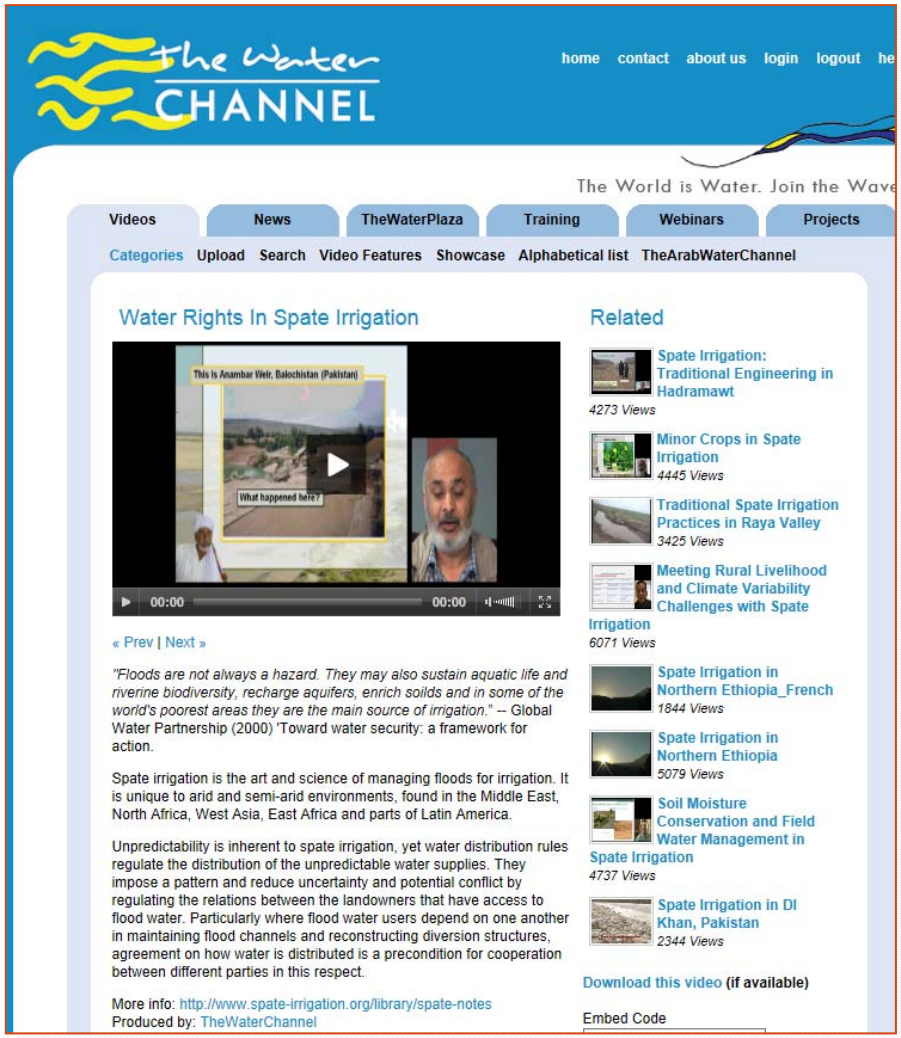
Model practitioner from Sudan

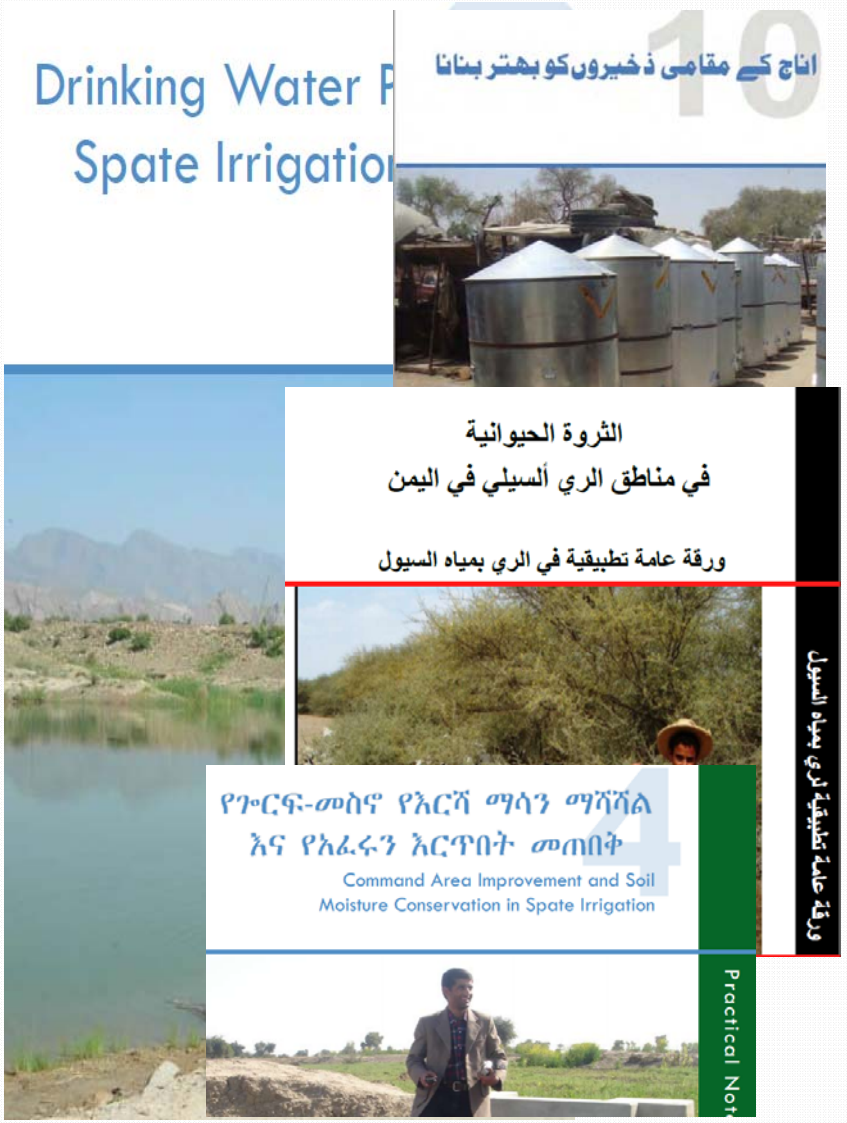
A Pro-poor local political leader (Pakistan)

Knowledge sharing among farmers and policy makers

2012: Sudan; 2013:Yemen

Knowledge products: Videos and brief notes in local languages





Regular Short-course on FBFS at Mekelle University

Regular Short Course
Sustainable Development of Flood-based Farming Systems
in Arid and Semi-arid Regions

Mekelle University, Ethiopia

Implementing Partner Institutions

Mekelle University | UNESCO-IHE Institute for Water Education | Spate Irrigation Network - Ethiopia | Meta Meta | GIZ International | International Fund for Agricultural Development

Regular Short Course
Sustainable Development of Flood-based Farming Systems
in Arid and Semi-arid Regions

Demand driven and relevant
This short course was initiated in 2013 in Mekelle following an extensive field research to the arid lowlands of Ethiopia in 2012. The varied stakeholders consulted justified the need for the short course as follows:

- Acute shortage of flood-based farming system (FBFS) designers, managers and researchers.
- Limited participatory planning, implementation and monitoring of FBFS.
- Lack of capacity in basin-wide approach for the development of FBFS

50 engineers and managers benefited from the August 2013 pilot course conducted by local and international experts. They appreciated the quality of content, delivery and organization of the modules including the interactive group discussions and content-rich field visits. They recommend that the course be offered on annual basis and up-scalled into regional (Africa) level.

Key learning objective
Produce professional leaders with a broader understanding of a participatory and river basin approach and specific skills to design and manage FBFS.

Course delivery
It follows practical approach where key experts present their case studies and share their best practices for extensive discussion with the participants. It is tailored at generating new ideas and practical dilemmas of a technical, economic, environmental, social and managerial nature.

Course duration
In 2014: 11 – 22 August

Registration fee
600 USD

Location
Mekelle University
PO Box 231, Mekelle
Tigray, Ethiopia

Course content – six modules with clear focus

MODULE 1	MODULE 2	MODULE 3	MODULE 4	MODULE 5	MODULE 6
Introduction to flood-based farming systems	**Participatory planning, implementation and monitoring**	**Land and water management**	**Participatory design**	**Watershed management**	**Field visit**
Gives comprehensive overview and clear-cut differences with conventional irrigation systems.	Provides concrete skills in Participatory Rural Appraisal (PRA), stakeholder analysis and triangulation techniques.	Focuses on command area development, water rights based on-farm water management, FBFS relevant soil moisture conservation practices and modeling tools.	Pinpointing key differences with conventional design concerning dependable flood analyses, intake and canal design, sediment management.	Gives the bigger picture - analyses the impact of different watershed management measures on the sustainability of FBFS and vice versa.	On-site in bright spots and failed systems, gain practical know-how through observation and discussion with real experts – farmers, site engineers, managers and extension workers.

Started in 2013 (35 participants)

2014 (47 participants)

In 2014 Participants came from Kenya, Sudan, Uganda, Somaliland

Water Harvesting Technologies & Potential Sites for Future Investments in Karamoja Region, Uganda

FBFS potential in Kenya: Mission by Mekelle University experts

13 sites visited and potential identified: 174 000 ha

Training delivered for 7 experts and more trainings are planned in Kenya and Ethiopia

Phase 4: 2015 … The Journey Ahead – new frontier with our partners

We are off he take-off appears to be good

2015 to 2016: Harnessing Floods for Enhanced Livelihood and ecosystem services

- From Scheme to landscape level
- Increasing agricultural production while safeguarding the health of the Environment

CGIAR Research Program on Water, Land and Ecosystems

Phase 4: 2015 … The Journey Ahead – new frontier with our partners

The take-off appears to be good

2015 to 2016: Harnessing Floods for Enhanced Livelihood and ecosystem services

- From Scheme to landscape level
- Increasing agricultural production while safeguarding the health of the Environment

CGIAR Research Program on Water, Land and Ecosystems

Phase 4: 2015 … The Journey Ahead – new frontier with our partners

2015 to 2019: From Africa to Asia & Back Again:

EC

Testing adaptation of FBFS

IFAD
Investing in rural people

Some concrete deliverables expected in the Tigray Region	
1.	Strengthening the MSc Programme in Integrated River Basin Management
2.	One new MSc Programme in Irrigation started-up
3.	One vocational training and two farmer learning schools strengthened
4.	Support to development of two investment programmes

Thank You