CASE STUDY: SHEEB FARMERS ASSOCIATION, ERITREA
SPATE IRRIGATION IN SHEEB, ERITREA

Introduced 80 years ago by Yemeni farmers
15-35 floods a year
3000 hectares
Highly productive sorghum cultivation (4 ton/ha)
Equal landownership
Strong traditional organization

Building the traditional diversion systems became difficult – hard to find brushwood for diversion structures
Sheeb-Abay main canal

Sheeb-Kethin main canal

‘JELWET’, TRADITIONAL MAIN FLOW DIVISION STRUCTURE
Strong traditional organization

Local leaders:
- ternafi (group)
- tehskil (subgroup)

Coordination between groups

Relatively egalitarian water distribution

Strong, positive link with government

Local Administration, North Red Sea Zoba

Ministry of Agriculture, North Red Sea Zoba

Ministry of Agriculture Sheeb sub-Zoba

Irrigation committee

Sheeb-kateen group

Left Bank group

Errem Group

Eid Abay group

Debret/Bises group

Emdena/Edeket group

32 Sub-group

21 Sub-groups

10 Sub-groups

8 Sub-groups

6 Sub-groups

937 Farmers

680 farmers

452 farmers

310 farmers

165 farmers

937 Farmers

680 farmers

452 farmers

310 farmers

165 farmers

Local leaders:
- ternafi (group)
- tehskil (subgroup)

Coordination between groups

Relatively egalitarian water distribution

Strong, positive link with government
Modernization of Wadi Laba and Mai Ule systems with IFAD-loan 1997-2006
Breaching bund – meant to break in very high floods and let water pass on downstream in river bed.

Wadi Laba River coming from highland, carries 15-35 floods in normal year.

Scour sluice – removes coarse sediment that accumulates in front of gates.

Weir to raise and divert water to gates.

Gates to sediment trap and left bank command area.
SEDIMENTATION POND

Sedimentation pond is supposed to trap coarse sediment and avoid this enters into the canals and field and cause these to rise too much and become difficult ‘to command’

However in Wadi Laba the pond does trap mainly fine sediment and not coarse gravel, because the sluice gate is operated well. This makes it difficult (and less necessary) to operate a bulldozer to clean it out.

Culvert to right bank takes off from the sedimentation pond
The command area works are meant to improve water distribution within the command area and fix flood channel bed levels. This is an innovative structure combining local knowledge with imported gabion techniques. In addition there is also large scope to improve the water distribution within the area.
In later stage of the project local leaders were involved in project management.

They were members of the Local Project Steering Committee.
Support was provided to establish Sheeb Farmers Association

- Based on traditional organization
- New:
  - Manage the headworks
  - Fee collection
- Formal constitution
- Election
- Training
  - Fee assessment
  - Use of bulldozers and frontloader
  - Design and operation of the system
  - Organisation
  - Computer skills
Executive Committee

Executive Committee
Members Sheeb
Farmers Association
Sheeb Farmers Association

Established January 2004

Executive Committee
- Chairperson
- Secretary
- Treasurer
- Four members
- Representatives of Kebabi Administration (invited)

Ternafi in each Parta (subcommand)
Teshkils (groups of 20 farm families)

Objective:
*to ensure the efficient operation and maintenance of the irrigation system, so that the members can make full use of the spate irrigation development*
Membership is increasing

- Compulsory
- Admission criteria
- Fee: 10 NfK
- Gone up from 2913 to 3607
Financial performance

- Annual fee increased to Nfk 500/ha all land (=40 USD/ha)
- Default is low: 8-11%
- Non-payment recouped next year (with fine)
Financial performance

- Fee collection system is well-organized

- Different source of income: annual fees, fines, penalties

![Graph showing financial performance comparison between 2004 and 2005.](image)
Financial performance

- Target collection from annual fees: Nfk 1431000 (USD 110,000)
- Expected from fines etc: Nfk 70000
- Costs annual routine maintenance: Nfk 1730000
- Costs (minus sedimentation pond): Nfk 1230000
Annual fee to be increased

- Annual fee now covers costs of routine maintenance
- Costs for replacement not included yet

However at 500 NfK annual fee is 2% of gross farm income

There is hence scope to increase the annual fee to cover replacement costs
Operational performance (1)

Apart from ELWDP works SFA also coordinates traditional maintenance
The monetary value is substantial (same order of magnitude as ELWDP works)
Operational performance (2)

- The SFA has also coordinated the several adjustments to the system to accommodate to the new situation (especially capturing the run-away water from the headworks)
- It has resolved the related water distribution problems
Adjustments to the modernized system

Agim to Sheeb Katin

Ide Abay Agim

Mai Ule Intake
Operational performance (3)

- It employs gate operators
- It has provided supervision and financial contribution to ELWDP maintenance
- In some areas it is still unfamiliar (for instance procurement of gabions)
- In some areas it is uncomfortable (gravel trap, culvert)
Organizational performance

- Recognized and appreciated
- Regular meetings
- Renumeration for staff
- Pro-poor initiatives (subsidiized land preparation)
- Records being kept