Pathways for irrigation development in Africa
Insights from Ethiopia, Morocco and Mozambique

Naomi Oates, Guy Jobbins, Beatrice Mosello and John Arnold

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Irrigation has played important role in contributing to increased agricultural production globally.

BUT slow progress in Africa

Need to learn from past failures & successes
Research objectives

History (40 years or so) of irrigation policy, practice and performance in:
  • Ethiopia
  • Morocco
  • Mozambique
  + case studies

Considering:
  • Changes in policy and drivers
  • Policy-practice-performance linkages
  • Factors contributing to success and failure
  • Emerging issues / future directions
Case study 1

Awash River Basin, Ethiopia
- Wonji Sugar Estate
- Melkayida WUA
- Genesis Farm
- Merti-Jeju Farm
- Fentale Project
(all upper-middle catchment)
Case Study 2

**Souss Massa Basin, Morocco**
- Issen Traditional
- Issen Modern
- Guerdane PPP

Map: FAO – AQUASTAT 2005
Case study 3

Chókwè irrigation scheme, Mozambique
(Limpopo river basin; Chókwè district, Gaza province)
Ethiopia & Mozambique share additional common features:
- Socialist period (~1970s): state farms, producers cooperatives
- PRSPs (2000s): initial focus smallholder, later agricultural commercialisation (with increased interest in irrigation)
- Green growth (2010s): role for irrigation in CC mitigation & adaptation

Timeline | Summary of key similarities
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1950s-60s | modernisation agenda, ‘big’ water investments, large centralised irrigation systems
~1970s | shift towards integrated rural development, farmer-manager systems, WUAs
1980s-90s | structural adjustment & neo-liberal policies, reduced role of the state, decentralisation, emphasis on private sector
Policy drivers

- Economic & social goals
- Agricultural & water policies
  - Irrigation policies

Drives:
- Political & ideological change
- Macro-economic conditions
- Donor/IFI agendas
- ‘Political projects’
- Climate & environment
Disentangling determinants of policy vs. practice is difficult:

- Policies have, in turn, been affected by irrigation practice & performance.
- Factors driving policy change can more directly shaped irrigation practice & performance e.g. donors.
- *Multiple* drivers operating at different scales / over different time periods (decision spaces).
- Policy and practice have essentially co-evolved e.g. Morocco.
Irrigation = multiple objectives, change over time, lack of robust M&E

How to compare performance of schemes?

Some broad aims:
• Increasing/stabilising agricultural production
• Efficient water use
• Sustainable management
• Poverty reduction & economic development
Performance 1

Raising / stabilising agricultural production

- Irrigation itself is just one dimension

- Numerous external conditioning factors (relating to wider agricultural system, land/water governance, institutions & incentives)

- Irrigated production can also be vulnerable to climate variability
Performance 2

Water use efficiency

- SW/canal irrigation dominant – often viewed as inefficient
- Morocco = push for pressurised systems
- BUT – other factors play a role e.g. crop choice, O&M, irrigated area
- Net reduction in water consumption?

Photo: Near East Foundation
Performance 3

Sustainability (O&M)

Lack of finance & human capacity remains a key challenge
- Private sector generally appears to do better

Political economy issues
- Bias towards high profile ‘modern’ investments
- Lack of attention to economics, technical difficulties underestimated & capacities overestimated
- Reluctance to acknowledge successes in SSI

Environmental challenges
Performance 4

Poverty reduction & economic growth

- Mixed results
- Trade-offs between objectives

More research needed on:
- Distribution of benefits from commercial irrigation (e.g. employment, tax revenue)
- Social equity / who benefits (e.g. land rights, elite capture)
Emerging issues, future directions
New build, rehabilitation or reform?

- Ethiopia & Mozambique: Untapped resources, but serious problems with O&M for existing schemes
- Morocco: Extensive GW & SW exploitation, water scarce & environmental constraints on the agenda
Responding to increasing water scarcity

- Growing demands & CC/variability
- Scheme-level interventions have their limits (think basin-level efficiency)
- Weak institutions, poor coordination an issue
- Better links needed between land & water governance
- Safeguards to protect access rights of communities
- Consideration of local water scarcity in land leasing
Is irrigation climate resilient?

Not necessarily! Morocco...

• Short-term versus long-term droughts

• Over-exploitation of water (common pool resource) = loss of strategic reserves

• Irrigation use/management based on average or normal conditions (water intensive crops) – high risk, high return – other options?
State versus private sector

Leave irrigation development & operation to the private sector?

- Growing FDI & local investors
- Experiments in PPPs

Effective governance & state regulation is still important!
(sustainability, equity, enabling role)
Questions for further discussion…

- Given limited state resources, where best are investments made?

- How to address farm, scheme and basin level water management (in light of growing water scarcity, trade-offs, equity issues)?

- When is irrigation climate resilient (more evidence needed)?

- Incentives for private sector investment in irrigation for food security & poverty reduction (as opposed to profit only)?

- What lessons can be learned from successful small-scale farmer initiatives, and how can these be supported or scaled-up?
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