



Food and Agriculture Organization  
of the United Nations



# TURNING PERFORMANCE ASSESSMENT INTO DEVELOPMENT PATHWAYS

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# OUTLINE



**RATIONAL OF RAP IN SCHEME DEVELOPMENT**

**CHALLENGES OF ASSESSING SMALL-SCALE SCHEMES**

**SELECTED IRRIGATION SCHEMES**

**RESULTS OF RAP ASSESSMENT**

**DEVELOPMENT PATHWAYS**

# RATIONAL OF RAP IN SCHEME DEVELOPMENT



- As the engine of overall economic growth, agriculture is the main driver of freshwater exploitation at 73 per cent globally
- Irrigation schemes are still underperforming and failing to provide flexible, reliable and equal water services
- Technical and management design needs review to reduce inefficiencies
- Systematic assessment is required to close the gap between conceptual frameworks and pragmatic approaches

# CHALLENGES OF ASSESSING SMALL-SCALE SCHEMES



- Creating efficient design in small-scale irrigation schemes (SSI) is constrained due to:
  - High degree of heterogeneity
  - Disparity amongst water users
  - Under-resourced farmers
  - Asymmetries in agricultural practices
- RAP is suitable tool to address these limitations and synthesize the development pathways for SSIs

# CHALLENGES OF ASSESSING SMALL-SCALE SCHEMES



- Application on different scale of schemes enabled by sequential approach
- Selection of SSI based on multiple criteria analysis, e.g. hydrological features, boundaries of competent authorities (hydraulic or administrative boundaries), size of scheme, farmers' influence on scheme management
- Non-probability sampling of interviewees based on their constraints to receive good water services (downstream location, topographical and structural disadvantages, social conflicts)
- Weights assigned to scoring of interviewees to compute final scores of indicators

# SELECTED IRRIGATION SCHEMES



- Four SSI pilot schemes selected with the same objective of “improving farmers’ livelihood through enhanced water use efficiency
- Two countries with transition economy (Tajikistan and Uzbekistan): irrigation modernization to reach food security, convert soviet-type schemes into ‘dekhan’ farming (family farming), increase energy efficiency of irrigation, quantify water resources, access export markets, privatization of agriculture and irrigation assets
- Two LCD countries (Burkina Faso and Uganda): smallholder dominance, centralized management, household production and consumption, low-value crops, local markets, shared assets

# SELECTED IRRIGATION SCHEMES



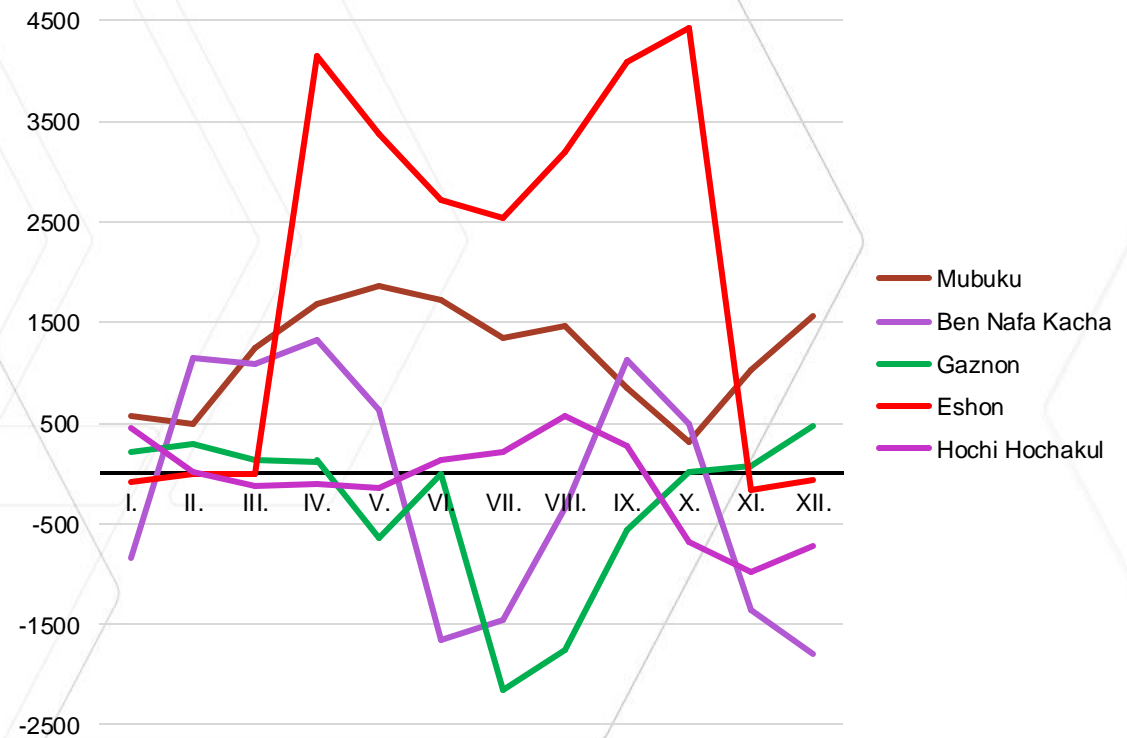
- Common consideration to overcome during the appraisal:
  - General data scarcity in SSI (climatic, agronomic, hydrological, asset etc.)
  - Declining system efficiency at tertiary and final delivery level due to responsibility transfer of O&M to farmers
  - Overlapping responsibilities over O&M
  - Lack of monitoring and evaluation systems (flow, asset, management etc.)
  - Responsible authorities (WUAs, WCAs, etc.) are based on administrative boundaries
  - Schemes under current structural transformation
- Quantitative analysis is not sufficient, qualitative analysis

# RESULTS OF RAP ASSESSMENT



- External indicators on irrigation efficiency reveal:
  - Schemes with significant water over-supply still suffer from temporal water shortage (management failure)
  - The majority of water loss occurs at farmers-operated levels
  - Methodology and data source are not in place to calculate crop water requirement
  - In lack of control devices, water is distributed in rigid rotation even in the most developed scheme

Water Balance per land unit in monthly step (m<sup>3</sup>/ha)





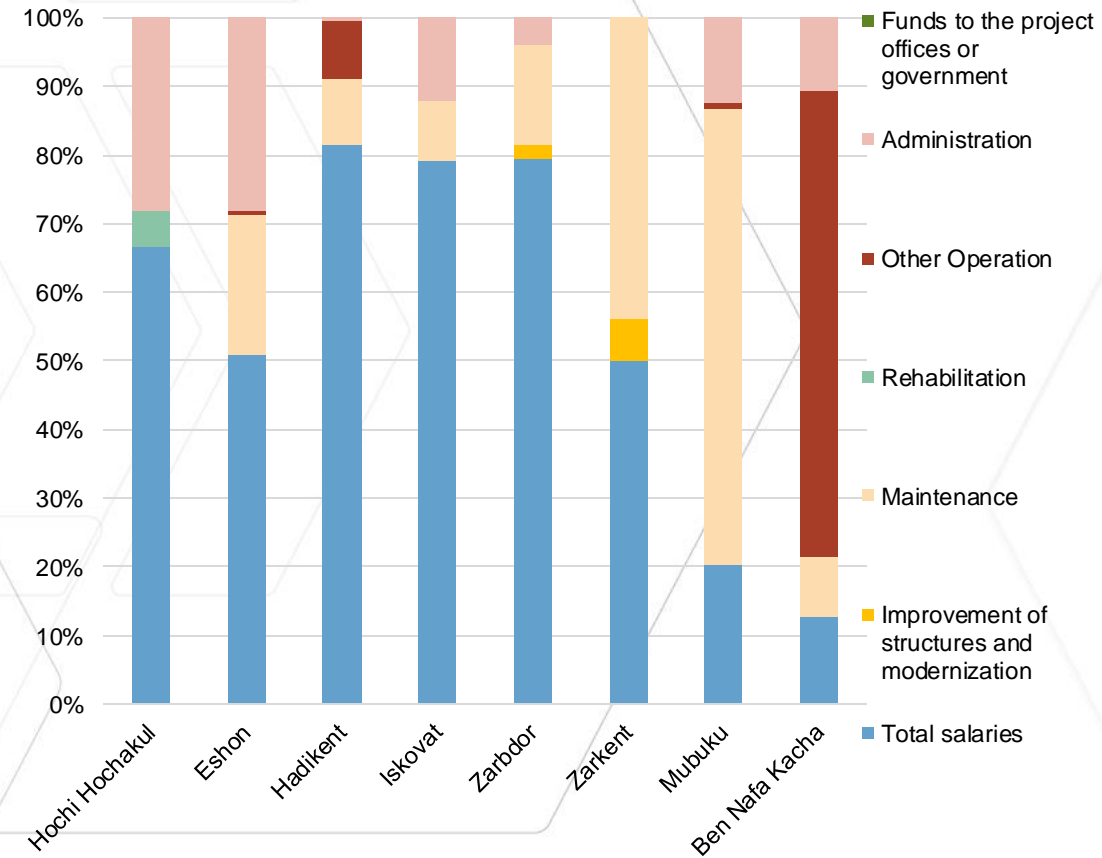
# RESULTS OF RAP ASSESSMENT



- Indicators on Institution and Organization reveal:

- Maintenance shares small amount from the total costs – except one case (Uganda)
- None of the WUAs achieves more than 90 percent fee-collection efficiency, but 2 of them has less than 50 percent
- None of the WUAs can finance meaningful rehabilitation or modernization without external fund
- Cost of salaries dominates in the budget

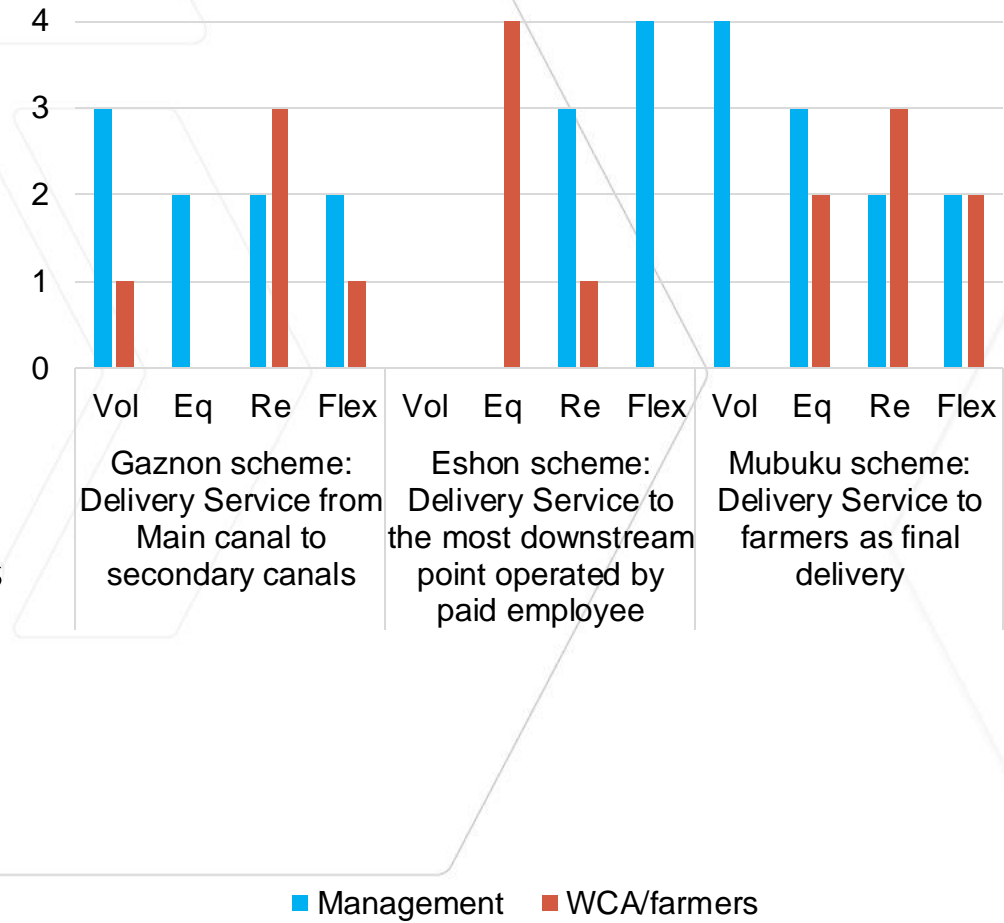
Budget composition of WUAs in irrigation schemes



# RESULTS OF RAP ASSESSMENT



- Internal indicators (measure of volume, equity, reliability, flexibility) on water delivery service reveal:
  - Significant discrepancies between performance assessment of management and end users
  - Based on aggregated scores, overall low performance according to end users (WUA, farmers)
  - Flexibility is the lowest scored indicator according to end users



# DEVELOPMENT PATHWAYS



- Agreeable irrigation management strategies arise from proper data acquisition (water, economic, social and environmental aspects)
- Water related institutions should be grounded in data-driven improvement
- Participatory Irrigation Management should be taken into account in performance assessment
- Farmers are responsible to reach full cost recovery
- Soft components of irrigation management are as effective means as infrastructural development
- Impact of equal access to water services is more likely poverty-reducing

# DEVELOPMENT PATHWAYS



- Re-visiting RAP provided successful piloting in several region
- Piloting proved that RAP is effective tool in different scales, including small-scale irrigation schemes
- Online tool to facilitate the access to and use of RAP
- Diversification of RAP to different types of irrigation system (pressurized)