



FAO | AgWA | OMVS

ROUNDTABLE

Dakar, 24-25 January 2017

Training need assessment

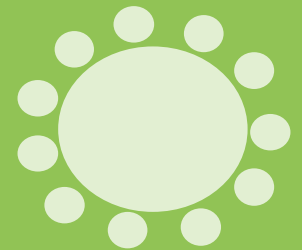


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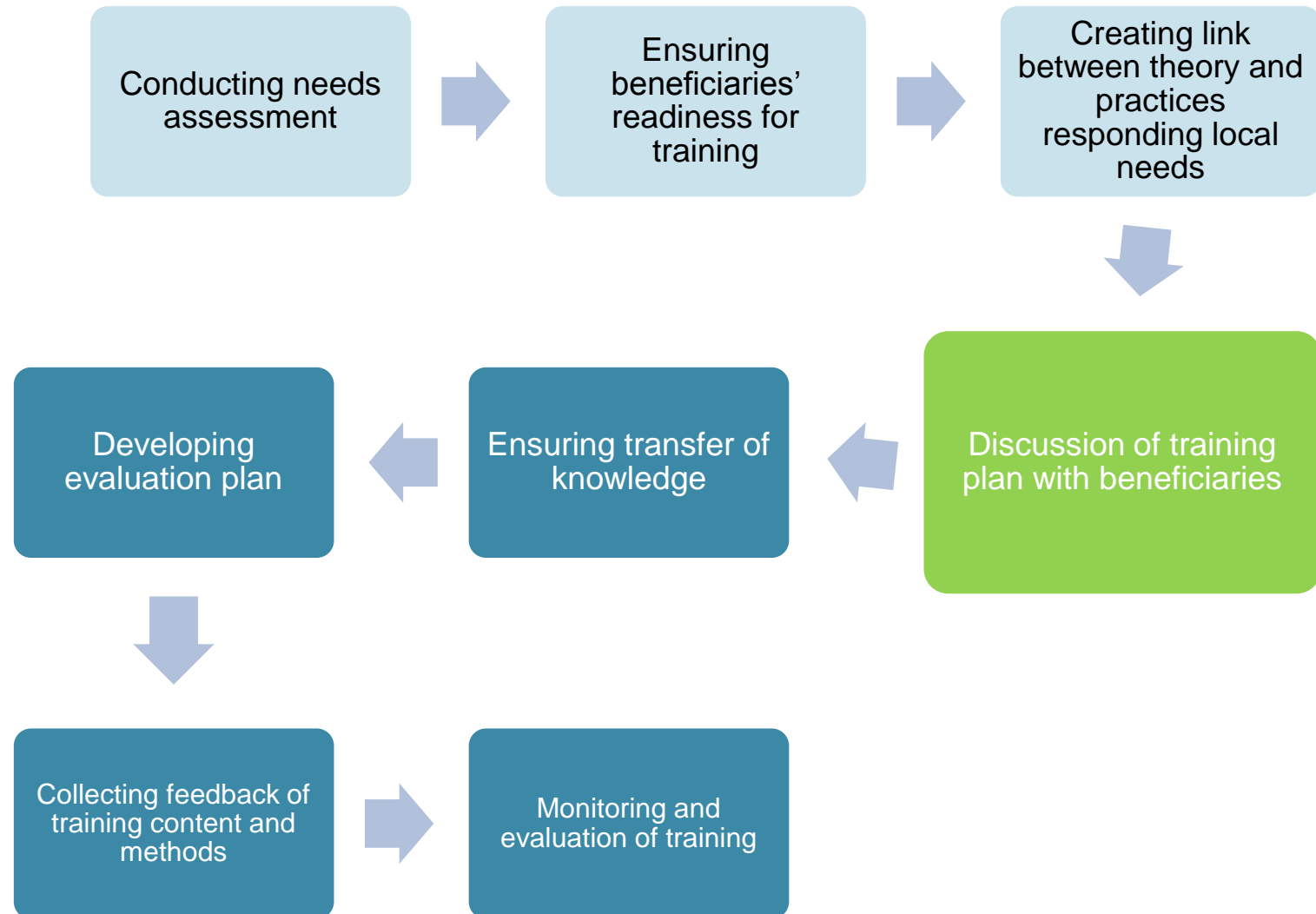
Training aims and objectives

- **Assure competences and efficiency** of common policy potentials in achieving water policy goals
- Identify the **pre-conditions** under which stakeholder structures and economic policy instruments deliver sustainable use resources and achieve efficient and equitable water supply





TRAINING NEEDS





TRAINING NEEDS

- A training on the operation and maintenance of the geo-referenced database for professionals, practitioners, and representative from OMVS

Training on
geo-referenced
database
management

Improved tools
for cross-
boundary
water
management

- Theories behind and implementation of improved tools for cross-country water management (hydro-economic modelling, trade-off, diagnosis, planning).

- A regional workshop on i) the results of the hydro-economic model, ii) the outputs from the application of DTI, iii) presentation of the trade-off assessment.

Regional
stakeholder
consultation
workshop

Diagnosis of
investment in
water for
agriculture and
energy

- Adaptation and use of DTI and its application to identify/prioritize common projects at basin level.





TRAINING NEEDS

Direct beneficiaries

- OMVS staff
- Ministry of Agriculture
- Ministry of Energy and Water Resources
- Ministry of Livestock and Fisheries
- Ministry of Agriculture
- Ministry of Fisheries and Maritime Economy
- Ministry of Livestock
- Ministry of Water and Sanitation
- Ministry of Petroleum, Energy and Mines
- Ministry of Agriculture
- Ministry of Energy and Water
- Ministry of Livestock and Fisheries
- Ministry of Agriculture
- Ministry of Energy and Water Resources
- Ministry of Fishing and Aquaculture
- National bodies



TRAINING ON GEO-REFERENCED DATABASE MANAGEMENT



Objectives

- Creating and maintaining geo-referenced database designs according to the main sectors in riparian countries
- Sharing ideas for creating common management scheme concerning the related investments in Senegal River basin
- Applying methodology to extract results from database to improve investment decision-making in the River basin





Skills to achieve

- Better insight of access to data
- Wider knowledge in numeracy, graphics, modern computationally intensive methods, and simulation
- Higher proficiency in data analysis
- Multipurpose application of datasets
- Wider knowledge about fundamental concepts of the theory of estimation and hypothesis testing
- Better understanding of efficiency of regional approached investments





Technical problems for data sharing:

- Old equipment
- Poor Internet connection
- Lack of technologies
- Lack of standards
- Lack of capacities

Institutional constraints on data sharing:

- **Lack of coordination**

What data is available?

Where is the data?

Who is going to collect what data?

Coordination within an institutes +
Coordination between institutes =
Saving time and money

- **Lack of confidence**

- Data ownership
- Data acknowledgment
- Data security
- Data cost

- **Data confidentiality**

- Land tenure data
- Tax sensitive data
- Military data
- Data on mining resources





1. TRAINING ON GEO-REFERENCED DATABASE MANAGEMENT

Lessons learnt

1. Research designs and data sources

Research question/hypothesis design

Types of data

Data collection in practice

Data generation process

Accuracy of data

Data categorization

Data storage and access

Missing data: estimation and benchmarking processes in parametric and non-parametric cases





1. TRAINING ON GEO-REFERENCED DATABASE MANAGEMENT

Lessons learnt

2. Different functional areas of management to database operation and maintenance

Differentiate responsibilities of technical and professional members

Required skill keys in river basin management

Planning and implementation

Operation and financial management

Monitoring

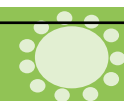
3. Maintenance of database

Data update and actualization, revising data

Responsibilities in data maintenance

Fitting new databases' characteristics

Actualization of stored information





1. TRAINING ON GEO-REFERENCED DATABASE MANAGEMENT

BENEFITS OF TRAINING	NATIONAL LEVEL	REGIONAL LEVEL
	1. More efficient use of water resources	1. Efficient cooperation amongst countries
	2. Limited risk in future investment	2. Trust building between countries
	3. Multiplication of shared knowledge	3. Assets efficient project implementations
	4. Understanding the national socio-economic tendencies	4. Unified methods for shared investments and services



IMPROVED TOOLS FOR CROSS- BOUNDARY WATER MANAGEMENT



Objectives

- Measurement and modelling of environmental-, water resources in River basin level
- Elaborating common River basin level water-management policy
- Providing common guidelines for environmental assessment and analysis
- Identifying upstream-downstream linkages in the Basin and other trade-off relationships





Skills to achieve

- Wider knowledge of benchmarking methods on available resources
- Ability to evaluate services in complex conditions
- Ability to compare efficiency of water-related activities
- Identifying the advantages of cooperative management
- Better knowledge of dynamic investment analysis





2. IMPROVED TOOLS FOR CROSS- BOUNDARY WATER MANAGEMENT

Lessons learnt

1. Microeconomic and welfare economics foundations

Theory of the consumer, producer

Economics of supply and cost

Economics of demand

Supply and demand: efficiency revisited

Welfare economics: consumer and producer surplus

Exercise: Investigate what can be done with a demand

2. Estimating water demands and costs

Supply vs demand approaches

Econometrics vs programming approaches

Estimating residential economic water demand

Estimating industrial economic water demand

Estimating agricultural economic water demand

Non-market valuation of environmental services

Exercise: econometric estimation of demand curve and econometric methods





2. IMPROVED TOOLS FOR CROSS- BOUNDARY WATER MANAGEMENT

Lessons learnt

3. Simulation-based and optimization-based hydro-economic modeling

Network representation of a water resources system

Rule-based **allocation**

Hedging rules for **reservoir operation**

Optimization and economics

Objective function feasible versus optimal solution

Introduction to linear programming

Introduction to dynamic programming

Practices/exercise

Analytical optimization and economic meaning of Lagrange multipliers

4. Environment and concept management of

Function of management

Various types of management theories

Functions, roles and skills of managers in national level





2. IMPROVED TOOLS FOR CROSS- BOUNDARY WATER MANAGEMENT

BENEFITS OF TRAINING	NATIONAL-LEVEL	REGIONAL-LEVEL
	1. Comparability of national resources	1. Cost-efficient investment potentials
	2. Potential breakouts of national economy	2. Transboundary cooperation on rural development, energy development and navigation
	3. Relevant regulations and clear legal circumstances	3. Harmonized policies at regional level
	4. Harmonized policies with environmental facilities	
	5. Revealing of absolute and comparative advantages of the country	
	6. Providing a unified framework to analyze water allocation at the basin level	



TRAINING ON DIAGNOSIS OF INVESTMENT IN WATER FOR AGRICULTURE AND ENERGY



Objectives

- Applying techniques and formulas to present the value of money in time and to create investment analysis dynamic.
- Evaluation of projects to analyze the economic profits or losses
- Avoiding economic losses of project investments
- Prioritize projects/interventions and support their feasibility preparation





Skills to achieve

- Ability for long-term planning
- Higher proficiency to fit projects and investment needs in regional tendencies
- Ability to represent project results
- Ability to identify risks
- Higher flexibility to manage projects





3. TRAINING ON DIAGNOSIS OF INVESTMENT IN WATER FOR AGRICULTURE AND ENERGY

Lessons learnt

1. Decision-making in time

Prioritization of investment

Representing investment analysis

Dynamic tools of investment: NPV, IRR, DPP, PI

Economics assessment tools for project planning

2. Scenario analysis

Optimistic and pessimistic scenarios of investment analysis

Occurrence of risk probability

Specific changes in investment

3. Risk management

Identification, analysis and coping or mitigation of uncertainty in investment

Minimizing risk with investment planning

Strategies to minimize losses of risks

Organization of management to avoid risk





3. TRAINING ON DIAGNOSIS OF INVESTMENT IN WATER FOR AGRICULTURE AND ENERGY

BENEFITS OF TRAINING

NATIONAL-LEVEL

1. Mobilize funding for prioritized interventions
2. Financial safety of investment
3. Higher responsibility of investment management
4. Confidence of investments

REGIONAL-LEVEL

1. Clear investment results without borders
2. Better regional break down of projects
3. Gross marginal costs of transboundary activities



REGIONAL STAKEHOLDER CONSULTATION WORKSHOP



4. REGIONAL STAKEHOLDER CONSULTATION WORKSHOP

Lessons learnt

1. Hydro-economic modelling result in common decision

Decision from several alternative

Examples of policy analysis using hydro-economic modelling

Inter-sectoral water allocation

Reservoir operation and reoperation

Water accounting

Water pricing

Benefit sharing

2. Planning at regional levels

Nature of planning in common decision

Planning steps/responsibilities

Decision from several alternatives





4. REGIONAL STAKEHOLDER CONSULTATION WORKSHOP

BENEFITS OF TRAINING

NATIONAL-LEVEL

1. Supporting the environment for leadership
2. Taking advantages of national human resources

REGIONAL-LEVEL

1. Balanced human resource use
2. Sustainable and long-term cooperation
3. Raising common interest instead of self interest



**THANK YOU FOR YOUR
ATTENTION!!**





Role of management and sustainable development:

- Possible common platforms to share ideas and knowledge of on-going and future river basin development
- Governance and its role in investment maintaining
- Challenges of partnerships in river basin development





Standardization of methods:

- Role of database standardization in basin-level cooperation
- Technical support for data storage and analysis

