

## Emerging practices from Agricultural Water Management in Africa and the Near East



### Thematic Workshop



Country experiences

# Water Use Efficiency Burkina Faso

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## Theme 2: Water Use Efficiency

### PRESENTATION OUTLINE

- Pilot scheme discription
- Project objectives
- Project components
- Lessons learned
- Challenges and improvement



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### PILOT AREA LOCATION



Ben Nafa Kacha Scheme:  
Area: 275 ha - 247 farmers  
Crops: maize, rice and onion  
Pumping station: 900 l/s  
Irrigation: furrow, Basin



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### OBJECTIVES – PILOT RELATED

#### Main Objective:

Improve the irrigation water use efficiency (WUE) in the Ben Nafa Kacha irrigation scheme in Sourou, Burkina Faso, and support the implementation of proposed improvement in operation and management of the irrigation system.

#### Specific Objectives:

- (i) reliable functioning of modules à masques along the main and secondary canals;
- (ii) efficient maintenance/contracts including energy; and
- (ii) better flexible water service.



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### PROJECT COMPONENTS – PILOT RELATED

- Assessment the structural condition and the operation of all “modules à masques” along the main and secondary canals as well as the condition of all canals;
  - Survey the status and operation of modules à masques and canals
  - Georeferenced database of all components of the irrigation system, including leaks, structural damage...
  - Topographical survey covering the main and secondary canals
  - Preparation of rehabilitation plan
- Evaluation of the accuracy of flow measurements by the “modules à masques” along the main and secondary canals;



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### PROJECT COMPONENTS – PILOT RELATED

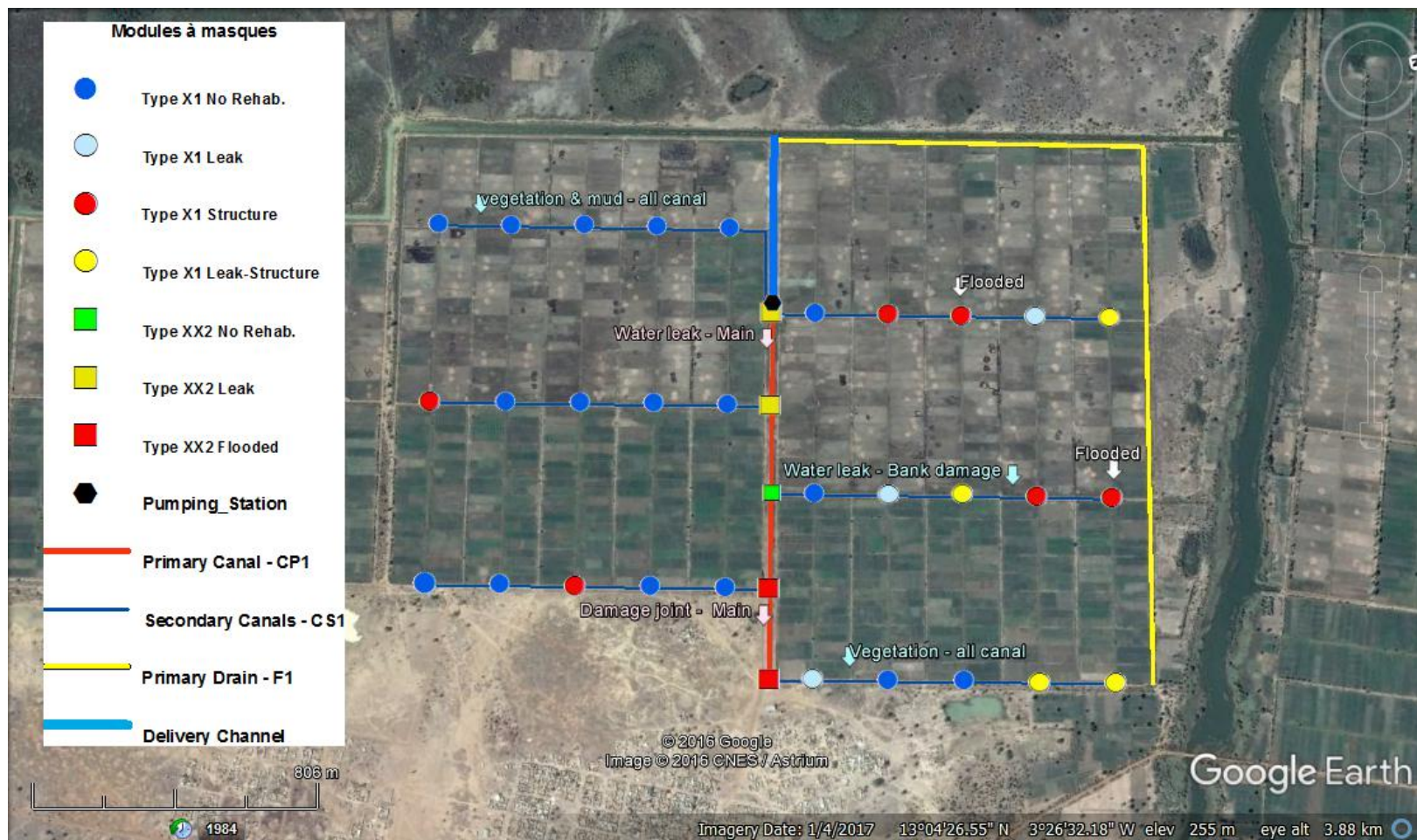
- Diagnostic analysis for cost reduction of O&M: contracts, management rules of O&M, enforcement in the field, accountability..... Validation of surveys with local managers;
  - Meetings and interviews with local WUA, managers, operators.
  - Meeting with local power company
  
- Diagnostic analysis of options to have an efficient and flexible water service in the scheme.





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### RESULTS IN FIGURES/FACTS





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### RESULTS IN FIGURES/FACTS

- Modules à masques
  - Leakage due to gates
  - Leakage due to damaged sealing







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### RESULTS IN FIGURES/FACTS

- Canals
  - Leakage from main canal due to damaged sealing;
  - Design flaws in two secondary canals (slope problem), which led farmers to modify modules and spillways;
  - Lack of canal maintenance.





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### RESULTS IN FIGURES/FACTS

- Operation and management
  - Considerable water wastage through drainage;
  - Pumping unused irrigation water;
  - Overflow of canals;
  - Unauthorized withdrawal of water from canals (syphoning);
  - Problems with frequent long-term power outages;
  - Lack of frequent canal maintenance.



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### EXPERIENCES AND LESSONS LEARNED

- Positive experience especially when it comes to interaction with WUA and system operators, and their willingness to improve operation and management;
- Initial design has a big impact on the operation and management. Therefore, it's imperative to involve the community in the design stage;
- The importance of water use measurement and recordings for better management;
- Absence of regulation within the scheme which causes low conveyance efficiency, lack of water flexibility and significant water losses downstream;
- The importance of capacity building to attain a better WUE.



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### CHALLENGES AND THE WAY TO IMPROVE

#### CHALLENGES

- Lack of accountability for managers, WUA and farmers
- Lack of managerial skills for WUA
- Inefficient water use by WUA and farmers

#### SCOPE FOR IMPROVEMENT

- Training managers and WUA operators for better water management and flow measurement.



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## Water Use Efficiency

### CHALLENGES AND THE WAY TO IMPROVE

#### CHALLENGES

- Design flaws that can't be corrected unless significant budget is available
- Lack of accountability for water use and water wastage.

#### SCOPE FOR IMPROVEMENT

- Implementation of a new management strategy in the secondary canals
- Involvement of the community and farmers for better WUE: arbitration for better water service and equity of distribution, raising awareness for water saving





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# Thank You

