AFRICA TO ASIA: TESTING ADAPTATION IN FLOOD-BASED RESOURCE MANAGEMENT PROJECT
CURRICULUM REVIEW AND IMPROVEMENT WORKSHOP
24 to 28 February, 2020; Wad Medani and Kassala, The Sudan
FBLN – Yemen Chapter Participation
Dr. sharafaddin Abdullah Ahmed Saleh (FBLN – Yemen – Team leader)
Spate Curriculum Should Answer the following questions:

1. What is the needs assessment for the spate curriculum at the national/local institutions
2. What topics, related to FBLS, are specific for the context in your country
3. What is already offered and where are gaps
4. What is the actual structure of the curriculum, including an example of the program/curricula developed for the specific country
5. How is evaluation/grading and marking taken care of
6. What is the pathway to continue the strengthening of the curricula
1. What is the needs assessment for the spate curriculum at the national/local institutions

Traditional and modern institutions

1. Management Arrangement

2. Water allocation

3. Flood protection

4. Wadi constraints and challenges consideration and solutions
Rules on large and small floods
قواعد على الفيضانات الكبيرة والصغيرة

Example Wadi Tuban:
مثال: وادي تبن

• When spate is small to upstream command area
عندما يكون السيل صغيرة لأعلى منطقة المشروع

• When spate is medium-sized to middle command area
عندما يكون السيل متوسط الحجم لمنطقة المشروع الوسطى

• When spate is large to either one of the tail command areas
عندما يكون السيل كبيرا لإحد أطراف منطقة المشروع

• When spate is very large to both tail command areas
عندما يكون السيل كبيرا جدا لكلا طرفي منطقة المشروع
Second Rule is the flow distribution according to nearest field and fields elevations by gated or un-gated field channel with different channel bed elevation.
The situation in Tihama Spate irrigation Systems
(Wadi Siham Bargugah diversion dam)
The situation in Tihama Spate irrigation Systems
(Wadi Rima Barga dam)
The situation in Tihama Spate irrigation Systems
(Wadi Mwor Bargugah diversion dam)
نموذج من الأعمال المنفذة من قبل جمعيات مستخدمي المياه
تصفية القناة من الترسبات والأشجار

Expample For participation Work of WUAs

Before

After

بعد التنفيذ

قبل التنفيذ
2. What topics, related to FBLS, are specific for the context in your country

1. Introduction

2. On farm water management structures and systems

3. Linkage between spate irrigation and natural resources management within a watershed

4. Basic Engineering

5. Watershed Protection

6. Supplementary Material (as needed)
Watershed Management Course

- Watershed management (WSM), spate irrigation systems - a detailed overview with focus on Yemen

Course Content

1. Introduction
   1.1 Typology of spate irrigation
   1.2 Spate Irrigation Global Trends
   1.3 Spate Irrigation in Yemen

2. On farm water management structures and systems
   2.1 Management of Spate Irrigation Systems (sharing management)
   2.3 Water Rights and Rules
   2.4 Adjusting Water Right
   2.5 Traditional and modern institutions
   2.6 Command Area Structure
   2.7 Soil Management and Moisture Conservation

3. Linkage between spate irrigation and natural resources management within a watershed
   3.1 Biodiversity and natural vegetation in spate areas
   3.2 Catchment degradation and sedimentation
   3.3 Wadi morphology and flood protection
   3.4 Groundwater recharge and management
   3.5 Upstream and downstream water use

- Exercise: concepts and practices for developing spate irrigation within a watershed
Watershed management (WSM), spate irrigation systems - a detailed overview with focus on Yemen (cont.)

4. Basic Engineering
4.1 Basic traditional and Modern Engineering
4.2 Basic Sediment Transport
4.3 Improved Traditional Engineering (traditional Eng. Yemen)
4.5 Case - Hadramawt Improved Traditional Engineering – structures
4.6 Drinking Water From Dry River MM

5. WATERSHED PROTECTION
5.1 New eight-tools for watershed protection
5.2 Wadi banks protection

6. SUPPLEMENTARY MATERIAL
6.1 Agronomy
6.1.1 Introduction Agronomy
6.1.2 Minor crops in Spate Irrigation with examples
6.1.3 Several crops planting practies
6.2 Participation
6.2.1 Participation in Structures Design and Water Management
6.2.2 Participation work in O&M of Spate systems
6.3 Women Rule
6.3.1 Women and their rule in Spate irrigation Management and planing
6.3.2 Women Participation in spate irrigation activities

6.4 Additional supplementary materials
Which can be insert in FLBS course as needed
6.4.1 Google Earth
6.4.2 Spate Irrigation Network
6.4.3 Field Image Survey
6.4.4 WEC_Small Dams Design (Gabion diversion dam)
6.4.5 Wadi management constraints

Total hour 25 - 30 hr, Lecturer: Dr. Sharafaddin A. Saleh and others
Structure hydraulic Course (BSc. Eng. Fucality)

1. Introduction
2. Irrigation channels
   2.1 Irrigation channels types
   2.2 Irrigation channels design
3. Diversion structures
   3.1 Diversion structures types
   3.2 Weir Design
4. Structures protection
   4.1 Scour (Erosion) protection
   4.2 Seepage protection
   4.3 Upleft pressure protection
5. Dams Engineering
   5.1 Dams types
   5.2 Dams O&M
   5.3 Dams design
   5.4 Dams EIA
6. Road drainage and water harvesting Structures.

Total hours: 16-20 hr, Lecturer: Dr. Sharafaddin A. Saleh and others
A. Irrigation Engineering MSc. (BSc. Eng. Fucality)

1. Surface irrigation methods
   1.1 Basin irrigation
   1.2 Border irrigation
   1.3 Furrow irrigation
   1.4 Flooding Irrigation

B. Start inserting spate in BSc. & Diploma in Agri. college courses

1. Traditional irrigation systems of their types, scale and design
2. Spate irrigation systems, design standards for switching barriers and the main sub-channel network
How is evaluation/grading and marking taken care of

• GRADE SUMMARY, PENALTIES AND CHANGES:
  • 15 % Mid term Exam
  • 10% Class Assignments, quizzes
  • 5% Attendance & Participation
  • 15% field work & applied project (Group work)
  • Total semester works 40%
  • Final Exam 60%
3. What is already offered and where are gaps

Stakeholder participation

Community Participation

Why Community Participation?

✓ **Efficient** - with the community’s help, essential information that may not be known otherwise is made available and important issues identified quickly – *(Local Knowledge)*

✓ **Financially beneficial** - costly mistakes and obstructions may be avoided

✓ **Interactive** - helps build up the community’s commitment to and continuing involvement with initiatives

✓ **Ethical** - in a world that calls for more justice and respect for human rights
What is the pathway to continue the strengthening of the curricula

- Making more practical material (Manual, practical guides, ……etc)
- Including alternatives and easy design for spate irrigation modern and traditional structures
- Inserting new programs as GIS and RS as skills part for the participants
- Inserting exchange experiences and knowledge locally, regionally, and globally
- Inserting field work and field visit as small project to show the participants the actual reality.
- Women and their role in Spate irrigation Management, planning and participation
Wadi Mwor Diversion structure
شكرا لحسن إستماعكم

Thank you for your Attention