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**SPATE IRRIGATION FOR RURAL ECONOMIC GROWTH AND
POVERTY ALLEVIATION**
STAKEHOLDER WORKSHOP TO
FORMULATE RESEARCH PROPOSALS

Final Report



29 JUNE, 2011
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BASIC DATA ON THE STAKEHOLDER WORKSHOP

Name

Stakeholder Workshop to Formulate Research Proposals for Spate Irrigation in Sudan

Implementing institutes

1. *Key Implementing Institute:*

- The Hydraulic Research Station, Wad Medani, Sudan

2. *Collaborating implementing Institutes:*

- Ministry of Irrigation and Water Resources (MoIWR), Khartoum, Sudan
- UNESCO-IHE Institute for Water Education, Delft, Netherlands
- MetaMeta, Denbosch, the Netherlands

3. *Funding organizations:*

- International Fund for Agricultural Development (IFAD)
- UNESCO-IHE Institute for Water Education

4. *Key contributing institutes:*

- GAS agricultural Scheme.
- Toker Delta Agricultural Scheme (TDAS),
- Khor Abu Habil Agricultural scheme
- University of Gezira
- Khartoum College of Technology
- Cotton Marketing Company
- Agricultural Research Cooperation
- Water User Association of GAS, Kassala
- Farmer's Union of TDAS, Toker
- Farmer's Union, GAS
- Groundwater Research, Kassala
- GASH river training unit, MoIWR

Stakeholders that participated in the Workshop

- GAS Agricultural scheme representatives
- TDAS Agricultural scheme representatives
- Khor Abu Habil Agricultural Scheme representatives
- State Ministry of Agricultural, Forestry and Irrigation representatives
- State Ministry of Animal Resources representative
- State Ministry of Development and Planning representative
- State Ministry of Finance representative
- Gezira university, Khartoum technical college
- Agricultural research cooperation, Headquarter and Kassala station
- Groundwater Research, Kassala
- GASH River training unit, Kassala
- Farmer's union representatives ,GAS Scheme
- Farmer's union representatives, TOKER Scheme
- GASH Sustainable livelihood regeneration project representatives, CPU, Kassala
- IFAD central coordination unit, Khartoum
- Legalization council representatives.
- UNESCO-IHE project coordinator

Location of the Stakeholder Workshop

- Kassala State, Kassala

Duration of the Stakeholder Workshop

- Start date: Sunday June 5, 2011
- End date: Monday June 6, 2011

Workshop Participants

- Total number of participants = 51
- Number of female Participants = 9

Annex 2 has the complete contact details of the participants

Workshop Facilitators

- Ms. Eiman Mohamed Fadul (Assistant Professor); Country Project team leader, Hydraulic Research Station, the Sudan
- Dr. Yassir Abbas Mohamed; Country Project Technical adviser, Hydraulic Research Station, the Sudan
- Dr. Ibrahim Ali Nour (formerly Abraham Mehari Haile); Project Director, UNESCO-IHE, the Netherlands

WORKSHOP OBJECTIVES AND EXPECTED OUTPUTS

Objectives

The main objectives of the stakeholder workshop were:

- Introducing the major activities and expected outputs of the project: *Spate Irrigation for Rural Growth and Poverty Alleviation* (SIRPA) to diverse stakeholder: policy makers, engineers, managers, practitioners, farmers;
- Discuss the main issues that distinguish spate irrigation system in Sudan for the other conventional irrigation systems with respect to hydrology, engineering, agronomy, field water management and soil moisture conservation, institutional aspects including organizational set up of water user Associations and socio-economic attributes.
- Define research areas through stakeholder consultation
- Establish contacts with relevant local institutions

Expected outputs

The tangible outputs anticipated at the end of the Stakeholder Workshop were:

- Better understanding of the major issues and problems that need to be addressed in spate irrigated agriculture in Sudan
- Well formulated research topics with clearly outlined key research questions
- Tentative selection of research sites and potential collaborating institutions

RECRUITMENT AND SELECTION OF PARTICIPANTS

51 participants were invited from various government and non-government ministries and institutions, universities and farmers' organizations. The criteria for selection of participants was to have a balanced representation of the spate irrigation community; this includes, Farmers, decision makers, planners, engineers, financing agencies, academic and research institutes.

IMPLEMENTATION OF THE STAKEHOLDER MEETING

Preparation

The organizing committee (Ms. Eiman Fadul, Dr. El Tigani Elnoor, Dr. Yasir Abbas, Eng. Hatim Eltoom, Mr. Ali Mohamed, Eng. Abdelnasir Osman, Mr. Eltereefy) started its preparations three months prior to the launching of the workshop. The major activities included:

- Formulation of guidelines for the content and format of papers;
- Reviewing of submitted papers and giving feedback to the respective authors;
- Maintain continuous contacts with the authors through e-mails and telephone to ensure timely submission of the papers in the required format and quality;
- invitation of stakeholders; decision makers, donors, Agriculture schemes representatives, WUA's representatives, farmers union representatives, academic institutes and research institutes;
- Organizing accommodation and local transport for all participants;
- Selection of the workshop venue - Kassala town was chosen owing to its close proximity to the Gash Spate Irrigation Scheme, one of the largest schemes in Sudan.

The support from local citizens and interested institutes from key implementing organizations was instrumental in accomplishing the above activities in a timely and orderly manner. The organizing committee very much appreciates such a valuable contribution (Dr. El tigani Elnoor from Water Management Research Institute-Gezira University, Mr. Ali Mohamed from Agriculture Research Cooperation, Kassala Office, Mr. Mujahid Okasha from Gash River training unit, Mr. Abdo Abbas from Gash Sustainable Livelihood Regeneration Project and his staff)

Execution

The two-day workshop was officially opened by the Minister of the Ministry of Agriculture and the State Minister of the Ministry of Irrigation and Water Resources. This was preceded with a detailed presentation by Ms. Eiman Mohamed Fadul, the Project country team leader that covered the background, objectives, activities and expected outputs of SIRPA Project.

Following this introductory session, sixteen papers were presented and debated. They collectively covered the main issues related to spate irrigation system in Sudan: Hydrology, Engineering aspects, river training, agronomy, water user association aspects, participatory

approach, groundwater vulnerability, mesquite control and management and experience from the different spate irrigation schemes in Sudan (TDAS, GAS and Abuhabil).

The underlying objectives of the two-day presentation-discussion sessions were:

- Providing the stakeholders with background information on the major issues and problems essential for formulation of applied research topics;
- Create a platform for all stakeholders to share their views on issues as varied as management, engineering, agronomy and institutional attributes. Farmers and water user association were given a special timeslot to share their practical experience, constraints and needs.

Expert meetings were conducted at the end of each of the two-day workshop with the objective of summarizing the key issues discussed and formulating and prioritizing research areas and topics. In the meetings, preliminary research questions and implementation methods were also outlined.

The wrap-up session was held in the afternoon of the second day. First, the session summarized all the major points raised during the presentations. Then, after an intensive discussion, the stakeholders agreed on the following main research areas and preliminary research questions.

1. River protection work and irrigation diversion
 - What is the optimal flood protection scenario?
 - What is the most feasible Early Flood Warning System (EFWS)?
 - How to maximize irrigation diversions?
 - What are the best alternative sediment management systems?
2. Field water distribution and management
 - What is the optimal irrigation distribution network?
 - Which on-farm water management structures and practices are locally suitable?
 - What are the most feasible and effective spate-special alternative soil moisture conservation practices?
3. Institutional setups
 - How can viable and sustainable WUAs be established?
 - What are the operation and maintenance roles and responsibilities at different levels?
4. Aquifer artificial (induced) recharge systems:
 - What are the types of aquifer in north Delta?
 - How can the recharge capacity in north Delta be quantified?
 - What are the suitable recharge techniques in north Delta?

It was agreed among the stakeholders that the first two researchers will be spear headed by the HRS, while the other two are to be open for competitive research grant amount to a total of 20,000 USD.

The follow-up

- A CD was prepared during the workshop with all the materials presented (papers and power-point slides) and distributed to the participants;
- A field visit to the Gash Agriculture Scheme (GAS) - spate flow intakes and field water distribution structures – along with some key workshop participants and GAS staff. There was a good spirited discussion and exchange of ideas and experiences among local and international participants. The main issues that emerged were: operation and maintenance, institutional and organizational matters as well as the problems with the design of the diversion and distribution structures;
- Extensive field trip to Tokar Delta Agricultural Scheme (TDAS) that combined a visit to the flood protection embankment and spate flow guide bunds on the one hand, and detailed discussion in the office with the TDAS staff on traditional and historical water sharing and land tenure systems. The major problems identified were the inadequacy and ineffectiveness of the field water distribution system and the lack of soil moisture conservation practices. The TDAS staff (Omer and Hassan) were exceptionally cooperative and offered MS. Eiman, the SIRPA country team leader all available project documents including a comprehensive background on the TDAS, historical flood data, a record on the agricultural inputs and outs;
- Most of participants (31 individuals) have become registered members of the Sudan Spate Irrigation Network (Sudan-SpN) and will be updated regularly of ongoing activities;
- Participants were invited to participate in documenting their experience in spate system through preparation of practical notes, overview papers and video clips.

ORGANIZATION AND LOGISTICS OF THE STAKE HOLDER MEETING

The Hydraulics Research Station (HRS) invited the project director as backstopping from UNESCO-IHE. The participation of the project director was a good opportunity to visit some of the potential implementing organizations such as Ministry of irrigation & water resources, Hydraulic Research Station, Tokar Irrigation Scheme, University of Gezira, Khartoum University and Sudan University of Science & Technology.

The ongoing IFAD project ‘Gash Sustainable Livelihood Regeneration Project’ located at Kassala was so much supportive to the success of the workshop through their active participation and supports through provision of a car for field trip and accommodation for some of participants. The Gash River Training Unit arranged a field visit to the Fota offtake at river Gash. The Kassala Agricultural research office was also supportive in facilitating the workshop implementation in Kassala and hotel & food arrangements.

CONCLUSIONS AND RECOMMENDATIONS

The stakeholder meeting was considered to be successful in meeting its objectives:

- The stakeholders were well acquainted with the SIRPA project. The attendance of the Decision makers who will help later in the implementation of the project recommendations and outputs was valuable as there were agreements in the importance of the project and its activities especially with regard to spate irrigation policy that are officially endorsed and set priorities.
- The meeting had attracted the participants to attend fully the two days. Discussion among the participants was very interesting and with participants bringing in a large range of knowledge from experience. Participation of other Spate Agriculture schemes such as TDAS and Khour Abu Habil Agricultural scheme attracted the attention of participants from GAS Agricultural scheme to exchange their experience and much encouragement advises were exchanged. The participation by the farmers and WUAs was imperative and influential as it shaped the discussion into what are the real problems faced by the small-holder rural poor spate irrigation communities in Sudan.
- The stakeholders agreed on four priority research areas and preliminary research questions as well as on their mode of implementation. HRS has already started formulating concept notes for the two research areas it is primarily responsible to: River Training and Diversion Works; and Field Water Distribution and Management. An open call for proposals has already been disseminated for the other two research areas: Institutional Set-ups and Artificial Aquifer Recharge;
- A complete data base of all stakeholders has been established – they have become registered members of the Sudan-SpN.

The Sudan spate network was introduced and many participants were interested to join and share their experience and knowledge with other global spate network partners.

ANNEX I RESULTS-BASED FINANCIAL REPORT FOR THE STAKEHOLDER WORKSHOP

Item 2.5*	Description	Cost (SDG)	Remarks
2.5.1	DSA& transportation for participants	21122	
2.5.2	Food & Refreshments	6150	
2.5.3	Video production	215	
2.5.4	Video documentation	300	
2.5.5	Workshop preparation & execution	5714	
2.5.6	Logistics	1347.5	Fuel, Posters, Stationeries, CD,'s Printing, Telephone bills
2.5.7	venue rent	800	
2.5.8	Accommodation for participants	1010	
2.5.9**	Transport for project staff	6000	In kind support paid by MoIWR
Total Cost (SDG)		36658.5	Excluding in kind support

**These item numbers are used because in the 2011 Work Plan of the Project: Spate Irrigation for Rural Growth and Poverty Alleviation (SIRPA), "2.5" is the item number for the activity: Stakeholder Workshop.*

*** In kind support paid by the Ministry of Irrigation and Water Resources*

ANNEX 2 PARTICIPANT CONTACT DETAILS FOR THE STAKEHOLDER WORKSHOP

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36	Haidar Awad Makki	GAS Agricultural scheme, Irrigation& operation	Irrigation Engineer,	9182645360	
37	Abdul Hamid Sheikh Ali Dicna	Tokar Delta Farmers' Union	Farmer	901189680	
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40	Omar Mohamed Adam Hussein	Kassala Block Inspection	President of WUA -Kassala	915741386	
41	Bakash Ahmed Bakash	Vice President	North Delta	911755726	
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43	Idress Ali Gism Allah	Development Inspector, Kassala	Department of Development and Planning Kassala	910298780	idressali44@yahoo.com
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ANNEX 3: PROGRAM SCHEDULE

MINISTRY OF IRRIGATION & WATER RESOURCES
HYDRAULIC RESEARCH STATION
SPATE IRRIGATION FOR RURAL GROWTH & POVERTY ALLEVIATION
INCEPTION WORKSHOP,
5-6TH JUNE, 2011, KASSALA-SUDAN

Day 1: 5th June, 2011

Time	Topic	Presenter	Chair P./Rep.
	Session 1		
08:30-09:00	Registration	Eng.Abdelnasir Osman	Facilitator: Dr. Yassir Abbas
09:00-09:30	Introduction to the project " Spate Irrigation for poverty Alleviation"	Eng.Eiman Fadul	
09:30-09:45	Welcome remarks: MoIWR, state Minister	Dr. Salah Yousif	
09:45-10:00	Official opening of the workshop: KASSALA State Governor	State Governor	
10:00-10:30	Breakfast/Coffee break		
	Session 2		
11:00-11:30	Overview of Spate Irrigation in Sudan and World	Dr. Abraham Mehari Hali	Chair: Eng. Adam Abaker Rap: Dr. Ali Eltieb
11:30-12:00	Hydrology of ephemeral rivers: Gash River Case	Eng. Widad Mutwakil	
12:00-12:30	River training & Flood Diversion Structures in Spate System	Eng. A.Azim Suliman	
12:30-13:00	Operation and maintenance in spate systems:GAS Case	Prof. Abbas Abdalla	
13:00-13:30	Discussion		
	Session 3		
14:30-15:00	Water management experience in Abu Habil Irrigation scheme	Eng. Ahmed Adam Omer	/Abdelazim
15:00-15:30	Prospective of Water Management in Spate Irrigation Schemes: GAS experience	Eng. Reham Banaga	
15:30-16:00	Water management experience in Toker Irrigation scheme	Mr. Omer Ali	
16:00-16:30	Field water management and soil moisture conservation	Prof .Elnaseeh	
16:30-17:00	Discussion		

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5-6TH JUNE, 2011, KASSALA-SUDAN

Day 2: 6th June, 2011

Time	Topic	Presenter	Chair P./Rep.
	Session 1		
08:30-09:00	Agronomy & Livestock in spate system: GASH	Mr. Abd Elhakeem Ahmed	Chair: Dr.Abraham Mehari Rap: Eng.Eiman Fadul
9:00-09:30	Farmer's Participation and Water User Associations	Dr. Eltigani Elnour Bashir	
09:30-10:00	Water User Association & policy Issues	Mr. Abdo Abbas	
10.30-11:00	Socio-economic aspects in GASH irrigation scheme	Ms. Hanan Salih	
11:00-11:30	Discussion		
11:30-12:00	Breakfast/Coffee Break		
	Session 2		
12.00-12:30	Prospective of Ground water management: Gash case	Eng. Moh.Abdelhai	Chair: Mr.Abdo Elrafeeg Rap: Dr.Eltigani
12:30-13:00	Weed Control in Gash irrigation scheme: Proposal	Moawia Abdel Fattah	
13:00-13:30	Mesquite management in GAS	Dr. Ali Elteib/Mr.Abdelgadir Haj Ali	
13:30-13:40	Experience of Gash Water User Association	Mohamed Isa-GAS	
13:40-13:50	Experience of AbuHabil water User Association	A.Rahim Adam-AbuHabil	
13:50-14:00	Experience of Tokar water User Association	A.Hamid Elsheikh -Toker	
14:00-14:30	Discussion & Wrap-up session: high lights and discussion of key issues	Dr.Yasir Abbas	
14:30-15:30	Lunch		
15:30-18:30	Filed Visit (Optional)		