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WATDEV

Climate Smart WATer Management and Sustainable DEVelopment for Food and Agriculture in East Africa

National Research Council of Italy

Suomen ympäristökeskus
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Finnish Environment Institute

ISRIC World Soil Information

ASARECA Transforming Agriculture for Improved Livelihoods

Water & Land Resource Centre
Addis Ababa University

KALRO

Heliopolis University for Sustainable Development

www.watdev.eu
info@watdev.eu

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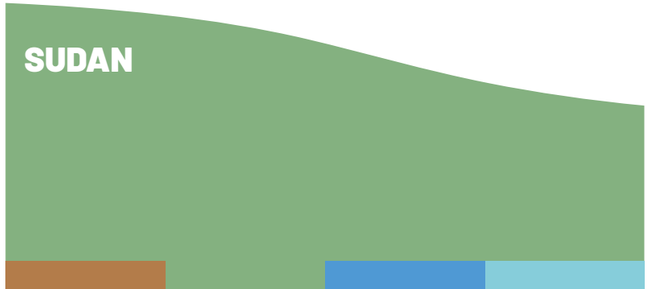
Climate Smart WATer Management and Sustainable DEVelopment for Food and Agriculture in East Africa

From the Selection of the Best Management Practices to the Identification of Scenarios

Stakeholder Forum 2024, CIHEAM Bari



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Coordination and Management:

Alberto TARANTINO (*AICS Cairo*)

Claudio BOGLIOTTI; Gaetano LADISA; Silvia LECCI (*CIHEAM Bari*)

Edited by:

Gaetano LADISA; Silvia LECCI (*CIHEAM Bari)*

Contributors in alphabetic order:

Blaise AMONY, Moses ODEKE (*ASARECA*)

Gamaleldin ABDO, Ahmed ELSHAIKH, Mohamed Abdin SALIH (*WRC*)

Aymen SAWASSI, Si Mokrane SIAD (*CIHEAM Bari*)

Raffaella BALLESTRINI, Alice CALVO, Mauro CENTRITTO, Fabiano SILLO (*CNR*)

Jantiene BAARTMAN, Luuk FLESKENS, Joao CARVALHO NUNES, Bai ZHANGUO (*ISRIC*)

Janne JUNTUNEN, Marketta JUPPI, Nasim FAZEL MODARES (*SYKE*)

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International Soil Reference and Information Centre (*ISRIC*), The Netherlands

Association for Strengthening Agricultural Research in Eastern and Central Africa (*ASARECA*), Uganda

Water and Land Resources Centre (*WRLC*), University of Addis Ababa, Ethiopia

Heliopolis University (*HU*), Egypt

Water Research Centre (*WRC*), University of Khartoum, Sudan

Kenya Agricultural & Livestock Research Organization (*KALRO*), Kenya

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Pagg. 12, 14, 32 WRC

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Mara Beccafarri (Laboratoriorosso)

Editorial management by:

Ernesto Pagano (Laboratoriorosso)

Printed by:

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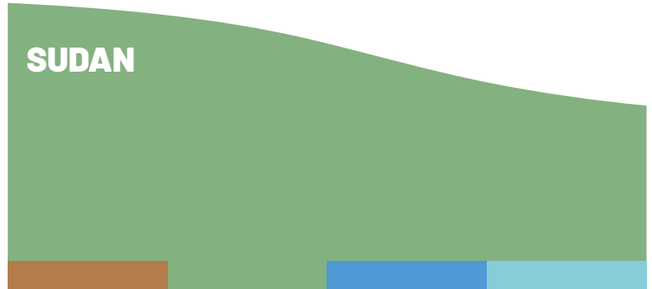

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1.

WHAT IS THE PROJECT WATDEV ABOUT?

The project WATDEV - Climate Smart WATer Management and Sustainable DEVelopment for Food and Agriculture in East Africa and Egypt is funded by the DeSIRA Initiative of the European Union and aims to increase the sustainability of agricultural water management and resilience of agroecosystems to climate change in East Africa, more particularly in Egypt, Ethiopia, Kenya, and Sudan, all of which score poorly on the Human Development Index and where the scarcity or limited availability of water resources and climate conditions are severely compromising agricultural production and food security.

SPECIFIC OBJECTIVES:

National Ministries and Research Institutions will be able to improve their knowledge and management of water in agriculture.

Farmers and local actors will gain new skills in innovative and sustainable solutions for water management.

EXPECTED RESULTS:

1. Identify the best fitting Best Management Practices (BMPs) and Innovations in project countries,
2. Enhance the implementation of BMPs/innovations in study areas,
3. Perform the BMPs /Innovations upscale and out-scale scenarios,
4. A modeling toolbox available for Researchers and Institutions,
5. Strengthened knowledge and capacity building and established regional "Water Knowledge Hub".

2.
THE PARTNERSHIP

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ITALIAN AGENCY FOR DEVELOPMENT COOPERATION

CIHEAM BARI

The Italian Agency for the Development Cooperation (AICS) is the Executive Body and assures the overall project coordination and monitoring. The **International Centre for Advanced Mediterranean Agronomic Studies - Institute of Bari (CIHEAM Bari)** is the technical and scientific project lead partner.

The partners are:

National Research Council of Italy

CNR-IPSP
The National Council for Scientific Research, Institute for Sustainable Plant Protection *(Italy).*

Suomen ympäristökeskus
Finlands miljöcentral
Finnish Environment Institute

SYKE
Finnish Environment Institute *(Finland).*

ISRIC World Soil Information

ISRIC
International Soil Reference and Information Centre, independent research foundation *(The Netherlands).*

ASARECA
Transforming Agriculture for Improved Livelihoods

ASARECA
Association for Strengthening Agricultural Research in Eastern and Central Africa *(Uganda).*

WATER & LAND RESOURCE CENTRE
Water & Land Resource Centre
Addis Ababa University

WLRC
Water and Land Resources Center *(Ethiopia).*

جامعة هليوبوليس للتنمية المستدامة
Heliopolis University for Sustainable Development

HU
Heliopolis University *(Egypt).*

WRC
Water Research Centre *(Sudan).*

KALRO

KALRO
Kenya Agricultural & Livestock Research Organization *(Kenya).*

3.
THE STAKEHOLDER FORUM OF WATDEV

MAIN FUNCTIONS AND OBJECTIVE

The main function of the Stakeholder Forum is to give recommendations and inputs to the WATDEV project regarding the work plan and relations with beneficiaries, local actors, and communities. The Stakeholder Forum could be invited to participate in project events when needed in Kenya, Sudan, Ethiopia, Egypt, or other countries.

DUTIES AND RESPONSIBILITIES OF THE STAKEHOLDER FORUM

Take stock of activities carried out during the project

Provide recommendations for further actions

Facilitate the dialogue with representatives of a wider range of actors, including local communities, extension services, local and national decision-makers, the private sector, and the research and academia

Ensuring project adherence to local communities' needs and national priorities

COMPOSITION OF THE STAKEHOLDER FORUM

The Stakeholder Forum is composed of **twenty members (five members from each country)** coming from **Kenya, Sudan, Ethiopia,** and **Egypt**. The Members are from the following stakeholder categories:

Policy and decision-makers in the fields of agriculture and management of natural resources with a major focus on agriculture water and land management. For this purpose, a representative of governmental authorities within the territory of the Study sites will be highly recommended to be part of the Stakeholder Forum

The private sector active in the field of agriculture, natural resource management, water management, soil degradation, ecosystem management, agricultural inputs, and agricultural equipment

Representatives of farmer organizations, land users, or community leaders

Representatives of the scientific, academic, and technical communities in Kenya, Sudan, Ethiopia, and Egypt.

4.
THE MULTI-ACTOR REGIONAL MEETING

Nairobi, March 8, 2023

On March 8th, 2022, the 1st Stakeholder Forum of the WATDEV project took place in Nairobi. High-level representatives of the Republic of Kenya's Ministry of Agriculture, project partners, and Stakeholder Forum members gathered to review the community's needs and the communities' ability to work together in the four different study areas. Stakeholder Forum members and project partners were then divided into working groups. They selected the best agricultural management practices for each country, to address the specific needs raised by rural communities to support a sustainable and efficient use of water in agriculture and resilient agroecosystems. They also identified the implementation sites where the selected practices will be studied and applied.

The agricultural Best Management Practices (BMPs) validated by the Stakeholder Forum in Sudan are displayed in the table below.

IMPROVED SEEDS

As a best management practice, using improved seeds is crucial for achieving higher yields, disease resistance, drought tolerance, or improved quality.

WATER USERS' ASSOCIATION

Water Users' Associations (WUA) bring individuals and organizations together to ensure equitable water allocation, conservation, and sustainable water management practices.

Moreover, the stakeholders subdivided by country identified the specific areas where the selected BMPs/innovations should be implemented.

The area where the BMPs and Innovation will be simulated and implemented in Sudan is:
The Gezira Irrigation Scheme

5.

Study area

GEZIRA IRRIGATION SCHEME

CLIMATE

The Gezira Scheme is located within a semi-arid agro-climatic zone between the Blue Nile and the White Nile Rivers. The climate has low annual rainfall (200-300 mm) and high rainfall variability. Temperature ranges from 33°C in January to 41-42°C in April/May, with low humidity (50% from October-June).

LAND USE

Covering 880,000 hectares, it's a major source of foreign currency (cotton) and food security (wheat, sorghum, vegetables) for Sudan. Producing 50% of domestic crop output and exports, it supports 1.5 million livelihoods and employs 713,000 people.

MAIN CHALLENGES

The scheme is subject to irrigation infrastructure decay, inefficient water distribution, and untreated agricultural drainage impacting water quality.
Institutional weakness and political instability hinder governance.

OPPORTUNITIES

The area is accessible and well connected to main cities and airport. It also serves as a buffer zone for dam siltation.
Opportunities exist for productivity enhancement via irrigation efficiency, crop diversification, institutional development, research, and extension programs.

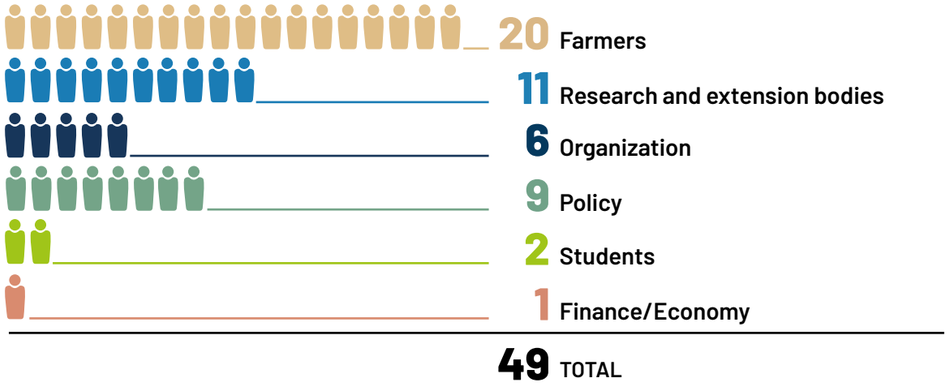
6. THE AWARENESS-RAISING MEETING WITH THE FARMING COMMUNITY IN MEDANI (SUDAN)

Medani, June 17, 2023

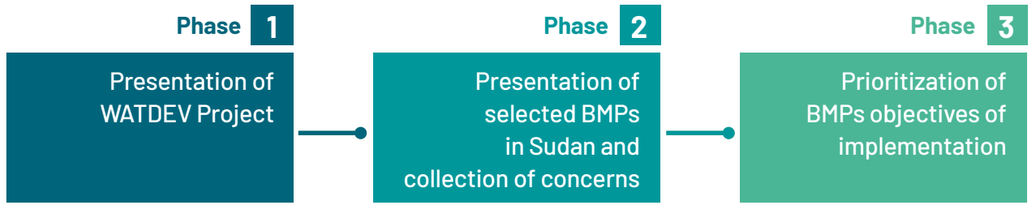
After selecting the agricultural Best Management Practices (BMPs) for Sudan, a local awareness meeting was held on June 17, 2023, at The Hydraulics Research Center, Medani (Sudan), and was organized by the Water Resource Centre of Khartoum University (WRC).
The meeting aimed to (i) present to local communities WATDEV project goals and activities; (ii) increase farmers' and local communities' awareness of the negative impacts of adopting certain practices in a non-sustainable way; (ii) increase farmers' and community's awareness of potential BMPs impacts; (iii) share with farmers' ways of how to improve sustainability, efficiency, and productivity of selected BMPs for their study area; and (iv) collect feedback, perceptions, and information needed to implement the selected BMPs and prioritize the BMPs objectives for different sustainability dimensions.

Despite the civil war in progress, nearly 50 stakeholders attended the meeting, representing public authorities, associations, and members from the private sector involved in water management and agriculture in the Gezira Irrigation Scheme (cf. Table 1).

Table 1 - Participants in the awareness-raising meeting in Sudan by stakeholder category



The awareness-raising meeting was facilitated by ASARECA and the WRC, and also attended by the CIHEAM Bari.
The awareness-raising event featured three distinct phases:



After the presentation of the WATDEV project, the participants shared some remarks for each best management practice selected for Sudan, as shown in Table 2 below.

Table 2 - Remarks on the implementation of the BMPs in Sudan.

IMPROVED SEED	
Key focus areas	**Recommendations for improvement**
• Agricultural operations • Seed production and challenges, (Wheat seeds)	• Government subsidies are required to enable farmers to acquire improved seeds at affordable prices

WATER USERS' ASSOCIATION	
Key focus areas	**Recommendations for improvement**
• Operation and maintenance, • Farmer's organizations, • Institutional governance, • Adoption of technology	• Need for a well-maintained irrigation system for efficient distribution of water

STAKEHOLDERS FEEDBACK

This session sought to collect from stakeholders their perceptions/feelings about the feasibility and sustainability of the BMPs, and their thoughts on what can be done to improve or refine the BMPs.
Some of these concerns are highlighted in Table 3 reported here below.

Table 3 - Concerns/Feedback from Stakeholders (by BMP)

IMPROVED SEED Concern/Feedback
• Need for government support to decrease improved seed prices for the farmers.

WATER USERS' ASSOCIATION Concern/Feedback
• Hydraulic management and maintenance of the irrigation and drainage system of the scheme

The last phase of the awareness meeting entailed an exercise aimed at collecting from local stakeholders their perceptions about the objectives of the implementation of BMPs. During this exercise, the facilitator displayed Table 4 in which the main objectives for different sectors of sustainability were listed for each selected BMP.
The meeting participants were then asked to select one objective under each sector, by voting.

PRIORITIZATION OF THE BMPs OBJECTIVES (BY DIMENSION AND SUB-DIMENSION)

The results of the prioritization of the objectives for the implementation of the BMPs are shown in Table 4 below:

Table 4 – Prioritization of the Objectives for BMPs (Improved seeds and Water users' Association)

a) SOCIO-ECONOMIC DIMENSION

Sub-dimension	Objectives	Rank
Socio-cultural	• **To create job opportunities for locals**	1
	• To contribute reducing / mitigating social conflicts	
	• To respect traditional/historical practice(s) in the area	
Policy	• **Supported by the Government**	1
	• Legislation/Regulations clarity	
	• Compliant with national regulations	
Governance	• Organizations support to learning about BMPs	
	• **To improve cooperation among all value chain actors**	1
	• **To improve collaboration between institutions and value chain actors**	1
Economy	• **To make farm costs manageable**	1
	• To increase crop production	
	• To increase farmer's income	

b) ENVIRONMENTAL DIMENSION

Sub-dimension	Objectives	Rank
Groundwater	• To avoid groundwater pollution	n/a
	• To enhance water quality	n/a
	• To ensure suitable groundwater access.	n/a
Soil	• To prevent soil erosion	
	• **To help crops grow better.**	1
	• To maintain soil health	
Crop	• **To make crops productive**	1
	• To make crops healthier.	
	• To make crops resistant to pests and diseases	
Surface water	• To avoid surface water pollution	
	• To enhance water quality	
	• **To keep the water flow safe**	1
Atmosphere	• To minimize greenhouse gases emissions	
	• To make the air cleaner	
	• **To ensure a healthier environment for the community**	1

7. THE FEASIBILITY INDICATORS

Each BMP/Innovation selected to be simulated in the study areas was subjected to a participatory feasibility and sustainability analysis. Established during the 3rd Modelling Working Group meeting in Turin (Italy, October 10, 2023) a group of experts belonging to ASARECA, CIHEAM Bari, and KALRO, elaborated a set of indicators for each objective of implementation of the BMPs and each sustainability dimension.

Across the 2 sustainability dimensions (Socio-economic and Environmental) and the 9 sub-dimensions (Socio-cultural, Policy, Governance, Economy, Groundwater, Soil, Crop, Surface water, and Atmosphere), a set of indicators is developed through literature review and experts' elicitation. This process was carried out from October to December 2023.

a) SOCIO-ECONOMIC DIMENSION

Sub-dimension: Socio-cultural		
Objectives of BMPs' implementation	**Theme**	**Indicators**
1. To generate job opportunities for locals	1.1 Social co-benefits	• No. of people employed by value chain, by country, by gender
2. To contribute to reducing/mitigating social conflicts	2.1 Social inclusiveness	• No. of people implementing the BMP (disaggregated by sex, gender, vulnerable people) • No. of women and youth participating in decision-making
	2.2 Social co-benefits	• No. of community members accessing social key services (e.g., schools, health facilities)
	2.3 Social trade-off	• Community attitudes and perceptions on the BMPs trade-offs
3. To respect traditional/ historical practice(s) in the area	3.1 Socio-cultural/ human acceptability	• Community attitudes and perceptions on their acceptability of BMPs • Community attitudes and perceptions on their identity preservation

Sub-dimension: Policy		
Objectives of BMPs' implementation	**Theme**	**Indicators**
4. Supported by the Government	4.1 Enabling conditions	• Level of endorsement or support by the local governments • No. of plans or projects or programs supporting the implementation of the practice
5. Legislations/Regulations Clarity	5.1 Policy feasibility	• Number of plans or strategies supporting BMP implementation
6. Compliant with national regulations	6.1 Policy feasibility	• No. of national, regional, or local policies and regulations that are aligned with the BMP activities • Value (in US$) of the government's contribution to the implementation of the BMPs in the target communities

Sub-dimension: Governance		
Objectives of BMPs' implementation	**Theme**	**Indicators**
7. Organizations support learning about BMPs	7.1 Enabling conditions	• No. of farmers accessing agricultural extension services from extension agencies • No. of organizations providing agricultural extension services to farmers • Number of farmers trained on BMP GAPs or practices
8. To improve cooperation among value chain actors	8.1 Enabling conditions	• No. of value chain linkages established. • No. of agreements among value-chain actors/yr
9. To improve collaboration between institutions and value chain actors	9.1 Enabling conditions	• No. of collaborative projects or initiatives in the target area (jointly established between local actors and institutions)

Sub-dimension: Economy		
Objectives of BMPs' implementation	**Theme**	**Indicators**
10 To make farm costs manageable.	10.1 Micro-economic viability	• Crop Yields (Tons/Ha) • Benefit-cost ratio of production • Price-Cost Ratio (compares selling price to the cost of production) • Cost saving (US$) because of BMP adoption
11. To increase crop production.	11.1 Diversification of the production	• Crop yield (total production (Kg)/ Total land area (ha) • Proportion of new crop enterprises
12. To increase farmer's income.	12.1 Economic co-benefits	• Total household Net farm income (GFI- Total production costs & expenses) • % increase in net farm income

b) ENVIRONMENTAL DIMENSION

Sub-dimension: Groundwater

Objectives of BMPs' implementation	Theme	Indicators
13. To avoid groundwater pollution.	13.1 Risk reduction potential	• Level of Nitrate content of groundwater
14. To enhance water quality.	14.1 Ensure water quality level	• Level of water salinity (standard methods) • Level of biological contamination (E. Coli, IBA, ...)
15. To ensure suitable groundwater access.	15.1 Access to resource(s)	• Intensity of water use by agriculture: amount of irrigation water (mc) used per unit of cropped land (ha) • Technical efficiency (mc) and economic efficiency (€) in water use • Depth to groundwater (m) (groundwater at much lower depths is more preferred and accessed because of low salinity) • No. of community members with access to water rights or secure water resource allocations

Sub-dimension: Soil

Objectives of BMPs' implementation	Theme	Indicators
16. To prevent soil erosion	16.1 Risk reduction potential	• Proportion of the area affected by soil erosion (%) • Average soil loss (t ha^{-1} yr^{-1})
17. To maintain soil health	16.1 Soil health	• Soil Organic Carbon (t ha^{-1})
18. To help crops grow better.	18.1 Soil fertility	• Soil fertility (SOM, N, $P2O_5$, K_2O) • Farmers' perception of soil fertility

Sub-dimension: Crop

Objectives of BMPs' implementation	Theme	Indicators
19. To make crops productive.	19.1 Crop productivity	• Production yield of crop per unit of cultivated area (t ha^{-1})
20. To make crops healthier.	20.1 Crop healthy	• Amount of fertilizers/pesticides per unit of crop (Residues level in the product) • Nutrient (N, P) use efficiency (kg product/kg N, P)
21. To make crops resistant to pests and diseases.	21.1 Crop resistance to pests/diseases	• Trend in pesticide use

Sub-dimension: Surface water		
Objectives of BMPs' implementation	**Theme**	**Indicators**
22. To avoid surface water pollution.	22.1 Risk reduction potential	• Level of Nitrate content of groundwater
23. To enhance water quality.	23.1 Ensure water quality level	• Level of water salinity (standard methods) • Level of biological contamination (E. Coli, IBA, ...)
24. To keep water flow safe.	24.1 Risk reduction potential	• Annual flood frequency (exceeding a certain threshold) • Proportion of land prone to flood risks (%)

Sub-dimension: Atmosphere		
Objectives of BMPs' implementation	**Theme**	**Indicators**
25. To minimize greenhouse gases emissions.	25.1 Environmental impact	• GHG emissions per ha/yr
26. To make the air cleaner.	26.1 Environmental impact	• Carbon storage and sequestration in the crop (t CO_2 ha^{-1})
27. To ensure a healthier environment for the community	27.1 Risk reduction potential	• Air Quality Index (AQI)

8.
THE TRAINING OF TRAINERS AND CAPACITY BUILDING COURSE: WATER, SOIL, AND CROP MANAGEMENT IN A CLIMATE-SMART AGRICULTURE

Bari - Italy, December 11-16, 2023

The primary aim of the Training and Capacity Building initiative is to empower local stakeholders in effectively implementing Best Management Practices (BMPs) and Innovations within their respective regions and communities. Emphasis is placed on advocating for the adoption of targeted BMPs while nurturing sustainable development. The training program comprises three modules, each spanning a week.

The 1st module took place from December 11th to 16th, 2023, hosted at the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM) in Bari - Italy.

Experienced lecturers were professionals in soil science, genetics, agronomy, and engineering, and officers from valued international organizations such as FAO.

Fifteen delegates from universities and local governing bodies in Kenya, Ethiopia, and Egypt, alongside an additional five participants joining remotely from Sudan, were selected by WATDEV project Partners to attend the 1st module of the Course. Participants included junior researchers, government officials, and extension workers actively involved in the implementation of BMPs and innovation projects within their respective regions.

After the training, participants will collaborate closely with local partners to transfer the newly acquired knowledge to local farmers, thereby promoting sustainable development within their communities.

	Name	Surname	Gender	Affiliation
KENYA	Laura Mikali	Dema	female	County Renewable Officer, County Department of Environment, Water, Forestry and Natural Resources
	Alex	Kubende	male	County Director of Agriculture, Tana River County
	William	Jillo	male	County Irrigation Engineer
	Anita Ijayi	Nunu	female	Crop agronomist (rice), Kenyan Agriculture and Land Research Organization (KALRO)
	Obadiah Kiarie	Kuria	male	National Irrigation Authority – Tana Irrigation Scheme
SUDAN	Ahmed Alsiddig	Elshaikh	male	University of Khartoum, WRC
	Eslam Ahmed	Mohamed	female	Agricultural Research Corporation
	Amani Ahmed	Idris	female	Agricultural Research Corporation
	Ali Mohamed	Elhaj	male	The Hydraulics Research Center (HRC-SUDAN)
	Mohammad Osman	Babiker	male	Gezira Scheme Authority

	Name	Surname	Gender	Affiliation
ETHIOPIA	Deribew Shanko	Negewo	male	Associate Researcher, Water and Land Resource Centre (WRLC)
	Tilahun	Mulugeta Bitew	male	Head of Horticulture and Water Management Department, Mech Wereda Agriculture Office
	Hibret	Andualem Jembere	male	Koga Branch Office, Ministry of Irrigation and Lowlands
	Bekure	Melesse Beyene	male	Agronomist, Water and Land Resource Centre
EGYPT	Rehab	Ibrahim	female	Research assistant at the Egyptian Biodynamic Association
	Buthaina	Elhosieny	female	Project Coordinator at the Egyptian Biodynamic Association
	Hend	Hany Hafez Mohamed	female	Administration Egyptian Biodynamic Association
	Salma	Wael Eladly	female	Research assistant, Faculty of Engineering, Heliopolis University
	Mahmoud Moustafa Mahmoud	Eid	male	Research Assistant, Faculty of Organic Agriculture, Heliopolis University

9. THE FOLLOW-UP TRAINING WORKSHOP IN THE STUDY AREA

Due to the terrible war in progress in Sudan for one year and an unstable internet connection, the Water Resource Centre (WRC) of Khartoum University decided not to deliver the follow-up training workshop neither in the study area nor remotely, until when safety conditions are re-established.

THE FINAL LIST OF SELECTED INDICATORS FOR EACH PRIORITIZED OBJECTIVE OF IMPLEMENTATION OF THE BMP

Despite the crisis in Sudan, the project team within WRC conducted an extensive discussion with stakeholders to select indicators for each implementation objective of the BMPs that they had prioritized during their Awareness Meeting on June 17, 2023 (see Chapter 6). In selecting the indicators among the overall list (see Chapter 7) the following aspects were considered: (i) how the indicators apply to the local conditions or how they accurately describe the local conditions; (ii) availability of data; and (iii) ease of accessing data. Moreover, the stakeholders discussed the following aspects: (i) which feasibility indicators apply to Sudan; (ii) modalities for data collection; (iii) key stakeholders to be involved in data collection; and (iv) plans and timeframe for data collection.

The stakeholders selected the following indicators:

a) SOCIO-ECONOMIC DIMENSION

Sub-dimension	Prioritized Objectives	Theme	Indicators
Socio-cultural	1. To generate job opportunities for locals	1.1 Social co-benefits	• No. of people employed by value chain, by country, by gender (specify NUTS level, time period)
Policy	4. Supported by the Government	4.1 Enabling conditions	• Level of endorsement or support by the local governments (Likert scale) • No. of plans or projects or programs supporting implementation of the practice

Sub-dimension	*Prioritized Objectives*	*Theme*	*Indicators*
Governance	8. Improve cooperation among value chain actors.	8.1 Enabling conditions	• No. of value chain linkages established. • No. of agreements among value-chain actors/yr
	9. Improve collaboration between institutions and value chain actors	9.1 Enabling conditions	• No. of collaborative projects or initiatives in the target area (jointly established between local actors and institutions)
Economy	10. Make farm costs manageable.	10.1 Micro-economic viability	• Crop Yields (Tons/Ha) • Benefit-cost ratio of production • Price-Cost Ratio (compares selling price to cost of production) • Cost saving (US$) as a result of BMP adoption

b) ENVIRONMENTAL DIMENSION

Sub-dimension	Prioritized Objectives	Theme	Indicators
Soil	18. To help crops grow better.	18.1 Soil fertility	• Soil fertility (SOM, N, P_2O_5, K_2O) • Farmers perception on soil fertility (Likert scale) *-additional*
Crop	19. To make crops productive.	19.1 crop productivity	• Production yield of crop per unit of cultivated area (t ha^{-1})
Surface water	24. To keep water flow safe.	24.1 Risk reduction potential	• Annual flood frequency (exceeding a certain threshold) • Proportion of land prone to flood risks (%)
Atmosphere	27. To ensure a healthier environment for the community	27.1 Risk reduction potential	• Air Quality Index (AQI)

10.
THE 2nd STAKEHOLDER FORUM OF THE WATDEV PROJECT: TASKS AND PARTICIPATORY SCENARIOS DEVELOPMENT

Bari - Italy, May 13, 2024

On 13th May, the 2nd Stakeholder Forum of the WATDEV project will take place at CIHEAM Bari Campus "Cosimo Lacirignola", in Valenzano (Bari – Italy).
The Stakeholder Forum members along with the Project Partners will examine and discuss the progress made through the project's activities and the outcomes of the meetings held in the study areas, to define the next steps.
Following the presentation of the functionalities of the WATDEV modelling tool, the Stakeholders Forum members and the local Partners will provide useful hints to tailor the modelling tool for the final users' needs.
Moreover, under the guidance of the Modelling Workgroup, participants will be asked to draft desired scenarios based on the implementation of BMPs/Innovation at the basin scale.

PARTICIPATORY DEVELOPMENT OF FUTURE SCENARIOS

ACTIVITY I: INDICATORS

The Stakeholder Forum Members will be shown the indicators on which the toolbox can provide output among the ones chosen by farmers in their study area (see Chapter 9).

In this exercise, we would like you to indicate:

- Which model output (or: indicator) is relevant for you?
- On which timescale: daily, monthly, seasonal and temporal extent (e.g. for 1 year, 10 years, 30 years?).
- Are there any indicators missing that you really would like to see as toolbox output.

ACTIVITY II:
TYPES OF SCENARIOS

You will be displayed different types of scenarios. Each of them will be briefly explained and an illustration will be given:

- Blanket application of one BMP
- Spatial differentiation of BMP application
- Application of a combination of BMPs
- Optimization of spatial allocation of BMPs

In this exercise, we would like to know, for each type of scenario:

- Are you interested in this type of scenario?
- Briefly indicate why and how would you use this type of scenario?
- (where relevant) Which BMP would be interested in applying? Please give as much detail as possible
- (where relevant) Indicate on the provided maps where you would implement this scenario

ACTIVITY III:
DESIGN THE MOST RELEVANT SCENARIOS (MAX 3) FOR YOUR STUDY AREA

Now that the indicator and types of scenarios have been reviewed, please describe and design the most relevant scenario for your study area.

Give as much detail as possible:

- Which type of scenario do you choose? (see exercise II)
- Which BMPs do you consider?
- Draw the locations of BMP implementation on the map
- What is the timeline of the scenario?
- What are the most important objectives (i.e. what do you want to achieve)?
- What are the most important indicators (i.e. the model output) that you are interested in obtaining from the model for this scenario?