

Republic of Sudan



**Ministry of Water Resources  
and Electricity**

Final report of National Consultation on Water,  
Food Security and Nutrition

# Sudan

## June 2015



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## Highlights of the Zimbabwe report

The preparations for the national consultation on water and food security in Sudan started in April 2015 by identifying relevant institutions such as Government Agencies operating in water, agriculture and fishery , energy, finance and planning, sectors, U N Organizations (FAO, IFAD, Research and Academia Agencies, some NGOs' and the Higher Council for Environment and Natural Resources.

The participants from those Agencies were gathered in a review workshop held on 15th June 2015. Participants were provided with the relevant materials and documentation including the HLPE Report. The meeting was officially opened by Prof. Seifeldin Hamad, the Chair of Sudan Water Partnership, also Chair of Water Resources Technical Organ in the Ministry of WR and Energy, representing the Undersecretary of the Ministry of Water Resources and Electricity. The meeting was also attended by Mr. Patrick Safari, Regional Coordinator of GWP EA and Eng. Sidig Hamid representing Sudan CWP. An overview and back ground on the theme was presented in the first session by the Consultant Dr. Tarig. The participants were then organized into 4 groups, each group focusing on two recommendations from the HLPE Report, to assess the relevance of the recommendations to the national context, and possibly provide additional recommendations in line with country's priorities and needs. Groups were also requested to assess the implications of the implementation of each recommendation. For each recommendation of the HLPE, some guiding questions and talking points were provided to the groups. Each group made two presentations on its findings (recommendations/ implications) during the plenary for further discussion.

Comments on HLPE recommendations:

During the workshop, participants have interactively reviewed and deliberated on the recommendations proposed by the HLPE. The participants found that the HLPE recommendations were pertinent and appreciated their relevancy Sudan. Nevertheless, the participants came up with comments under each HLPE's recommendation in line with the national context and in consideration of the country priorities and challenges as highlighted in the main report.

Implications for the implementation of recommendations

After reviewing all the HLPE recommendations, participants reflected on their implementation in Sudan, and realized that these will be the implications:

1. Consideration of IWRM and Natural Resources Management into sector policy formulation for Land, WRM and Ecosystems;
2. Enforcement of sector policies and laws on Lands, Agriculture, Environment and Ecosystems at all levels, is highly recommended;
3. Enhancing the Institutional, human, technical and financial capacity in Sudan;

4. Strengthening the cross-sectoral integration and coordination of sector interventions at all levels
  5. Environmental considerations for ecosystem sustainability
  6. Integrated Management of rural water supply systems
  7. Promotion of Regional Cooperation between Riparian States in the areas of water, agriculture, trade and energy;
  8. Promoting investment and infrastructure development for water, energy and ecosystems sectors
  9. Developing and using modern communication and information technologies in the areas of water, agriculture and trade;
  10. Improving the Scientific knowledge development and information sharing on Drought and Climate Change ;
  11. Enhancing the easy access of women to water for agricultural and other domestic uses to improve the household's food security and nutritional status in the country;
  12. Initiate Land Reform in order to improve land tenure and regularization systems;
  13. Harmonize Regional and National trade policies and Regulations and promote cross border trade for genuine agriculture and food commodities;
  14. Enhancing agro forestry and food-processing Unities (value addition and preservation of the quality).
  15. Strengthening the existing and establishment of new research centers.
  16. Upgrade the existing Early Warning Systems (EWS) and enhance dissemination and information sharing to the relevant stakeholders and incorporation in the decision making process.
  17. Documentation, disseminating and raising public awareness on WASH
  18. Promoting Public-Private Partnership (PPP) for investment promotion in the sectors of water, agriculture and energy;
- Comments specific to the country

The workshop explored the direct and indirect contributions of water for food security and nutrition from the national perspective. It tackled water supply, sanitation, irrigation, food processing and transformation. The contribution of water to the national economic development including ecosystem sustainability and hence to food accessibility was also explored. The first and foremost emphasis is to improve water productivity in the agricultural sector (both in terms of quantity and quality) through strengthening scientific research and enhancement of the public awareness.

Mobilization of the political will, integrated policy development; microfinance and enforcement of relevant laws are to be given strong emphasis. Land reform is to be conducted with a view of empowering women and the marginalized rural people in general through the development of dedicated laws to regulate their constitutional rights. The workshop also recommended regional cooperation e.g. electricity interconnection with the Nile Basin countries and enhancement of regional trade specially food products.

## About the overall initiative

2015 is a milestone with the new UN Sustainable Development Goals and the COP 21 on Climate Change in Paris. Building on the recent report on Water produced by the High Level Panel of Experts on Food Security and Nutrition, Global Water Partnership Africa (GWP) partners are joining forces to contribute to sustainable development in the face of climate change. This initiative, planned for five years, will, in an inclusive manner, identify challenges and implement relevant concrete activities at all levels.



Country Water Partnerships (CWPs) in Benin, Burkina Faso, Cameroon, Ethiopia, Mali, Nigeria, Sudan, Uganda, and Zimbabwe decided to seize the opportunity created by the Committee on World Food Security (CFS) to engage further with Food Security and Nutrition (FSN) to make a tangible contribution at country level.

As a first step, these CWPs took the May 2015 HLPE report, explained it to country water and FSN stakeholders and facilitated a national dialog on HLPE recommendations against country priorities. The second step was to convene national workshops with interested stakeholders for more than 200 concerned ministers, farmers organizations, CSOs, and development partners on urgent needs and priority actions to be taken to impact the functioning of the Water Energy Food Ecosystems nexus for better livelihoods.

### **Next steps: elaboration and implementation of the program**

With its “SDGs preparedness facility”, its Water and Climate Development Program, and with partners, GWP will coordinate the elaboration in 2016 and then the implementation of a 3 years program addressing technical and institutional country-identified priorities in the context of CFS resolutions and the COP 21 agenda for solutions.

## Report :

### **Acronyms:**

<b>CBD</b>	Convention on Biological Diversity
<b>COMESA</b>	Common Market of Eastern and Southern Africa
<b>EA</b>	Eastern Africa
<b>EAC</b>	East African Community
<b>HE</b>	His Excellency
<b>EWS</b>	Early Warning System
<b>FSN</b>	Food Security and Nutrition
<b>GMF</b>	Genetically Modified Food
<b>GWP</b>	Global Water Partnership
<b>HLPE</b>	High Level Panel of Experts
<b>ICT</b>	Information and Communication Technology
<b>IDMP</b>	Integrated Drought Management Program
<b>IGAD</b>	Inter Governmental Authority on Development
<b>IDRRISI</b>	IGAD Drought Risk Reduction Strategy Initiative
<b>GERD</b>	Great Ethiopian Renaissance Dam
<b>QNSP</b>	Quarter Century National Strategic Plan
<b>MWRE</b>	Ministry of Water Resources and Electricity
<b>NDDCU</b>	National Drought and Desertification Coordination Unit
<b>M &amp; E</b>	Monitoring and Evaluation
<b>SUMA</b>	Sudan Meteorological Authority
<b>SWaP</b>	Sudan Water Partnership
<b>WRM</b>	Water Resources Management
<b>UNCCD</b>	United Nations Convention to Combat Desertification
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change

### **Introduction:**

The preparations for the national consultation on water and food security in Sudan p started in April 2015 by identifying relevant institutions such as Government Agencies operating in water, agriculture and fishery , energy, finance and planning, sectors, U N Organizations (FAO, IFAD, Research and Academia Agencies, some NGOs' and the Higher Council for Environment and Natural Resources.

The participants from those Agencies were gathered in a review workshop held on 15<sup>th</sup> June 2015. Participants were provided with the relevant materials and documentation

including the HLPE Report. The meeting was officially opened by Prof. Seifeldin Hamad, the Chair of Sudan Water Partnership (SWaP) and also Chair of Water Resources Technical Organ in the Ministry of WR and Energy, representing the Undersecretary of the Ministry of Water Resources and Electricity. The meeting was also attended by Mr. Patrick Safari, Regional Coordinator of GWP EA and Eng. Sidig Hamid representing Sudan CWP. An overview and back ground on the theme was presented at the first session by the Consultant Dr. Tarig. The participants were then organized into 4 groups, each group focusing on two recommendations from the HLPE Report, to assess the relevance to the national context, and possibly provide additional recommendations in line with country's priorities and needs. Groups were also requested to assess the implications of the implementation of each recommendation. For each recommendation of the HLPE, some guiding questions and talking points were provided to the groups, see Annex.. Each group made two presentations on its findings (recommendations/ implications) during the plenary for further discussion.



### ***Chapter 1: Comments on HLPE recommendations:***

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During the workshop, participants have interactively reviewed and deliberated on the recommendations proposed by the HLPE, and came up with comments under each recommendation in line with the national context and in consideration of the country priorities and challenges as follows:

**HLPE Recommendation 1: Ensure sustainable management and conservation of ecosystems for the continued availability, quality and stability of water for FSN.**

**Comments of the participants**

- Make full use of the existing global interventions and the synergies between pertinent conventions such as the CBD, UNCCD and UNFCCC. A coordination mechanism is suggested and the Higher Council for Environment and Natural Resources is to take a leading role in this regard.
- Mobilization of the political will should make an effect in reality e.g. unlike the states strong political support is maintained at the federal level for forestry.
- Weak enforcement of laws while local orders and by-laws are in act.
- Level of participation in WRM is better at the local level.
- High negative impacts of land tenure system on ecological sustainability since small indigenous farmers and herder don't own their farms.
- Proper planning (coordinated/ participatory) for land use and land tenure system
- Enhancement of the level adoption of integrated watershed management.
- Lack of sustainable environmental management systems.
- Siltation resulted in considerable loss of reservoir capacity, affected irrigation efficiency and tremendously increased the cost of canal maintenance and affected fisheries.
- Adoption of integrated wastewater management with a view of reducing pollution hazards and reuse of treated wastewater in agriculture and environmental protection.
- Update of the baseline surveys in natural resources and the environment as a prerequisite for robust environment management approaches.
- Encroachment of mechanized farming is the most serious problem facing wildlife and biodiversity others include encroachment by livestock, commercial poaching and bush meat.
- Encroachment of mechanized farming is also affecting the traditional rangeland systems especially small herders.

**HLPE Recommendation 2: Ensure an integrated approach to water and FSN related policies.**

**Comments of the participants**

- Enhancement of policy integration across the different sectors.
- Scientific evidence based (research findings) should be considered in policy formulation.
- Recently a Higher Council for Food Security was established. The council should be mandated for policy development. The integrated policy should be divided in short intervals, monitored and evaluated periodically.
- Although sectoral policies do exist however, there is a need to develop a national ecosystem conservation policy through mobilization of Political will.
- At the local level the policy should consider customary laws and indigenous knowledge and social values.
- Natural resources constitute the backbone of FSN and hence utmost efforts are to be considered for ecosystem sustainability.

- Despite the great efforts to craft the water policy of 2007 it's not yet endorsed by the government meanwhile; state water policies are still underway.

**HLPE Recommendation 3: Prioritize the most vulnerable and marginalized, including mainstreaming gender and addressing the specific needs of women**

**Comments of the participants**

- Constitutionally women have the right to own agricultural lands however, these rights need to be regulated through the development and enforcement of dedicated laws.
- Easy access of women to water for agricultural and other domestic uses to improve household food security and nutritional status also need to be regulated.
- Provision of water services and technical-know how are necessary to ensure sustainability viz. health, hygiene, training ...etc.
- In rural Sudan livelihoods are inter-linked hence, a holistic livelihood strategy would be more effective.
- Considering the current situation of rural areas, subsidies are needed for water supply, electrification through renewable energy techniques and infrastructure.
- Introduction of the concept of microfinance as a mean to enhance climate resilience of the rural poor and provision of social services.
- Competition over land resources has become a major cause of conflict among the pastoral and farming populations in Sudan.

**HLPE Recommendation 4: Improve water management in agriculture and adapt agricultural systems to improve their overall water efficiency and water productivity, and their resilience to water stresses.**

**Comments of the participants**

- Agricultural productivity is generally very low especially in rain fed agriculture which constitutes the bulk in terms of acreage and host the most marginalized and impoverished tenants.
- The high sediment load of the Blue Nile waters especially during the rainy season affected water management in the large government owned schemes e.g. Gezira Scheme. Beside that maintenance of the irrigation channels cost huge financial resources and hence affected the sustainability of such projects.
- River bank erosion and sand bars are other serious problem facing agriculture especially along the Blue Nile and the Main Nile.
- Water harvesting proved to be an efficient tool for rural water supply and enhancement of agricultural productivity.
- To improve water management in agriculture by adapting and/ or adopting appropriate agricultural systems to increase water productivity and to strengthen community resilience.
- Research is to give focus on the impacts of climate change on the agricultural systems including crop water requirements, crop pest and diseases and the impacts on sowing dates especially for winter crops.



- The impacts of the mega dams in the Ethiopian Plateau e.g. GERD on the agricultural systems along the Blue Nile and the Main Nile are to be studied in depth since such dams tends to regulate the flow.
- Up-scaling of agro-forestry techniques.

**HLPE Recommendation 5: Improve the contribution of trade to “water for FSN”.**

**Comments of the participants**

- Improve trade policies.
- Increase food production and improve the quality of the product.
- Put more emphasis on regional trade with EAC, IGAD, NBI and COMESA.
- Development crop suitability maps.
- Strengthen the use of ICT in the trade of agricultural products.
- Remove the barriers on domestic and regional trade.
- Enhance agro-processing (value addition and preservation of the quality).
- Control of the trade on endangered food species e.g. mammals (deers), birds, Rhinos ... etc.
- Regulation of the introduction of bio fuel crops e.g, Jatropha plant
- Enforce regulations in the trade of Genetically Modified Food (GMF), specially labeling.
- Electricity inter connection at the Nile Basin level will assist the country to expand its' national electricity grid and consequently reduce the cost of production especially in agriculture and industry. Meanwhile upstream countries (Ethiopia) will generate additional revenues from the sold electricity.
- Formulation of a national legislation on access to the genetic resources, benefit sharing and farmers' rights.

**HLPE Recommendation 6: Devise and share enhanced knowledge, technologies and management tools related to water for FSN.**

**Comments of the participants**

- Generally research centres including those working in water resources management are by far below the desired capacity to tackle the complicated physical and socioeconomic problems related water and FSN.
- Some emphasis has been made on research in the Quarter Century National Strategic Plan (QNSP) but no dedicated research policy/ strategy exist.
- Devise and share enhanced knowledge and technologies and management tools related to water for FSN.
- Strengthen existing and establishment of new research centres.
- Raise the awareness of the public on the importance of research as a potential tool for solving technical hindrances to the improvement of food production both in terms of quality and quantity.
- Establish links between research centres and stakeholders.
- Develop national research policies and strategies with a view of strengthening water food security and nutrition.
- Upgrade the existing Early Warning Systems (EWS) and enhance dissemination of their information to the relevant stakeholders and incorporation in the decision making process.

- Establish proper digital libraries and improve access to information.
- Documentation and up scaling of success stories, approved technologies and strengthening scientific research.
- Create mechanisms/ institutions to ensure data sharing at the national and regional levels and establishment of a paper and digital library including research directory.
- Activation of the Law of the SUMA especially the oversight on the specifications, installation and supervision of met stations and accessibility to data.
- Encouragement of problem solving research and creation of a Research Fund.

**HLPE Recommendation 7: Foster an inclusive and effective governance of water for FSN.**

**Comments of the participants**

- Dissolution of the local governance systems affected conflict resolution especially those related to land tenure and utilization of natural resources.
- Overlaps in mandates in land management exist between federal and state authorities and customary and statutory laws.
- Clear definition of responsibilities, duties and roles at the various levels of governance and enforcement of laws.
- Empowering local governance and initiation of community-based monitoring.

**HLPE Recommendation 8: Promote a rights-based approach to governance of water for FSN**

**Comments of the participants**

- The current constitution of the Republic is strongly acknowledges the basic rights for water and food security and nutrition however, dedicated goals are needed to regulated these basic rights.
- Resolution of the contradiction of customary and statutory law with regard to poor and social integrity.
- Expedite the peace process to restore governance and role of law and hence maintenance of the basic rights.

*Chapter 2: Key implications and means of implementation  
identified for achieving the recommendations over the period  
2015-2030.*

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- Sub-section on each implication: capacity, costs, institutions, infrastructure, monitoring and any others identified by the meeting. This should highlight the viability of having recommendations in terms of the resources available to meet them in the specified timeframe.
- Any other issues arising from the meeting related to the HLPE report and the food and water security agenda.

**HLPE Recommendation 1: Ensure sustainable management and conservation of ecosystems for the continued availability, quality and stability of water for FSN.**

**Comments of the participants**

- Formulation and implementation of a national environment conservation policy.
- Development of a national integrated watershed plan and the establishment of River Basin Organizations both at the national and the regional level (cooperation with NBI is of prime importance).
- Due to its high efficiency the use of activated sludge technology is highly advocated.
- Treated wastewater may be used for forestry (to control dust storms and to rehabilitate the degraded lands) tree and fodder production.
- Enhance the national capacity in execution of baseline surveys in the environment and natural resources.
- Laws, regulation and by-laws are to put in place
- Encouragement of innovations.
- Capacity development through mobilization of national funds and the technical support from the international community
- Control of invasive species specially mesquite.
- Development of robust M & E system with a view of performing continuous monitoring.

**HLPE Recommendation 2: Ensure an integrated approach to water and FSN related policies.**

**Comments of the participants**

- Enhancement of the national capacity in integrated policy development
- Enhancement of policy conversion into laws and their enforcement which at present is very meager e.g. investment laws.
- Revision of the National Action Plan to Combat Desertification.
- Enhancement of the policy environment by crafting the national climate change policy and the climate resilience strategy.
- Expedite the preparation of the national IWRM plan and update of the national and state water policies and their endorsement.
- Coordination between the concerned institutions regarding water policy/ strategy/ planning.
- Update the National Biodiversity Strategy.
- Coordination with regional and international programs especially the IGAD IDRRISI and the GWP's IDMP.

**HLPE Recommendation 3: Prioritize the most vulnerable and marginalized, including mainstreaming gender and addressing the specific needs of women.**

**Comments of the participants**

- Finance of the provision of water services should be given highest priorities in the national budget and those of the UN and other donor agencies with a view of eliminating discrimination against women.
- Effective coordination among all relevant institutions and stakeholders through well established mechanisms.
- Corporate social responsibility funds should be attracted.
- Provision of microfinance for social services.
- Establishment of a department of statistics, monitoring and an information centres both at the federal and state levels.
- Solar pumping proved to be an efficient technology for the provision of rural water supply especially in North Kordofan State however, government subsidies are crucially needed.
- Vocational training of rural youth in the repair and maintenance of rural water supply units.
- Strengthening rural infrastructure especially roads will facilitate accessibility and hence supply of spare parts and the related services and ultimately reduce the cost of the water services.
- Water harvesting is identified as a mean for the settlement of pastoralists and hence maintaining peace both inside and with neighboring countries.
- Promotion of the establishment of village development committees with a view of strengthening social services and rural infrastructure.
- Provision of extension services, animal vaccination and supplementary feeding to the rural poor.
- Training of rural women in nutrition (food processing) and household hygiene and income generating skills e.g. small industries and handcrafts.
- Provision of sanitation services for the rural poor with a view of eliminating open defecation and the related diseases.
- Awareness raising and advocacy.

**HLPE Recommendation 4: Improve water management in agriculture and adapt agricultural systems to improve their overall water efficiency and water productivity, and their resilience to water stresses.**

**Comments of the participants**

- To resolve the problem of increased concentration of sediment, basin wide cooperation is needed especially in integrated watershed management with a main emphasis on the control of water erosion.
- Up-grade of the technical and managerial capabilities in the domain of water services and irrigation is necessary to ensure sustainability of the resources and stability of supply.
- Strengthen scientific research in water resources management, conservation and development.
- Training in hydrological modeling, water harvesting, modern irrigation systems and canal lining is of prime importance.
- Provision of subsidies, loans and technical know-how is needed to promote community and private forests.

## **HLPE Recommendation 5: Improve the contribution of trade to “water for FSN”.**

### **Comments of the participants**

- Enhancement of the national capacity in policy development
- Release of improved production package in both agriculture and animal production.
- Full utilization of the principle of "Comparative Advantage" both at the national and the regional levels.
- Expansion of the telecom network and rural roads.
- Enhancement of the availability of electricity.
- Strengthening infrastructure including roads, water supply etc.
- Enforcement of laws on the protection of endangered food species.
- Research and piloting should proceed introduction of bio-fuel crops.
- Enforcement of laws regarding Genetically Modified Food.
- Strengthening the role of private sector.
- Government market interventions are to support small producers and their organization into production and marketing cooperatives.

## **HLPE Recommendation 6: Devise and share enhanced knowledge, technologies and management tools related to water for FSN.**

- Establishment of a science policy platform to facilitate dialogue between scientists and policy makers and hence the development of science informed policy.
- Awareness on the role of research in boosting socioeconomic development
- Strengthening research – stakeholder partnership
- Capacity building in ICT with special reference to EWS and digital libraries.
- Introduction of water resources management in school and university curricula and on provision of on job training.
- Awareness raising using mass media, drama etc.
- Development of research policies and strategies.
- Avoidance of water consuming crops e.g. sugar cane.
- Breeding for drought tolerant, early maturing, improved quality of the products and combinable varieties.

## **HLPE Recommendation 7: Foster an inclusive and effective governance of water for FSN.**

### **Comments of the participants**

- Recent legislative developments e.g. Local Government Act (1998) and The Interim National Constitution of Sudan (2005) recognize customary laws, authorities and local users. However, the process needs to be expedited and exercised in reality.
- To promote afforestation states should be assigned responsibilities regarding forests development and protection.
- Strengthening the Higher Council for Environment and Natural Resources.
- Up grading the administrative position of the National Drought and Desertification Coordination Unit (NDDCU) and its support with adequate staff, facilities and financial resources.

- Establishment of the Drought and Desertification Control Coordinating Council.

### **HLPE Recommendation 8: Promote a rights-based approach to governance of water for FSN**

#### **Comments of the participants**

- Revision of laws to acknowledge the rights of small farmers and pastoralists, secure the rights of women and include recent constitutional and legislative developments.
- Establishment of the National Land Commission.
- Codification of traditions.

### *Chapter 3: Concluding comments specific to the country*

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The workshop explored the direct and indirect contributions of water for food security and nutrition from the national perspective. It tackled water supply, sanitation, irrigation, food processing and transformation. The contribution of water to the national economic development including ecosystem sustainability and hence to food accessibility was also explored. The first and foremost emphasis is to improve water productivity in the agricultural sector (both in terms of quantity and quality) through strengthening scientific research and enhancement of the public awareness.

Mobilization of the political will, synergy between MEAs', integrated policy development; microfinance and enforcement of relevant laws are to be given strong emphasis. Land reform is to be practiced with a view of empowering women and the marginalized rural people in general through the development of dedicated laws to regulate their constitutional rights. The workshop also recommended regional cooperation e.g. electricity interconnection with the Nile Basin countries and enhancement of regional trade specially food products.

## Annexes:

### Annex 1: List of participants and any other supporting information:

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26	Aisha Alfaki	Wildlife Research Centre	
27	Magda Osman	Medicinal and Aromatic Plants Res Inst., The National Centre for Research	
28	Mawahib Eltaib	The National Centre for Research	
29	Khitma Awad	Higher Council for Env. and Natural Resources	
30	Manal Omer Ali	Dept. of International Cooperation, Ministry of Finance and National Economy.	
31	Hani Elsadaani	IFAD, Sudan	
32	Ahmed Gabir Sobahi	IFAD, Sudan	
33	Asya Adlan	Climate Risk Finance Project, Higher Council for Env. And Natural Resources	
34	Alwiya Yousif	National Drought and Desertification Control Unit, Ministry of Agriculture	

35	Amal Ibrahim	Water Resources Technical Organ, MWRE	
36	Dr. Fadl Ahmed Mohamed	Advocate	
37	Prof. Seifeldin Hamad Abdalla	Water Resources Technical Organ MWRE, SWaP	
38	Ammar Abbakar	SWaP	
39	Alsidig Ahmed	SWaP	