

## Narrative report Tailor-Made Training - Water Management in Mega Irrigation Schemes

MetaMeta Research and Hydraulics Research Centre (HRC-Sudan) have compiled this narrative as part of the reporting of the tailor-made training carried out in Sudan entitled 'Water Management in Mega Irrigation Schemes'. This training was supported by Nuffic through the NFP-TMT facility. This report is accompanied by the following:

1. A full descriptive report on the training and evaluation by the participants
2. A list of participants in excel
3. A signed statement of actual costs

Online additionally a comprehensive dossier including, video, blogs and training material about mega irrigation schemes is available (<http://www.thewaterchannel.tv/dossiers/mega-irrigation>).

### I. Basic data

1. Title of the Tailor-Made Training course	Water Management in Mega Irrigation Schemes
2. File number (see grant)	Grant award CF 12096/2016
3. Name of the requesting organisation(s)	Hydraulics Research Centre (HRC-Sudan)
4. Type of organisation	<input type="checkbox"/> Government or public sector <input checked="" type="checkbox"/> Education or research institute <input type="checkbox"/> Non- governmental organisation <input type="checkbox"/> Commercial organisation <input type="checkbox"/> Other, ... <i>(please specify)</i>
5. Name of the Dutch organisation(s) that provided the training (provider)	MetaMeta Research
6. If applicable: Name and address of the co-provider (local/regional/Dutch)	
7. Type of organisation	<input type="checkbox"/> Government or public sector <input type="checkbox"/> Education or research institute <input type="checkbox"/> Non-governmental organisation <input checked="" type="checkbox"/> Commercial organisation <input type="checkbox"/> Other, ... <i>(please specify)</i>
8. Location of training	<input checked="" type="checkbox"/> In country <input type="checkbox"/> In the Netherlands <input type="checkbox"/> Elsewhere: .....
9. Start date of the training	14 August 2016
10. End date of the training	25 August 2016

11. Total number of training days	11
12. Total number of participants	24
13. Number of male participants	19
14. Number of female participants	5
15. Number of participants who dropped out	0

## II. Implementation of training activities

16. Were local/regional trainers used?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
17. Please specify the training activities each organisation conducted (name requesting, providing and/or supporting organisation)	<p>Activity</p> <p>The training course consisted of the following training modules:</p> <ul style="list-style-type: none"> <li>• Module 1: Situation analyses of current major challenges and possible solutions, taking into consideration local and international experiences and lessons.</li> <li>• Module 2: Design aspects of irrigation and drainage systems.</li> <li>• Module 3: Operation and Maintenance (O&amp;M).</li> <li>• Module 4: Improving field water management for higher productivity.</li> <li>• Module 5: Assessment of irrigation performance using remotely sensed information.</li> <li>• Module 6: Water governance</li> <li>• Module 7: Gender role in irrigation water management.</li> <li>• Module 8: Managing mega</li> </ul>	<p>Who (organisation)</p> <p>The modules were compiled and given by the following people</p> <p>MetaMeta: Dr. Abraham Mehari Haile  HRC: Prof. Yasir Mohamed, Assis. Prof.Hassan Balla,</p> <p>MetaMeta: Dr. Abraham Mehari Haile, Prof. Bart Schultz  HRC: Dr. Adil Elkhider, Dr. Ahmed Kabo, Dr. YounisAbdalla</p> <p>MetaMeta: Prof. Bart Schultz  HRC: Dr. Ahmed Adam</p> <p>MetaMeta: Dr. Abraham Mehari Haile, Prof. Bart Schultz  HRC: Assoc. Prof. Abu Obieda  HRC: Dr. Khalid Biro, Prof. Ali Adeeb, Prof. Samira Hamid</p> <p>MetaMeta: Frank van Steenberg  HRC: Dr. El Tigani Bashier</p> <p>HRC : Dr. Sumaia Alsayd, Dr. Khalid Biro</p> <p>MetaMeta: Frank van</p>

	irrigation schemes.	Steenbergen
18. Has examination been conducted?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
19. If yes to question 19, number of participants who passed the test		
20. If yes to question 19, number of participants who failed		
21. Remarks on possible delays, complications, reasons for deviations from planning ( <i>max. 150 words</i> )		
22. Has an evaluation been carried out amongst participants?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
23. What was their general opinion of the training?	<input checked="" type="checkbox"/> Very good <input type="checkbox"/> Good <input type="checkbox"/> Fair <input type="checkbox"/> Poor <input type="checkbox"/> Very poor <input type="checkbox"/> No opinion  All 22 participants who completed the evaluation forms stated that the TMT course was useful and certainly could be followed-up on other topics/ domains. • There was agreement by all participants that the TMT course has achieved its goals and learning objectives and it has intensively covered the practical issues of irrigation water management within irrigation schemes. • Almost all trainees were satisfied about the organization of the course by the host institution (HRC-Sudan).	
24. Explanations of deviations from the budget as specified in the budget format ( <i>see original budget format as submitted to Nuffic</i> ) <b>Note:</b> only required if approved budget is equal or higher than €125,000	N/A	
25. If yes to question 24, indicate the deviation from the budget in euros	€ ...	

### III. Analysis of results

Indicators of success/results ( <i>see original training outline as submitted with Nuffic</i> ).	
26. Result 1. Curriculum for HRC on integrated water management of mega irrigation schemes to be used in the	HRC has embraced the topic of integrated water management of mega irrigation schemes. A follow-up course programme is developed that takes stock of the evaluation by the participants.

<p>training and capacity building as well as outreach programmes?</p> <p><input checked="" type="checkbox"/> Fully achieved</p> <p><input type="checkbox"/> Partially achieved</p> <p><input type="checkbox"/> Not at all achieved</p> <p><input type="checkbox"/> Unsure</p>	<p>Furthermore, also with MetaMeta this renewed attention for mega irrigation schemes has meant that a comprehensive online dossier was developed, including a promotional video that outlines the challenges of and makes the case for more attention to mega irrigation schemes</p> <p><a href="http://www.thewaterchannel.tv/media-gallery/6354-mega-irrigation-schemes">http://www.thewaterchannel.tv/media-gallery/6354-mega-irrigation-schemes</a>). As part of capacity development efforts in the region, the training as developed and given at HRC will be jointly adapted to also accommodate professionals from other countries.</p>
<p>27. Result 2. Core group of 20 trainees, with an improved capacity to better identify water management challenges in mega irrigation schemes and apply practical tools to develop solutions?</p> <p><input checked="" type="checkbox"/> Fully achieved</p> <p><input type="checkbox"/> Partially achieved</p> <p><input type="checkbox"/> Not at all achieved</p> <p><input type="checkbox"/> Unsure</p>	<p>The main outcomes with regards to the capacity of participants of the training include:</p> <ul style="list-style-type: none"> <li>• Enrich the participants' knowledge with new insights on related issues to irrigation water management viz design, operation and maintenance, management of mega irrigation schemes, etc ...</li> <li>• Improve capacity and enhance capability of water professionals/managers to handle the overall scheme management responsibilities as well as planning and implementing the specialized water management tasks required for maximizing water and crop productivities.</li> <li>• Acquire skills in applying remote sensing and AquaCrop to assess the performance of irrigation systems.</li> <li>• A spreadsheet programme was developed for planning and monitoring operation and maintenance activities.</li> </ul>
<p>28. Did gender constitute a specific component of the training?</p>	<p><input checked="" type="checkbox"/> Yes</p> <p><input type="checkbox"/> No</p>
<p>29. If yes to question 28, describe the achieved result(s) relating to gender or women's empowerment. <i>Please explain (max. 150 words)</i></p>	<p>As part of the training, specifically also gender was included as a topic. This allowed for raising awareness on gender role in irrigation water management as well as on water governance aspects to be integrated in formulating water management solutions.</p>
<p>30. How have you ensured that the results of this training are sustainable? <i>Please explain (max. 150 words)</i></p>	<p>The course was solutions-oriented. The different design, water management and governance, operation and maintenance and gender and modelling courses addressed some existing problems of the 1 million ha Gezira Irrigation Scheme in Sudan, the largest in Sub-Saharan Africa. The participants from HRC and the Ministry of Water Resources and Electricity are engineers and managers currently in duty managing the Gezira and other mega irrigation schemes in Sudan and hence have the opportunity to apply the knowledge and experiences they gained in the training. The participants were provided with the complete package of the training materials (power-points, exercise and reference notes) and this will support their efforts to transfer knowledge to their fellow engineers and managers.</p>

#### IV. Other relevant information

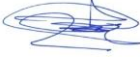
31. Do you have any other final conclusions or recommendations?	<p>Mega irrigation schemes are the largest water users. For instance in Sudan, they account for about 80% consumption of the national water resources. Water management in mega irrigation schemes is therefore critical for water and food security at household and national levels. Yet, in the past decades, much of the focus shifted to small-scale irrigation and as a result the water and agricultural productivity of the mega irrigation schemes has significantly declined. HRC and MetaMeta recommend to build upon this training and develop long-term solutions-oriented capacity building and research programmes in collaboration with NFP and other relevant development organizations</p>
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**V. Publicity**

35. How do you make information regarding the training publicly available	Please indicate the link.
<input type="checkbox"/> Twitter	<a href="https://twitter.com/thewaterchannel">twitter.com/thewaterchannel</a>
<input type="checkbox"/> Facebook	<a href="https://facebook.com/thewaterchannel">facebook.com/thewaterchannel</a>
<input type="checkbox"/> Instagram	
<input checked="" type="checkbox"/> Blog	<a href="http://www.thewaterchannel.tv/dossiers/mega-irrigation">http://www.thewaterchannel.tv/dossiers/mega-irrigation</a>
<input checked="" type="checkbox"/> Website	<a href="http://www.thewaterchannel.tv/dossiers/mega-irrigation">http://www.thewaterchannel.tv/dossiers/mega-irrigation</a>
<input checked="" type="checkbox"/> Other:.....	The trainees and trainers were, on the first training day, graced by the presence of State Minister of the Ministry of Water Resources, Irrigation and Electricity (Sudan) and the Ambassador of Dutch Embassy. This was covered in Sudanese media through both Newspaper and <a href="http://www.suna-sd.net">www.suna-sd.net</a> (see also attached report).
Reference should be made to the Ministry of Foreign Affairs and EP-Nuffic.	

## VI. Statements

This (signed) statements indicate that the all parties (provider(s) and trained requesting organisation) have approved the report.

Signature	Name signatory	Date and location
Requesting organisation: Hydraulic Research Centre (HRC)	 Prof. Yasir A. Mohammed	6 November 2016, Wad Medani, Sudan
Providing organisation: MetaMeta Research	 Dr. Frank van Steenbergen, Managing Director	4 November 2016, 's-Hertogenbosch, The Netherlands