



Report on:

**The Tailor Made Training Course on:
Water Management in Mega Irrigation Schemes**



**The Hydraulics Research Center, 14-25 August 2016
Wad Medani – SUDAN**

I. Introduction

This report presents a brief overview of the activities of the Tailor-Made Training course organized by the Hydraulics Research Center (HRC-Sudan) and MetaMeta Research – The Netherlands in the period 14-25 August 2016. The TMT course was funded by the Netherlands Fellowships Programs (NFP) - The Netherlands Government, administered by NUFFIC.

The TMT course aimed to equip and strengthen the scientific and practical knowledge in the field of irrigation water management within HRC-Sudan and the other local organizations engaged in water resources management and development under irrigated agriculture.

Twenty four (24) participants have attended the course (list given in Annex 1). The candidates are junior and mid-career professionals representing governmental authorities, universities and research institutions who are involved directly or indirectly in agricultural development in Sudan with a particular emphasis on irrigation water management. It is worth noting that three (3) experts of international experiences have contributed to the TMT teaching staff besides twelve (12) national experts.

On the closing day, certificates of attendance were handed to the participants by the representative of the Undersecretary of the Ministry of Water Resources, Irrigation and Electricity (Sudan), Director General of HRC-Sudan and MetaMeta Research representative.

II. Implementation of the Training Course

The training has started by an opening session which included introductory presentations on the activities of HRC-Sudan and MetaMeta Research. It was addressed by the State Minister of the Ministry of Water Resources, Irrigation and Electricity (Sudan), Ambassador of Dutch Embassy in Sudan, Director General of HRC-Sudan and representative of MetaMeta Research. Key stakeholders related to irrigation water management in Sudan have attended the opening session, viz: representatives from the governmental ministries, academic institutions in the Gezira State, in addition to HRC staff.



The training sessions covered the following modules (Annex 2 has the detailed programme):

- Module 1: Situation analyses of current major challenges and possible solutions, taking into consideration local and international experiences and lessons.
- Module 2: Design aspects of irrigation and drainage systems.
- Module 3: Operation and Maintenance (O&M).
- Module 4: Improving field water management for higher productivity.
- Module 5: Assessment of irrigation performance using remotely sensed information.
- Module 6: Water governance.
- Module 7: Gender role in irrigation water management.
- Module 8: Managing mega irrigation schemes.

The delivery of the modules followed a participant-centered approach. There was ample time for questions and discussions and all lecture sessions were supported with individual and group exercises that address an existing local design, management, operation and maintenance problems. Given its national significance as far as water and food security are concerned, the close to 1 million ha Gezira scheme served as a case study to many of the exercises and lectures.



In addition to the above modules, a one day field visit was conducted to the Gezira irrigation scheme. Section III below gives further details.

III. Field Visit

The Gezira irrigation scheme, as a living model for irrigated agriculture in Sudan, is visited by the course participants guided by the HRC staff.

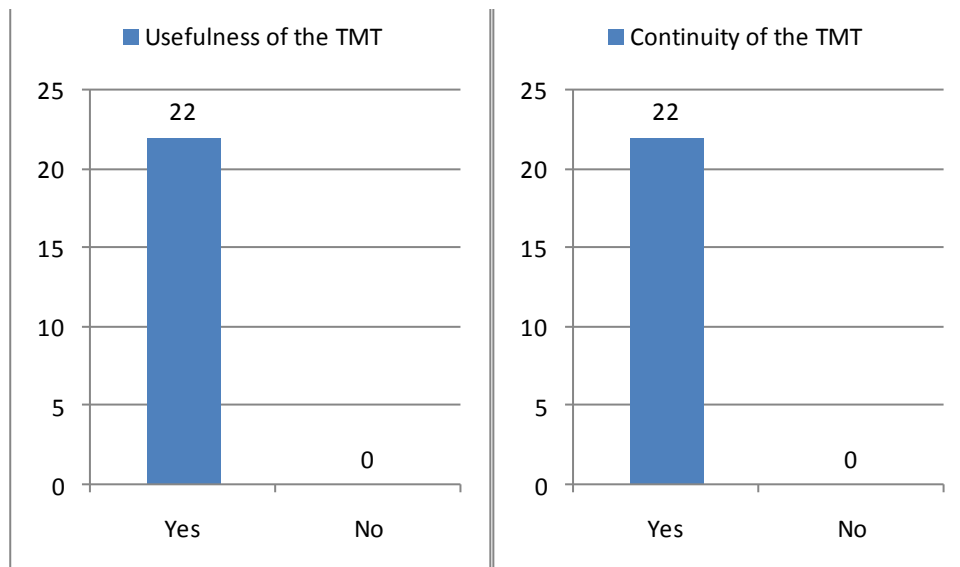
The theory behind calculating discharges passing through different hydraulic structures, how to conduct surveying works in canalization systems, and introducing the different equipments and devices used in the field work were in depth explained before going to the field to fulfill some the prerequisite of the irrigation engineers. Working into groups, flow measurements and exercises on surveying works were conducted in one of the major canals in Gezira scheme.



IV. Reflections by Course Participants

22 participants of the TMT course out of 24 have filled in the evaluation forms on Thursday 25th of August 2016 (see Annex 3). The course participants have freely reflected their own points of views regarding the course activities. The main outcomes are as follows:

- 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).
- A detailed analysis of the course evaluation by the participants was made and it has considered different aspects of the training including the performance of the lecturers, the usefulness of the delivered course material, organizational issues, etc ... The diagram below shows the response of the TMT participants regarding the importance of the TMT course and the need for similar events to enhance the capacity building of the local staff and for improving the sector of the irrigation water management in agricultural schemes. Annex 4 gives a detailed evaluation.



V. Main Outcomes

The TMT course has contributed to:

- 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 ...
- 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.
- Acquire skills in applying remote sensing and AquaCrop to assess the performance of irrigation systems.
- A spreadsheet programme was developed for planning and monitoring operation and maintenance activities.
- A follow-up course programme is developed that takes stock of the evaluation by the participants.
- Promotional video that outlines the challenges of and makes the case for more attention to mega irrigation schemes has been produced. See the link: <http://www.thewaterchannel.tv/media-gallery/6354-mega-irrigation-schemes>
- Awareness rising on gender role in irrigation water management as well as on water governance aspects to be integrated in formulating water management solutions.



VI. Closing Ceremony

The closing ceremony was addressed by the representative of U/S of the Ministry of Water Resources, Irrigation and Electricity (Sudan), Director General of HRC-Sudan and MetaMeta Research representative.

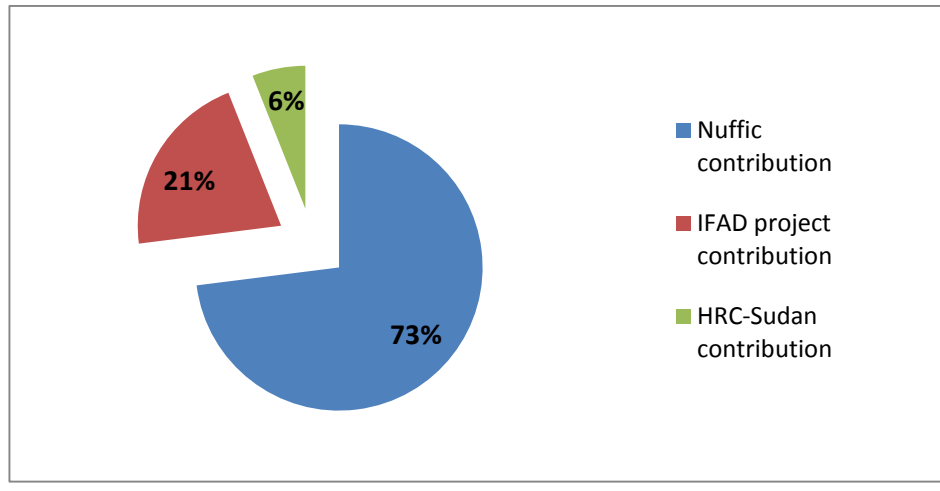
By the end of the TMT course, the participants were awarded attendance certificates by the guest of honors. All participants have also been provided with completed packages of course material that included power points, reference materials, and exercise notes.

As in the opening session, representatives of national and local media and press agencies were present to cover this important scientific event (Annex 5).



VII. Financial Report

The total allocated budget has reached 70952 Euro and the share of the funding organization (NFP), the research project in FBFs funded by IFAD, and the requesting organization (HRC-Sudan) is presented by the following diagram.



The NFP contribution has covered the expenditures of development and implementation of the TMT course for the training provider i.e. MetaMeta-Research in addition to the TMT participants relevant costs while the IFAD project contribution has covered the costs of the HRC-Sudan staff for preparation and implementation purposes. On the other side, HRC-Sudan has provided the training venue, transportation for all lecturers and for the field trip, costs of opening and closing ceremonies and other relevant services.

A completed financial report is provided including all detailed expenditures during the TMT course (Annex ..).

Annex 1: List of Participants

No.	Name	Organization
1	Aasim Abdalla Osman Elhag	DIU
2	Abulfaid Mohamed Murtada Yousif	DIU
3	Ali Khalifa Mohammed	Min. of Agri./Khartoum State
4	Ali Mohamed Ahmed Elhaj	HRC-Sudan
5	Amira Osman Elhassan	MWRIE/N-Gezira
6	Bahaeldin Abdalla Abass Mustafa	MWRIE/Rahad
7	Burai Abdalla Ibrahim Haroun	MWRIE/New Halfa
8	Elawad Ahmed Abdulhameed Mohammed	Cooperation of irrigation work
9	Eltayeb Awad Sulieman	Guneid Sugar Scheme
10	Eltayeb Garelnapy Elamin Musa	MWRIE/W-Managil
11	Eltayeb Mohammed Yousif Awad Elkrim	MWRIE/GRTU
12	Fath el Rahman Rizg Alla Mohamed Rizg Alla	MWRIE/EL Suki
13	Julia Awad Elkarim Elhadi Mustafa	HRC-Sudan
14	Mohamed Ahmed Osman Amin	ARC
15	Mohamed Eldow Elbushra Eldow	HRC-Sudan
16	Mohamed Hassan Elfaki	MWRIE
17	Mohammed Hassan Mohammed Salih	MWRIE/N-Gezira
18	Mustafa Omer Salih Mahamed	MWRIE/E-Managil
19	Nagla Barakat Abdallah Mohammed	MWRIE/Projects
20	Nasr Eldeen Hassan Taha Suhel	MWRIE/S-Gezira
21	Sami Ibrahim Ismael Omer	MWRIE/S-Gezira
22	Shaza Sir el Khatim Elsayed	MWRIE/Projects
23	Shazali Ibrahim Abdelgadir	MWRIE/N-Gezira
24	Waleed Hashim Mohammed Elamin	Khartoum Uni.

Annex 2: TMT Course Program

Tailor-Made Training Course: Water Management in Mega Irrigation Schemes

Training Program

14-25AUG. 2016, HRC-Sudan

Day 1: 14 August	Topic	Lecturer/moderator
8:30 to 10:00	Session 1: Opening session	
8:30 to 9:00	Registration	Eng. Ahmed A. Bagi
9:00 to 9:10	Welcoming remarks	Prof. Yasir Mohamed
9:10 to 9:20	HRC-Sudan at a glance	Assoc. Prof. Abu Obieda
9:20 to 9:30	MetaMeta Research at a glance	Dr. Abraham Mehari Haile
9:30 to 9:40	Welcoming remarks	US-Irrigation
9:40 to 9:50	Welcoming remarks	Ambassador – Dutch embassy
9:50 to 10:00	Welcoming remarks	State Minister
10:00 to 10:30	Coffee break	
10:30 to 17:00	Module 1: Situation analyses	
10:30 to 12:00	Water management challenges/solutions in mega irrigation systems in Sudan: <ul style="list-style-type: none"> - Video: the ‘Gezira Irrigation Scheme- A struggle for Revival’ - Presentation and discussion : Summary Gezira Consultative Workshop (21-26 February 2016) 	Prof. Yasir Mohamed
12:00 to 13:00	Overview of mega flood-based irrigation systems in Sudan and beyond	Dr. Abraham Mehari Haile
13:00 to 14:00	Lunch	
14:00 to 15:00	Presentation: Overview of conventional mega irrigation systems in Sudan: Commonalities and experiences	Assis. Prof.Hassan Balla
15:00 to 15:30	Coffee break	
15:30 to 17:00	Discussion: Participants from various schemes share experiences	Assis. Prof. Hassan/ Dr. Abraham
Day 2:15 August	Topic	Lecturer/moderator
9:00 to 17:00	Module 2: Design aspects of irrigation and drainage systems	
9:00 to 10:30	Key design strategies and considerations	Dr. AdilElkhider
10:30 to 11:00	Coffee break	

11:00 to 12:30	Design of hydraulic structures and canals : Introducing useful software	Dr. AdilElkhider	
<i>12:30 to 13:30</i>	<i>Lunch</i>		
13:30 to 15:00	Open discussion: Key design challenges and practical solutions	Dr. Adil and Dr. Abraham	
<i>15:00 to 15:30</i>	<i>Coffee break</i>		
15:30 to 17:00	Introducing the design sheet manual of the MWRIE	Dr. Ahmed Kabo	
Day 3:16 August	Topic	Lecturer/moderator	
9:00 to 17:00	Module 2: Design aspects of irrigation and drainage systems		
9:00 to 10:30	Exercise: Evaluation the design sheet manual – completeness and practical usefulness	Dr. Ahmed Kabo and Dr. Abraham	
<i>10:30 to 11:00</i>	<i>Coffee break</i>		
11:00 to 12:30	Sedimentation management: avoiding excessive sedimentation through design, better operation and maintenance	Dr. YounisAbdalla	
<i>12:30 to 13:30</i>	<i>Lunch</i>		
13:30 to 15:00	Exercise: participants in groups formulate sediment management options forGezira Irrigation Scheme	Dr. YounisAbdalla	
<i>15:00 to 15:30</i>	<i>Coffee break</i>		
15:30 to 17:00	Worldwide examples of modernization and upgrading	Prof. Bart Schultz	
Day 4:17 August	Topic	Lecturer/moderator	
9:00 to 17:00	Module 3: Operation and Maintenance (O&M)		
9:00 to 10:30	Operation: approaches, key technical and organizational requirements for planning and implementation	Prof. Bart Schultz	
<i>10:30 to 11:00</i>	<i>Coffee break</i>		
11:00 to 12:30	Maintenance: approaches, key technical and organizational requirement for planning and implementation	Prof. Bart Schultz	
<i>12:30 to 13:30</i>	<i>Lunch</i>		
13:30 to 15:00	Evaluating the current operation and maintenance practices in Gezira Irrigation Scheme (existing manuals/guidelines)	Dr. Ahmed Adam	
<i>15:00 to 15:30</i>	<i>Coffee break</i>		
15:30 to 17:00	Evaluating the current operation and maintenance practices in Gezira Irrigation Scheme (existing manuals/guidelines)	Dr. Ahmed Adam	
Day 5: 18 August	Topic	Lecturer/moderator	Location

8:30 to 17:00	Module 4: Field visit and field work in Gezira Scheme	Abu Obeida/Prof. Schultz	
8:30 to 9:15	Flow measurement & control structures: Types (weirs, sluice gates): terminologies, flow conditions, sensitivity, applicability ... etc.	Prof. Bart Schultz	Training center, HRC
9:15 to 10:00	Methods of flow measurements: Velocity-area, float, rating curve, Manning-Chezy.	Assoc. Prof. Abu Obieda	Training center, HRC
10:00 to 10:30	Land survey (x-sectioning) – setting-out sheet preparation .. etc.	Assoc. Prof. Abu Obieda	Training center, HRC
10:30 to 11:00	Coffee break		
11:00 to 15:00	Field work: observations, flow measurement & x-sectioning	Prof. Schultz, Assoc. Prof. Abu Obieda, Tech. Nasreldin, Tech. Al Terafi, Staffmen: Hussien, Ahmed	K108, Al Warag Major
15:00 to 15:30	Coffee break		
15:30 to 17:00	Exercises & discussions	Abu Obeida/Prof. Schultz	Training center, HRC
Day 6: 19 August	Free day		
Day 7: 20 August	Topic	Lecturer/moderator	
9:00 to 17:00	Module 5: Improving field water management for higher productivity		
9:00 to 10:30	Irrigation planning: cropping calendar, cropping pattern, CWR and irrigation scheduling	Dr. Abraham Mehari Haile	
10:30 to 11:00	Coffee break		
11:00 to 12:30	Introducing AquaCrop programme	Dr. Abraham Mehari Haile	
12:30 to 13:30	Lunch		
13:30 to 15:00	Exercise: Using AquaCrop programme for assessing crop and water productivity under different irrigation planning scenarios	Dr. Abraham Mehari Haile and Mr. Ahmed A. Bagi	
15:00 to 15:30	Coffee break		
15:30 to 17:00	Exercise: Using AquaCrop programme for assessing crop and water productivity under different irrigation planning scenarios	Dr. Abraham Mehari Haile and Mr. Ahmed A. Bagi	
Day 8: 21 August	Topic	Lecturer/moderator	
9:00 to 17:00	Module 6: Assessment of irrigation performance		
9:00 to 10:30	Irrigation water management using remotely sensed data	Dr. Khalid Biro	

<i>10:30 to 11:00</i>	<i>Coffee break</i>	
11:00 to 12:30	Performance assessment: RS application to Gezira/ Application of Smart ICT for water management	Dr. Khalid Biro
<i>12:30 to 13:30</i>	<i>Lunch</i>	
13:30 to 15:00	Environmental issues in irrigation systems	Prof. Ali Adeeb
<i>15:00 to 15:30</i>	<i>Coffee break</i>	
15:30 to 17:00	Health issues in irrigation systems	Prof. Samira Hamid
Day 9:22 August	Topic	Lecturer/moderator
9:00 to 17:00	Module 7: Water governance	
9:00 to 10:30	Policy and institutions of irrigation systems: Experiences from Sudan	Dr. El TiganiBashier
<i>10:30 to 11:00</i>	<i>Coffee break</i>	
11:00 to 12:30	Policies and institutional changes in Gezira Scheme during last years	Dr. El TiganiBashier
<i>12:30 to 13:30</i>	<i>Lunch</i>	
13:30 to 15:00	Policy and institutions of irrigation systems – international experiences	Dr. Frank Van Steenberg
<i>15:00 to 15:30</i>	<i>Coffee break</i>	
15:30 to 17:00	Policy and institutions of irrigation systems – international experiences	Dr. Frank Van Steenberg
Day 10:23 August	Topic	Lecturer/moderator
9:00 to 12:30	Module 8: Gender role in irrigation management	
9:00 to 10:30	A gender sensitive approach to irrigation management	Dr. SumaiaAlsayd
<i>10:30 to 11:00</i>	<i>Coffee break</i>	
11:00 to 12:30	Gender mainstreaming: analyzing the different costs/benefits of planned interventions for women and men	Dr. SumaiaAlsayd
<i>12:30 to 13:30</i>	<i>Lunch</i>	
13:30 to 15:00	Group Exercise:	Dr. Khalid Biro, Rumyssa
<i>15:00 to 15:30</i>	<i>Coffee break</i>	
15:30 to 17:00	Group Exercise:	Dr. Khalid Biro, Rumyssa
Day 11:24 August	Topic	Lecturer/moderator
9:00 to 17:00	Module 9: Managing mega irrigation schemes	
9:00 to 10:30	Managing the process of rehabilitation and modernisation: strategies and practices	Dr. Frank Van Steenberg

<i>10:30 to 11:00</i>	<i>Coffee break</i>	
11:00 to 12:30	Managing the scheme: organizational structures, overall coordination, management of specialized activities, administrative services	Dr. Frank Van Steenbergen
<i>12:30 to 13:30</i>	<i>Lunch</i>	
13:30 to 15:00	Group exercise: prepare the best management structure for Gezira irrigation scheme supported with brief explanation	Dr. Frank Van Steenbergen
<i>15:00 to 15:30</i>	<i>Coffee break</i>	
15:30 to 17:00	Group exercise: prepare the best management structure for Gezira irrigation scheme supported with brief explanation	Dr. Frank Van Steenbergen
Day 12:25 August	Topic	Lecturer/moderator
9:00 to 10:00	Reflections and written evaluations by participants	Eng. Amira Mekawi
10:00 to 11:00	Closing ceremony and certificates award	Prof. Yasir Mohamed

Annex 3: Evaluation Form

الكورس المتخصص في مجال إدارة مياه الري في المشاريع الكبرى

25-14 أغسطس 2016 - مركز البحوث الهيدروليكية - واد مدني

استمارة تقييم

ا. أسئلة عامة

1. هل تعتقد بأن هذا التدريب المتخصص لمهندسي عمليات الري مفيد؟ نعم لا

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.....
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2. ما هي أكثر أجزاء التدريب فائدة لكم؟

1.
2.
3.

3. ما هي أكثر أجزاء التدريب أقل فائدة لكم؟

1.
2.
3.

4. ما هي الموضوعات التي تقترح إضافتها من أجل التجويد مستقبلا؟

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5. ما هي الموضوعات التي تقترح إلغاءها من أجل التجويد مستقبلا؟

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.....
.....

لا نعم

6. هل تؤيد استمرارية وتكرار هذا التدريب بصورة دائمة لفائدة الآخرين ؟

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II. المادة العلمية / المحاضرون

فضلا ضع علامة (√) :

1. تحليل الوضع الحالي

التقييم					المحتوى / المحاضر
دون الوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	
					Water management challenges/solutions in mega irrigation systems in Sudan: Video & Summary Gezira Consultative Workshop
					Prof. Yasir Mohamed
					Overview of mega flood-based irrigation systems in Sudan and beyond
					Dr. Abraham Mehari Haile
					Overview of conventional mega irrigation systems in Sudan: Commonalities and experiences
					Assis. Prof. Hassan Balla
					Discussion: Participants from various schemes share experiences
					Assis. Prof. Hassan & Dr. Abraham

2. الجوانب التصميمية لأنظمة الري والصرف

التقييم					المحتوى / المحاضر
دونالوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	
					Key design strategies and considerations&Design of hydraulic structures and canals
					Dr. Adil Elkhider
					Open discussion: Key design challenges and practical solutions exercises
					Dr. Adil & Dr. Abraham
					Introducing the design sheet manual of the MWRIE
					Dr. Ahmed Kabo

					Exercise: Evaluation the design sheet manual – completeness and practical usefulness
					Dr. Ahmed Kabo & Dr. Abraham
					Sedimentation management& Group exercise
					Dr. Younis Abdalla
					Worldwide examples of modernization and upgrading
					Prof. Bart Schultz

3. التشغيل والصيانة

التقييم					المحتوى / المحاضر
دونالوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	
					Operation:
					Prof. Bart Schultz
					Maintenance:
					Prof. Bart Schultz
					دليل تشغيل شبكة الري بمشروع الجزيرة
					Dr. Ahmed Adam
					دليل تشغيل قنوات الري بمشروع الجزيرة
					Dr. Ahmed Adam

4. الزيارة الحقلية لمشروع الجزيرة

التقييم					المحتوى / المحاضر
دونالوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	
					Flow measurement & control structures
					Prof. Bart Schultz
					Methods of flow measurement & land survey
					Assoc. Prof. Abu Obieda
					Field work: observations, flow measurement & x-sectioning
					Prof. Schultz, Assoc. Prof. Abu Obieda
					Exercises & discussions
					Assoc. Prof. Abu Obeida/Prof. Schultz

5. إدارة المياه على مستوى الحقل

التقييم					المحتوى / المحاضر
دونالوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	

					Irrigation planning: cropping calendar, cropping pattern, CWR and irrigation scheduling
					Dr. Abraham Mehari Haile
					Introducing AquaCrop programme
					Dr. Abraham Mehari Haile
					Exercise: Using AquaCrop programme for assessing crop and water productivity under different irrigation planning
					Dr. Abraham Mehari Haile & Mr. Ahmed A. Bagi

6. تقييم أداء الري

التقييم					المحتوى / المحاضر
دونا لوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	
					Irrigation water management using remotely sensed data
					Dr. Khalid Biro
					Performance assessment: RS application to Gezira/ Application of Smart ICT for water management
					Dr. Khalid Biro
					Environmental issues in irrigation systems
					Prof. Ali Adeeb
					Health issues in irrigation systems
					Prof. Samira Hamid

7. حوكمة المياه

التقييم					المحتوى / المحاضر
دونا لوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	
					Policy and institutions of irrigation systems: Experiences from Sudan & Policies and institutional changes in Gezira Scheme during last years
					Dr. El Tigani Bashier
					Policy and institutions of irrigation systems – international experiences
					Dr. Frank Van Steenberg

8. دور الجندر في إدارة مياه الري

التقييم					المحتوى / المحاضر
دونا لوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	
					A gender sensitive approach to irrigation management & Gender mainstreaming
					Dr. Sumaia Alsayd
					Group Exercise
					Dr. Khalid Biro, Rumyssa

9. إدارة مشاريع الري الكبرى

التقييم					المحتوى / المحاضر
دونالوسط 5≤0	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	
					Managing the process of rehabilitation and modernisation: strategies and practices
					Dr. Frank Van Steenbergen
					Managing the scheme: organizational structures, overall coordination, administrative services, etc ...
					Dr. Frank Van Steenbergen
					Group exercise: prepare the best management structure for Gezira irrigation scheme supported with brief explanation
					Dr. Frank Van Steenbergen

III. الجوانب التقنية

دونالوسط ≤ 50	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	التقييم	الموضوع
						كفاية الزمن المخصص لكل جزئية أعلاه (1-9)
						برنامج التدريب (التوقيت، عدد الأيام، ...)
						إعطاء الأفضلية للغة الإنجليزية في التدريس
						أخرى

IV. التقييم العام لمجمل التدريب وفائدته لمهندسي عمليات الري

دونالوسط ≤ 50	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	التقييم	الموضوع
						التقييم العام لمجمل التدريب و فائدته لمهندسي عمليات الري

V. التنظيم العام

دونالوسط ≤ 50	وسط 50-60	جيد 60-70	جيد جداً 70-80	ممتاز ≥80	التقييم	الموضوع
						الترتيبات العامة، التواصل مع المشاركين، ...
						الالتزام بالزمن
						الوجبات اليومية
						السكن والترحيل
						أخرى

.VI مقترحات أخرى من أجل التطوير

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شكراً جزيلاً لحسن تعاونكم معنا ...

Annex 4: Evaluation Results of the TMT Training Course

Tailor-Made Training Course on: Water management in Mega Irrigation Schemes

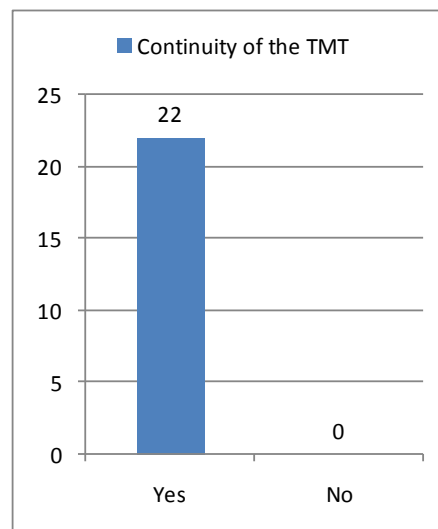
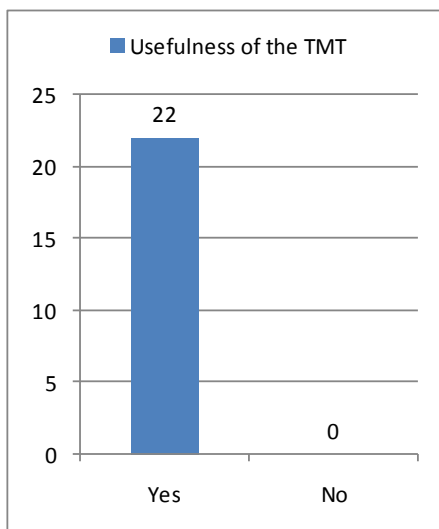
Course Evaluation

22 participants of the TMT course out of 24 have filled in the evaluation forms on Thursday 25th of August 2016. The following sections highlight the major observations.

I. General questions:

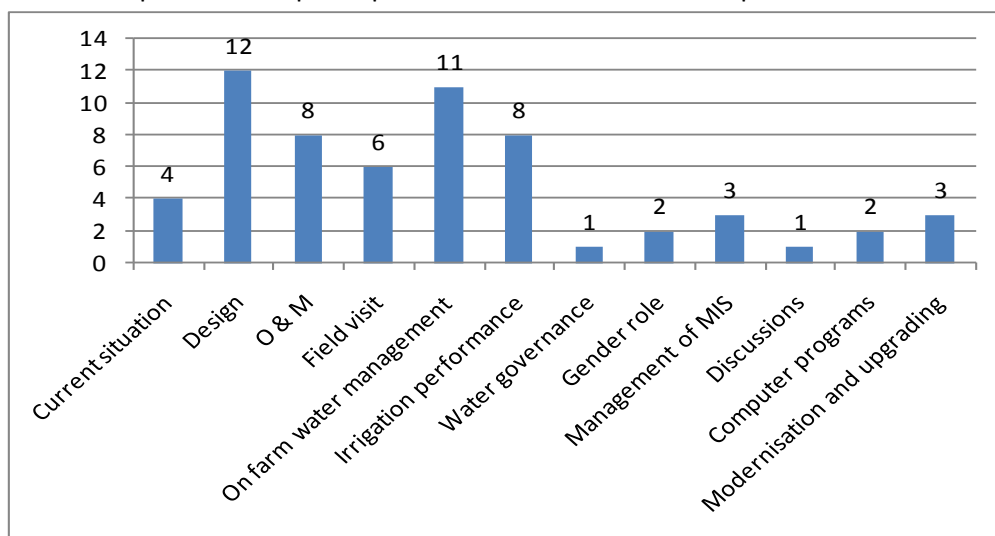
1. Usefulness & continuity of the TMT course

All participants have fully agreed that the training was very useful and it is necessary to be continued regularly for the benefit of irrigation engineers.



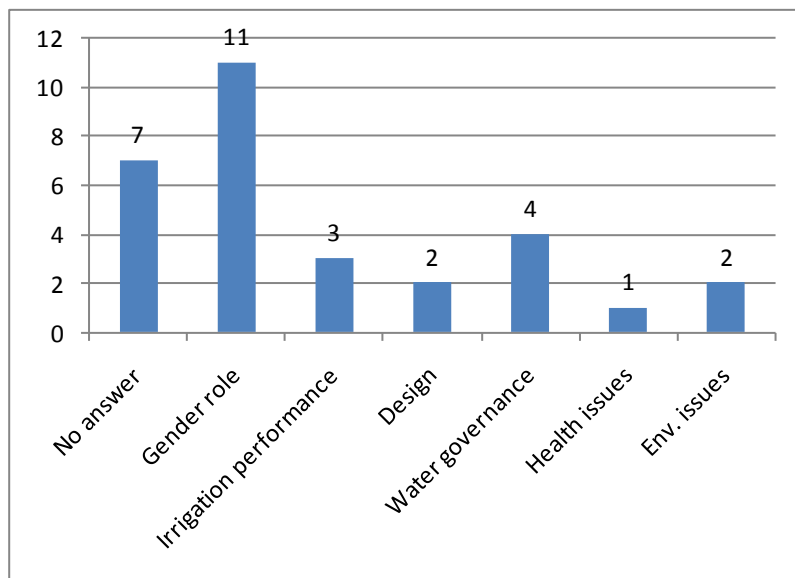
2. Most useful parts

Below is the response of the participants towards the most useful parts in the TMT course.



3. Least useful parts

The number of participants, who have rated the least useful parts in the TMT course, is as shown by the figure below.



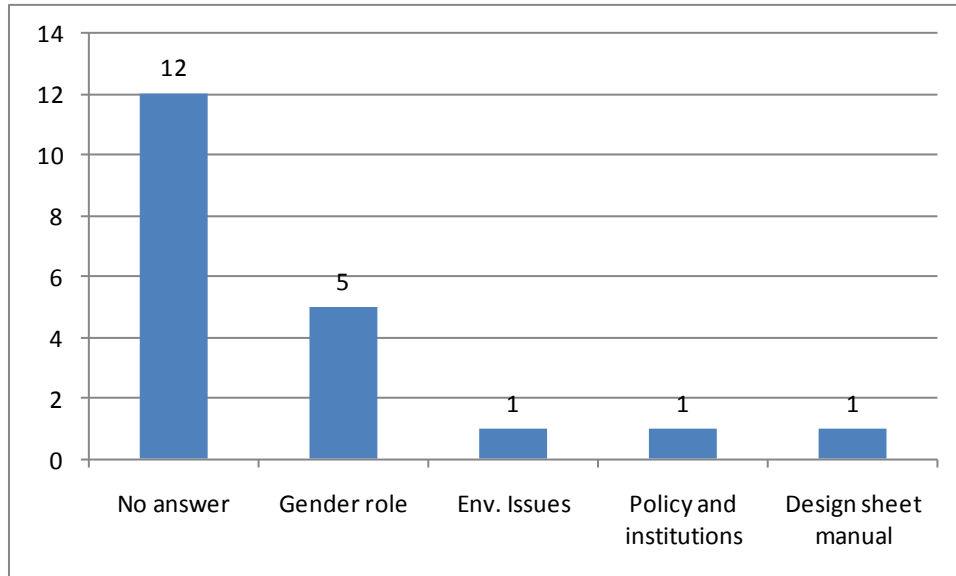
4. Topics to be added

Suggestions of TMT participants are listed as follows:

- Detailed design of current structures/regulators , their related problems, and means of sediment removal ...
- Link between theory and field
- Increasing time for field survey works, x-sectioning
- Using GIS and RS in irrigation water management, introduction to relevant softwares
- Water management on canalization system level
- Agricultural machinery
- Software of calculating water volumes and modeling
- Course on operation of dams
- Studies on social situation of GS farmers and impact of demographical changes on irrigation performance
- Including other systems of irrigation (e.g. GW, ...)
- Training to be held in Arabic plus translation for foreign lecturers
- Political, social and regulation aspects
- Automation of irrigation schemes
- Rehabilitation of irrigation schemes
- Courses on computer

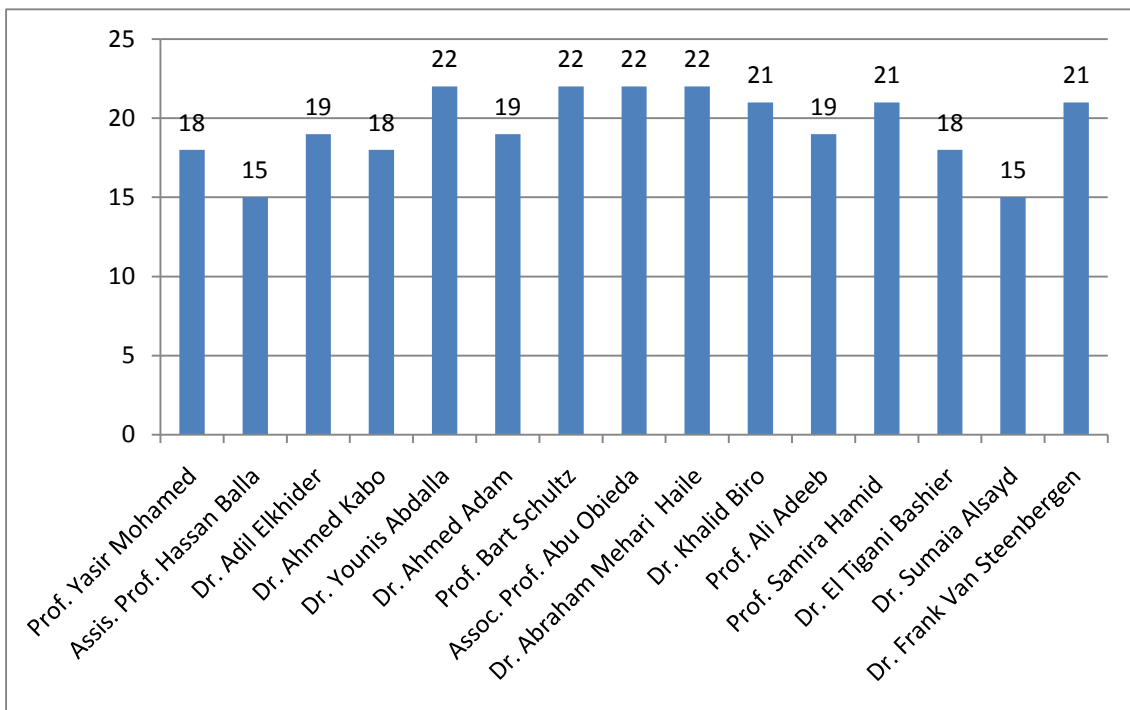
5. Topics to be cancelled

The figure below shows the response of the participants concerning the unnecessary themes.

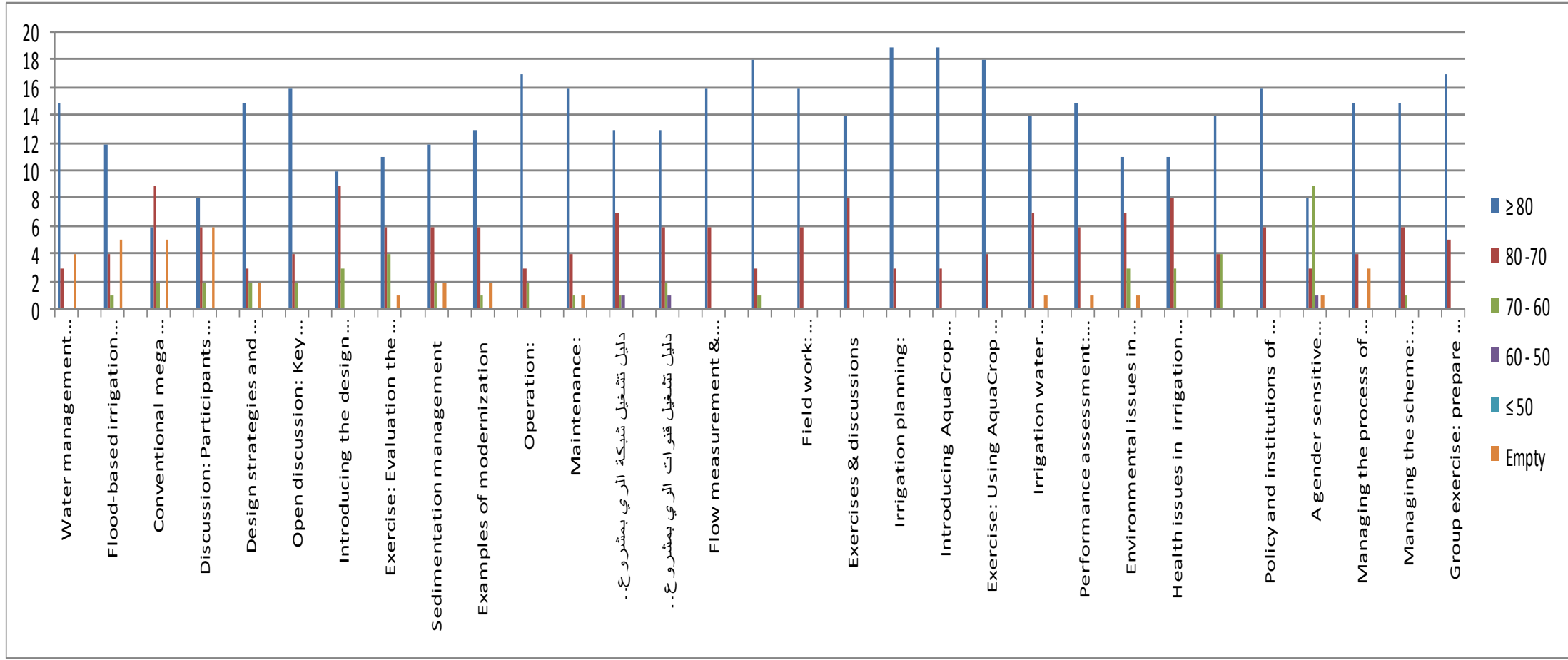


II. Content and lecturers:

Below is the number of the TMT participants who have rated the lecturers for performance above 70%:

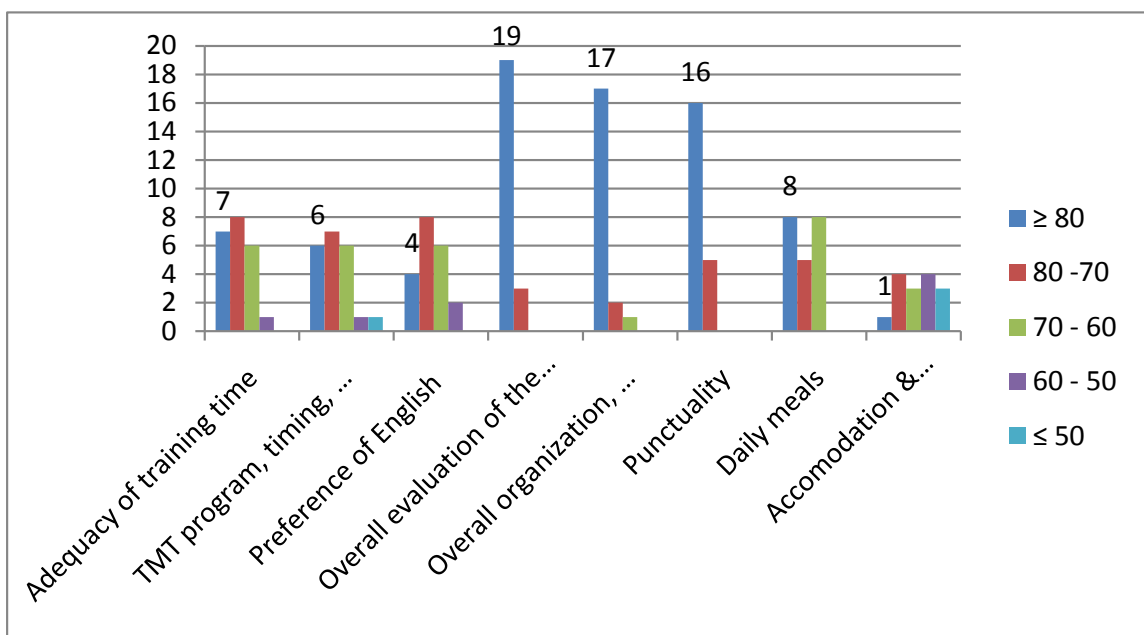


The diagram below gives in details the response of the TMT participants concerning the course material.



III. Overall evaluation of the TMT course:

Below is summary of participants' response towards some technical and logistical issues concerning the TMT course.



Annex 5: Examples of Media Coverage

