



Technical Report

TRAINING COURSE
ON
SALINITY MANAGEMENT
13 – 17 September, 2015
Amman, Jordan

Japan International Cooperation Agency (JICA)
and
International Center for Agricultural Research in the Dry Areas (ICARDA)



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EXECUTIVE SUMMARY

Name of the project

Capacity Development for Agriculture and Water management for Iraq and Regional countries

Partners

Japan International Cooperation Agency (JICA)

International Center for Agricultural Research in the Dry Areas (ICARDA)

National Center for Agricultural Research and extension (NCARE) - Hashemite Kingdom of Jordan

Purpose

To enhance Capacity Development of government officials and researchers who are engaged in irrigation projects and agricultural development mainly in Iraq

Specific objectives of the training course on Salinity Management

Up-to-date knowledge and enhanced capacity in salinity and the design, implementation, management, analysis, and reporting of agricultural research related to water-use efficiency, drought monitoring, and crop improvement for sustainable agricultural production.

Specific outputs

9 professionally-trained NARS partners from Iraq, 2 from Jordan and 2 from other countries: 1 from Sudan and 1 from Egypt on Improving Water Productivity in Agricultural Systems with emphasis on dry land agriculture

Specific outcomes

Design, implement, manage, analyze and report on research and development in salinity and acquire up-to-date information on research and practical activities in salinity management in each participating country.



GENERAL OVERVIEW

Water is the major limiting factor of agricultural production in the dry areas of Central and West Asia and North Africa (CWANA) regions. Agriculture accounts for around 80-90% of freshwater consumption in the regions. However, the rapidly growing population, industrialization, and urbanization will lead to reallocation of water increasingly away from agriculture to other sectors. On the other hand, high population growth rates require a continuous increase in agricultural production.

Salinity management in agriculture is interpreted differently by different entities. This often creates misunderstandings about approaches towards managing salinity (or effects of salinity) in agriculture.

Most of the salinity-affected areas in Iraq, Egypt, Jordan, Sudan and Tunisia are related to irrigation water management. Irrigation water management can either be the cause, and/or the solution to salinity management in agriculture. In countries like Jordan and Palestine, solutions to reduce salinity in saline areas are highly limited, or not economically feasible. Therefore, we approach salinity management in terms of "fighting salinity" for areas where water management is a possible tool, and "living with salinity" where we are adjusting our agronomic practices to maximize agricultural production under saline conditions. Note that one approach does not exclude the other, and that in areas of the Mesopotamian plain, as well as in the Nile Delta, a mixture of solutions from the "fighting salinity" and "living with salinity" is needed.

ICARDA's mission is to improve the welfare of people through agricultural research and training to increase the production, productivity, and quality of food, while preserving or improving the resource base. ICARDA's training courses are designed to improve the capabilities of scientists and technicians in national agricultural research systems (NARS) in developing countries to conduct research independently, and to foster transfer of technology and address issues related to farmers' decisions in adopting or rejecting new technologies. To this end, ICARDA has organized this course.

PURPOSE

The course conducted by ICARDA focused on the different approaches towards salinity management, the different conditions that guide us towards solutions, and the interpretation of solutions on long-term sustainability of agricultural production under saline conditions.

The course was developed to introduce the framework, understand the impact of the "solutions" selected for salinity management, and explain the different scales of salinity management (*see details Annex I*).

Several examples from other regions were used to explain the possible advantages and disadvantages of salinity management in the countries of Iraq, Egypt, Jordan and Palestine.



The training is an element in the approach to improve capacity of national governments to understand and implement salinity management frameworks within the capabilities of the country.

TARGETED AUDIENCE

Mid-level career managers of natural resources for agricultural production, involved in field scale, irrigation system scale, and regional scale water, land and salinity management. The focus of the course was on the Mesopotamian plain in Iraq, but the inclusion of representatives from Egypt, Jordan, Sudan and Palestine allowed for a broader discussion between participants on the possible implementations of solutions.

A total of 13 participants from four countries (Iraq, Sudan, Egypt, and Jordan) took part of the training.

Amongst them 9 trainees from Iraq, 2 from Jordan, 1 from Sudan and 1 from Egypt were supported under JICA Capacity development for agriculture and water management for Iraq and regional countries program (*see details Annex III*).

ORGANIZING COMMITTEE

Mr. Charles Kleinermann, Head, ICARDA Capacity Development Unit (CDU)

Dr. Theib Oweis, Director, ICARDA Integrated Water & Land Management Program (IWLMP)

Dr. Vinay Nangia, ICARDA, IWLMP, Course Coordinator

COURSE STRUCTURE

The course was setup to maximize the interaction of participants with the course content.

The background of the participants was homogeneous (water engineers, soil engineers, water managers and agricultural researchers) which was an asset in the discussions.

Due to the homogeneity of backgrounds, the focus of the course was on a better understanding and ability to define the problems, and to find solutions through management. Some engineering approaches were used to strengthen the concept of salt mass (and thus the long term sustainability issues).

Lecturing and discussions were to a large extent conducted by one or two experts at a time. This was designed to improve the coherency of the course, and to allow a frequent reflection on discussions held earlier in the course.

To allow interaction with other researchers from ICARDA, seven lecturers were invited to provide case studies, and to provide a detailed example from other parts of the CWANA region.



COURSE IMPLEMENTATION

The 5-day course was designed to grow into the salinity management framework approach.

The first day included an introduction at the three identified levels of salinity management: field/farm level, irrigation system level, and regional/national level. The two approaches of "living with salinity" and "fighting salinity" were introduced to allow an understanding of the term "salinity management". Salinity management as a mass balance approach was introduced to understand the difference between "managing the accumulation of salts" and "managing the effects of salinizing areas on agricultural production".

The second day was used to introduce the concepts of a salinity management framework implementation at the three management levels introduced on the first day. Based on this example, discussions were held on the potential of these approaches in the countries of Iraq, Egypt, Jordan, Sudan and Palestine. Sustainability assessments were introduced in the latter part of the day to introduce long-term visions towards proposed solutions, related to sustainability, applicable to the three scales of management.

The third day started with an overview of salt management solutions at field level, using a water and salt flux assessment. Similar to the discussions on the previous day, where mainly the national level approach was discussed, group discussions were held, and examples were given on salinity management options for irrigation districts and field levels. The day concluded with a summary and emphasis on sustainable solution-driven approaches.

The fourth day introduced the problem of salinity management under shallow groundwater conditions. This is a condition that contributes strongly to some of the saline areas in Iraq and Egypt. Examples from research in Central Asia were presented. The second part of the day was used for participants to analyze four case-studies. Four groups were formed to attempt to advise the participants from the other countries on their potential solutions. These solutions were presented in the course, and discussed on their long-term sustainability, their approach towards management salinity mass or effects of salinity on agricultural production, and methods to implement these solutions.

The last day was used to introduce the assessment and results from a project that focused on salinity management in central and southern Iraq. The analysis and proposed solutions were the result of a 5-year program between 5 international organizations, and 5 ministries of the government of Iraq. The proposed solutions were submitted at ministerial levels, and the introduction of these reports to the participants had the objective to strengthen the conclusions from participants based on the analysis exercise from the fourth day. Further discussions were held on how the thoughts and ideas developed during the course would be used in the participants' work place.



GROUP ASSESSMENT

Trainees were divided into 4 groups and were given information on agricultural sector, salinity problems and study site location to develop a 20 minute presentation to give to the given country's agriculture minister presenting a plan to solve the salinity problem. The groups of trainees were asked to present the problem, the solution, methodology, estimate of cost and time and any negative environmental effects of their planned intervention. They were to apply the knowledge gained in the training to prepare the presentations.

Drs. Usman Awan and Vinay Nangia served as judges to score the presentations.

Here is summary of group scores:

Group	Average Score	Team members
Iraq-1	3.5/5.0	Ms. Alyaa Ali Mohammed Saeed Ms. Dina Makky Ibrahim Mr. Layth Saadi Jaafar Mr. Ammar Jabbar Abdul Razzq
Iraq-2	3.5/5.0	Ms. Maha Ali Abbas Ms. Mousen Adnan Al-Kamil Ms. Shaymaa Saadoon Mutar Mr. Hatim Hameed Hussein Mr. Mohammed Sami Safi
Egypt + Tunisia	4.5/5.0	Mr. Mostafa Mohamed Zahran Mr. Tlili Abderrazak
Jordan + Sudan	4.0/5.0	Mr. Houthiafah bin Abdullah Al-Sawalemah Mr. Khalafalla Mohammed Ali Yousif

GENERAL COURSE EVALUATION by TRAINEES

Overall, the evaluation of the course by the participants was positive (*details in annex IV*). The list of the three most interesting ideas/concepts that the trainees learned in the course actually includes all course topics. This shows on one hand the heterogeneity in the scientific and professional background of the trainees but also that all topics were relevant to trainees. They stressed that the main relevant topics were on how to manage and solve salinity, solutions at irrigation, river basin and drainage, soil mixture and properties.

The trainees also suggested that the venue of the course should be in another country in order to provide practical sessions.



CONCLUSION

The participants nominated for the course were of high quality and appeared eager to participate.

The mixture between lectures and discussions appeared to work well, and the enthusiasm of the participants over the five day course appeared to remain high.

The course evaluations support the approach taken, and the pre and post knowledge assessment tests show an overall improvement in understanding the material.

This course should be seen as part of a capacity building approach of national governments towards salinity management.

With this objective in mind, the course is evaluated as successful by the lecturers. However, to actually improve water and land management for higher agricultural production and improved livelihoods under saline conditions, more follow-up activities, as well as a more coherent approach by international donors and organizations towards the national governments are needed.



ANNEX I: Course Program

Day 1: Sunday 13 September – Overview, concepts and approaches		
09:00 – 10:00	Opening ceremony - Introductions and course overview	Drs. Theib Oweis and JICA representative
10:00 – 11:00	Salinity in agriculture	Dr. Biju George
11:00 – 11:15	<i>Coffee and tea break</i>	
11:15 – 12:30	Water mass balance approach	Dr. Ashok Alva
12:30 – 13:30	<i>Lunch break</i>	
13:30 – 14:30	Available technology for water mass balance	Dr. Ashok Alva
14:30 – 14:45	<i>Coffee and tea break</i>	
14:45 – 16:00	Salinity management at different scales, from basin to field	Dr. Biju George
Day 2: Monday 14 September – Integrated approach		
09:00 – 11:00	Adapting to versus controlling salinity	Dr. Usman Awan
11:00 – 11:15	<i>Coffee and tea break</i>	
11:15 – 12:30	Traditional farm based solutions (drainage, evaporation ponds) and their impact	Dr. Biju George
12:30 – 13:30	<i>Lunch break</i>	
13:30 – 14:30	Engineering approach to salt balances – long term estimates of soil salinity in water and soil	Dr. Usman Awan
14:30 – 14:45	<i>Coffee and tea break</i>	
14:45 – 16:00	Calculation examples and exercises	Dr. Usman Awan
Day 3: Tuesday 15 September – Field, district and basin based interventions		
09:00 – 11:00	Mapping salinity using geospatial tools	Dr. Claudio Zucca
11:00 – 11:15	<i>Coffee and tea break</i>	
11:15 – 12:30	Controlling salinity in irrigated systems	Dr. Theib Oweis
12:30 – 13:30	<i>Lunch break</i>	
13:30 – 14:30	Discussion: farmer-based interventions in Iraq, Jordan, Sudan and Egypt	Facilitated by Drs. Vinay Nangia and Usman Awan
14:30 – 14:45	<i>Coffee and tea break</i>	
14:45 – 16:00	Solutions at farm level, adapting to salinity	Dr. Serkan Ates
Day 4: Wednesday 16 September – Shallow groundwater and salinity		
09:00 – 11:00	Shallow groundwater, capillary rise and salinization – the eternal cycle at irrigation districts	Dr. Usman Awan
11:00 – 11:15	<i>Coffee and tea break</i>	
11:15 – 12:30	Case study from Khorezm, Central Asia	Dr. Usman Awan
12:30 – 13:30	<i>Lunch break</i>	
13:30 – 14:30	Preparation of presentation on salinity management in Iraq, Sudan, Jordan and Egypt by participants	Facilitated by Drs. Vinay Nangia and Usman Awan



14:30 – 14:45	<i>Coffee and tea break</i>	
14:45 – 16:00	Presentation of salinity management issues in Iraq, Palestine, Jordan and Egypt by participants	Course participants and judged by Drs. Vinay Nangia and Usman Awan
Day 5: Thursday 17 September – Iraq salinity management project		
09:00 – 11:00	Overview of the Iraq salinity project- Socio Economic Perspective	Dr. Boubaker Dhehibi
11:00 – 11:15	<i>Coffee and tea break</i>	
11:15 – 12:30	Activities and their results	Dr. Boubaker Dhehibi
12:30 – 13:30	<i>Lunch break</i>	
13:30 – 14:30	What the future brings – synthesis of Iraq salinity project recommendations and key findings	Dr. Vinay Nangia
14:30 – 14:45	<i>Coffee and tea break</i>	
14:45 – 16:00	Closing ceremony	Drs. Theib Oweis and JICA representatives

Annex II: Trainers



Dr. Ashok Alva received Ph.D. from Pennsylvania State University, in soil fertility & plant nutrition, M.Sc. from Asian Institute of Technology, Bangkok, in agricultural soil & water engineering, and B.Sc. from University of Agricultural Sciences, Bangalore, in Agronomy. He is a Supervisory Research Soil Scientist, at the USDA – ARS, Northern Plains Agricultural Research Laboratory, Sidney, Montana, USA since November 2014. Previously, he was a Research Leader and Location Coordinator for the USDA-ARS Vegetable and Forage Crops Research Center in Prosser, Washington (for 15 years). He provided supervision and leadership to 40+ employees (eight scientists) on research programs to develop: (i) economically important germplasms of specialty crops, forages, and edible legumes to improve resistance to diseases, pests, abiotic stresses, and enhance processing and market qualities, and phytonutrient traits; and (ii) sustainable management technologies for specialty crops and biofuel crops production systems in the irrigated US Northwest to minimize negative environmental impacts of agricultural production practices while enhancing soil quality. He also served as an Associate Professor at the University of Florida. He led a statewide multidisciplinary research team to develop nutrient best management practices for citrus to mitigate potential nitrate loading to groundwater while maintaining high yields and quality. He has also worked and continue to collaborate with researchers in India, China, Australia, Denmark, Egypt, Kuwait, and most recently in Middle East and North Africa region. He is author/coauthor of 240+ refereed papers, 3 co-edited books, 25 book chapters, 110+ non-refereed publications. He is a ‘Fellow’ of the American Society of Agronomy and the Soil Science Society of America.



Dr. Biju George is an Irrigation and Water Management Specialist based at ICARDA, Cairo, Egypt office. He is also a Senior Fellow at the Melbourne School of Engineering, the University of Melbourne. Prior to joining ICARDA, he worked as a Senior Research Fellow at the University of Melbourne for 12 years. He has more than 15 years of experience in conducting research, developing research collaborations and teaching. His research interests include water resources systems, on-farm irrigation systems, hydrologic modelling, climate change impact assessment and water-energy nexus. He has supervised/supervising nine Ph.D. and 23 Master’s degree students and has examined several Ph.D. and M.Sc. theses internationally. He has published more than 100 research publications in international and national journals and conferences in the fields of water allocation modelling, irrigation system management, water-energy nexus and hydrology of which 67 are peer-reviewed.



Dr. Boubaker Dhehibi is an Agricultural Resource Economist Specialist in the Social, Economics and Policy Research Program (SEPRP) at ICARDA. He is distinguished for his research and teaching on production economics, climate change, economics of natural resources management, applied micro-econometrics, food demand analysis, international trade, economic modeling, competitiveness and productivity analysis of the agriculture sector in MENA region, growth analysis and economics of development. He has published more than 80 research publications in peer reviewed journals, book chapters, international conferences, working papers and proceedings.



Dr. Claudio Zucca is Soil Conservation and Land Management specialist within the Integrated Water and Land Management (IWLM) Program of ICARDA, in Amman, Jordan. Dr. Zucca has a PhD. in Pedology. Before joining ICARDA he was employed as a senior researcher at the University of Sassari (Italy), where he worked at the Department of Agricultural Sciences and at the Desertification Research Centre (NRD). His studies mainly addressed land degradation, particularly soil erosion, and land evaluation, and were characterized by interdisciplinary approaches integrating fieldwork and geomatics. His most recent research was focused on evaluating the impacts of land restoration and soil conservation practices on the provision of ecosystem goods and services. Additionally, as a consequence of his strong interest in soil genesis and geography, he performed basic pedologic research and took part to several soil survey and mapping studies. He has 25 ISI publications.



Dr. Theib Oweis is a water resources planning and management scientist, with over 40 years of experience in international research and education, development and human capacity building and in the management of water for agriculture especially in water scarce dry environments. He holds an M.Sc. and Ph.D. degrees in Agricultural and Irrigation Engineering from Utah State University, Logan, Utah, USA in 1979-1983, and BSc in Agriculture from Aleppo University in Syria in 1968-1972. He is the director of the Integrated Water and Land Management Program at the International Center for Agricultural Research in the Dry Areas (ICARDA), based in Amman, Jordan. Since 1991, he has joined ICARDA and worked in several capacities as scientist, principal scientist, research team leader and research manager. Earlier, he joined the University of Jordan, in Amman, as an assistant professor in irrigation and drainage engineering and in the 70's worked for Dar Al Handash Consultants (Shaer and Partners) as a field irrigation engineer in south Yemen. He is an author



of over 200 refereed journal publications, books/book chapters and conference proceedings in the areas of water use efficiency, supplemental irrigation, water harvesting, water productivity, deficit irrigation, salinity and the management of scarce water resources; coordinating Lead author of water productivity and the Rainfed Agriculture of the Comprehensive Assessment of water management.



Dr. Ing. Usman Khalid Awan has obtained his Ph.D. degree from Center for Development Research (ZEF), University of Bonn, Germany. He has practical experience in groundwater hydrology, surface and groundwater interactions, groundwater modeling, soil and water conservation at different spatial scales, agricultural water management, salt and water accounting at different scales, up-scaling water use efficiency and productivity from farm to irrigation scheme, salinity management, actual and potential evapotranspiration through remote sensing, and remote sensing application in hydrology in different continents of the world (Pakistan, Australia, Central Asia and Germany).



Dr. Vinay Nangia is a Senior Agricultural Hydrologist at ICARDA and an adjunct faculty at the Texas A&M University. He received his Ph.D. in Water Resources Science and two M.S. degrees - one in Biosystems & Agricultural Engineering and another in Geographic Information Science - all from the University of Minnesota, USA. Throughout his career, he has applied skills in hydrologic and crop modeling, and GIS and remote sensing to research issues relating to climate change, climatic variability, conservation agriculture, water quality, water productivity, land degradation and sustainable crop production. During a 9-year research career, he has served as a PI or co-PI on research projects worth about \$5.75 million, authored or co-authored 59 technical publications that include 22 refereed journal articles in national or international journals. Dr. Nangia is an internationally-recognized authority in hydrologic and water quality modeling and GIS applications in water resources management. He has offered more than 20 trainings (covering a total of 400 participants) on hydrologic modeling in 10 countries. Dr. Nangia serves on the editorial board of professional society journals. He serves as research advisor/committee member to M.S. and Ph.D. students and was a Visiting Assistant Professor (2007-2011) at the Institute of Soil & Water Conservation of the Chinese Academy of Science where he co-advised graduate students. Previously, Dr. Nangia was a NSERC Visiting Fellow at Agriculture and Agri-Food Canada conducting research on GHG emissions from subsurface tile-drained croplands of Eastern Ontario prior to which he was a postdoctoral fellow at the International Water Management Institute (IWMI), where he started his career in 2005.



Annex III: Trainees List of Contacts

Name/Country	Position/Specialization/Institution	Contact
Ms. Alyaa Ali Mohammed Saeed Al-Khalidi / Iraq	Ministry of water resources, Palestine street, Baghdad, Iraq Directorate of Planning and follow up/Department of planning	Mobile: 00 964 7902361010
		Email: aliaa_alkhalidy@yahoo.com
Ms. Dina Makky Ibrahim Alash / Iraq	Ministry of water resources, Palestine street, Baghdad, Iraq Directorate of Planning and follow up/Department of planning	Mobile: 00 964 7901263613
		Email: dinaalash1974@gmail.com
Miss. Maha Ali Abbas Al-Sammarraie / Iraq	Ministry of water resources, Palestine street, Baghdad, Iraq Directorate of Planning and follow up/Department of operation and maintenance of irrigation projects	Mobile: 00 964 7712985960
		Email: mha_civil@yahoo.com
Ms. Mousen Adnan Salman Al-Kamel / Iraq	Ministry of water resources, Palestine street, Baghdad, Iraq/State Commission for Irrigation and Reclamation Project in Basrah .	Mobile: 00964 7801452103
		Email: mousenalkamil@yahoo.com
Ms. Shaymaa Saadoon Mutar Al-Ibadi / Iraq	Ministry of water resources, Palestine street, Baghdad, Iraq	Mobile:
		Email: shemo_shem@yahoo.com
Mr. Ammar Jabbar Abdulrazzq Sabti / Iraq	Ministry of water resources, Palestine street, Baghdad, Iraq	Mobile: 00964 7901534799
		Email: ajars11@gmail.com
Mr. Hatem Hameed Hussein Al-Tameemi / Iraq	Ministry of water resources, National center for water resources management, Baghdad, Iraq	Mobile: 00964 7707910361
		Email: hatem_altamimy@yahoo.com
Mr. Layth Saadi Jaafar Al-Qazzaz / Iraq	Ministry of water resources, Palestine street, Baghdad, Iraq/Legal department and contracts.	Mobile: 00964 7703471599
		Email: layth_alkazzaz@yahoo.com
Mr. Mohammed Sami Safi / Iraq	Ministry of water resources, Palestine street, Baghdad, Iraq/ State Commission for Operation on Irrigation and Drainage.	Mobile: 00964 7705391519
		Email: m.sami.safi@gmail.com
Mr. Mostafa Mohamed Ahmed Ali Zahran / Egypt	Research Department at Soils, Water and Environment Research Institute, at Agriculture Research Center. Assiut Agricultural Research Station, Assiut P.O. Box 219	Mobile: 00 201090900365
		Email: Mostafazahran80@yahoo.com
Mr. Khalafalla Mohammed Ali Yousif / Sudan	Soaba Research station for Reclamation Saline and Sodic soils, Khartoum Sudan	Mobile: 00 249 966255853
		Email: khalaf881927@gmail.com
Mr. Houthiafah Abdullah Al-Sawalemah / Jordan	NCARE	Mobile: 0779847723/ 0797317187
		Email: hodyfahalswalmah@yaoo.com
Mr. Abdalah Mahmoud Mohamed AlQudah / Jordan	NCARE	Mobile: 0777306870
		Email: alqudah-75@yahoo.com



Annex IV: General Course Evaluation

I. Contents of the course:

	OVERALL AVERAGE
Relevance of the subject to your job 1=Not relevant; 5=Very relevant	4.25
Clarity of course objectives 1=Not clear; 5=Very clear	4.2
Level of lectures 1=Too basic; 5=Too advanced	4.1
Coverage of subject matter 1=Inadequate; 5=Very comprehensive	3.75
Emphasis on detail 1=Too brief; 5=Too detailed	4.2
Time for discussions 1=Too short; 5=Too long	4.3
Proceedings of the course and other complements 1=Poor; 5=Excellent	4.5
Interaction with participants enrolled in the course 1=Very low; 5=Very high	4.75
Overall, how would you rate this course 1=Poor; 5=Excellent	4.4

II. Teaching aids:

	OVERALL AVERAGE
Effectiveness of teaching aids in general 1=Not effective; 5=Very effective	4.7
Clarity of slides/overheads 1=Not clear; 5=Very clear	4.75
Handouts 1=Not useful; 5=Very useful	4.8
Computer hardware/software 1=Poor; 5=Excellent	3.7
Emphasis on detail 1=Too brief; 5=Too detailed	4.3



III. Logistics:

	OVERALL AVERAGE
Pre-course communication	5.0
Travel arrangements	4.8
Meeting at airport/entrance	5.0
Quality of the accommodation	4.6
Housekeeping services	4.5
Payment of allowance	4.25
Quality of meals	4.6
Transportation services	4.9
Lecture rooms	4.8

IV. General comments and suggestions on the course:

1. Please state the three most important ideas/concepts that you learned from this course
 - New information on salt-affected soils, their regional distribution and management
 - How to improve agriculture in affected salt soils
 - Application of water mass balance approach
 - Application of salinity management (framework in Iraq, Jordan, and Sudan)
2. Suggestions for future improvement of the course
 - Need more field work
 - Use the mother tongue language of trainees
 - Longer time should be allocated to the course
 - Practical work should be offered in Iraq
 - The trainees should be given a sample of what the classes will be like before the course so they can know what to expect.
3. Do you recommend this course to be repeated in the future?

Yes 90% No 10%