



**Food and Agriculture Organization  
of the United Nations**

**Strengthening Agricultural Water Efficiency and Productivity on the African and Global level  
GCP/INT/231/SWI**

**Regional Training Workshop on Enhancing Water Use Efficiency  
in Small Scale Irrigation: The Application of FAO's MASSCOTE Approach**

**8-15 June 2015 - Sanliurfa, Turkey**

**GAP  
WORKSHOP REPORT**



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Approach 8-15 June 2015 - Sanliurfa, Turkey**

# **GAP WORKSHOP REPORT**

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS**

**Addis Ababa, 2015**

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## **1. Background and justification**

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The project “CP/INT/231/SWI: Strengthening Agricultural Water Efficiency and Productivity on the African and Global Level” aims at reducing hunger and poverty in three African countries (Burkina Faso, Morocco and Uganda) by focusing on the improvement of Agriculture Water Management (AWM) and mainstreaming AWM in national frameworks and processes. The objectives of this project are in line with the Comprehensive Africa Agriculture Development Programme (CAADP), which provides a common framework for stimulating and guiding national, regional and continental initiatives for enhanced agriculture productivity in Africa.

The ultimate beneficiaries of the project are the small-scale and family farmers, but the overall approach of the project is a combination of bottom up and top down activities and different levels (micro, meso and macro levels). For this reason, the project will be working with extension agents and farmers’ representatives (micro level), research institutes and regional governance structures (meso level), and national governments (macro level).

One of the main outputs of the project is to enhance capacity for increased water use efficiency in small-scale irrigation in Burkina Faso, Morocco and Uganda (Output 2). The workshop “Enhancing Water Use Efficiency in Small Scale Irrigation: The Application of FAO’s MASSCOTE Approach” was one of the activities of this output.

The main objective of the workshop was to build capacities of water professionals from Burkina Faso, Morocco and Uganda (as well as the host country as a step towards south- south cooperation) on increasing water use efficiency of irrigation systems by stimulating critical senses of agricultural water management in diagnosing and evaluating obstacles, constraints and opportunities, and in developing consistent modernization plans/ strategies.

In irrigation, Water Use Efficiency (WUE) represents the ratio between effective water use and actual water withdrawal. It characterizes, in a specific process, how effective is the use of water. Efficiency is both scale and process dependent. The following questions of WUE will be answered by the training workshop.

- What are the scope/priorities for improving WUE (at canal/system level, at field level, at scheme level)?
- With what degree of certainty WUE and measurements are known (water delivery, inflow, etc.)?
- How does WUE scale up from field to system and scheme (water recycling, formal and informal irrigation practices, rain-fed irrigation, etc.)?
- What are the specific leverages for improving WUE at farm/field level, at system/scheme level)?

MASSCOTE methodology has been developed in a step-by-step approach in order to convert the overall complexity into simple and straightforward elements. These are then explored in a recursive process leading progressively to a new management setup and improvements in canal operation in order to facilitate the move towards more effective water management and improved water delivery services.

## **2. Venue and Organization**

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The present report refers to the 8-days Regional Training Workshop on Enhancing Water Use Efficiency in Small Scale Irrigation organized by FAO/AgWA and the Southeastern Anatolia Project Regional Development Administration (GAP-RDA, Turkey), as part of the Project “Strengthening Agricultural Water Efficiency and Productivity on the African and Global level” funded by the Swiss Agency for Development and Cooperation (SDC).

Prior to the training, the area on which the field works would be carried out was defined and the input data needed by MASSCOTE was collected (Annex 1).

The first four days of the workshop were organized in both theoretical and practical sessions. The aim was to make participants understand all the phases of the MASSCOTE approach, giving them the possibility to apply it on practical examples (i.e. two days of field work). Moreover, at the fifth day, a session on water efficiency assessment was held. Through all the workshop, practical sessions and presentations on the water efficiency were presented.

The opening ceremony took place on Monday 8 June 2015 at 9 am with representatives from FAO and South-Eastern Anatolia Project (GAP). Addresses were given by:

- Dr. Ahmet AÇIKGÖZ, Vice President of GAP Administration
- Maher SALMAN, Technical Advisor, FAO
- Ahmet TOKDEMİR, Private Sector and Entrepreneurship Coordinator, GAP RDA

The training, which was conducted in English (some explanations were performed in Turkish and French), consisted of theoretical sessions (conducted by Daniel Renault and Rubina Wahaj) and practical sessions in the field.

The workshop was also taken as an opportunity to discuss, in the framework of the GCP/INT/231/SWI project, the application of MASSCOTE to enhance crop water efficiency in the three countries.

The third and fourth day, a group visit to head-works, Canals and Fields was organized in the countryside near Şanlıurfa. The participants had the opportunity to travel along the canals, and interview main canal operators. Also interviews with operations staff and tour of control structures were made.

On Saturday, 13<sup>th</sup> of June 2015, a visit to Halfeti and Gaziantep was organized for all participants.

At the closing ceremony Mr. Fethi Lebdi (AgWA Coordinator, FAO) and Mr. Sadrettin Karahocagil, President of GAP, gave an overview of the workshop, and addressed thanks and appreciation. Subsequently the participants fulfilled the evaluation forms of the workshop. At the end of the ceremony, the certificates of attendance were distributed to all the participants.








### **3. Participants and trainers**

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The participants came from governmental and non-governmental agencies dealing with agricultural water resources management, from extension services formulating practical advices to farmers, and from relevant research or higher education institutions.

5 participants from Morocco, 6 from Uganda, 6 from Burkina Faso and 11 from GAP Region of Turkey, total of 28 participants, 4 trainers and focal persons from the GAP Administration and FAO participated. Trainers lectured both in English and French languages. The list of participants and resource persons is given below:

## Participants

Name	E-mail	Telephone	Institution	Position	
<b>BURKINA FASO</b>					
1	 Gustave Cyr SANON	<a href="mailto:cyrgustave2003@yahoo.fr">cyrgustave2003@yahoo.fr</a>			
2	 Baba Galley DIARRA	<a href="mailto:babagalleyd@yahoo.fr">babagalleyd@yahoo.fr</a>	226 70 15 86 15	Ministère de l'Agriculture, des Ressources Hydrauliques, de l'Assainissement et de la Sécurité Alimentaire	Ingénieur Agronome, Chargé des aménagements et de la conservation des sols
3	 Dometierké John Herman HIEN	<a href="mailto:hienherman@yahoo.fr">hienherman@yahoo.fr</a>	22670438261	Ministère de l'Agriculture, des Ressources Hydrauliques, de l'Assainissement et de la Sécurité Alimentaire	Ingénieur d'Agriculture, Chef de Service Formation et Recherche Développement
4	 Donkora KAMBOU	<a href="mailto:kdonkora@yahoo.fr">kdonkora@yahoo.fr</a>	22670284748	Directeur de la Restauration de la conservation et de la Récupération des Sols. (MARHASA)	Agronome/ Coordonnateur National du projet
5	 Salifou SANOGO	<a href="mailto:salifou.sanogo@yahoo.fr">salifou.sanogo@yahoo.fr</a>	22670618129	CAP-Matourkou (MARHASA)	Agronome, Enseignant en Irrigation et Gestion de l'Eau Agricole
6	 Idriss SERME	<a href="mailto:sermeidriss@yahoo.fr">sermeidriss@yahoo.fr</a>	226 70 23 21 98 226 78 27 43 90	Ministère de la Recherche Scientifique et de l'Innovation (MRSI)/INERA	Attaché de Recherche
<b>MOROCCO</b>					
7	 Abdelali BOUDRA	<a href="mailto:boudra_1999@yahoo.fr">boudra_1999@yahoo.fr</a>	669754334	Office National du Conseil Agricole	Directeur Régional de l'Office National du Conseil Agricole

Strengthening Agricultural Water Efficiency and Productivity on the African and Global level  
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8		Mohammed BAKACHE	<a href="mailto:bakache@yahoo.fr">bakache@yahoo.fr</a>	661978307	Institut Agronomique et Vétérinaire Hassan II	Enseignant
9		Ahmed LAFAHI		661978307	Office Régional de Mise en Valeur Agricole de Tadla	Ingénieur Génie Rural
10		Salma OUDRHIRI			Direction de l'Irrigation et de l'Aménagement de l'Espace Agricole du Ministère de l'Agriculture et de la Pêche Maritime	Ingénieur Génie Rural
11		Ali BEKRAOUI	<a href="mailto:bekraouiali@gmail.com">bekraouiali@gmail.com</a>		Service des Expérimentations, des Essais et de la Normalisation (SEEN)	Ingénieur
<b>MOROCCO</b>						
12		Silas EKADU			MAAIF	responsible for Water Use Efficiency on the AgWA Project, Member of Task team, workshop team leader
13		Charles MUTUMBA	<a href="mailto:mutumbac@hotmail.com">mutumbac@hotmail.com</a>		AETREC	Knowledgeable about the Kasese (Mubuku and Muhokya Irrigation Schemes); potential demo study site for AgWA project
14		Rajab NAMAKHOLA	<a href="mailto:rajabnamakhola@gmail.com">rajabnamakhola@gmail.com</a>		Mbale District/PISD Project District Support Officer	Project on Irrigation Scheme Design (PISD) funded by JICA covering Central and Eastern Uganda. (Feasibility Studies and detailed Engineering Designs for three irrigation schemes). There is potential for Application for the Mapping System and Services for Canal Operation Techniques (MASSCOTE).
15		Angella NAMYENYA	<a href="mailto:anamyenya@gmail.com">anamyenya@gmail.com</a>		MAAIF/Extension	Responsible for Extension and Irrigation Agronomy in Agoro Irrigation Scheme. There is potential for Application of the Mapping System and Services for Canal Operation Techniques (MASSCOTE). The extension component under NAADS-ATAAS was moved to MAAIF mainstream under the new reforms in the extension sector.



16		Sowed SEWAGUDE			MWE, Directorate of Water Resources Management	Senior Engineer, Member of the task team responsible for Water Auditing and trans-boundary and water resources issues on the AgWA project
17		Joshua WANYAMA	<a href="mailto:wanyama2002@yahoo.com">wanyama2002@yahoo.com</a>		Makerere University	Representing Universities/national consultants and WfAP subject matter specialist
<b>TURKEY/GAP REGION</b>						
18		Akif Yenikale	<a href="mailto:akyenikale@gaptevap.org">akyenikale@gaptevap.org</a>		GAP RDA	Irr. Eng.
19		İbrahim Şahin	<a href="mailto:ibrahims@gaptevap.org">ibrahims@gaptevap.org</a>		GAP RDA	Irr. Eng.
20		İbrahim Gürbüz	<a href="mailto:ibrahimg55@gaptevap.org">ibrahimg55@gaptevap.org</a>		GAP RDA	Agr. Eng.
21		Celal Kaya	<a href="mailto:celalkaya@gap.gov.tr">celalkaya@gap.gov.tr</a>		GAP RDA	Extencion Prj Coord.
22		Mehmet Uğur Yıldırım	<a href="mailto:muyildirim@dsi.gov.tr">muyildirim@dsi.gov.tr</a>		DSI	Deputy Reg. Direct
23		Oktay Kılıç	<a href="mailto:oktayk@dsi.gov.tr">oktayk@dsi.gov.tr</a>		DSI	Agr. Eng.



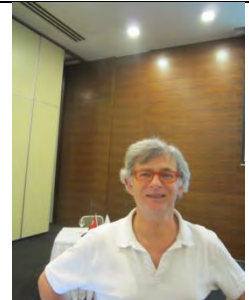

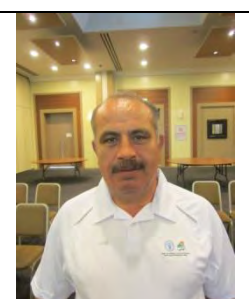
24		İbrahim Tezdiğ	<a href="mailto:itezdig@hotmail.com">itezdig@hotmail.com</a>		DSI	Agr. Eng.
25		Abdullah Çıtırık	<a href="mailto:yedek13@hotmail.com">yedek13@hotmail.com</a>		Harran WUA	manager/Agr. Eng
31		Mehmet Emin Bayık	<a href="mailto:mebayik@dsi.gov.tr">mebayik@dsi.gov.tr</a>		DSI	manager/Agr. Eng
32		Metin İnci	<a href="mailto:metinci@dsi.gov.tr">metinci@dsi.gov.tr</a>		DSI	Deputy Reg. Direct

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### Assistance Team

	<p><b>Lami HAYIRLI</b> International Relations Southeastern Anatolia Project (GAP) Regional Development Administration Sanliurfa, TURKEY</p>
	<p><b>Kübra ACAR</b> Public Relations Southeastern Anatolia Project (GAP) Regional Development Administration Sanliurfa, TURKEY</p>

## Resource Persons

	<p><b>Daniel RENAULT</b> Trainer, International Consultant, Land and Water Division, FAO-Rome daniel.renault34@orange.fr</p>
	<p><b>Robina WAHAJ</b> Trainer, Technical Officer, Land and Water Division, FAO-Rome, ITALY Robina.Wahaj@fao.org</p>
	<p><b>Tobias Siegfried,</b> Trainer, Hydrosolutions, GmbH-Switzerland Affiliate, Affiliate Center for Comparative and International Studies, Swiss Federal Institute of Technology, Zurich. SWITZERLAND siegfried@hydrosolutions.ch</p>
	<p><b>Huseyin DEMIR</b> <b>GAP Focal Person;</b> Southeastern Anatolia Project (GAP) Regional Development Administration Sanliurfa, TURKEY demirh40@hotmail.com huseyin@gap.gov.tr</p>
	<p><b>Lebdi Fethi</b> AgWA Coordinator, FAO Sub Regional Office for Eastern Africa (SFE) FAO, Addis Ababa, ETHIOPIA Fethi.Lebni@fao.org</p>



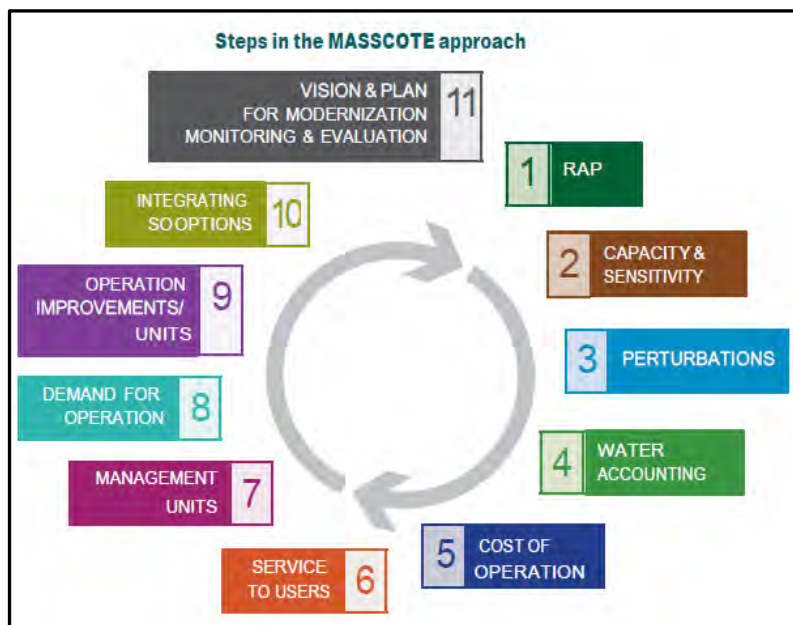
**Maher SALMAN**  
Technical Adviser/Project Leader  
FAO Focal Point  
FAO Natural Resources and Environment Department: Land and Water Division (NRL) Rome, ITALY  
Maher.Salman@fao.org

#### 4. Programme

FAO's **Mapping System and Services for Canal Operation Techniques-(MASSCOTE)** approach in Modernizing Irrigation Management was intensively lectured to participants during the first two days of the training by Daniel Renault and Robina Wahaj (FAO-NRL-HQs-Rome).

The methodology has been adapted to fit the characteristics of small-scale irrigation schemes. It includes a baseline system analysis through Rapid Appraisal Procedures (with the application of alternative techniques for rapid measurement of canal water) and proposes improved field operations and water services to users. MASSCOTE aims to organize the development of modernization programmes through: mapping various system characteristics; delimiting institutionally and spatially manageable subunits; and defining the strategy for service and operation for each unit.

The following steps were followed in the course. The details of the steps can be learned from the FAO Irrigation and Drainage Paper 63.



A presentation about Harran Irrigation Area in Turkey was given. One of world's notable dams, Ataturk Dam, and Turkey's modern irrigation system, Yaylak Pump Irrigation area were also visited.

Participants were divided in two groups under the supervision of the trainers during the field trip to Harran Irrigation Area to engage in field work and applying the Rapid Appraisal Process in the 3<sup>rd</sup> and 4<sup>th</sup> days of the training.

Participants were given information about technological developments in water measurement in canals by a Swiss expert on June 14<sup>th</sup>, 2015.

Evaluations of the groups were gathered and an evaluation report has been prepared. The report was presented in closing ceremony with the presence of GAP Regional Development Administration President, and a certificate ceremony was organized.

Participants visited, during an off day, historic town of Halfeti which was partially left under water of Birecik Dam and Gaziantep Mosaic Museum that exhibits mosaics rescued from Birecik Dam Lake area.

DAY 1 - Monday 8th June	
09:00	Registration
09:30	Official inaugural session
	Mehmet AÇIKGÖZ, Vice President of GAP Administration, Welcome Speech.
	Maher SALMAN, Technical Adviser/Project Leader, FAO. Welcome Speech and Presentation of the MASSCOTE Project
	Ahmet TOKDEMİR, Private Sector and Entrepreneurship Coordinator, GAP RDA Southeastern Anatolia Project (GAP) Presentation
10:30	Coffee/Tea Break
11:00	Water Use Efficiency: Conceptual approach
12:00	Introduction to FAO MASSCOTE approach
13.00	Lunch
	Water Efficiency Assessment
14:00	Generalities & indicators
15:00	Application to pressurized systems: sprinkler, drip
16:00	Application to surface irrigation
DAY 2 - Tuesday 9th June	
08:00	Assessing Performance and Productivity at Small Scale Irrigation
10.00	Coffee/Tea Break
10:30	MASSCOTE For Small Scale Irrigation - STEP 1 (The Rapid Appraisal Procedure - RAP)
13.00	Lunch
14:30	Presentation of the irrigation system to be investigated
	RAP Exercise area presentation
16:00	Departure to Ataturk Dam and Yaylak Pumping Irrigation Area
20:00	Dinner
DAY 3 - Wednesday 10th June	
08.00-18:30	FIELD VISIT (I): Group visit to Head-works, Canals and Fields
	Travel to the canals, and interviews with main canal operators
	<ul style="list-style-type: none"> <li>• Interviews with operations staff and tour of control structures</li> <li>• Interviews with farmers</li> <li>• Field visit for different irrigation application techniques</li> </ul>
DAY 4 - Thursday 11th June	
07:30	FIELD VISIT (II)
12:30	Lunch
14:00	Group sessions for filling the RAP sheets in Hotel
17:00	Visit to Sanliurfa Museum

DAY 5 - Friday 12th June	
08:30	RAP results and consolidation of indicators
14:00	MASSCOTE Steps 2 and 3 - Capacity, Sensitivity and Perturbations
16:00	Working group session on Step 2 and 3
Saturday 13th June – Day Off	
08:30	Departure to Halfeti
10:30	Boat Tour Birecik Dam
12:00	Lunch
13:00	Departure to Gaziantep
14:30	Visit to Zeugma Museum
15:30	Visit to Bazaars
18:00	Dinner (Birecik)
19:00	Departure to Sanliurfa
DAY 6 - Sunday 14th June	
08:30	MASSCOTE Step 4 - Water Balance
09:15	MASSCOTE Steps 5 and 6 - Cost, Service and Vision: System and field
10.00	Coffee/Tea Break
10:30	Using integrated low-cost, high-tech and user centered approaches in order to measure and account for water at local levels in irrigation - Presentation of the iMoMo Approach
13.00	Lunch
14:00	Working group session on steps 4, 5 and 6 Report and finalization of the vision: SOM, WUE at field level and MASSCOTE for Small Scale Irrigation
19:30	Traditional Night (Manici Hotel)
DAY 7 - Monday 15th June	
08:30	Presentation on Steps 7, 8, 9 and 10 - Management, Demand for Operation, Improvements and Integration
10.00	Coffee/Tea Break
10:30	Group work on Steps 7, 8, 9 and 10
13.00	Lunch
14:00	Discussion, consolidation and integration of options for improvements: Preparation for presentations
16:00	OUTCOMES AND CLOSING CEREMONY

## 5. Evaluation

Training evaluation surveys (ANNEX II) were given to participants to be filled out. Participants have responded to questions according to the following ratings key or comments.

**Ratings key: 0-Poor / 1-Weak/ 2- Satisfactory / 3- Good / 4-Excellent**

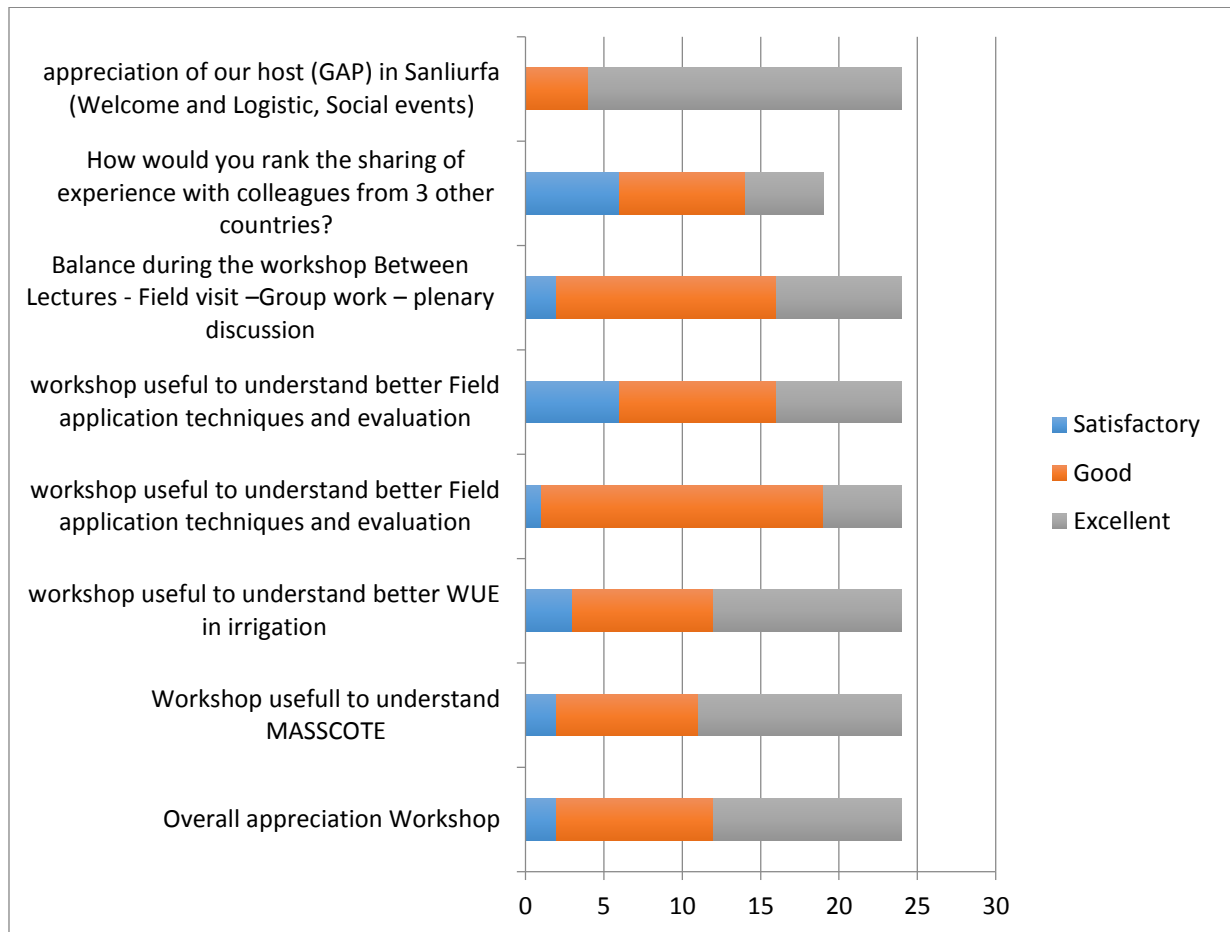
More than 80% of participants said that technical subjects were good and excellent, the duration of the training was short and that they would be able to apply what they learned to their work life. Almost all participants evaluated host GAP Administration excellent in training venue, logistics and social activities. 25% of respondents answered satisfactorily and the rest were good and excellent of the questions of usefulness of MASSCOTE and the sharing of experience with colleagues from other countries.

### Evaluation result

Question	VOTE			COMMENTS
	Satisfactory (2)	Good (3)	Excelent (4)	
Overall appreciation of the MASSCOTE Small Scale & WUE workshop	2	10	12	
Was the workshop useful to understand the approach of Masscote for small scale irrigation system?	2	9	13	
Was the workshop useful to understand better <u>WUE</u> in irrigation?	3	9	12	
Was the workshop useful to understand better <u>Field application techniques</u> and evaluation?	1	18	5	
How would you rank the usefulness of MASSCOTE Small Scale & WUE in your country in general	6	10	8	
How would you rank the sharing of experience with colleagues from 3 other countries?	6	8	5	
Balance during the workshop Between Lectures - Field visit – Group work – plenary discussion	2	14	8	
Overall appreciation of our host (GAP) in Sanliurfa (Welcome and Logistic, Social events)	0	4	20	
What would you rate as best point of the workshop				
What would you rate as a weak point of the workshop				
Usefulness of the workshop Respond yes or no to these statements	19	Useful for my professional activity		
	3	Not necessarily useful directly but I can still see the value of the lessons learned from the approach		
	1	Not useful for me.		
How was the length of the workshop (7 days)?	Too Long	Not enough long	OK	
	1	10	5	
How about the technical background for Masscote?	13	I found the technical background easy to follow		
	11	I found sometimes but not always difficulties to follow and relate the techniques into the overall frame		
	0	I found difficult to follow all the technical background		

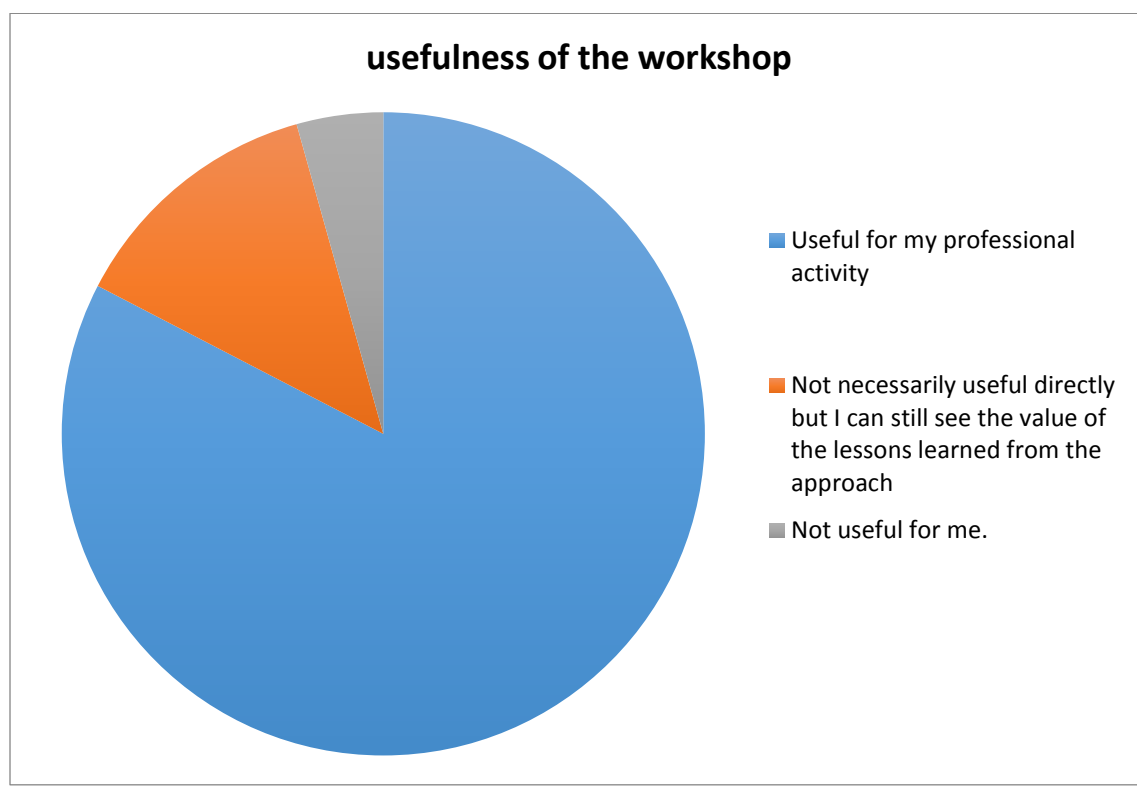
## General aspects of the MASSCOTE workshop

### Overall appreciation of the workshop



- The major part of the participants really liked the Host (GAP) welcoming and logistics management of the workshop.
- The sharing experience of the workshop with colleagues from other three countries was for the majority good.
- The majority of the participants though that the balance between lectures, field visit and group work was adequate.
- The majority of participants think that the workshop was useful to understand MASSCOTE
- The overall appreciation of the workshop is excellent.

■  
**Usefulness the workshop**

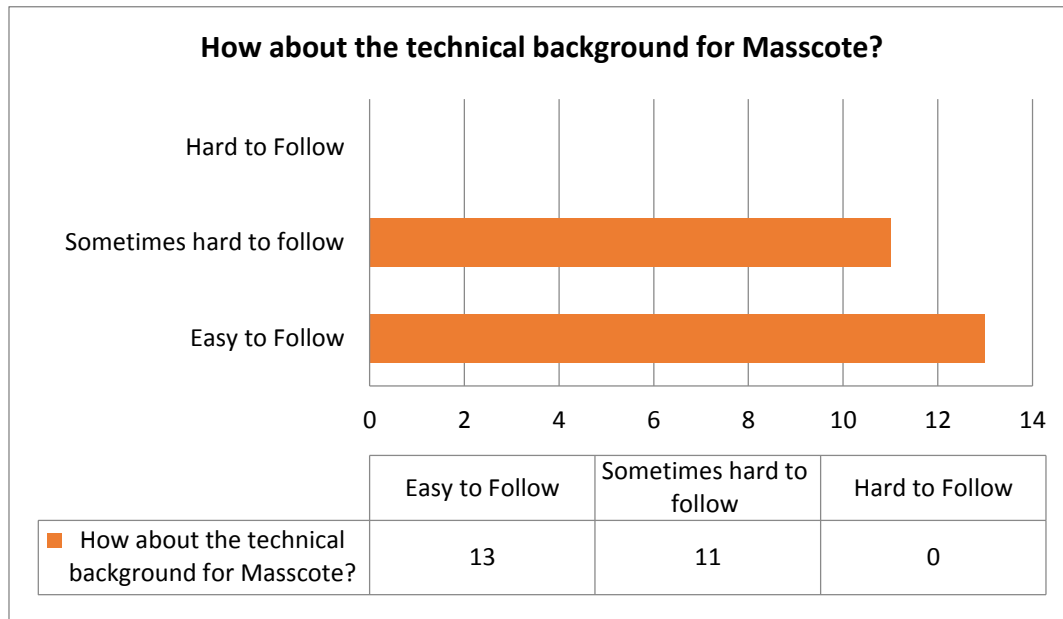


**Comments:**

- major part of the participants believe that course was useful for them
- Some of the participants thought that the MASSCOTE approach is not directly relevant for their work, but they still learned from the approach
- Very few participants did not find the workshop useful



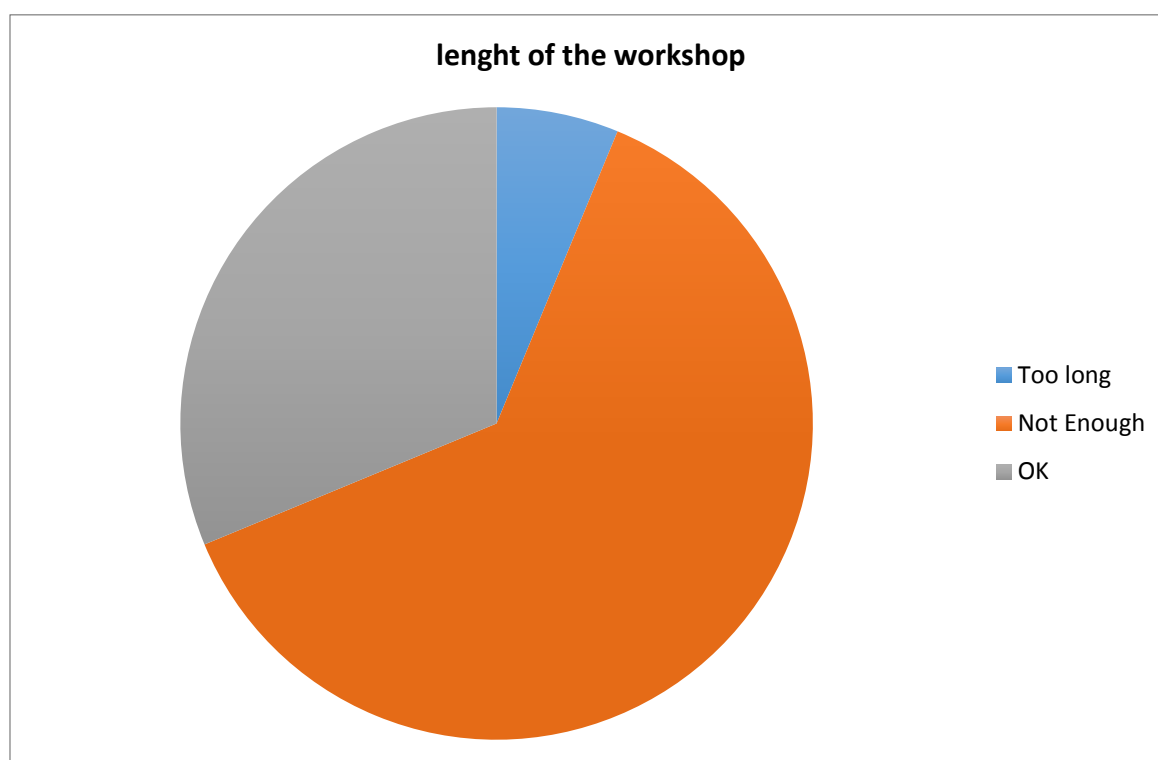
**Technical background**



**Comments:**

- The majority of the participant found the technical background of MASSCOTE easy to follow.
- A good number of the participants found the technical background of MASSCOTE sometimes hard to follow.

**Length of workshop, time availability for theoretical and practical sessions**



**Comments:**

**Length of the workshop**

- Enough to make a good idea on how the model works.
- The duration of course during the day is very long (it must not exceed 6 hours).
- Not sufficient but it was most the appropriate.
- It is necessary a day for the theoretical and practical module.
- This workshop needs 2 weeks.
- The time is good for us to get familiar with the MASSCOTE but not enough time to internalise it.
- More time is needed.
- The time is satisfactory for learning.
- This training needed two weeks for a better understanding.
- This would be appropriate for a follow up training.

**Comments by the conductors of the workshop**

The overall impression was very good. There was an effort to interact with all of the participants and to discuss their specific interests and the different applications of the model. All of the participants exhibited significant interest and motivation to learn MASSCOTE and to apply it to their specific conditions. The Workshop went very well in an amiable atmosphere and with substantial exchanges among all participants.

## 7. Pictures



**Opening ceremony, Hilton Garden Inn Hotel, Şanlıurfa. Left: Mehmet AÇIKGÖZ, Vice President of GAP Administration Right: Maher SALMAN, Technical Adviser/Project Leader, FAO**



**Theoretical sessions conducted by Daniel Renault (International Consultant, Land and Water Division, FAO-Rome), Rubina Wahaj (Technical Officer, Land and Water Division, FAO-Rome) and Tobias Siegfried, Hydro-solutions, GmbH-Switzerland**



Technical Tour: Ataturk Dam, Şanlıurfa



Technical Tour: Yaylak Pumping Irrigation, Şanlıurfa



**Field Study, Harran Irrigation District, Şanlıurfa**



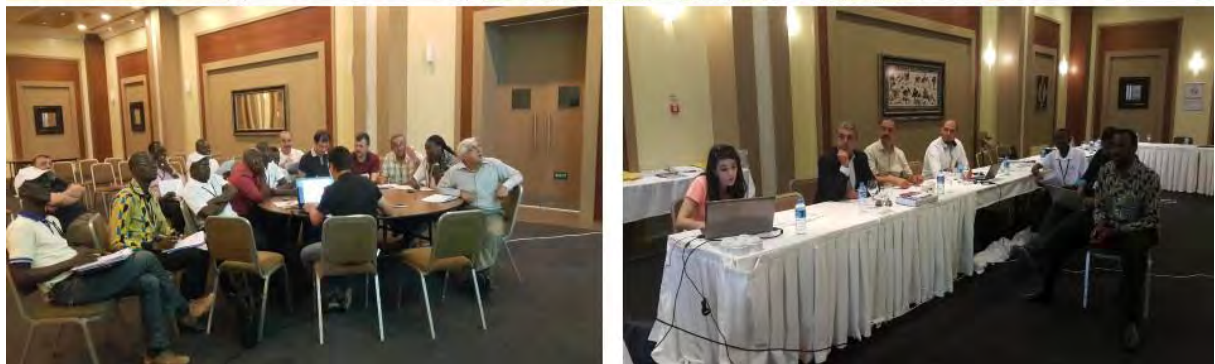
**Harran WUA Meeting and Field Study, Harran ID**



**Field Study, Harran ID**



**Field Study, Harran ID and Group Evaluation at the Hotel**



**Off Day Activities, Boat Tour on the Birecik Dam Lake, Halfeti-ŞANLIURFA**

Closing Dinner, Manici Hotel Şanlıurfa Closing ceremony – distribution of the certificates  
Group picture of participants, organizers and trainers (Hilton Inn Hotel, ŞANLIURFA)



Closing ceremony, Left: Sadrettin KARAHOCAGIL, President of GAP Regional Development Administration, Right: Fethi LEBNI, AgWA Coordinator, FAO Sub-Regional Office for Eastern Africa (SFE) FAO, Addis Ababa, ETHIOPIA



Closing ceremony – distribution of the certificates, Hilton Garden Inn Hotel, ŞANLIURFA



**Closing ceremony – distribution of the certificates**  
**Group picture of participants, organizers and trainers (Hilton Inn Hotel, ŞANLIURFA)**



## ANNEX 1

### Technical Note

# IRRIGATION SECTOR OF TURKEY & FIELD STUDY AREA of MASSCOTE APPROACH: HARRAN IRRIGATION DISTRICT

#### Irrigation in Turkey

Turkey has a subtropical, semi-arid climate with extremes in temperatures. In the east, summers are hot and dry; winters are cold, rainy and snowy. Along the coastal area, a Mediterranean climate is dominant with long, hot, dry summers and short, mild, rainy winters. Rainfall shows great differences from one region to another. Average annual rainfall is 643 mm, ranging from 250 mm in the Southeast to over 3 000 mm in the northeast Black Sea area. About 70% of the rain falls in the winter and spring seasons. Droughts are frequent and without irrigation the agricultural production will remain subject to important variations.



Of the total surface runoff of the country, estimated at 192.8 km<sup>3</sup>/year, almost one-fourth comes from the Euphrates and the Tigris rivers, that both have their sources in the eastern part of the country. Turkey contributes about 90% of the total annual flow of the Euphrates, while the remaining part originates in Syria. Turkey contributes 38% directly to the main Tigris river and another 11% to its tributaries that join the main stream of the Tigris further downstream in Iraq.

Out of the total area of 78 million ha of the country, about 28 million ha, or 36% of the total area, are classified as agricultural land while the remaining area consists of forest, grazing land, open water bodies and others. The area that can economically be irrigated covers 8.5 million ha out of which 7.9 million ha is to be irrigated from surface water resources and the remaining 0.6 million ha from groundwater. Out of this potential, 5.73 million ha (67 %) were irrigated in the year 2014 with 4.1 million ha from surface water and 0.6 million ha with groundwater.

<i>Water resources (Billion CM/yr)</i>		<i>Land resources (Million ha)</i>	
Average Annual Precipitation (mm/yr)	642,6	Total Area	77,95
Total Precipitation	501	Arable Land	28,05
Total Run-off	186	Irrigable Land	25,85
Usable Surface Run-off	95	Economically Irrigable Land	8,5
Safe Yield of Groundwater	13,66		
Total Usable Potential	108,66		

Irrigation development in Turkey is carried out by the public sector, represented by DSI (State Hydraulic Works belongs to Ministry of Forestry and Hydraulic Works) and GDAR (General Directorate of Agrarian Reform belongs to Ministry of Food, Agriculture and Livestock), and by the private sector (farmers and groups of farmers). The State Hydraulic Works (DSI) was established in 1954 as a legal entity and brought under the aegis of the Ministry of Public Works and Settlement and is responsible for the planning, design, construction and operation of water resources development for various purposes like irrigation, flood control, swamp reclamation, hydropower development, navigation and water supply to cities with over 100000 inhabitants. General Directorate of Agrarian Reform (GDAR) was established by incorporating the soil conservation and irrigation organisation, the rural settlement organisation. It is responsible for the development of small-scale irrigation schemes and small reservoirs, rural roads and water supply to rural areas. It is also responsible for land consolidation and the on-farm development of all irrigation projects, including the projects developed by DSI. It is under the Ministry of Food, Agriculture and Livestock. DSI and GDAR have developed a large part (77%) of these irrigation schemes: 1.094 million ha irrigated by surface water and 0.487 Mha by ground water. Private irrigation schemes cover some 1 million ha irrigated by surface water and 0.080 million ha by groundwater.

Almost 94% of the total area are irrigated using surface irrigation methods (furrow, basin, and border, wild flooding). The remaining part is under sprinkler irrigation (mainly hand-move) and some micro-irrigation, mainly in the Aegean and Mediterranean regions. The conventional (hand-move) sprinkler irrigation is common all over Turkey among the farmers and an estimated 500 000 ha are irrigated using this method. On DSI schemes, 300 000 ha are irrigated by sprinklers, mainly for sugar beet, cereals, beans, alfalfa, cotton, sunflowers, water melons and vegetables. During the last three decades GDAR has carried out a lot of on-farm water development works, for example the reclamation of saline and alkaline soils on 803 000 ha and open drains on 3 143 000 ha.

### **GAP Region Irrigation**

The GAP project is a regional development project focused on the socio-economic development of Southeastern Anatolia. As well as its major objectives of utilising the waters of the Euphrates and Tigris rivers for hydropower and irrigation development, it covers investment in areas as urban and rural infrastructure, transportation, industry, education, health, housing, tourism and other sectors. Major construction already well progressed comprises dams, hydraulic power plants and irrigation system infrastructure. But the project also has a major social objective which is to substantially improve the quality of life of local people and to close the developmental and economic gap that exists between this region and the rest of Turkey.

The GAP Regional Development Administration (established 1989 under the Office of Turkey's Prime Ministry) is responsible for the integrated regional planning and coordination of implementation. The GAP Administration has its head office also a Regional Directorate in Şanlıurfa.

### Project components

#### GAP Water Resources Development Programme

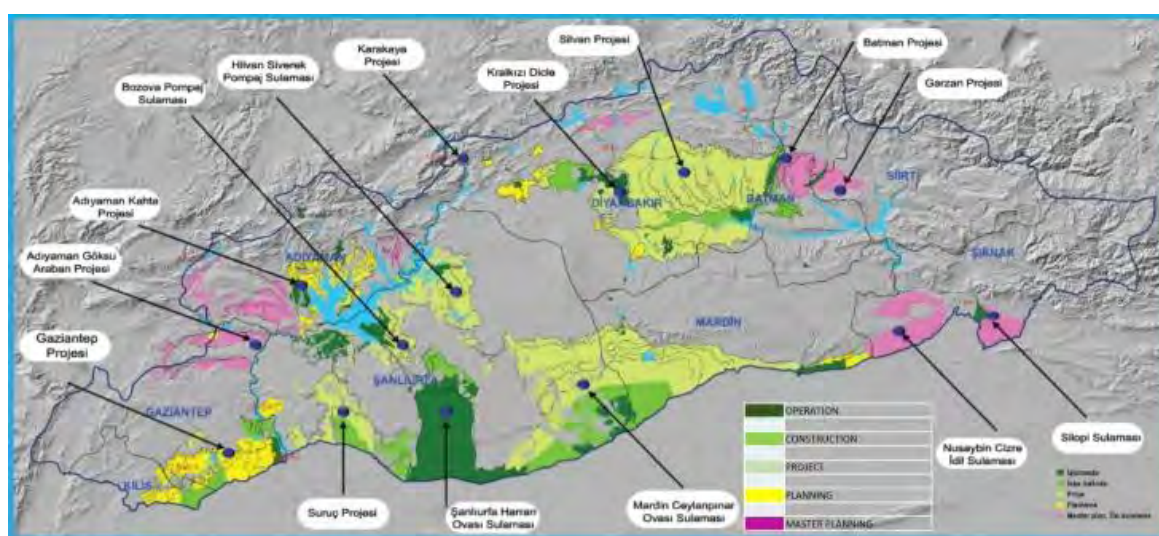
The programme comprises two groups of projects built in the upper catchments of the Euphrates and Tigris rivers. Some 22 dams, 19 hydraulic power plants and irrigation canals delivering water to 1.9 million hectares of land will eventually be built (mainly by DSI, Turkey's State Hydraulic Works Department). These facilities will enable Turkey to control the flow of over 50 billion cubic meters of water that flow each year down the Euphrates and Tigris, and which represent 28% of the country's total water potential. The area to be irrigated in the region corresponds to 20% of total irrigable land in Turkey, and its annual energy production to 22% of the country's total.

#### Present situation

The cash realisation rate of the GAP project is 65%. Analysed by sector, the rate of cash realisation is 77% for energy, 22% for irrigation projects and 75% for social projects. Thus the project has already created economic benefits to the region and the country.

#### Water Resources Development Projects

The Southeastern Anatolia Project (GAP) covers an area of 74,000 square kilometres of the lower parts of the Euphrates and Tigris catchments in Turkey, and the plains between them. The project consists of 13 sub-projects related to irrigation and energy production. Seven of these packages are in the Euphrates Basin and six in the Tigris Basin. Upon the completion of the project about 1.9 million hectares of land will be brought under irrigation, and the energy production capacity of the region will be 23 billion kWh after irrigation (27 billion kWh without irrigation).



Status of GAP Irrigation Project			Status of GAP Energy Project		
Operating	428995	22,4%	Operating	5770	77,7%
Construction	99215	5,2%	Construction	1200	16,2%
Rest	1388079	72,4%	Rest	457	6,2%
<b>TOTAL</b>	<b>1916289</b>	<b>100,0%</b>	<b>TOTAL</b>	<b>7427</b>	<b>100,0%</b>

#### Transferring of the Management Responsibilities to the Farmers of the Irrigation Projects Turnover to Self-Management

In many parts of the world it became apparent that bureaucracies, with staff trained as administrators, were not best suited for management tasks. Various approaches have been made to hand over the management of irrigation projects and even of larger water resources development entities to organizations of the users.

## **Forms of Organizations for Transfer of Irrigation Projects**

### **1) Transfer to Water User Associations (WUAs)**

An irrigation scheme can be transferred to a WUA where there are more than one local administrative units (village, legal entities, and municipalities) within one irrigation scheme. These WUAs are established under a statute which has to be approved by the Council Of Ministers. For large areas, this is considered to be the most appropriate organization.

### **2) Transfer to Municipal Organizations**

This is a form of transfer where the scheme serves only single municipal unit. In this organization Mayor is the natural chairman of the WUA and the agreement of transfer is undersigned by the DSI and the Mayor and submitted to the Ministry of Forestry and Water Affairs (the DSI Minister) for the approval.

### **3) Transfer to Village Organization**

This is a form of transfer where the scheme serves only single village: Village Head (Muhtar) is the natural chairman of this organization and the transfer agreement is undersigned by DSI and Muhtar and submitted to the DSI Minister for approval.

### **4) Transfer to Cooperatives**

These organizations are established under the Cooperatives Law and it is mandatory that a legal cooperative to be formed at the request of a minimum of 15 farmers before a scheme is undertaken.

There are two means of Transfer to Cooperatives as follows:

- A. Transfer of DSI irrigation schemes to cooperatives DSI transfers its scheme (excluding groundwater schemes) to cooperatives for only irrigation purpose.
- B. Transfer of DSI and GDAR developed irrigation schemes to cooperatives. This is a form of transfer to groundwater cooperatives where an irrigation scheme is provided by DSI with wells and pumps and irrigation distribution network by GDAR. After the establishment of these co-operatives transfer is realized following the same legal procedure applicable to other organizations.

The main rule in the process of transferring irrigation projects to the users is not the ownership of irrigation, but the transfer of operational maintenance and management responsibility.

In each region, the type of the association or institution whose services are to be transferred is determined by farmers according to the region. These organizations have been carrying out the main rules of DSI. Transferring organizations receive payments from farmers for their services on the agreement made every year determined according to the price tariffs.

Atatürk dam is the largest dam has built in Turkey. It is located in 70 km northwest of the city of Şanlıurfa on the Euphrates River. It serves for irrigation, power generation and water supply. The dam will make possible to irrigate 882.000 hectares of land.

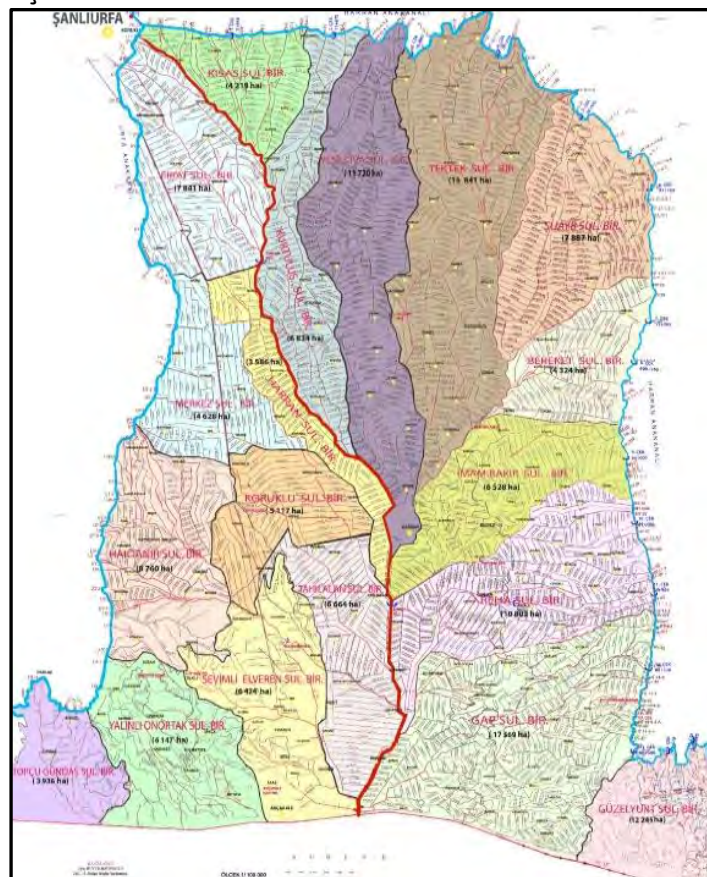
The Şanlıurfa irrigation tunnels (twin) start from the reservoir of Atatürk dam and lie parallel to each other up to Şanlıurfa. The tunnels are circular and concrete lined with diameters of 7,62 meters and length of 26,4 kilometers each. The capacity of two tunnels are 328 cubic meters per second. This water used to irrigate 376.000 hectares in Şanlıurfa-Harran (150.000 ha) and Mardin-ceylanpınar (226.000Hha) plains.

RESPOSIBILITY of MANAGEMENT, OPERATION AND MAINTANCE of IRRIGATION SCHEMES in GAP REGION						
Regional Directorate		15th Şanlıurfa	10th Diyarbakır	20th K.Maraş	TOTAL	Percentage
WUA	Number	29	8	7	44	58,7
	Area (ha)	233676	50671	32107	316454	73,8
Village administrations (muhtar)	Number	3	7	6	16	21,3
	Area (ha)	990	2514	1099	4603	1,1
Cooperative	Number	1	1	8	10	13,3
	Area (ha)	143	966	6297	7406	1,7
DSI	Number	1	1	0	2	2,7
	Area (ha)	37844	5300	0	43144	10,1
State Institutions	Number	3			3	4,0
	Area (ha)	57388			57388	13,4
TOTAL	Number	37	17	21	75	100,0
	Area (ha)	330041	59451	39503	428995	100,0

Harran plain is between Şanlıurfa city and Syrian border. The irrigation has started in 1995. There are two main canals; namely Sanliurfa canal ( $Q=40 \text{ m}^3/\text{s}$ ) and Harran canal ( $124 \text{ m}^3/\text{s}$ ). 18 WUA take care of management, operation and maintenance.

Mardin-Ceylanpinar project is under construction.

### ŞANLIURFA-HARRAN PLAIN IRRIGATION SCHEME



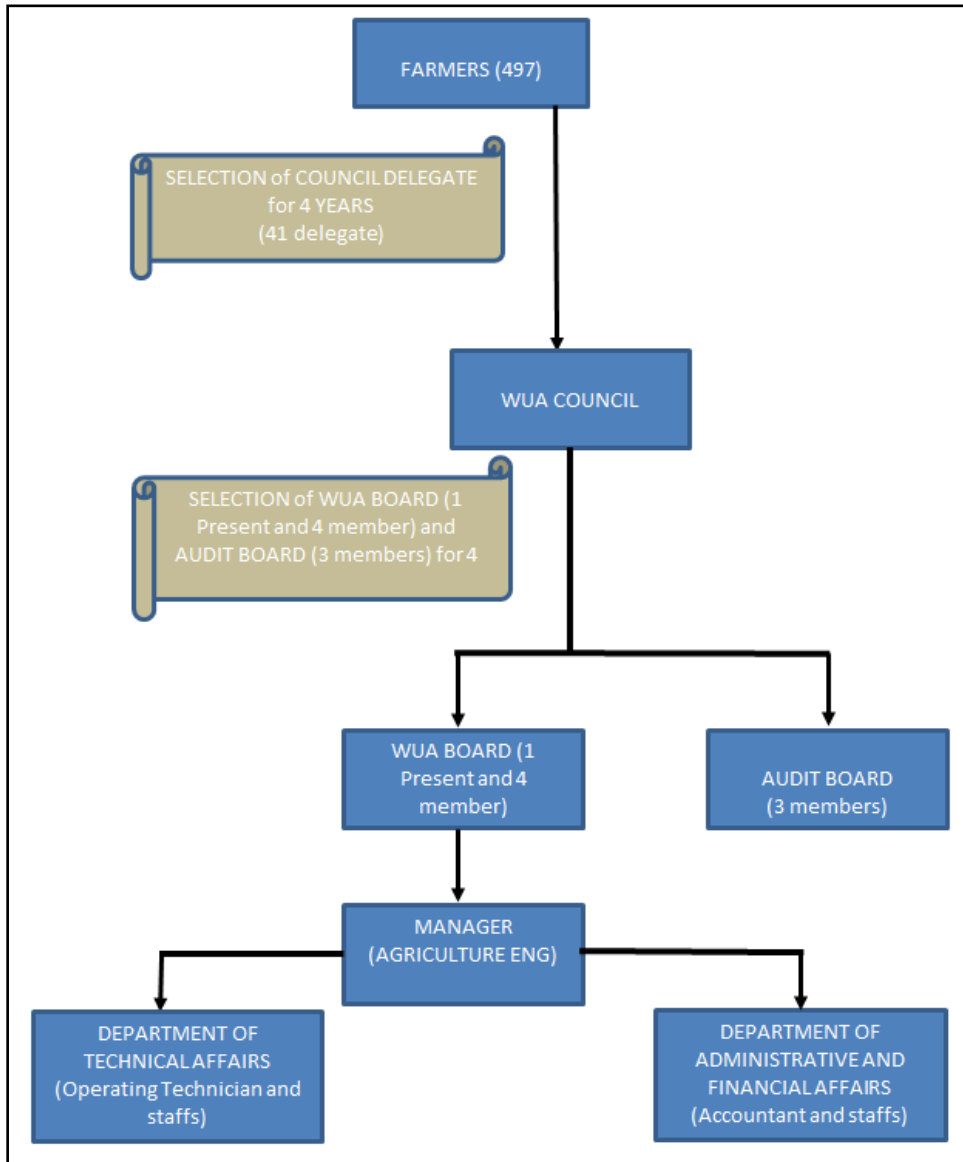
### EXERCISE FIELD (Harran Irrigation District and WUA)

The union was established in 1995. Takes water from Sanliurfa main canal. It has 3586 hectares of gross land and 497 members. The network is open canal and canaled.

INFORMATION OF HARRAN WATER ASSOCIATION	
Foundation date	Dec 12th, 1995
Gross Area	3586 ha
Net Irrigated Area	3200 ha
The number of settlements in the service area	13 villages and 1 towns
Number of farmer members	497
Average farm size	6,44 ha
Number of parcel	467
The average parcel size	6,85 ha
Number of Council members	41
Number of board members	5
Number of audit board members	3
President's Name and job	Halil ACAR/ Farmer/ 16 years
Manager's name and Job	Abdullah ÇITIRIK/Agricultural Eng/16 years
Accountant's name and job	Mehmet ULUDAĞ/Accountant/20 years

HARRAN WUA STAFFS				
POSITION/DUTY	Number of staff	The number of permanent staff	The number of temporary staff	Running time of the temporary staff (month/year)
Manager	1	1		
Accountant	1	1		
Accountant staffs	3	3		
Driver	2	2		
Office boy	1	1		
Operating Technician	1	1		
Water Distribution Technician	7	4	3	6
Work Machine Operator	1	1		
TOTAL	17	14	3	

**Staff allocation and structure of organization**

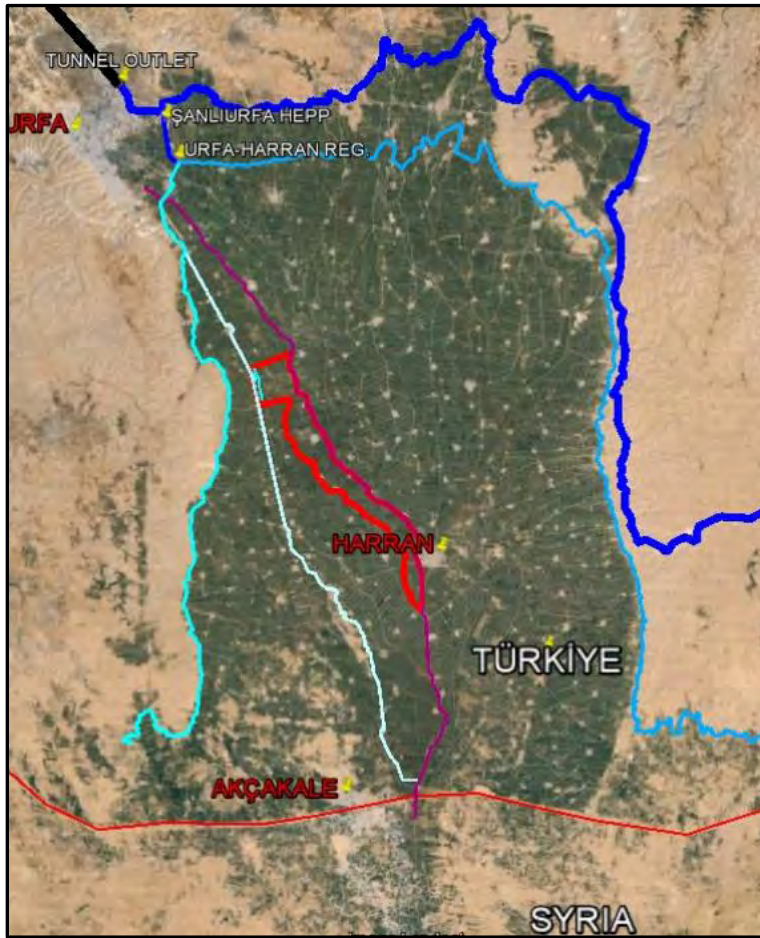


**Harran Irrigation District's Irrigation Infrastructure**

HID has only one secondary canal which is called "**13<sup>th</sup> secondary canal**". But its technical code/name is UY4-13. Its length is 25.2 km and initial capacity is 3250 l/ sec. The first 11.2 km of UY13-4 is concrete trapezoidal canal. Rest of it is canaled. Water distribution is done 74 tertiary and 17 quaternary canals. Total length of distribution canal is 100,2 km. Eastern boundary of HID is Main Drainage Canal (MDC) (Cullap Creek) and western border is the UT4 Submain Drainage Canal.

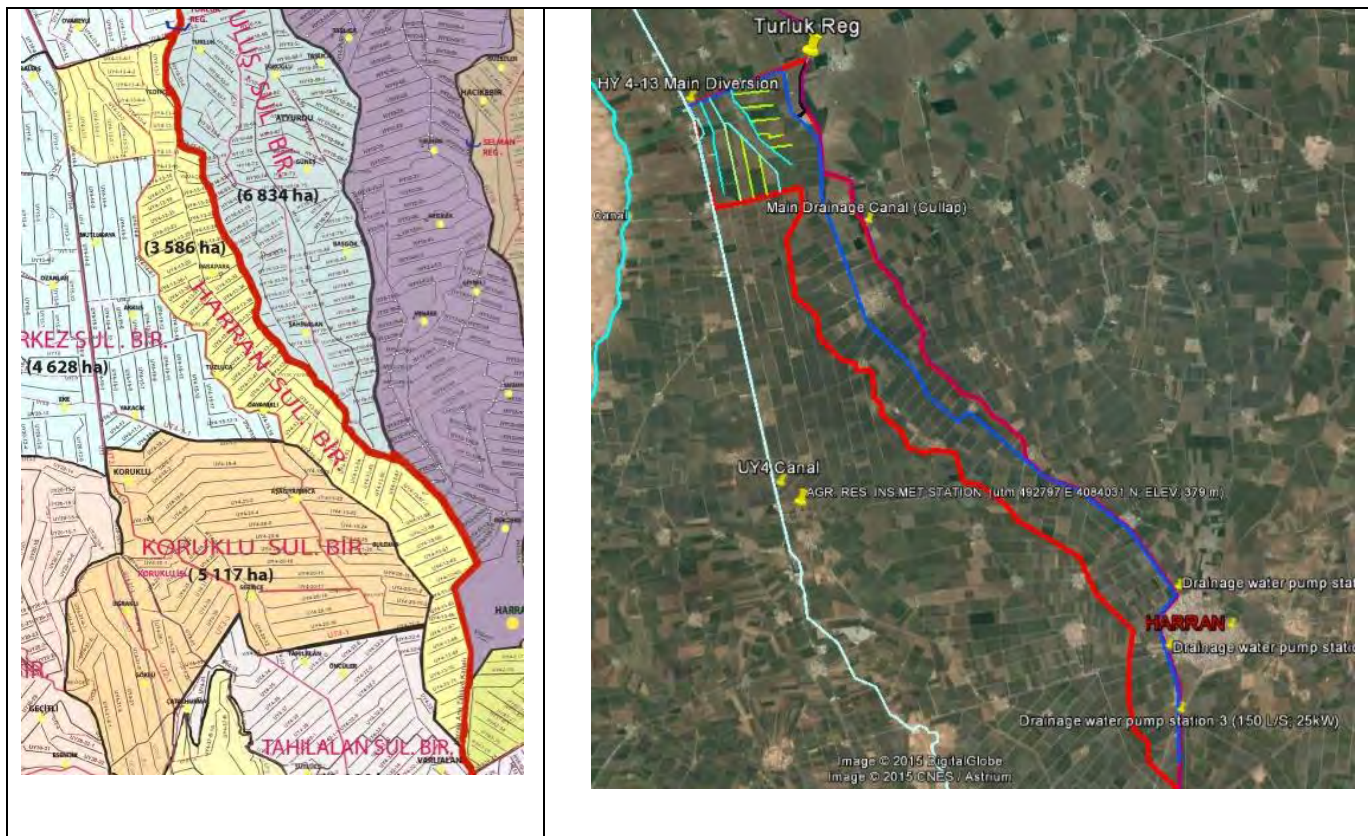
HID takes 500 l/sec drainage water for irrigation by regulator on the MDC. Also, there are 3 pump on the MCD.

### Şanlıurfa-Harran Plain Overview





### Harran Irrigation District Overview



- **Average daily water levels at the main diversion points of the main canal:** There isn't daily water levels at the UY4-13rd cross check point because of limnograph on the UY4-13 doesn't work. There is non-recording scale gauge and water distribution technician determines the water flow according to the tool. Real daily data is available at 4<sup>th</sup> cross check point.
- **Depth of water at these points:** Usually it ranges from 110 to 120 cm.
- **Gate openings at the cross regulator and offtakes;** every 2-3 days
- **Flow condition (free flow/submerged flow):** Free flow
- **Actual peak flow rate into the main canal(s) at the diversion points for the year of data collected:** 4127 l/sec.
- **Flow rate capacity of main canal at the diversion point:** Design capacity of HY4-13 canal is 3250 l/sec. Sometimes, channel capacity is increased by using freeboard and it's increased about 4200 l/sec.
- **Drainage outflow (rate/volume):** There is no measured. It is shared from all the drain water which is measured on the Syrian border.
- **Estimated Conveyance efficiency at different level of the system;** at the main canal level (UY4-13)= 3-4% secondary (e.g. UY4-13-3) and tertiary canal (e.g. UY4-13-3A)= 2-4%
- **Estimated field irrigation efficiency for other crops:** 65-70%

THE AMOUNT OF IRRIGATION AND DRAINAGE WATER (MCM) in Harran Irr District in 2014															
THE AMOUNT OF IRRIGATION WATER		JAN	FEB	MAR	APR	MAY	JUNE	JULY	AGU	SEP	OCT	NOV	DEC	TOTAL	Explanation
Source of Irr Water	Irr. water enter points of irrigation area														
FRESS WATER from Atatürk Dam	UY13-4			2,07	8,97	3,83	6,32	10,26	10,70	5,60				47,75	measured
RE-USE water from main drainage Canal	TURLUK REG (UY4-13-8)	0,00	0,86	1,08	1,30	1,30	1,30	1,30	1,30	1,30	0,69	0,00	0,00	10,41	Project design capacity
	PUPM 1 (UY4-13-62)	0,00	0,00	0,03	0,03	0,00	0,00	0,19	0,19	0,05	0,02			0,51	measured
	PUPM 2 (UY4-13-66)			0,02	0,27	0,02	0,28	0,33	0,30	0,22				1,44	measured
	PUPM 3 (UY4-13-71)				0,06	0,06	0,06	0,09	0,10	0,04	0,02		0,01	0,42	measured
TOTAL		0,00	0,86	3,20	10,62	5,20	7,95	12,16	12,58	7,21	0,72	0,00	0,01	60,53	
The amount of drainage water				0,31	2,80	1,68	1,33	2,12	2,32	2,19				12,75	It is shared from Main drainage water.
Conveyance Losses from UY4-13 Sec. Canal		0,00	0,03	0,09	0,31	0,15	0,23	0,35	0,36	0,21	0,02	0,00	0,00	1,74	Project design criteria

- **For one year: Monthly rainfall:** There are 3 meteorology stations near the exercise area. Closed of them is Agriculture research Institute Met Station, but only evaporation and precipitation are observed.

AGR. RES. INS.MET STATION (utm 492797 E 4084031 N; ELEV: 379 m)

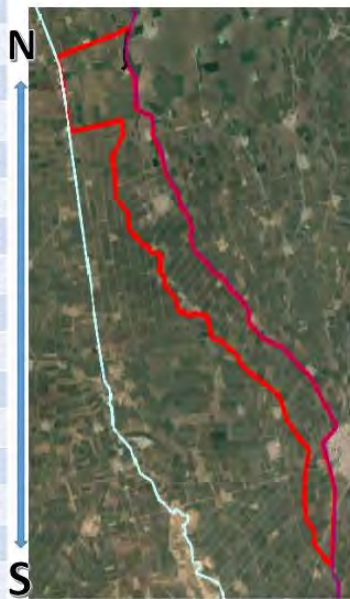
	2013			2014								
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
PAN EVAPORATION	139,1	63,8	64	35	73	123,3	152,7	222	271	300	232	178
PRECIPITATION	0	12,9	53,7	20,2	14	75	21,1	0	6,4	0	0	16,4

### METEOROLOGY STATION LOCATION

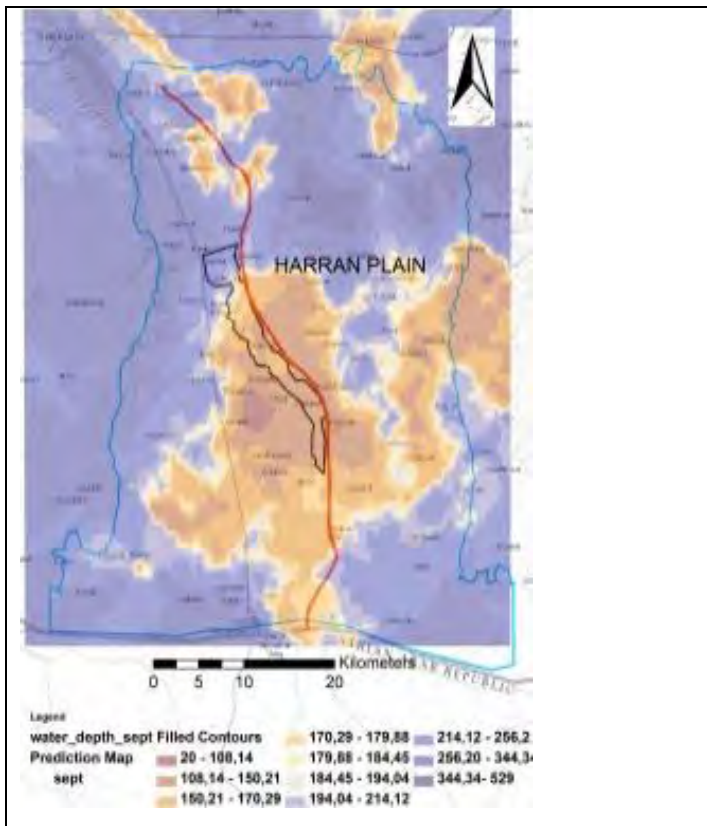


**WATERTABLE OBSERVATION AND WATERTABLE WATER QUALITY**

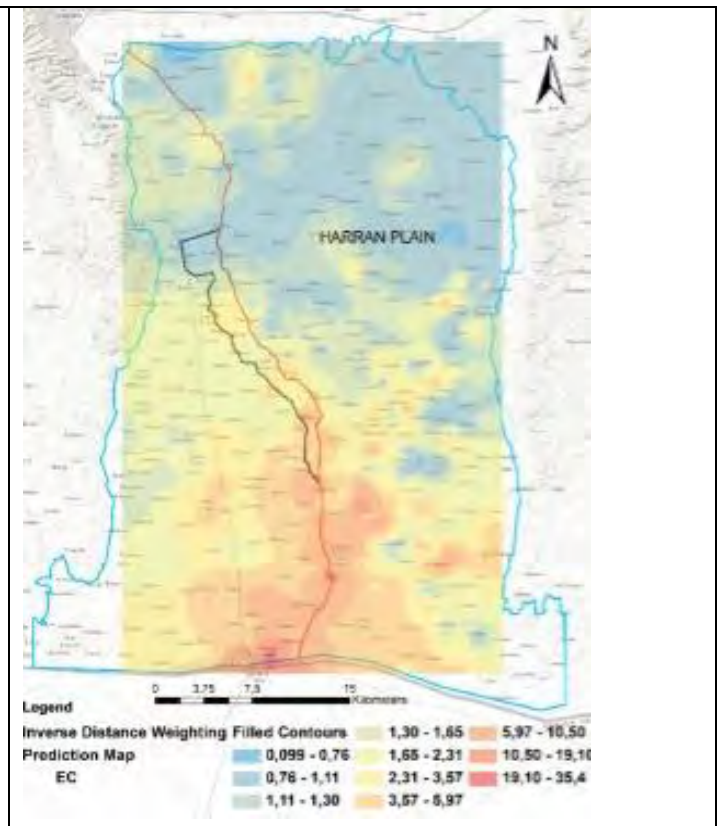
UTMX	UTMY	Elevation (m) MSL	The depth of obs.wells (cm)	July 2014 (EC25= dS/m)	2013		2014		
					Oct	Jan	Apr	June	Sep
492137	4094836	389	350		350	350	350	350	350
491635	4094619	400	350		350	350	350	350	350
491281	4094118	400	350	1,09	241	283	157	350	100
493030	4094105	384	360		360	360	360	360	360
491863	4094004	388	360	1,00	360	360	313	360	360
494003	4093757	380	360	1,00	141	237	213	360	105
492549	4093413	384	360		360	360	360	360	360
494159	4092320	381	350	1,49	237	285	107	271	115
497011	4086065	365	345	1,68	231	281	207	263	187
498864	4084559	366	360	4,90	191	217	163	193	177
499764	4083858	359	335	1,88	187	213	133	173	127
500540	4081642	354	325	10,11	164	223	151	193	137
501262	4079683	356	360	55,20	231	253	157	181	153
501511	4078740	351	280	4,29	193	241	117	163	133
501511	4078740	351	280	4,29	193	241	117	163	133



**WATERTABLE AND WATERTABLE QUALITY MAPS**



Watertable depth in September 2014



Watertable water quality in July 2014

## Agriculture

HARRAN IRR DISTRICT CROP PATTERN 2013-14

Crop	Growing period			Area in Ha												Percentage area (%)
				2014									2013			
	Sowing	Harvest	TOTAL (day)	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	
Wheat	1-7 Nov	15-20 June	205	718	718	718						718	718	718	718	23,12
Cotton	25-30 Apr	15-30 Oct	174	2364	2364	2364	2364	2364	2364	2364						76,11
Vegetable	25-30 Apr	15-30 Oct	185	4	4	4	4	4	4	4						0,13
Pistachio (rainfed)	10-20 March (the foliation)	15-20 Oct	215	20	20	20	20	20	20	20	20	20	20	20	20	0,64
2nd Crop Maize	25-30 June-	25-30 Oct	125				555	555	555	555						17,87
TOTAL				3106	3106	3106	2388	2388	2388	2388	738	738	738	738	738	117,87

CROP COEFFICIENTS (Kc) in Harran Plain (Kc value is calculated according to the FAO Penman Monteith base on the results of researchs in Harran plain by İLBEYLİ )															
Crop	Growing period			CROP COEFFICIENTS (Kc)											
	Sowing	Harvest	TOTAL (day)	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Wheat	1-7 Nov	15-20 June	205	1,28	0,99	0,46					0,47	1,19	1,06	1,13	1,17
Cotton	25-30 Apr	15-30 Oct	174	0,65	0,78	1,25	1,09	1,24	0,88	0,50					
Vegetable	25-30 Apr	15-30 Oct	185	0,42	0,92	1,48	1,72	1,87	1,87	1,54	0,66				
Pistachio (rainfed)	10-20 March (the foliation)	15-20 Oct	215	0,48	0,50	0,57	0,54	0,91	0,64	0,61	0,69				0,36
2nd Crop Maize	25-30 June-	1-7 Dec	125				0,68	1,90	2,26	0,89					

### Crop production costs and income

Crop	Total Production costs (TL/ha)	Yield (t/ha)	Farm gate price (TL/kg)	Subsidy (TL/kg)	Diesel oil and fertilizer Subsidy (TL/ha)	Net Income (TL/ha)	Crop pattern (%)	Crop pattern average area income (TL/ha)
Wheat	3821	6,75	0,80	0,05	106,00	2022,5	23,12	468
Cotton	6042	5,50	1,40	0,55	150,00	4833	76,11	3678
Vegetable	14454	30,00	0,75	0,00	0,00	8046	0,13	10
Pistachio (rainfed)	4574	1,25	11	0,00	0,00	9176	0,64	59
2nd Crop Maize	3905	11,00	0,53	0,04	150,00	2515	17,87	449
TOTAL							117,87	4665

**HARRAN WUA BUDGET**

MAIN EXPENDITURE ITEMS	EXPENDITURE DETAILS	2011			2012			2013			2014		
		Total Budget Allowance	Total expenditure	Budget realization (%)	Total Budget Allowance	Total expenditure	Budget realization (%)	Total Budget Allowance	Total expenditure	Budget realization (%)	Total Budget Allowance	Total expenditure	Budget realization (%)
	<b>TOTAL</b>	<b>423800</b>	<b>183231</b>	<b>43</b>	<b>443113</b>	<b>225086</b>	<b>51</b>	<b>410988</b>	<b>331454</b>	<b>81</b>	<b>432389</b>	<b>304217</b>	<b>70</b>
ADMINISTRATION	WUA Board and Auditing Board honorarium payments	62000	49314	80	67000	60742	91	65142	63068	97	70902	67473	95
	SALARY Salaries of permanent workers	172800	127297	74	180000	158849	88	297846	265370	89	313487	236744	76
	Other Expenditure	189000	6619	4	196113	5495	3	48000	3016	6	48000	0	0
	<b>TOTAL</b>	<b>415450</b>	<b>169793</b>	<b>41</b>	<b>454000</b>	<b>196235</b>	<b>43</b>	<b>475233</b>	<b>263746</b>	<b>55</b>	<b>502013</b>	<b>276082</b>	<b>55</b>
OPERATION	SALARY	155450	108253	70	160000	135631	85	255797	206255	81	267013	187630	70
	ELECTRICITY	70000	1332	2	85000	5565	7	64936	1331	2	69000		0
	Other Expenditure	190000	60209	32	209000	55039	26	154500	56160	36	166000	88451	53
	<b>TOTAL</b>	<b>225750</b>	<b>161383</b>	<b>71</b>	<b>232000</b>	<b>171947</b>	<b>74</b>	<b>688780</b>	<b>371758</b>	<b>54</b>	<b>663867</b>	<b>323416</b>	<b>49</b>
MAINTANCE	SALARY	76750	51558	67	75000	69898	93	143498	130101	91	154867	110880	72
	Other Expenditure	149000	109825	74	157000	102048	65	545282	241657	44	509000	212536	42
	<b>TOTAL</b>	<b>1065000</b>	<b>514407</b>	<b>48</b>	<b>1129113</b>	<b>593268</b>	<b>53</b>	<b>1575000</b>	<b>966957</b>	<b>61</b>	<b>1598269</b>	<b>903715</b>	<b>57</b>

EXPENDITURE DETAILS	2011			2012			2013			2014		
	Total Budget Allowance	Total expenditure	Budget realization (%)	Total Budget Allowance	Total expenditure	Budget realization (%)	Total Budget Allowance	Total expenditure	Budget realization (%)	Total Budget Allowance	Total expenditure	Budget realization (%)
ADMINISTRATION	423800	183231	36	443113	225086	38	410988	331454	34	432389	304217	34
OPERATION	415450	169793	33	454000	196235	33	475233	263746	27	502013	276082	31
MAINTANCE	225750	161383	31	232000	171947	29	688780	371758	38	663867	323416	36
<b>TOTAL</b>	<b>1065000</b>	<b>514407</b>	<b>100</b>	<b>1129113</b>	<b>593268</b>	<b>100</b>	<b>1575000</b>	<b>966957</b>	<b>100</b>	<b>1598269</b>	<b>903715</b>	<b>100</b>
<b>TOTAL SALARY</b>	<b>467000</b>	<b>336422</b>	<b>65</b>	<b>482000</b>	<b>425121</b>	<b>72</b>	<b>762282</b>	<b>664794</b>	<b>69</b>	<b>806269</b>	<b>602728</b>	<b>67</b>

## ANNEX II

Regional Training Workshop on Enhancing Water Use Efficiency in Small Scale Irrigation

Application of FAO's MASSCOTE Approach Strengthening Agricultural Water Efficiency and Productivity on the African and global level

8-15 June 2015 - Şanlıurfa, Turkey

### Performance Evaluation form

#### Rating key

**0-Poor / 1-Weak/ 2- Satisfactory / 3- Good / 4-Excellent**

Question	Rating 0 to 4	Comments
Overall appreciation of the MASSCOTE Small Scale & WUE workshop		
Was the workshop useful to understand the approach of Masscote for small scale irrigation system?		
Was the workshop useful to understand better <u>WUE</u> in irrigation?		
Was the workshop useful to understand better <u>Field application techniques</u> and evaluation?		
How would you rank the usefulness of MASSCOTE Small Scale & WUE in your country in general		
Balance during the workshop Between Lectures - Field visit – Group work – plenary discussion		
What would you rate as best point of the workshop		
What would you rate as a weak point of the workshop		

Usefulness of the workshop		
<i>Respond yes or no to these statements</i>		Useful for my professional activity
		Not necessarily useful directly but I can still see the value of the lessons learned from the approach
		Not useful for me.
	<i>Add any comments here:</i>	
How would you rank the sharing of experience with colleagues from 3 other countries?	<u>(0 to 4)</u>	<i>Add any comments here:</i>
How was the length of the workshop (7 days)?	<u>Underline your choice</u> Too long - Not enough long - OK	
How about the technical background for Masscote?		I found the technical background easy to follow
		I found sometimes but not always difficulties to follow and relate the techniques into the overall frame
		I found difficult to follow all the technical background
	<i>Add any comments here:</i>	
Overall appreciation of our host (GAP) in Sanliurfa (Welcome and Logistic, Social events)	<u>(0 to 4)</u>	<i>Add any comments here:</i>



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