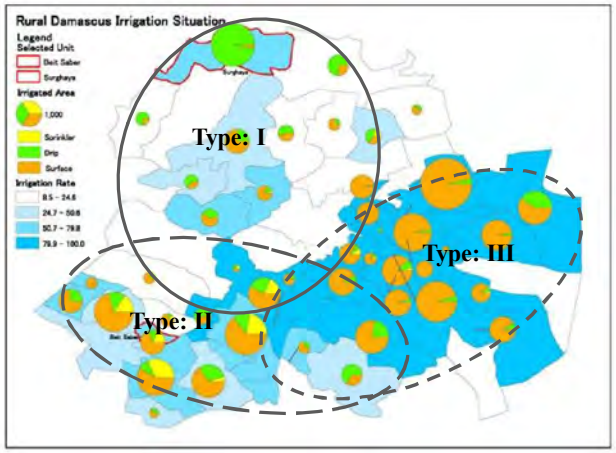
FIGURES and TABLES



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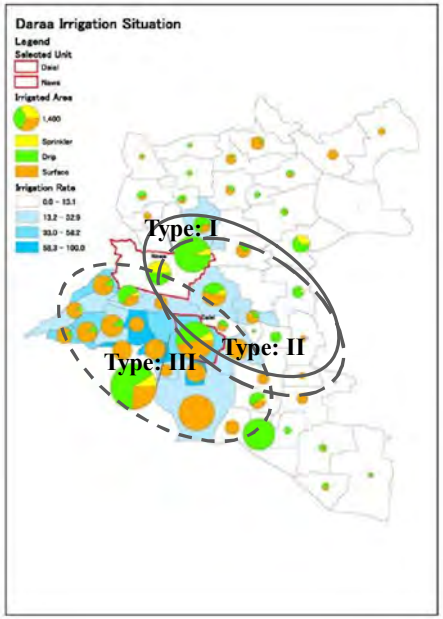

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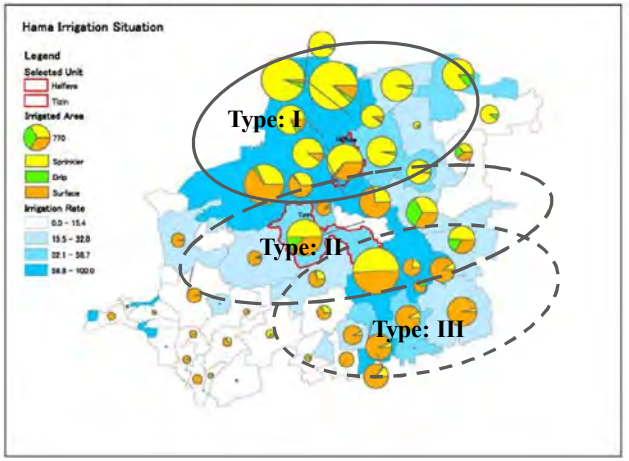

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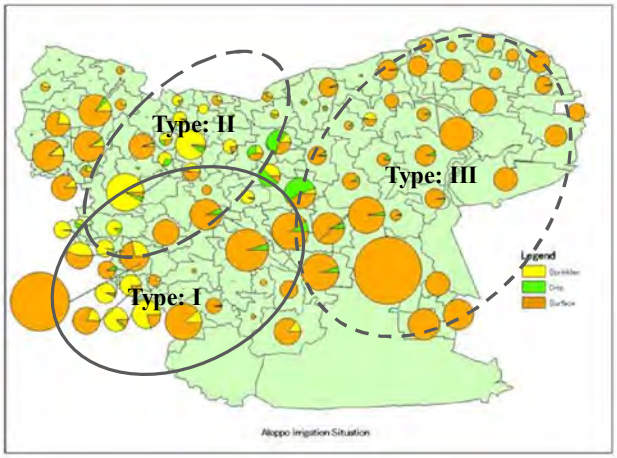

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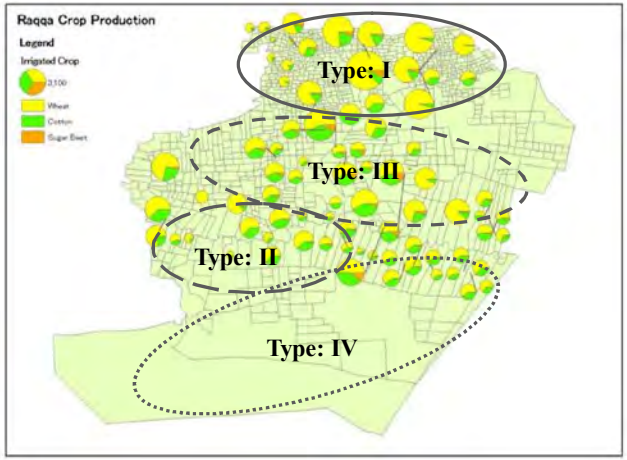
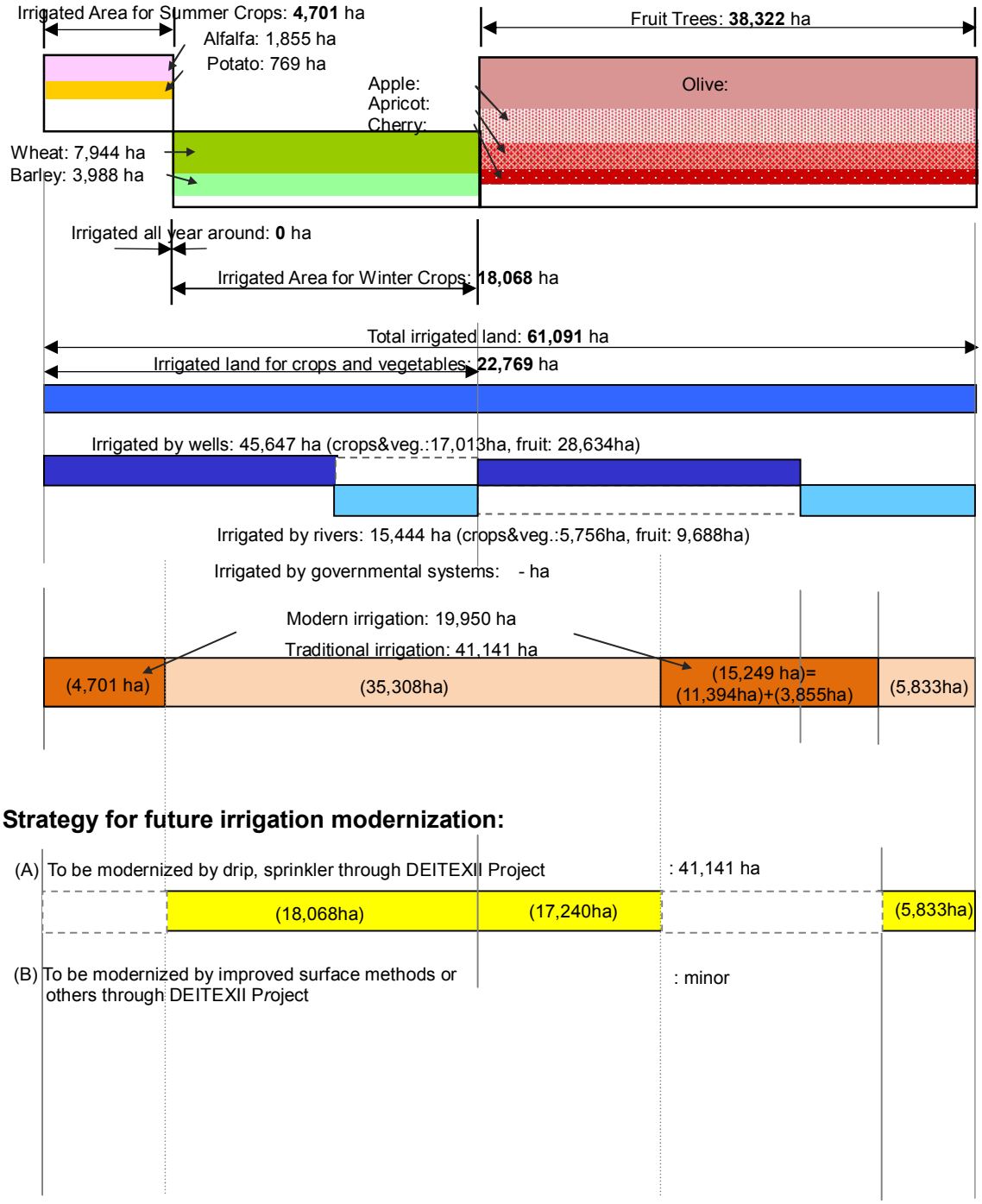


Raqqa

Fig.4.2.1 Classified Types of Irrigated Agriculture by Concerned Governorates

Irrigated Agricultural Condition in 2008: based on the *Agricultural Statistics 2009*



Strategy for future irrigation modernization:

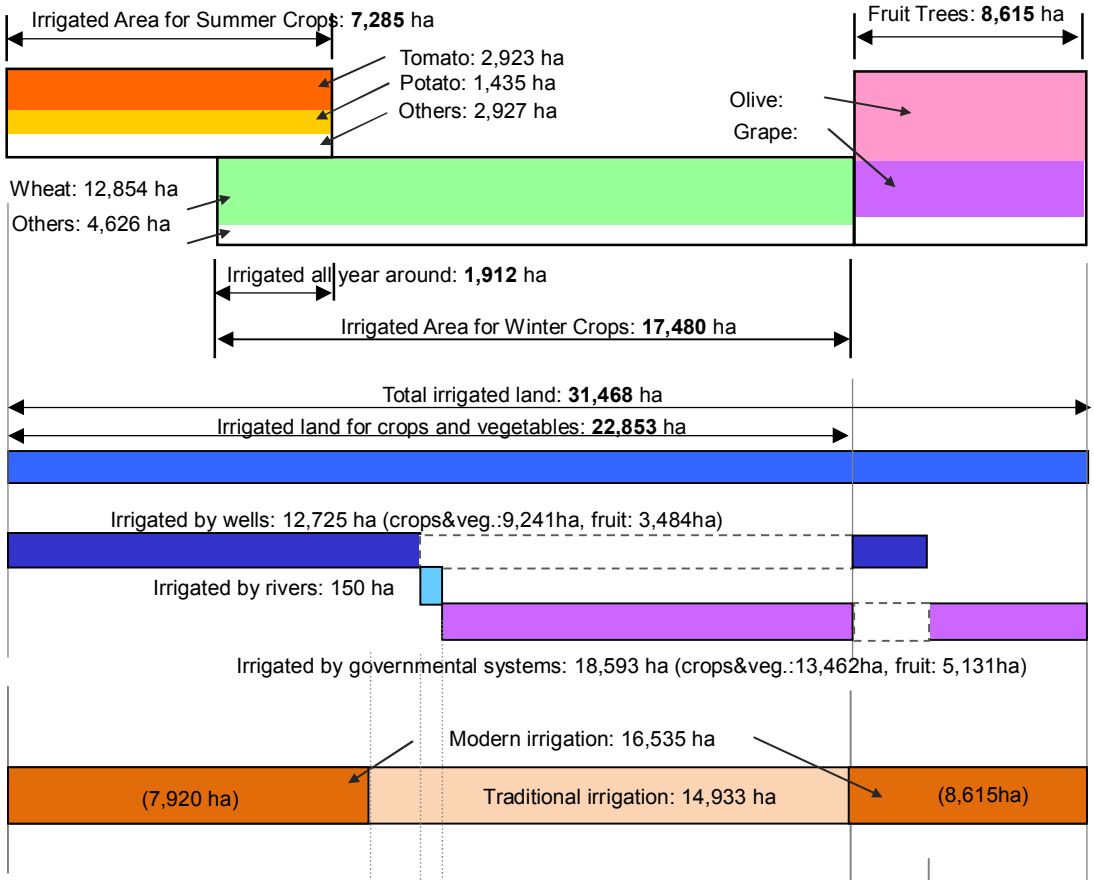
As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

As to the area categorized into (B), it is minor. However, some part of (A) might be proposed to apply improved surface method.

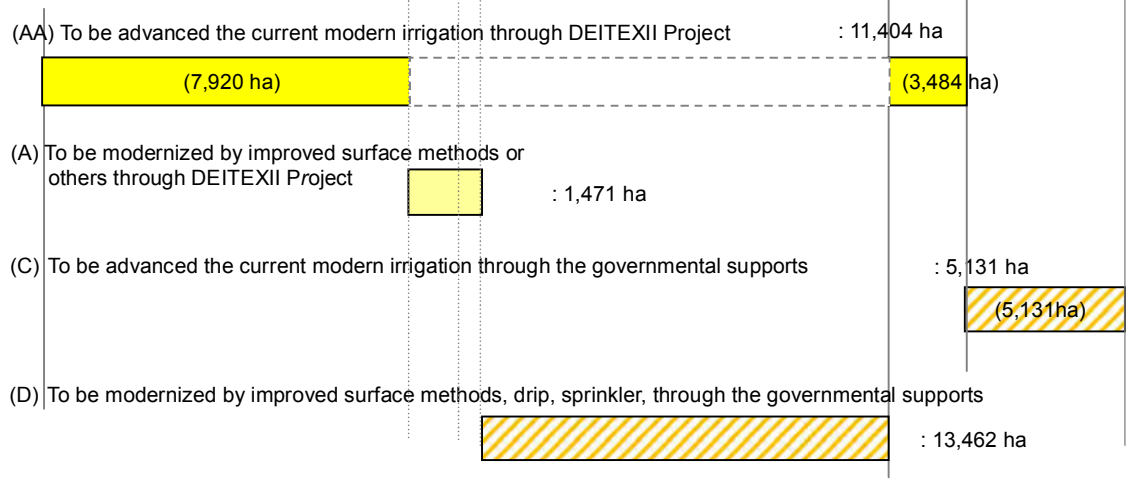
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**1 of 15**: in 2008 for Rural Damascus)

Irrigated Agricultural Condition in 2008: based on the *Agricultural Statistics 2009*



Strategy for future irrigation modernization:



As to the area categorized into (AA), more efficient irrigation should be pursued while those were modernized as the first stage.

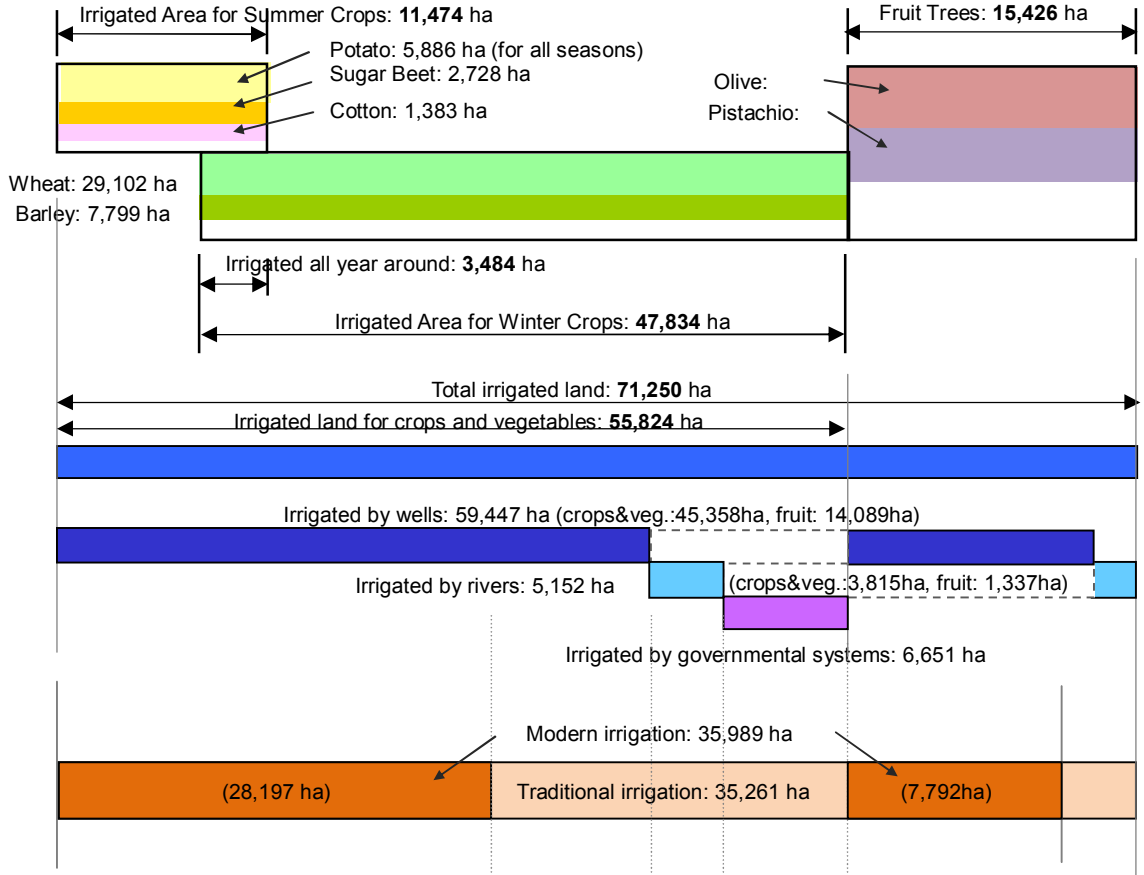
As to the area categorized into (A), irrigation modernization should be promoted according to water availability.

As to the area categorized into (D), drip or sprinkler as well as improved surface irrigation is applicable under the support of the government.

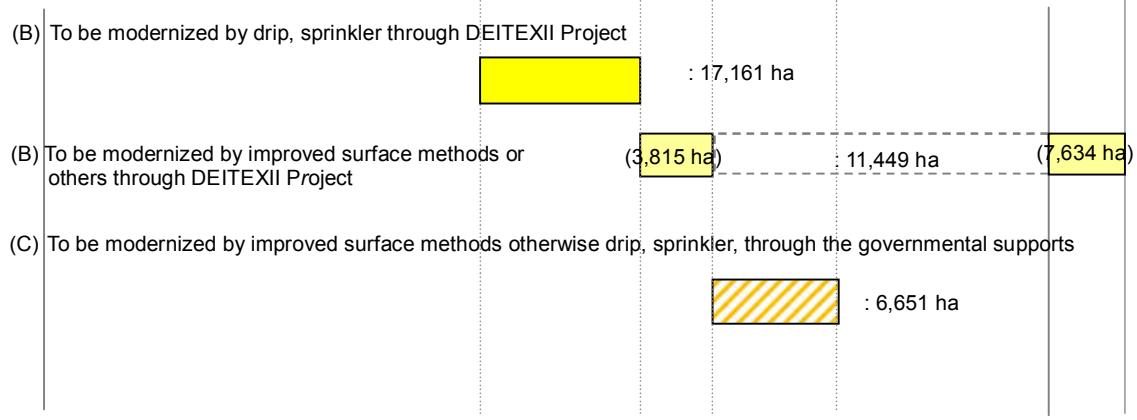
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**2 of 15**: in 2008 for Daraa)

Irrigated Agricultural Condition in 2008: based on the *Agricultural Statistics 2009*



Strategy for future irrigation modernization:



As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

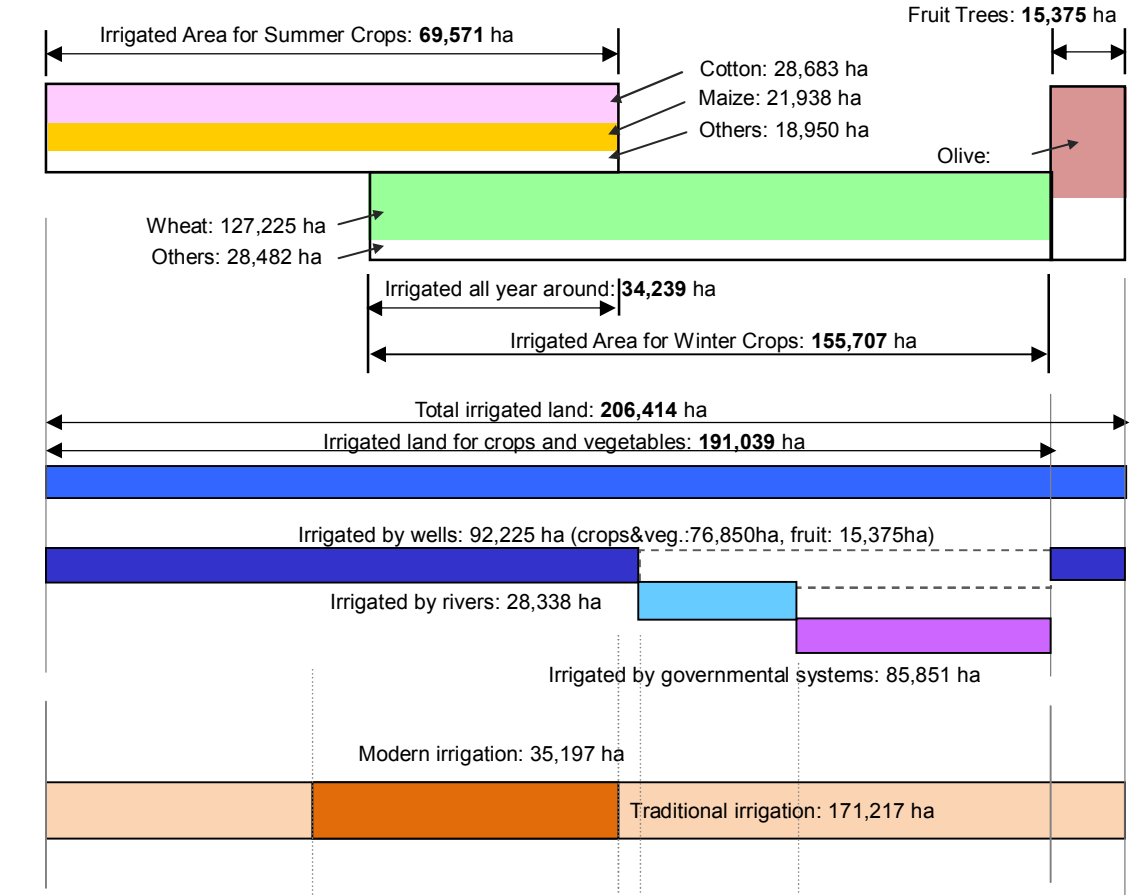
As to the area categorized into (B), drip or sprinkler as well as improved surface method is applicable if booster pump could be installed by farmers' efforts.

As to the area categorized into (C), drip or sprinkler as well as improved surface method is applicable if booster pump could be installed under the support of the government.

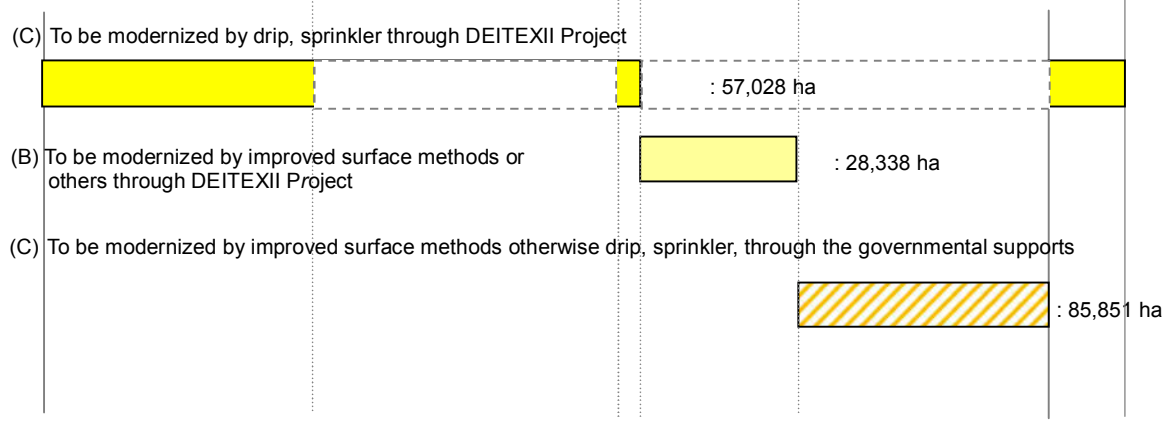
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**3 of 15**: in 2008 for Hama)

Irrigated Agricultural Condition in 2008: based on the *Agricultural Statistics 2009*



Strategy for future irrigation modernization:



As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

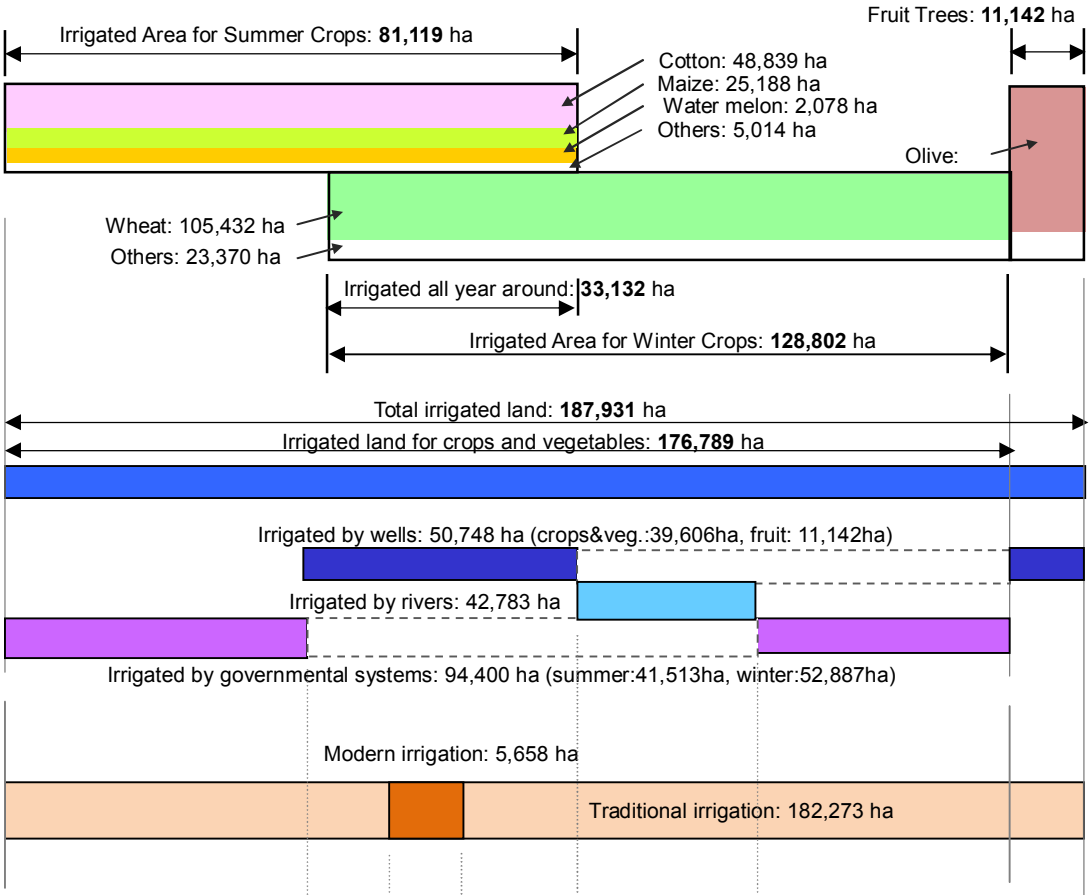
As to the area categorized into (B), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed by farmers' efforts.

As to the area categorized into (C), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed under the support of the government.

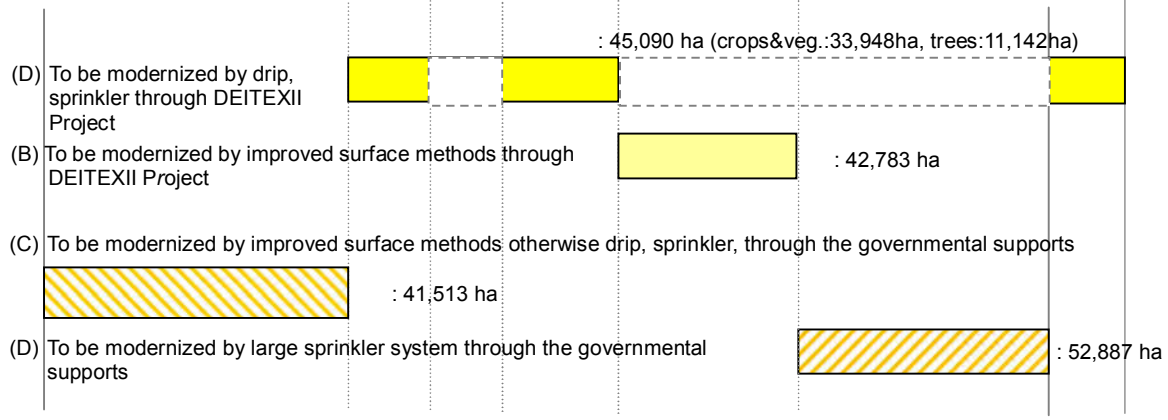
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**4 of 15**: in 2008 for Aleppo)

Irrigated Agricultural Condition in 2008: based on the *Agricultural Statistics 2009*



Strategy for future irrigation modernization:



As to the area categorized into (A), irrigation modernization could be progressed by stages in which improved surface irrigation will be introduced at first.

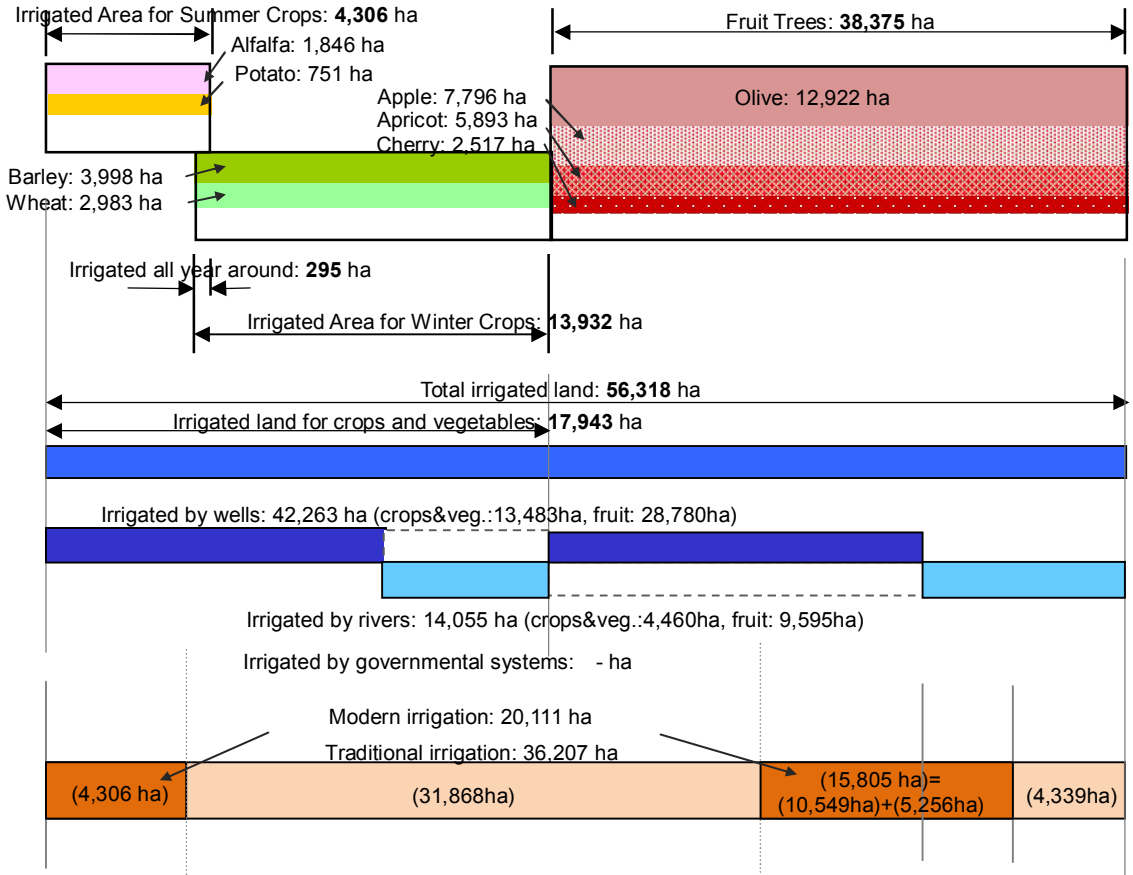
As to the area categorized into (B), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed by farmers' efforts.

As to the area categorized into (C), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed under the support of the government.

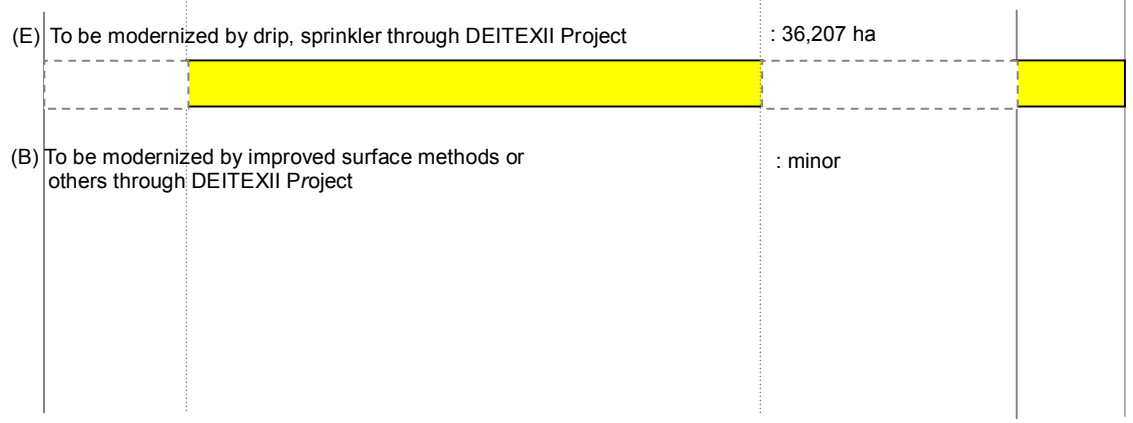
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**5 of 15**: in 2008 for Raqqa)

Irrigated Agricultural Condition in 2009: based on the *Agricultural Statistics 2010*



Strategy for future irrigation modernization:



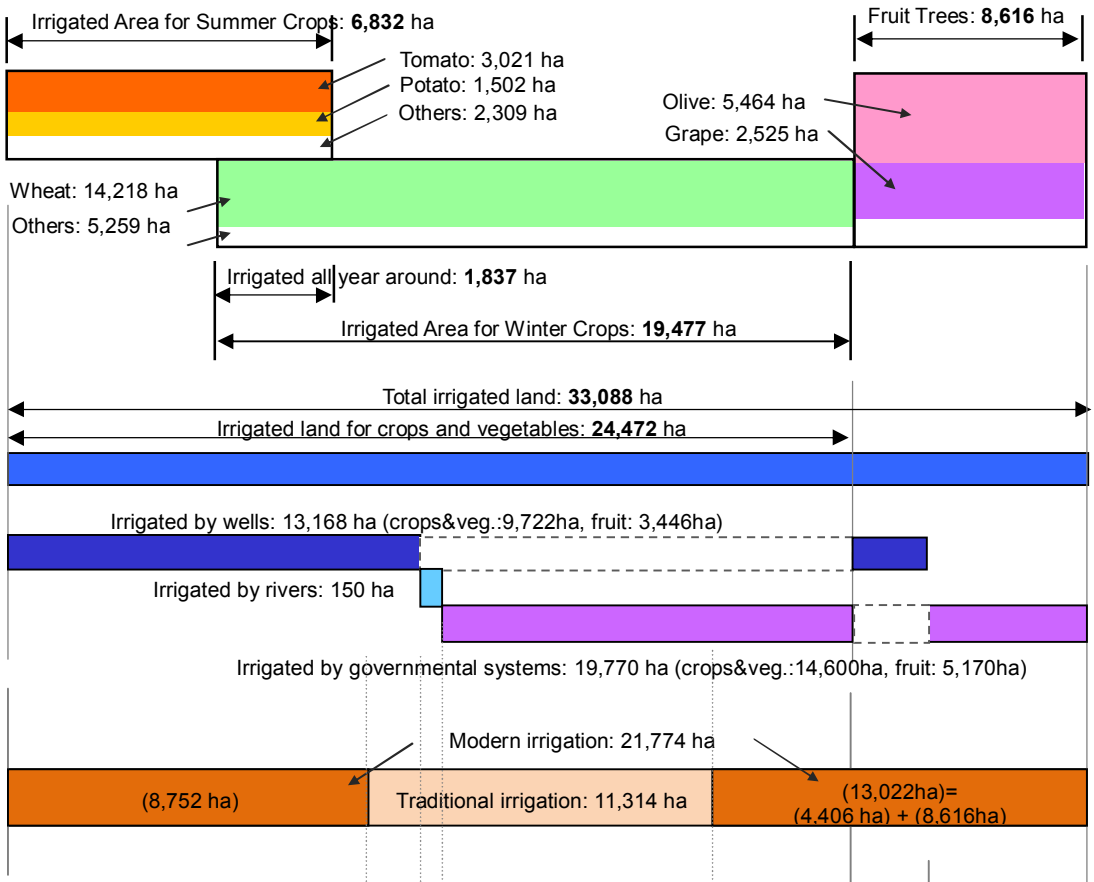
As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

As to the area categorized into (B), it is minor. However, some part of (A) might be proposed to apply improved surface method.

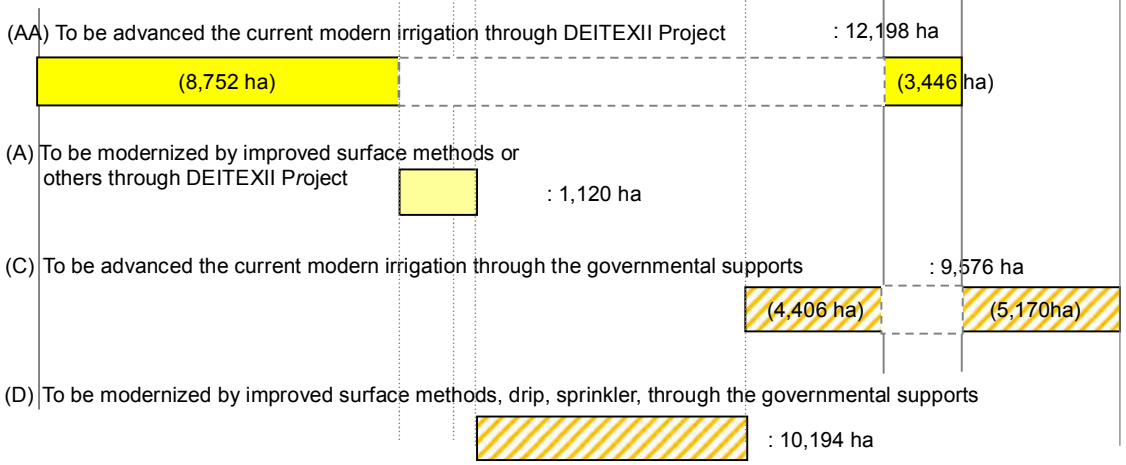
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**6 of 15**: in 2009 for Rural Damascus)

Irrigated Agricultural Condition in 2009: based on the *Agricultural Statistics 2010*



Strategy for future irrigation modernization:



As to the area categorized into (AA), more efficient irrigation should be pursued while those were modernized at first stage.

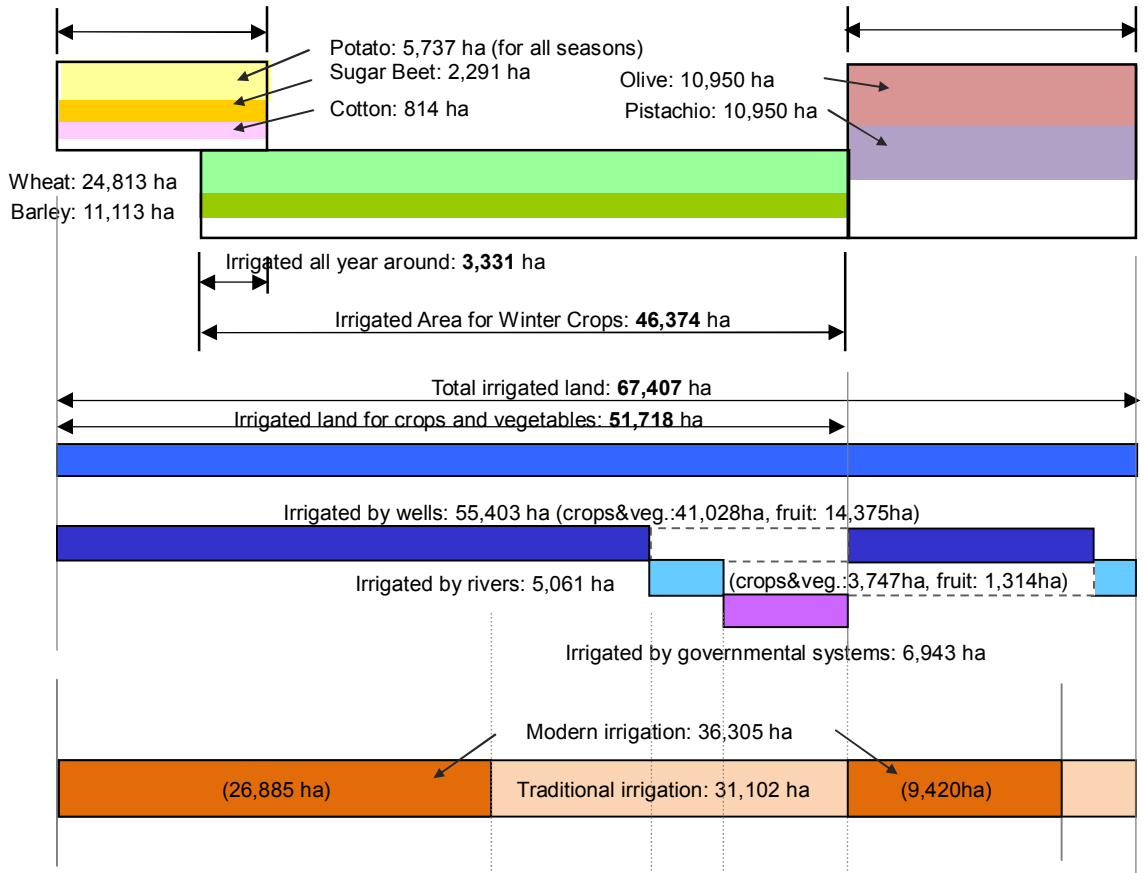
As to the area categorized into (A), irrigation modernization should be promoted according to water availability.

As to the area categorized into (D), drip or sprinkler as well as improved surface irrigation are applicable under the support of the government.

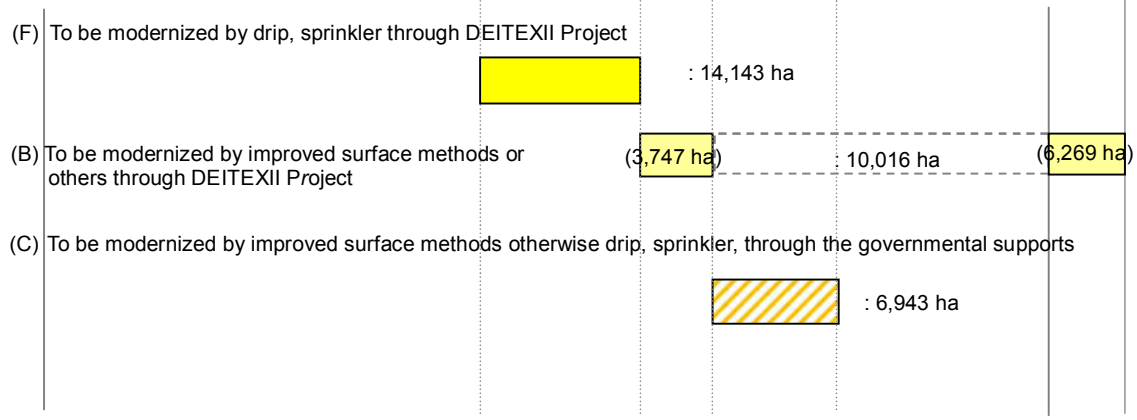
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**7 of 15**: in 2009 for Daraa)

Irrigated Agricultural Condition in 2009: based on the *Agricultural Statistics 2010*



Strategy for future irrigation modernization:



As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

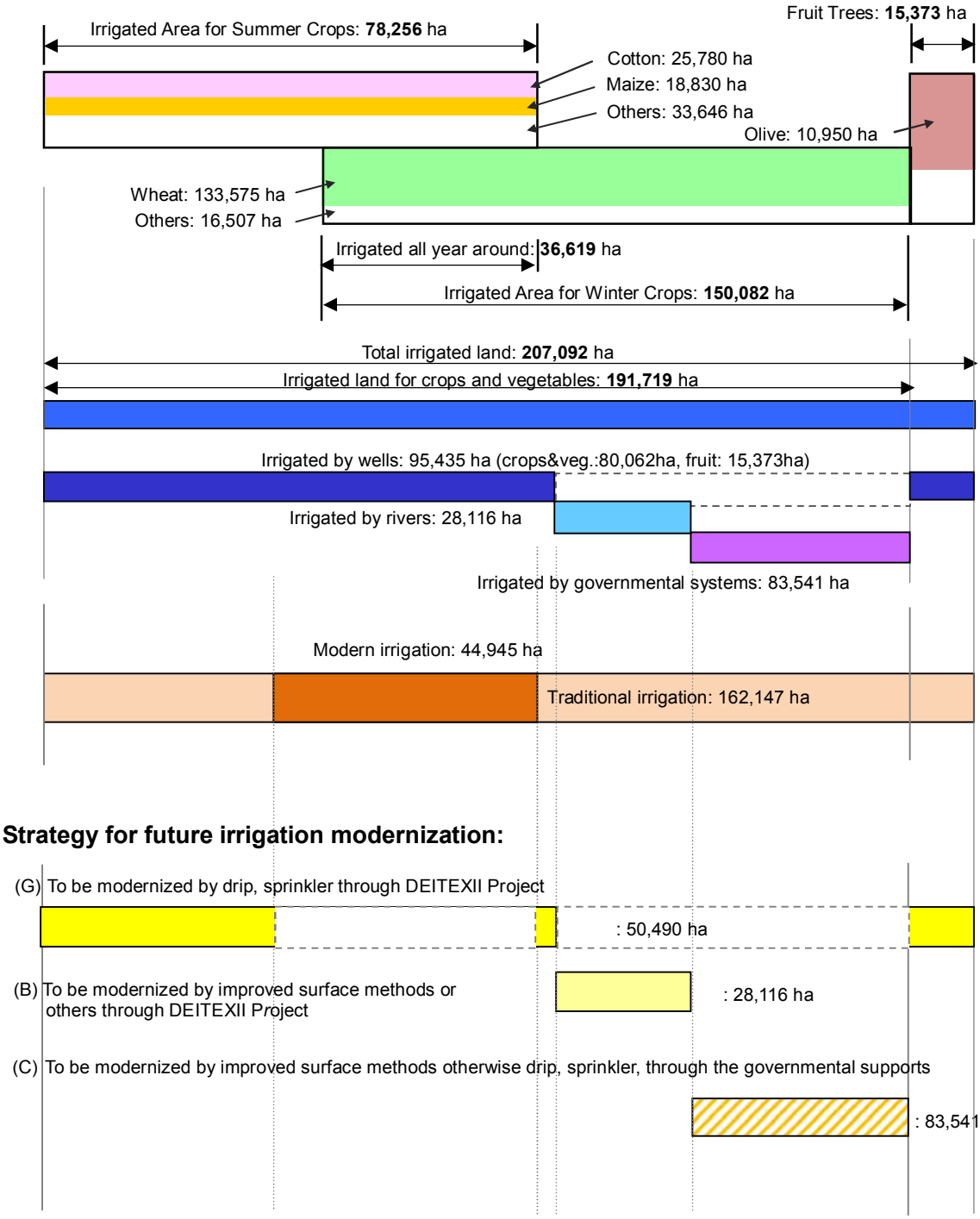
As to the area categorized into (B), drip or sprinkler as well as improved surface method is applicable if booster pump could be installed by farmers' efforts.

As to the area categorized into (C), drip or sprinkler as well as improved surface method is applicable if booster pump could be installed under the support of the government.

Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**8 of 15**: in 2009 for Hama)

Irrigated Agricultural Condition in 2009: based on the *Agricultural Statistics 2010*



Strategy for future irrigation modernization:

As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

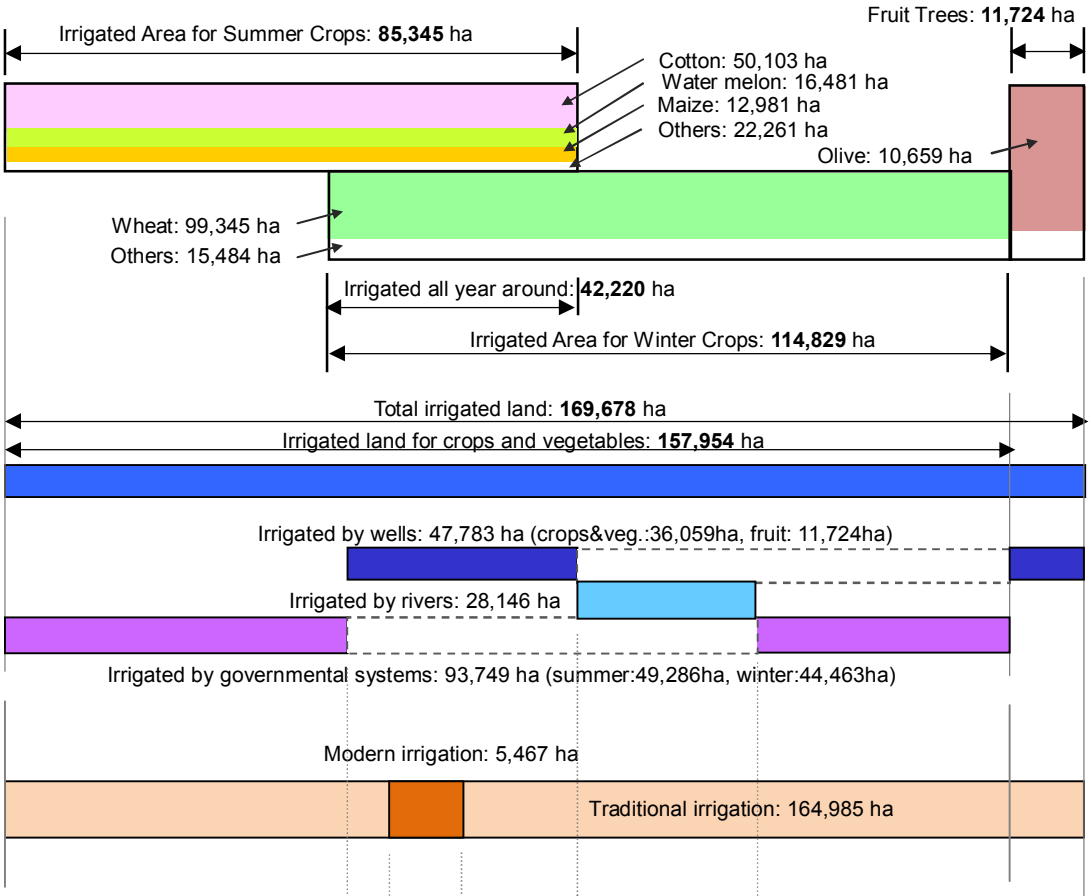
As to the area categorized into (B), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed by farmers' efforts.

As to the area categorized into (C), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed under the support of the government.

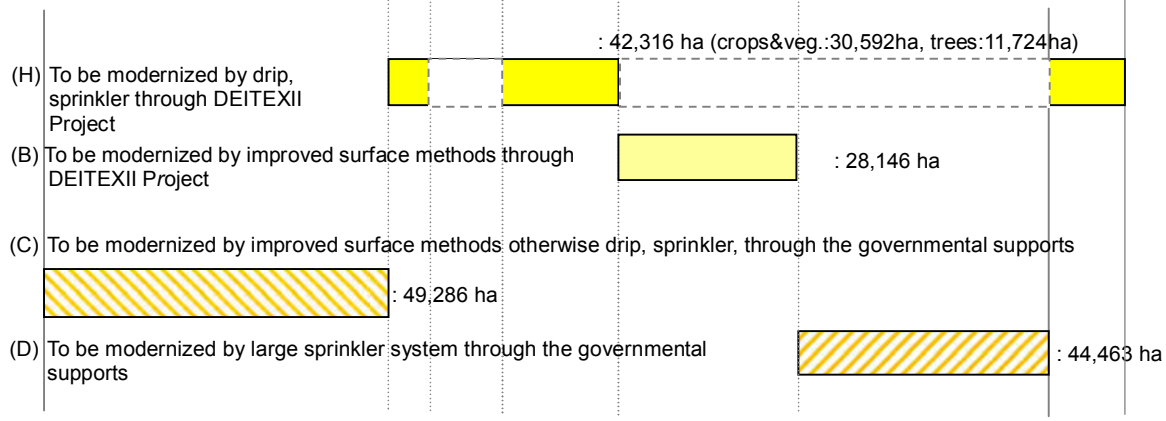
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**9 of 15**: in 2009 for Aleppo)

Irrigated Agricultural Condition in 2009: based on the *Agricultural Statistics 2010*



Strategy for future irrigation modernization:



As to the area categorized into (A), irrigation modernization could be progressed by stages in which improved surface irrigation will be introduced at first.

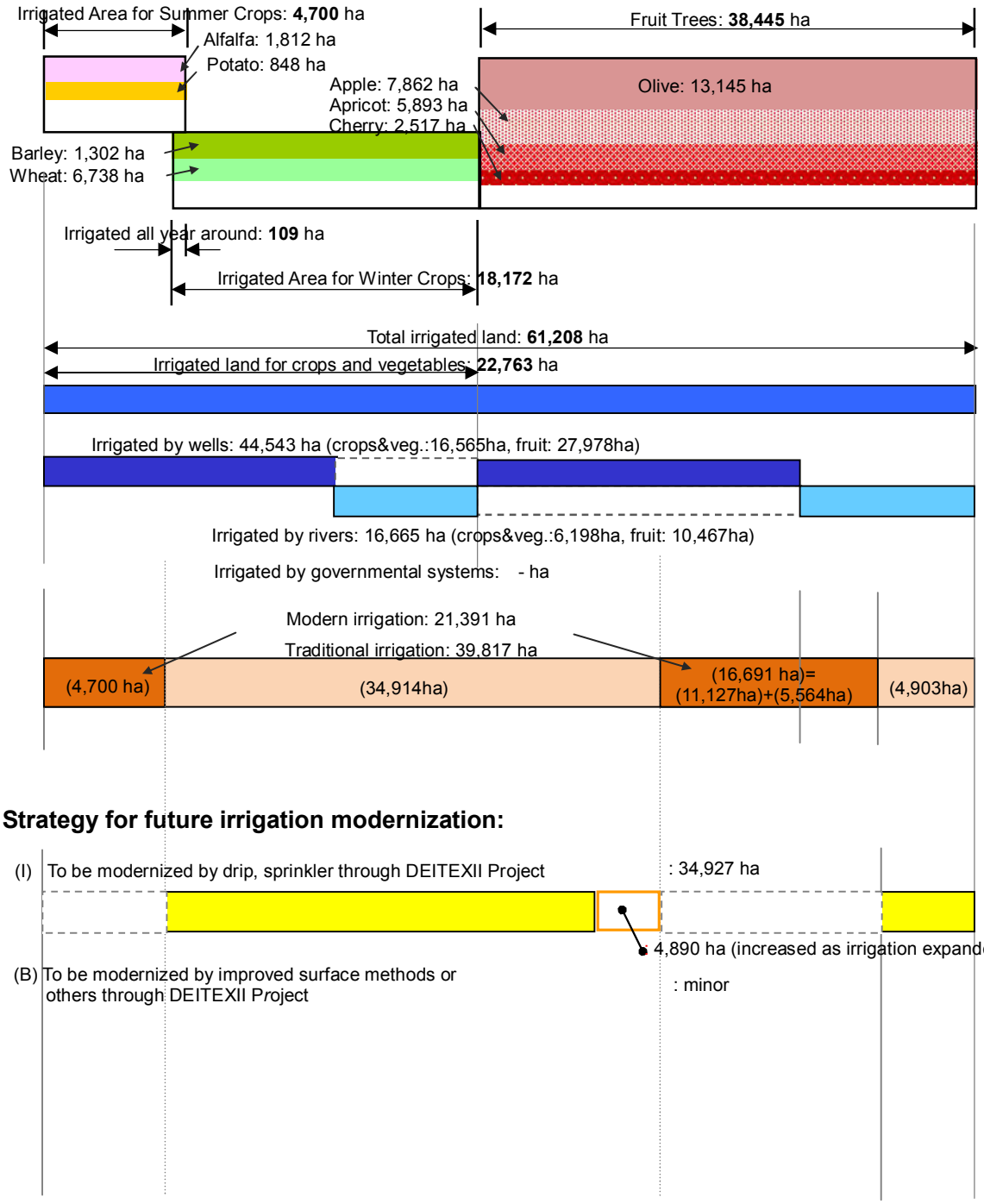
As to the area categorized into (B), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed by farmers' efforts.

As to the area categorized into (C), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed under the support of the government.

Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**10 of 15**: in 2009 for Raqqa)

Irrigated Agricultural Condition in 2010: based on the *Agricultural Statistics 2011*



Strategy for future irrigation modernization:

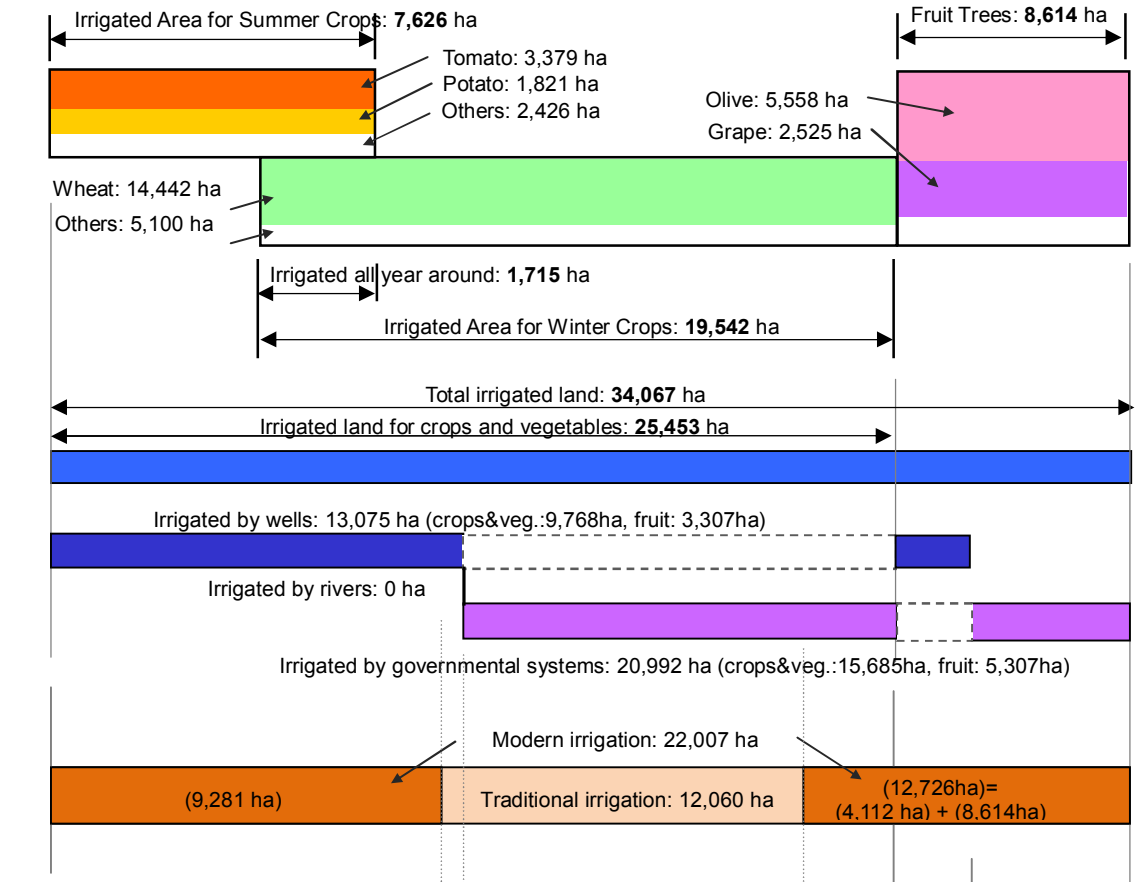
As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

As to the area categorized into (B), it is minor. However, some part of (A) might be proposed to apply improved surface method.

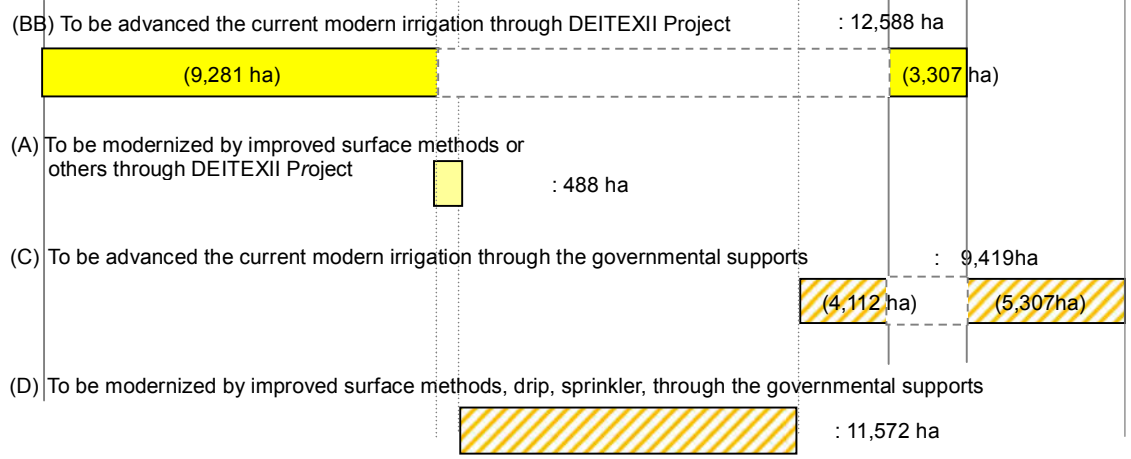
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**11 of 15**: in 2010 for Rural Damascus)

Irrigated Agricultural Condition in 2010: based on the *Agricultural Statistics 2011*



Strategy for future irrigation modernization:



As to the area categorized into (AA), more efficient irrigation should be pursued while those were modernized at first stage.

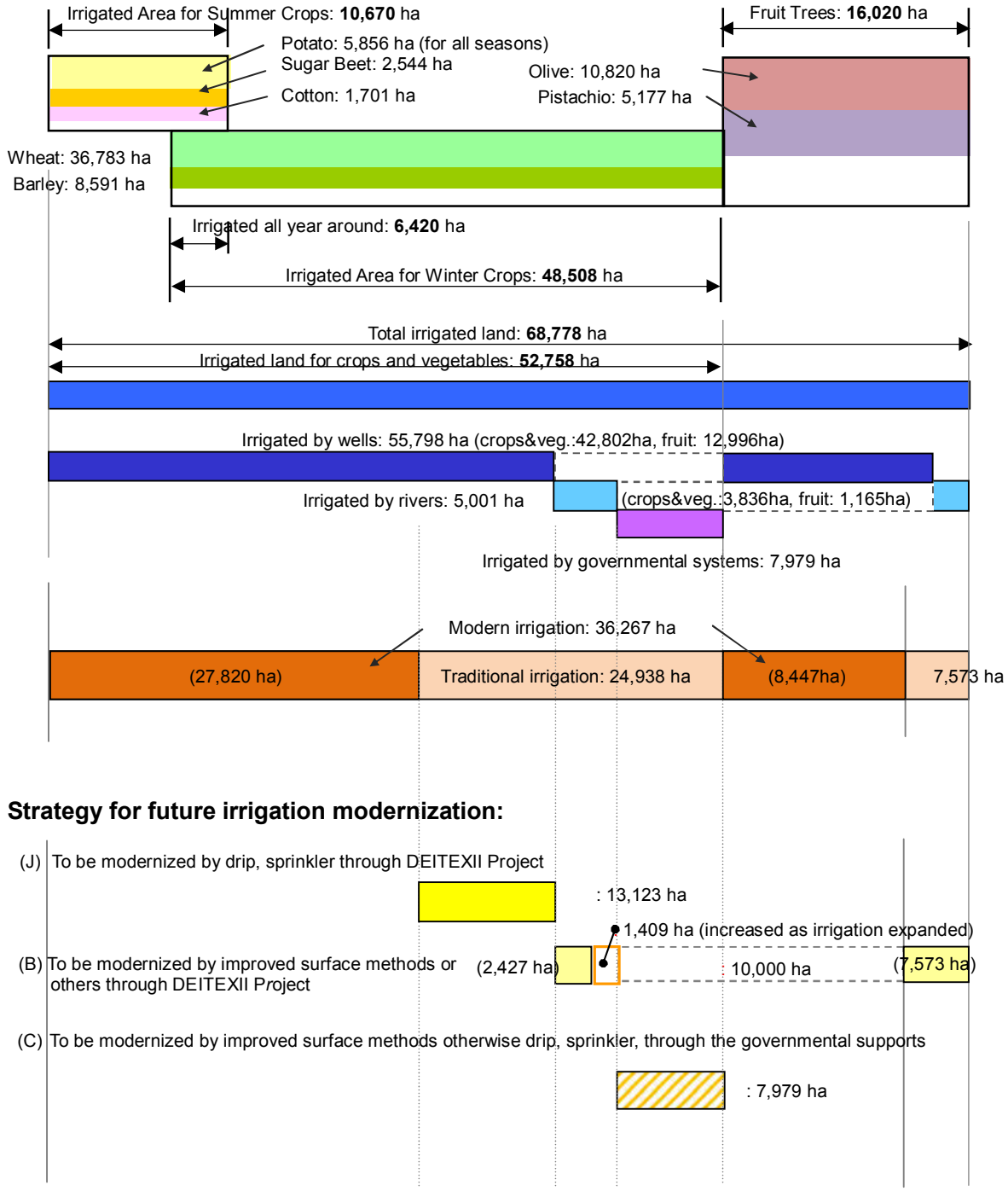
As to the area categorized into (A), irrigation modernization should be promoted according to water availability.

As to the area categorized into (D), drip or sprinkler as well as improved surface irrigation are applicable under the support of the government.

Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**12 of 15**: in 2010 for Daraa)

Irrigated Agricultural Condition in 2010: based on the *Agricultural Statistics 2011*



Strategy for future irrigation modernization:

As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

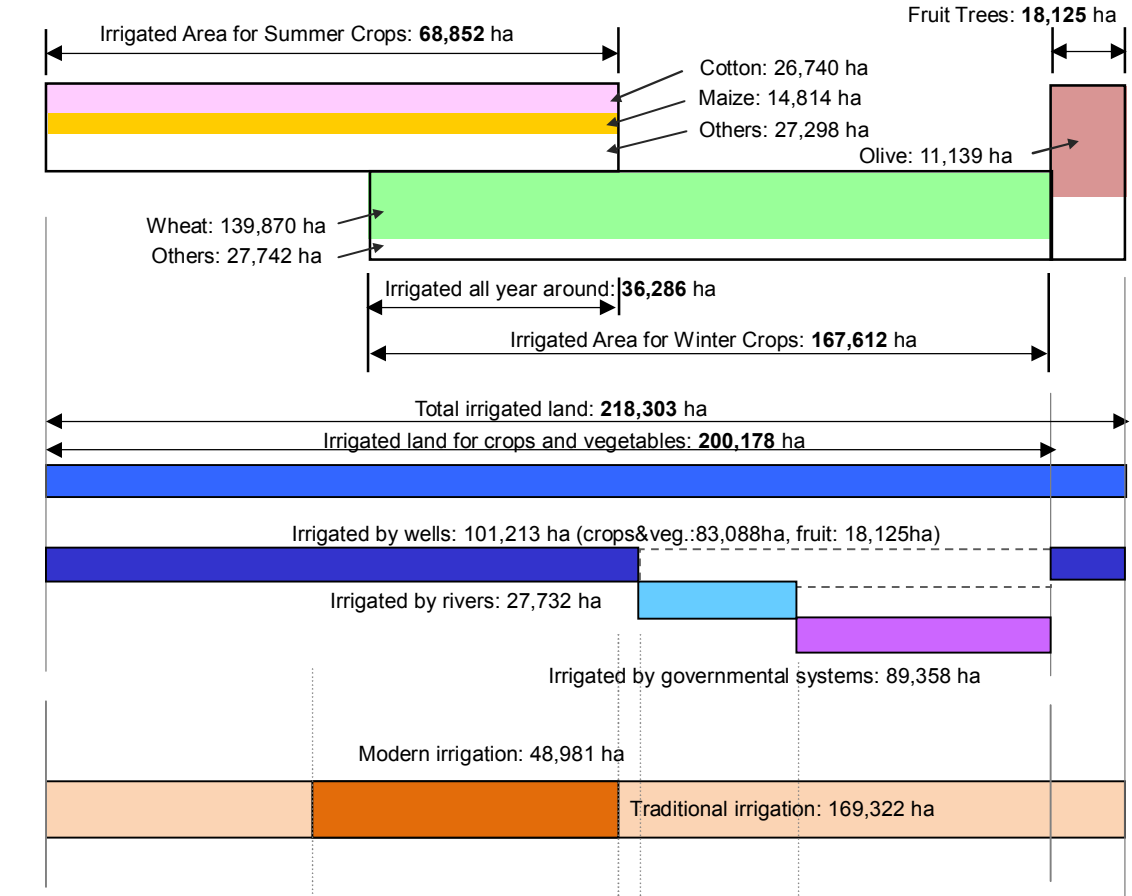
As to the area categorized into (B), drip or sprinkler as well as improved surface method is applicable if booster pump could be installed by farmers' efforts.

As to the area categorized into (C), drip or sprinkler as well as improved surface method is applicable if booster pump could be installed under the support of the government.

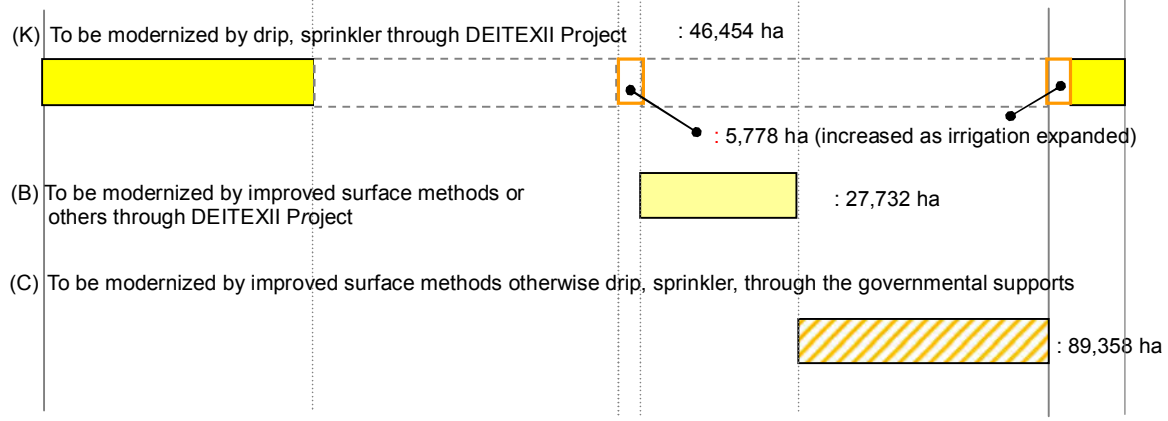
Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

(**13 of 15**: in 2010 for Hama)

Irrigated Agricultural Condition in 2010: based on the *Agricultural Statistics 2011*



Strategy for future irrigation modernization:



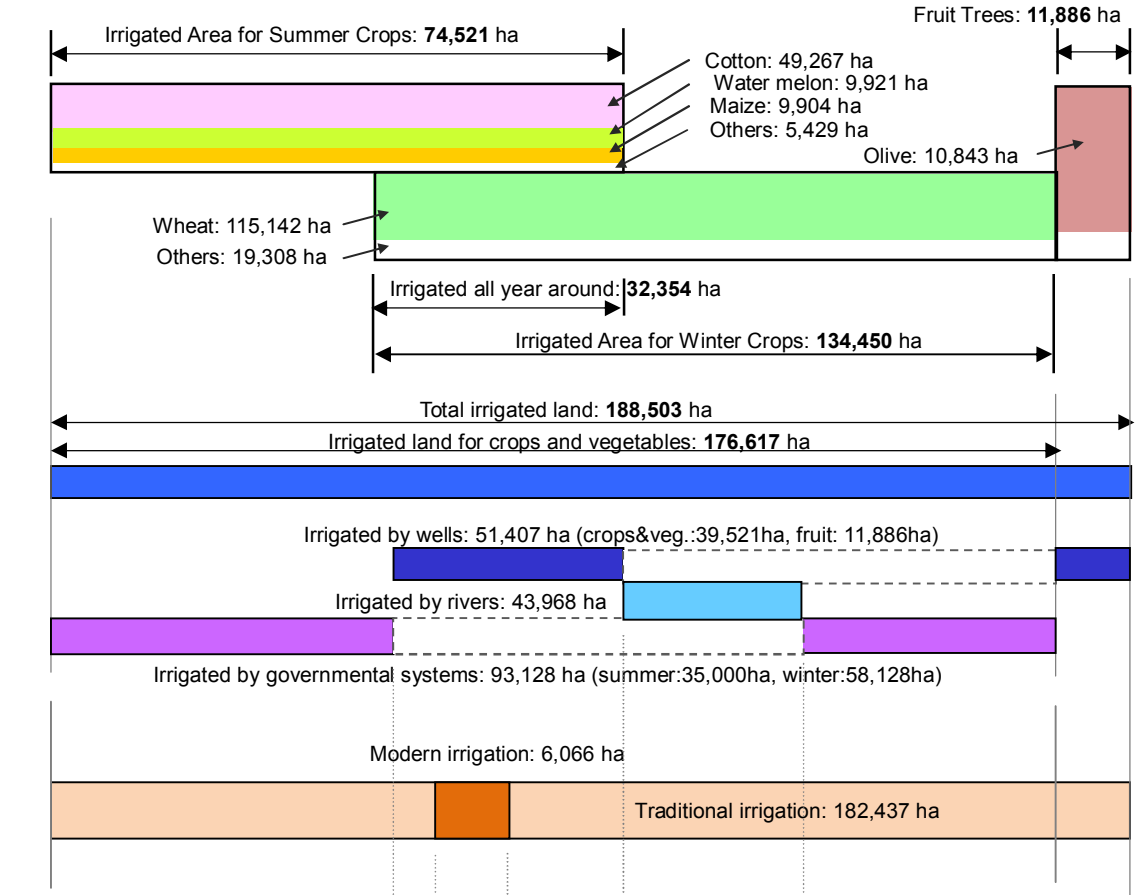
As to the area categorized into (A), irrigation modernization should be promoted at the first priority.

As to the area categorized into (B), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed by farmers' efforts.

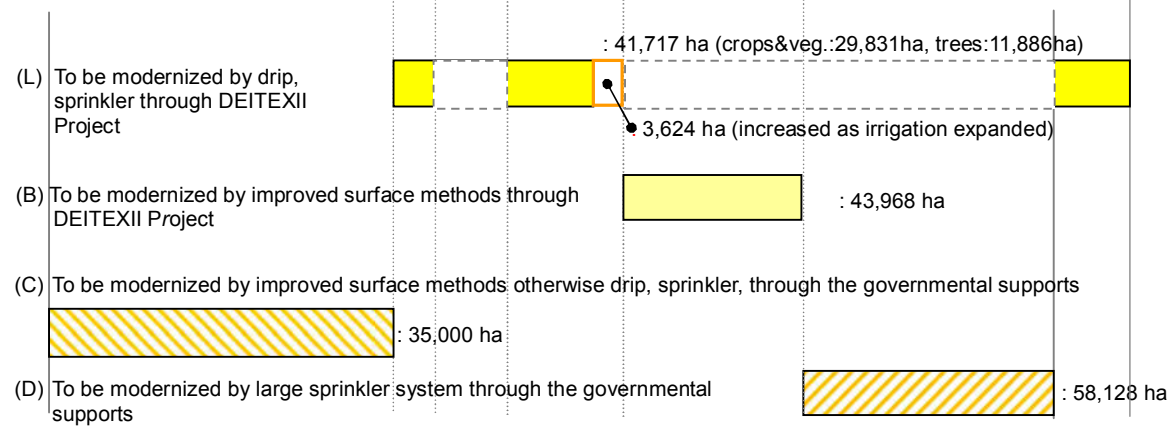
As to the area categorized into (C), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed under the support of the government.

Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

Irrigated Agricultural Condition in 2010: based on the *Agricultural Statistics 2011*



Strategy for future irrigation modernization:



As to the area categorized into (A), irrigation modernization could be progressed by stages in which improved surface irrigation will be introduced at first.

As to the area categorized into (B), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed by farmers' efforts.

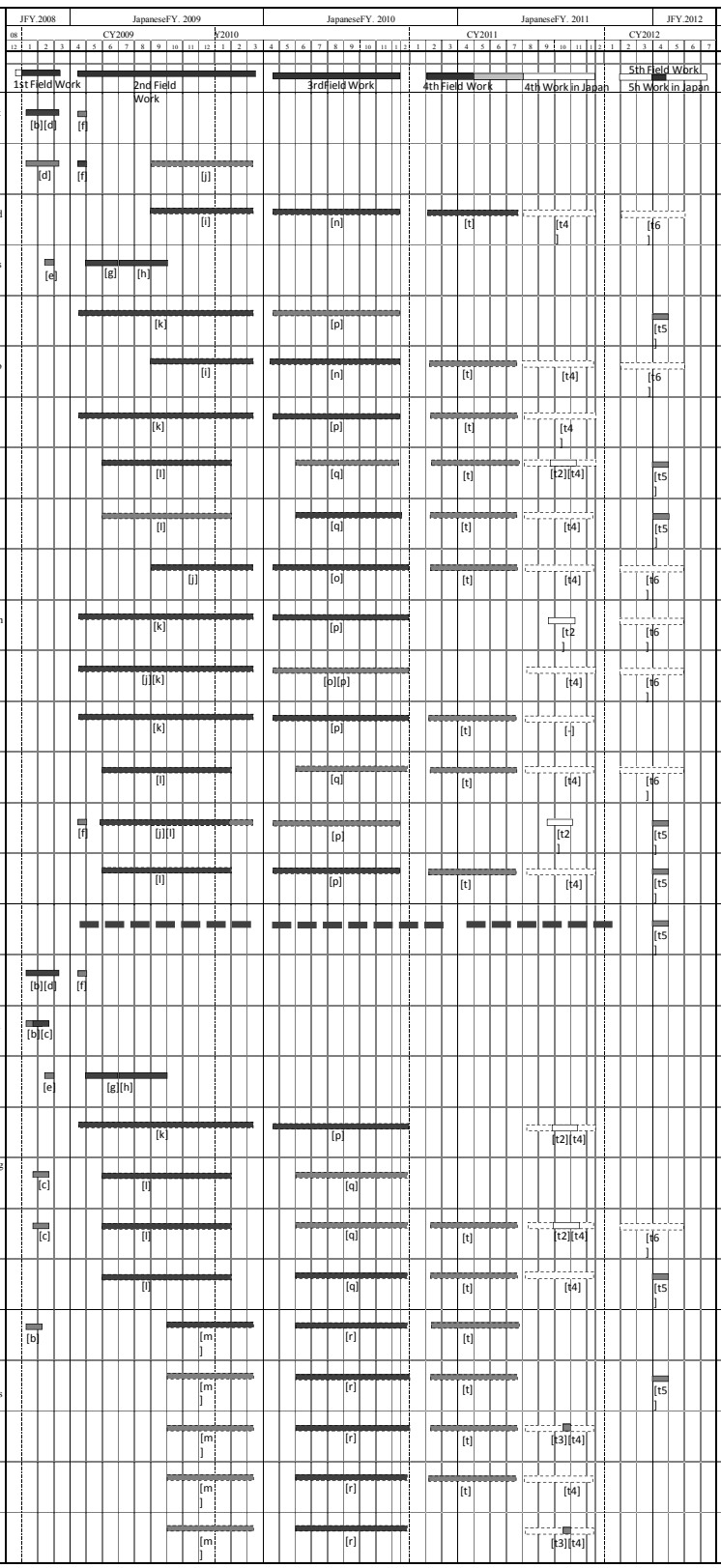
As to the area categorized into (C), drip or sprinkler as well as large sprinkler system is applicable if booster pump could be installed under the support of the government.

Fig.5.1.2 Detailed Analysis of Structure of Irrigated Agriculture by Governorates

Table 2.4.2 Plan of Operation of the DEITEX II Project

Date: February 2012

Expected Outcomes in the PDM (Version 3.0)		Planned Project Activities in the PDM	Syrian side	JICA team	Related Agencies
Outcome 1:	1-1	Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas.	◎	◎	Every counterpart agencies
Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates.	1-2	Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas.	○	◎	GCSAR, Reseach org., universities, Donors
	1-3	Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above.	○	◎	Every counterpart agencies
	1-4	Select suitable Project Sites in the Target Areas and establish the demonstration fields selected within the Project Sites as required.	◎	◎	Every counterpart agencies, Governorates
	1-5-1	Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4.	◎	◎	DoE, DTQ, DMIC
	1-5-2	Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas.	◎	◎	Every counterpart agencies
	1-5-3	Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies.	◎	◎	GCSAR, DoE, DTQ, DMIC
	1-5-4	Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3.	○	◎	DoE, DTQ, DMIC, Goverorates
	1-5-5	Support extension activities to be done by the trained extensionists in line with the extension plan above.	◎	○	DoE, Governorates
	1-6-1	Advance efficient surface irrigation technique and its related technology for water-saving.	◎	◎	GCSAR, DMIC, Reseach org., universities
	1-6-2	Prepare a plan of training activities in accordance with the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6.	◎	◎	DoE, DTQ, DMIC
	1-6-3	Prepare the training guideline and materials on surface irrigation technique.	○	◎	GCSAR, DMIC, Reseach org., universities
	1-6-4	Implement the training courses on water-saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-5-3.	◎	◎	GCSAR, DoE, DTQ, DMIC
	1-6-5	Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6.	○	◎	GCSAR, DoE, DMIC
	1-6-6	Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3.	◎	◎	DoE, DMIC, Goverorates
	1-6-7	Support extension activities to be done by the trained extensionists in line with the extension plan above.	◎	◎	DoE, Goverorates
Outcome 2:	2-1	Hold regular meetings on promotion of water-saving irrigation among the related agencies.	◎	○	GCSAR, DoE, DTQ,DMIC, Governorates
The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Dara Governorates.	2-2	Conduct a baseline survey in the selected districts excluding the concerned districts which were covered by the Phase 1 Project.	◎	○	GCSAR, DoE, DMIC, Governorates
	2-3	Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas.	◎	◎	MAAR, SPC, Counterparts agencies, Governorates
	2-4	Establish satellite plots in the selected districts excluding the concerned districts which were covered by the Phase 1 Project on the basis of the outcomes of item (2)-2	◎	○	GCSAR, DoE, DMIC, Governorates
	2-5	Implement the training activities in line with the extension plan of item (2)-6.	◎	◎	GCSAR, DoE, DTQ, Governorates
	2-6	Revise the plan of extension prepared during Phase I Project.	◎	◎	DoE, DTQ, Governorates
	2-7	Improve extension tools and methods.	◎	◎	DoE, GCSAR, DMIC, Governorates
	2-8	Support extension activities to be done by the trained extensionists in line with the extension plan above.	◎	◎	DoE, Governorates
Outcome 3:	3-1	Study on the collaboration with universities and international research organizations in Syria, regarding water-saving irrigation techniques.	○	◎	GCSAR, Universities, ICARDA, ACSAD etc.
Measures to improve and operate water-saving irrigation techniques are extended to the rest of Syria and to neighboring countries, through the cooperation with universities and international research organizations in Syria.	3-2	Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the	◎	◎	GCSAR, Universities, ICARDA, ACSAD etc.
	3-3	Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1 and (3)-2.	◎	◎	GCSAR, Universities, ICARDA, ACSAD etc.
	3-4	Accept trainees of the training courses arranged by other organizations.	○	◎	GCSAR, Universities, ICARDA, ACSAD etc.
	3-5	Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.	◎	◎	GCSAR, Universities, ICARDA, ACSAD etc.



Note: [a ～v] is the number of project tasks indicated in the Project Implementation Schedule.
◎: Major player ○: Cooperative player

ANNEXES

Annex 1

Inputs of the Project

Table A Lost of Japanese Experts

No.	Name of JICA Expert	Field of Expert	Total M/M (Man-Month)	Total Days	2008	2009	2010	2011	2012
					10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7 8 9 10 11 12	1 2 3 4 5 6 7
1	Mr. Shuichi MATSUSHIMA**	Leader/ Irrigation	19.77	593	5	70 60 60	60 50 55	50 45 20 10 30	30 18 30
2	Mr.Akira KOTO**	Training/ Sub-leader	23.77	713	5	70 130 117	105 60	63 35 50	30 18 30
3	Mr. Hiroyasu OHNUMA**	Extension	16.03	481	5	70 75 68	60 45	63 35 15 15	15 15
4	Mr. Naoki KOGA*	Socio-economy/ Farmers Organization	8.50	255		30 75	45 45 60		
5	Mr. Tomoki HOTTA*	Irrigation System Designing	13.00	390		55 105 30	75 30	60 15 5	15
6	Mr. Masakazu NAKAYAMA*	Farming Management/ Coordinator	5.77	173		20 60	15	30	15 18 15
		Sub-total	86.83	2,605					

Legend: Work in Syria (or Third Country)
Work in Japan

** : Long -Term Japanese Experts
*: Short-Term Japanese Experts

Table B Equipment provided by JICA

Note: R/P: Route of Procurement (J: From Japan, L: Local, E: With Expert)
Frequency of Use (A: Always, B: Often, C: Sometimes)
Condition (A: Good, B: Fair, C: Bad)

No.	Date of Arrival	Description				Quantity	Unit Price	Sub-total	Place of Storage	Frequency of Use	Condition	Remarks
		Item	Manufacture	Model Number/ Specification	R/P							
1	Jan. 2010	Pick up track	Mitsubishi	L200	L	3	US$21,500	US$64,500	GCSAR	A	A	
2	Jan. 2010	4WD	Mitsubishi	PAJERO GLS3.2L	L	1	US$29,500	US$29,500	GCSAR	A	A	
3	Jan. 2009	Copy machine	Canon	Copier IR 2230	L	2		¥721,069	Project office	A	A	
4	Feb. 2009	Fax machine	Panasonic	KX-FL402	L	2		¥63,964	Project office	A	A	
5	Dec. 2009	Irrigation equipment for demonstration famrs	Mais (Syria)	composing of many parts of irrigation equipment	L	1		¥10,048,500	Demonstration Farms	A	A	
6	Sep. 2010	Laser levelling equipment (without tractor)	Leica	420GD	L	1	US$70,000	US$70,000	Irrigation Staion (ANRR)	C	A	
7	Sep. 2010	Laser levelling equipment (with tractor)	Leica (Lazar eq.) New Holland (Tractor)	420GD (Lazar eq.) TS-6020 (Tractor)	L	1	US$123,800	US$123,800	Irrigation Staion (ANRR)	C	A	
8	Jul. 2009	Projector/ OHP	Acer	2,000 lumen	L	3		¥220,720	Project office	B	A	
9	Jul. 2009	Screen	Acer	2m x 2m	L	3		¥131,859	Project office	B	A	
10	Jul. 2009 Feb. 2010	Digital camera	Olympus	3 million pixel	L	26		¥287,797	C/Ps	B	B	
11	Jul.2009	Digital Video Camera	Panasonic	HDD	L	3		¥190,909	Project office	B	A	
12	Feb. 2009	Computer (desktop type)	Acer	Windows, Microsoft Office	L	5		¥831,244	Project office	A	A	
13	Mar. 2009	Laser Printer	Canon	A4 paper	L	3		¥94,039	Project office	A	A	
14	Mar. 2009	Inkjet Printer	Hewlett-Packard	A3 paper, Color	L	3		¥64,811	Project office	A	A	
15	Mar. 2009	Inkjet Printer	Canon	A4 paper, Color	L	3		¥99,440	Project office	A	A	
16	Mar. 2009	Flow meter	Fuji electric	for conduit (Ultrasound type)	E	2		¥1,966,000	Project office	C	A	
17	Dec. 2008	Flow meter	Climatec	for open channel (low velocity of flow)	E	1		¥150,000	Project office	C	A	
18	Dec. 2008	Flow meter	Climatec	for open channel (high velocity of flow)	E	1		¥160,000	Project office	C	A	
							Total (US$ portion):	US$287,800				
							Total (Yen portion):	¥15,030,352				

Table C Counterpart Training in Japan and Third Country Training

(1) Training in Japan

No.	Name	Position and organization	Name of Training Course	Period
1	Mr. Mhammad Bahari	Engineer of Extension Directorate (Damascus)	Study on agricultural extension and training by the central government, prefectural government and local government including training on PDM workshop and Coaching Presentation methods.	From Oct. 3 to Nov.1, 2009
2	Mr. Rateb Raja	Training Officer of Rurla Damascus Agr. Directorate		
3	Mr. Mahmmad Shahadat	Chief of Extension, Daraa Agr. Directorate		
4	Mr. Hikmat Jarah	Extension Officer of Hama Agr. Directorate		
5	Mr. Mazen Doughot	Engineer of ANRR	Filed visit to major irrigation schemes in Japan and manufactures of irrigation equipment. Also included methods on PDM workshop and coaching presentation.	From Sep. 24 to Oct. 25, 2010
6	Ms. Hanan Mosalkh	Engineer of ANRR		
7	Mr. Husam Qattan	Engineer of DMIC		
8	Mr. Abed Al-Ghani	Engineer of ANRR, Aleppo		
9	Mr. Ahmad Hafez	Engineer of ANRR, Aleppo		
10	Mr. Othman Al-Ali	Head of DMIC, Raqqa		
11	Mr. Ahammad Al-Kadri	Director of DMIC, MAAR	Learn management of irrigation schemes, training, extension activities in Japan through field visit to major irrigation schemes (Kasumigaura and Toyokawa yosui) and agricultural research stations.	From Oct. 2 to Oct. 10, 2010
12	Mr. Mahamod Al-Taba	Director, Training Center, Training Directorate		
13	Ms.Rahaf Shakko	Engineer of ANRR	Study on agricultural extension and training by the central government, prefectural government and local government including training on PDM/CUDBAS workshop and Coaching Presentation methods.	From Oct. 01 to Oct. 30, 2011
14	Mr.Hasan Al-Rachi	Head of Extension Directorate		
15	Mr.Ziad Al-Zaharaa	Engineer of Training Directorate		
16	Mr.Ghassan Ziyada	Director of Human Resources, Aleppo Agr. Directorate		
17	Mr.Ahamad Al-Hamdan	Chief of Training, Aleppo Agr. Directorate		
18	Mr.Saleh Al-Shabli	Chief of Extension, Raqqa Agr. Directorate		
19	Ms.Mnaour Tayar	Chief of Training, Raqqa Agr. Directorate		

(2) Training in third countries

No.	Name	Position and organization	Name of Training Course	Period
1	Mr. Bassam Al-Husein	Irrigation Engineer of ANRR, GCSAR	Study visit to Tunisia on modernized irrigation management and water resource management	From Jul. 31 to Aug. 8, 2009
2	Mr. Samer Al-Ahmad	Irrigation Engineer of ANRR, GCSAR		
3	Mr. Ahmad Zalita	Chief of CWR section, ANRR, GCSAR		
4	Mr. Abdulhamid AlChara	Deputy Director of DMIC		
5	Mr. Najib Hassoun	Head of DMIC, Rural Damascus		
6	Mr. Ahmad Zouikli	Head of DMIC, Hama		
7	Mr. Mahmoud Al-Shahadat	DMIC, ANNR		

Table D Assignment of Syrian Counterparts

No.	Name of Counterpart	Field for the Project	Present Post Post at assignment time	Working Place	Period of Assignment From	 To	2008 2009 2010 2011 2012
1	Dr. Walid Tawil	Project Director	Director General of GCSAR, MAAR	Damascus	Dec. 2008	April 2011	
2	Dr. Nayef Al-Salty	Project Director	Director General of GCSAR, MAAR	Damascus	May 2011	Present	
3	Dr. Awadis Arslan	Project Manager	Director of ANRR, GCSAR	Damascus	Dec. 2008	Present	
4	Dr. Mohammad Abdallah	Project Manager	Director of Extension, MAAR	Damascus	Dec. 2008	Feb. 2012	
5	Mr. Bassam Al-Bunni	Project Manager	Director of Extension, MAAR	Damascus	Mar.2012	Present	
6	Mr. Ahmad Al-Qadri	Project Manager	Director of DMIC, MAAR	Damascus	Dec. 2008	Dec. 2011	
7	Mr. Abed Al-Hamed Al-Sharaa	Project Manager	Director of DMIC, MAAR	Damascus	Apr. 2012	Present	
8	Mr. Bassam Al-Husein	Project Coordinator	Engineer of ANRR	Damascus	Dec. 2008	Present	
9	Mr. Samer Al-Ahmad		Engineer of ANRR	Damascus	Dec. 2008	Present	
10	Mr. Naser Koki		Engineer of ANRR	Damascus	Dec. 2008	Present	
11	Ms. Rahaf Shakko		Engineer of ANRR	Damascus	Dec. 2008	Present	
12	Ms. Hanan Mosalkh		Engineer of ANRR	Damascus	Dec. 2008	Present	
13	Mr. Mazen Doughot		Engineer of ANRR	Damascus	Dec. 2008	Present	
14	Mr. Abed Al-Salam Hosen		Engineer of ANRR	Damascus	Dec. 2008	Present	
15	Mr. Mahmmod Taba		Director, Sabra Training Center, Training Directorate	Damascus	Dec. 2008	Present	
16	Mr. Ziad Zahra		Engineer of Training Directorate	Damascus	Dec. 2008	Present	
17	Mr. Mohammad Bahry		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
18	Mr. Hasan Al-Rashy		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
19	Ms. Najwa Diab		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
20	Mr. Samer Al-Qadi		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
21	Mr. Salah Othman		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
22	Mr. Abed Al-Hamed Al-Sharaa		Deputy Director of DMIC	Damascus	Dec. 2008	Present	
23	Ms. Sahar Toban		Engineer of DMIC	Damascus	Dec. 2008	Present	
24	Mr. Husam Qattan		Engineer of DMIC	Damascus	Jan. 2010	Present	
25	Dr. Abd Al-Naser Omar		Director of Agricultural Research Center, Hama	Hama	Dec. 2008	Present	
26	Mr. Yaser Al Mohammad		Engineer of Agricultural Research Center, Hama	Hama	Dec. 2008	Present	
27	Mr. Mohammad Jazar		Head of Irrigation Research Station, Hama	Hama	Dec. 2008	Present	
28	Mr. Bassam Al-Bunni		Director of Human Resource Division, Hama Agricultural Directorate	Hama	Dec. 2008	Feb.2012	
29	Mr. Husam Obaysi		Extension Officer of Hama Agr. Directorate	Hama	Dec. 2008	Present	
30	Mr. Adnan Khder		Training Officer of Hama Agr. Directorate	Hama	Dec. 2008	Present	
31	Mr. Mohammad Kreim		Head of DMIC, Hama	Hama	Dec. 2008	Jun.2010	
32	Mr. Khudr Hamoud		Engineer of DMIC, Hama	Hama	Dec. 2008	Present	

No.	Name of Counterpart	Field for the Project	Present Post Post at assignment time	Working Place	Period of Assignment From	 To	2008 2009 2010 2011 2012
33	Mr. Ayman Hijazi		Head of Irrigation Research Station, Rural Damascus	Rural Damascus	Dec. 2008	Present	
34	Mr. Marwan Shikh Fatoh		Chief of Extension, Rural Damascus Agr. Directorate	Rural Damascus	Dec. 2008	Present	
35	Mr. Zahr Al-Abdallah		Extension Officer of Rurla Damascus Agr. Directorate	Rural Damascus	Dec. 2008	Present	
36	Mr. Rateb Rajah		Training Officer of Rurla Damascus Agr. Directorate	Rural Damascus	Dec. 2008	Present	
37	Mr. Najeeb Hason		Head of DMIC, Rural Damascus	Rural Damascus	Dec. 2008	Present	
38	Mr. Deab Al-Hanash		Engineer of DMIC, Rural Damascus	Rural Damascus	Dec. 2008	Present	
39	Mr. Husein Kottuma		Director Agr. Research Center, Daraa	Daraa	Dec. 2008	Present	
40	Mr. Mohammad Al-Hayak		Engineer of Irrigation Research Station, Daraa	Daraa	Dec. 2008	Present	
41	Mr. Fabi Abo Rokba		Head of Irrigation Research Station, Daraa	Daraa	Dec. 2008	Present	
42	Mr. Mohammad Shahadat		Chief of Extension, Daraa Agr. Directorate	Daraa	Dec. 2008	Present	
43	Mr. Husain Shinwan		Extension Officer of Daraa Agr. Directorate	Daraa	Dec. 2008	Present	
44	Mr. Mahmmod Al-Namah		Chief of Training, Daraa Agr. Directorate	Daraa	Dec. 2008	Present	
45	Mr. Mahmmod Shahadat		Head of DMIC, Daraa	Daraa	Dec. 2008	Present	
46	Mr. Adham Abo Jiash		Engineer of DMIC, Daraa	Daraa	Dec. 2008	Present	
47	Dr. Bader Jalab		Director Agr. Research Center, Aleppo	Aleppo	Dec. 2008	Present	
48	Mr. Abed Al-Ghani Al-Khaldi		Engineer of ANRR, Aleppo	Aleppo	Dec. 2008	Present	
49	Mr. Trad Dandal		Head of Irrigation Research Station, Aleppo	Aleppo	Dec. 2008	Present	
50	Mr. Mohammad Al-Kahel		Engineer of ANRR, Aleppo	Aleppo	Dec. 2008	Present	
51	Mr. Ghasan Ziada		Director of Human Resource Division, Aleppo Agr. Directorate	Aleppo	Dec. 2008	Present	
52	Mr. Ibraheem Bridy		Extension Officer of Aleppo Agr. Directorate	Aleppo	Dec. 2008	Present	
53	Mr. Ahmmad Al-Hamdan		Chief of Training, Aleppo Agr. Directorate	Aleppo	Dec. 2008	Present	
54	Mr. Hammid Falah		Head of DMIC, Aleppo	Aleppo	Dec. 2008	Sep.2010	
55	Mr. Saheeb Brijawi		Engineer of DMIC, Aleppo	Aleppo	Dec. 2008	Present	
56	Mr. Mahmmod Al-Naif		Director Agr. Research Center, Raqqa	Raqqa	Dec. 2008	Present	
57	Mr. Omar Naser		Engineer of Agr. Research Center, Raqqa	Raqqa	Dec. 2008	Present	
58	Mr. Salm Al-Hasan		Head of Irrigation Research Station, Raqqa	Raqqa	Dec. 2008	Present	
59	Mr. Salah Al-Shably		Chief of Extension, Raqqa Agr. Directorate	Raqqa	Dec. 2008	Present	
60	Mr. Amar Khder		Extension Officer of Raqqa Agr. Directorate	Raqqa	Dec. 2008	Present	
61	Ms. Mnoar Tiar		Engineer of DMIC, Raqqa	Raqqa	Dec. 2008	Present	
62	Mr. Othman Al-Ali		Head of DMIC, Raqqa	Raqqa	Dec. 2008	Present	
63	Mr. Abed Al-Hamud Al-Shadid		Engineer of DMIC, Raqqa	Raqqa	Dec. 2008	Present	

Table E-1 Local Operation Cost Allocated by Japanese Side

Unit: Japanese Yen

No.	Category	JFY.2008	JFY.2009	JFY.2010	JFY.2011	JFY.2012	Total
1	Travel expenses	9,314,000	23,269,000	17,114,000	7,916,000	2,822,000	60,435,000
2	Expenses for general administration	3,241,000	7,434,000	7,100,000	6,394,000	4,387,000	28,556,000
3	Procurement of equipment	4,380,000	11,880,000	0	0	0	16,260,000
4	Printing	150,000	2,000	0	0	423,000	575,000
	Total	17,085,000	42,585,000	24,214,000	14,310,000	7,632,000	105,826,000

Remark: JFY: Japanese Fiscal Year from April to March

Data of JFY 2008-2011 are amount used. Data of JFY2012 are planned amount.

Table E-2 Project Operation Cost Allocated by Syrian Side

Unit: Japanese Yen

No.	Category	2008	2009	2010	2011	2012	Total
1	Expences for maintenance	0	400,000	600,000	360,000	50,000	1,410,000
2	Expences for training activities	0	180,000	200,000	250,000	100,000	730,000
3	Expences for extension activities	0	150,000	180,000	300,000	125,000	755,000
4	Expences for office establishment	100,000	0	0	0	0	100,000
	Total	100,000	730,000	980,000	910,000	275,000	2,995,000

Annex 2

Revised Versions of PDM

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : 2008.December～2012.June (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group :

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

2009.01

Ver.1.0

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.	1) Total amount of irrigation water per unit area decreases XX1% without yield decrease in Target Area by the end of 2017. 2) The importance and the necessity of water -saving irrigation are considered even in the other areas in Syria (XX2%).	- Reports on hydrological conditions in Syria - Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・Available amount of water resources for irrigation purpose dose not reduce. ・Irrigated land is not expanded by illegal water source development.
Project Purpose The capability of extensionists and staffs of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.	1) The usage of irrigated water for the crops in the Target Areas is reduced to each recommended amount by the Project (X1%). 2) The capability of extensionists and staffs of related agencies on extension of water-saving irrigation are improved (X2%).	- Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・Farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Target Areas can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.
Outputs (1) Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates. (2) The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Dara Governorates. (3) Water-saving irrigation techniques developed under the cooperation with universities and international research organizations in Syria are reflected upon Project activities. And, the outcomes are disseminated to the other areas in Syria and neighboring countries.	(1)-1: Amount of irrigation water used for each crop in the Demo Farms in Aleppo and Raqqa Governorates are reduced by X3%. (1)-2: X4% of irrigation farmers adapts water -saving irrigation technique in the Project Sites in Aleppo and Raqqa Governorates. (1)-3: Regular extension activities are implemented by the trained extensionists in Aleppo and Raqqa Governorates (X5%). (2)-1: The difficulties after the phase 1 Project are clarified and the countermeasures are established (more than X6 cases). (2)-2: X7% of irrigation farmers in the Project Sites adapts modern irrigation technique. (2)-3: Regular extension activities are given by the concerned organizations in Rural Damascus, Hama and Dara Governorates (X8%). (3)-1: More than X9 techniques on water saving irrigation are recommended by the Project under the cooperation with universities and international research organizations. (3)-2: Among the above recommendations, more than X10 techniques are utilized in the Project and others (Syria and neighboring countries).	- Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・There is no major change in the working environment of extensionists, at least, farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Project Sites can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : 2008.December～2012.June (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group :

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

2009.01

Ver.1.0

Activities	Input		
	<Japan>	**<Syria>**	
(1)-1 Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas. (1)-2 Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas. (1)-3 Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above. (1)-4 Select suitable Project Sites in the Target Areas, and establish the demonstration farms selected within the Project Sites as required. (1)-5 ＜**Small Scale Pressurized Irrigation**＞ (1)-5-1 Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4. (1)-5-2 Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas. (1)-5-3 Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies. (1)-5-4 Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3. (1)-5-5 Support extension activities to be done by the trained extensionists in line with the extension plan above. (1)-6 ＜**Surface Irrigation**＞ (1)-6-1Advance efficient surface irrigation technique and its related technology for water-saving. (1)-6-2 Prepare a plan of training activities and training tools in accordance with the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6. (1)-6-3 Prepare the technical guideline and materials on surface irrigation technique. (1)-6-4 Implement the training courses on water- saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-6-2.	1. Personnel (1) Long-Term Experts: 3 persons *Project Leader/Irrigation *Training *Extension (2) Short-Term Experts Rural Community Irrigation Facilities Farm Management Others (according to the requirement) 2. Equipment Laser Leveling Units Equipment for Demonstration Farms and research activities for efficient water-saving irrigation Equipment for measurement Equipment for training and extension activities Vehicles Others (according to the requirement) 3. Local costs 1) Seminar etc. 4. Training 1) Training in Japan 2) Training in the third countries	1. Personnel Counterpart personnel of the Phase 1 Project, in general. In addition, new personnel will be added as counterparts from the implementation agencies. 2. Facilities 1) Office space Main Office within the building in ANRR, GCSAR. Local Project Office within the concerned offices in the related Governorates. 2) Equipment Satellite Plots in Rural Damascus, Daraa and Hama, for the demonstration activities of the efficient water-saving irrigation. Telephone line and telephone for each Project Office. Necessary furniture in the Project Office. 3) Vehicles Three project cars which were procured by JICA for the implementation of the Phase 1 Project. 3. Local Costs Available for stationary, supplies and small equipment for project activities (including a part of cost for seminars etc.)	

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : 2008.December～2012.June (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group : 2009.01

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Ver.1.0

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

(1)-6-5 Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6. (1)-6-6 Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3. (1)-6-7 Support extension activities to be done by the trained extensionists in line with the extension plan above. (2)-1 Hold regular meetings on promotion of water-saving irrigation among the related agencies. (2)-2 Conduct a baseline survey in the districts excluding the concerned districts which were covered by the Phase 1 Project. (2)-3 Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas. (2)-4 Establish satellite plots in the districts excluding the concerned districts which were covered by the Phase 1 Project on the basis of the outcomes of item (2)-2 and (2)-3. (2)-5 Implement the training activities in line with the extension plan of item (2)-6. (2)-6 Revise the plan of extension for "modern irrigation promotion" prepared during Phase I Project. (2)-7 Improve extension tools and methods. (2)-8 Support extension activities to be done by the trained extensionists in line with the extension plan above. (3)-1 Study on the collaboration with universities and international research organizations in Syria, regarding water-saving irrigation techniques. (3)-2 Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the project purpose. (3)-3 Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1			

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Duration : 2008.December～2012.June (3.5years)

Target Group :

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

2009.01

Ver.1.0

and (3)-2. (3)-4 Accept trainees of the training courses arranged by other organizations. (3)-5 Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.			**Pre-conditions:** Relevant extensionists take part in the project activities

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : 2008.December～2012.June (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group : 2010.03

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Ver.2.0

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.	1) Total amount of irrigation water per unit area decreases more than 10% without yield decrease in Target Area by the end of 2017. 2) More than 50%of total farmers in the other governorates in Syria also recognize the importance and the necessity of water-saving in irrigation.	- Reports on hydrological conditions in Syria - Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・Available amount of water resources for irrigation purpose dose not reduce. ・Irrigated land is not expanded by illegal water source development.
Project Purpose The capability of extensionists and staffs of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.	1) The usage of irrigated water for the crops in the Project Sites is reduced by the Project (10 -20%). 2) The capability of extensionists and staffs of related agencies on extension of water-saving irrigation are improved (number of certified extentionists become more than 40% to the required number of water extensionists).	- Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・Farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Target Areas can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.
Outputs (1) Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates. (2) The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Dara Governorates. (3) Water-saving irrigation techniques developed under the cooperation with universities and international research organizations in Syria are reflected upon Project activities. And, the outcomes are disseminated to the other areas in Syria and neighboring countries.	(1)-1: Amount of irrigation water used for each crop in the Demonstration Farms in Aleppo and Raqqa Governorates are reduced by 10 -15%. (1)-2: The number of farmers adopting water-saving irrigation technique in the Project Sites in Aleppo and Raqqa Governorates increased by 80 – 100%. (1)-3: The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates increases by 50% and is more than 10 times a year. (2)-1: The difficulties after the phase 1 Project are clarified and the countermeasures are established (more than 5 cases). (2)-2: Number of irrigation farmers in the Project Sites adapting modern irrigation technique increases by 30 – 40%. (2)-3: The frequency of regular extension activities implemented by the concerned organizations in Rural Damascus, Hama and Daraa Governorates increases by 25% (3)-1: More than 3 techniques on water saving irrigation are recommended by the Project under the cooperation with universities and international research organizations. (3)-2: Among the above recommendations, more than 2 techniques are utilized in the Project and others (Syria and neighboring countries).	- Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・There is no major change in the working environment of extensionists, at least, farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Project Sites can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : 2008.December～2012.June (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group :

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

2010.03

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Activities	Input		
(1)-1 Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas. (1)-2 Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas. (1)-3 Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above. (1)-4 Select suitable Project Sites in the Target Areas, and establish the demonstration farms selected within the Project Sites as required. (1)-5 ＜**Small Scale Pressurized Irrigation**＞ (1)-5-1 Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4. (1)-5-2 Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas. (1)-5-3 Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies. (1)-5-4 Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3. (1)-5-5 Support extension activities to be done by the trained extensionists in line with the extension plan above. (1)-6 ＜**Surface Irrigation**＞ (1)-6-1Advance efficient surface irrigation technique and its related technology for water-saving. (1)-6-2 Prepare a plan of training activities and training tools in accordance with the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6. (1)-6-3 Prepare the technical guideline and materials on surface irrigation technique.	**<Japan>** 1. Personnel (1) Long-Term Experts: 3 persons *Project Leader/Irrigation *Training *Extension (2) Short-Term Experts Rural Community Irrigation Facilities Farm Management Others (according to the requirement) 2. Equipment Laser Leveling Units Equipment for Demonstration Farms and research activities for efficient water-saving irrigation Equipment for measurement Equipment for training and extension activities Vehicles Others (according to the requirement) 3. Local costs 1) Seminar etc. 4. Training 1) Training in Japan 2) Training in the third countries	**<Syria>** 1. Personnel Counterpart personnel of the Phase 1 Project, in general. In addition, new personnel will be added as counterparts from the implementation agencies. 2. Facilities 1) Office space Main Office within the building in ANRR, GCSAR. Local Project Office within the concerned offices in the related Governorates. 2) Equipment Satellite Plots in Rural Damascus, Daraa and Hama, for the demonstration activities of the efficient water-saving irrigation. Telephone line and telephone for each Project Office. Necessary furniture in the Project Office. 3) Vehicles Three project cars which were procured by JICA for the implementation of the Phase 1 Project. 3. Local Costs Available for stationary, supplies and small equipment for project activities (including a part of cost for seminars etc.)	

Project Design Matrix (PDM)

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(1)-6-4 Implement the training courses on water-saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-6-2. (1)-6-5 Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6. (1)-6-6 Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3. (1)-6-7 Support extension activities to be done by the trained extensionists in line with the extension plan above. (2)-1 Hold regular meetings on promotion of water-saving irrigation among the related agencies. (2)-2 Conduct a baseline survey in the districts excluding the concerned districts which were covered by the Phase 1 Project. (2)-3 Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas. (2)-4 Establish satellite plots in the districts excluding the concerned districts which were covered by the Phase 1 Project on the basis of the outcomes of item (2)-2 and (2)-3. (2)-5 Implement the training activities in line with the extension plan of item (2)-6. (2)-6 Revise the plan of extension for "modern irrigation promotion" prepared during Phase I Project. (2)-7 Improve extension tools and methods. (2)-8 Support extension activities to be done by the trained extensionists in line with the extension plan above. (3)-1 Study on the collaboration with universities and international research organizations in			

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : 2008.December～2012.June (3.5years)

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Target Group :

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

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Syria, regarding water-saving irrigation techniques. (3)-2 Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the project purpose. (3)-3 Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1 and (3)-2. (3)-4 Accept trainees of the training courses arranged by other organizations. (3)-5 Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.			**Pre-conditions:** Relevant extensionists take part in the project activities

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : from December 2008 to June 2012 (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group :

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

2010.12

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Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumption
Overall Goal Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.	1) Total amount of irrigation water per unit area decreases more than 10% without yield decrease in Target Area by the end of 2017. 2) More than 50%of total farmers in the other governorates in Syria also recognize the importance and the necessity of water-saving in irrigation.	1) - Annual Statistics of Syria - Data on irrigation water amount estimated by MAAR 2) - Survey on relevant agencies/interviews to farmers	・Available amount of water resources for irrigation purpose dose not reduce. ・Irrigated land is not expanded by illegal water source development.
Project Purpose The capability of extensionists and staffs of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.	1) The usage of irrigated water for the crops in the Project Sites is reduced by the Project (10 -20%). 2) The capability of extensionists and staffs of related agencies on extension of water-saving irrigation are improved (number of certified extentionists become more than 40% to the required number of water extensionists).	1) - Results of baseline survey and impact survey (interview to farmers) 2) - Record of the Project	・Farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Target Areas can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.
Outputs (1) Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates.	(1)-1: Amount of irrigation water used for each crop in the Demonstration Farms in Aleppo and Raqqa Governorates are reduced by 10 -15%. (1)-2: The number of farmers adopting water-saving irrigation technique in the Project Sites in Aleppo and Raqqa Governorates increased by 80 – 100%. (1)-3: The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates is more than 10 times a year. (1)-4: Quality of extension activities by the trained extensionists is at a suitable level.	-1 Field measurement at the demonstration farms and results of baseline survey -2 Collected data from relevant extension units, results of impact survey (interview to farmers) -3 Data of Directorate of Agriculture in Aleppo and Raqqa -4 Impact survey (interview to farmers)	・There is no major change in the working environment of extensionists, at least, farming environment in the Target Areas is not deteriorated unexpectedly.
(2) The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Dara Governorates.	(2)-1: The difficulties after the phase 1 Project are clarified and the countermeasures are established (more than 5 cases). (2)-2: Number of irrigation farmers in the Project Sites adapting modern irrigation technique increases by 30 – 40%. (2)-3: The frequency of regular extension activities implemented by the concerned organizations in Rural Damascus, Hama and Daraa Governorates increases by 25%	-1 Record of the Project -2 Collected data from relevant extension units, results of impact survey (interview to farmers), and number of farmers who received DMIC's loan -3 Data of Directorate of Agriculture in Daraa, Hama and Rural Damascus	・Farmers in the Project Sites can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.
(3) Measures to improve and operate water-saving irrigation techniques are extended to the rest of Syria and to neighboring countries, through the cooperation with universities and international research organizations in Syria	(3)-1: Cooperation activities on dissemination of measures to improve and operate water-saving irrigation techniques are increased.	Record of the Project	

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : from December 2008 to June 2012 (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group :

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

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Activities	Input		
(1)-1 Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas. (1)-2 Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas. (1)-3 Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above. (1)-4 Select suitable Project Sites in the Target Areas, and establish the demonstration farms selected within the Project Sites as required. (1)-5 ＜**Small Scale Pressurized Irrigation**＞ (1)-5-1 Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4. (1)-5-2 Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas. (1)-5-3 Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies. (1)-5-4 Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3. (1)-5-5 Support extension activities to be done by the trained extensionists in line with the extension plan above. (1)-6 ＜**Surface Irrigation**＞ (1)-6-1Advance efficient surface irrigation technique and its related technology for water-saving. (1)-6-2 Prepare a plan of training activities and training tools in accordance with	<Japan> 1. Personnel (1) Long-Term Experts: 3 persons *Project Leader/Irrigation *Training *Extension (2) Short-Term Experts Rural Community Irrigation Facilities Farm Management Others (according to the requirement) 2. Equipment Laser Leveling Units Equipment for Demonstration Farms and research activities for efficient water-saving irrigation Equipment for measurement Equipment for training and extension activities Vehicles Others (according to the requirement) 3. Local costs 1) Seminar etc. 4. Training 1) Training in Japan	<Syria> 1. Personnel Counterpart personnel of the Phase 1 Project, in general. In addition, new personnel will be added as counterparts from the implementation agencies. 2. Facilities 1) Office space Main Office within the building in ANRR, GCSAR. Local Project Office within the concerned offices in the related Governorates. 2) Equipment Satellite Plots in Rural Damascus, Daraa and Hama, for the demonstration activities of the efficient water-saving irrigation. Telephone line and telephone for each Project Office. Necessary furniture in the Project Office. 3) Vehicles Three project cars which were procured by JICA for the implementation of the Phase 1 Project. 3. Local Costs Available for stationary, supplies and small equipment for project activities (including a part of cost for seminars etc.)	

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : from December 2008 to June 2012 (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group :
Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists
Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

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the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6. (1)-6-3 Prepare the technical guideline and materials on surface irrigation technique. (1)-6-4 Implement the training courses on water- saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-6-2. (1)-6-5 Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6. (1)-6-6 Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3. (1)-6-7 Support extension activities to be done by the trained extensionists in line with the extension plan above. (2)-1 Hold regular meetings on promotion of water-saving irrigation among the related agencies. (2)-2 Conduct a baseline survey in the districts excluding the concerned districts which were covered by the Phase 1 Project. (2)-3 Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas. (2)-4 Establish satellite plots in the districts excluding the concerned districts which were covered by the Phase 1 Project on the basis of the outcomes of item (2)-2 and (2)-3. (2)-5 Implement the training activities in line with the extension plan of item (2)-6. (2)-6 Revise the plan of extension for "modern irrigation promotion" prepared	2) Training in the third countries		

Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)

Duration : from December 2008 to June 2012 (3.5years)

Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates

Target Group :

Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists

Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas

2010.12

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during Phase I Project. (2)-7 Improve extension tools and methods. (2)-8 Support extension activities to be done by the trained extensionists in line with the extension plan above. (3)-1 Study on the collaboration with universities and international research organizations in Syria, regarding water-saving irrigation techniques. (3)-2 Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the project purpose. (3)-3 Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1 and (3)-2. (3)-4 Accept trainees of the training courses arranged by other organizations. (3)-5 Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.			**Pre-conditions:** Relevant extensionists take part in the project activities

Annex 3

Record of Meetings

Minutes of Meeting
for
Kick-Off Meeting
of
The Project on Development of Efficient Irrigation Techniques and Extension Phase II

The Japan International Cooperation Agency (JICA) dispatched the Project Team (hereinafter referred to as "JICA Team") on Development of Efficient Irrigation Techniques and Extension Phase II to Syria in accordance with the "Record of Discussions" that was signed on October 15, 2008. After arriving in Syria the JICA Team is going to commence the Field Work of the Project. Prior to implementing the substantial project activities, Kick-off Meeting was held in the conference room of Administration of Natural Resource Research (ANRR) on January 12, 2009.

As a result of the discussion, the JICA Team and the Syrian officers concerned exchanged their opinions and agreed on the matters referred to in the document attached hereto. The names of attendants on the Kick-Off Meeting are shown within the document hereinto.

Damascus, January 12, 2009

Dr.Shuichi MATSUSHIMA
Team Leader
JICA Project Team on
Development of Efficient Irrigation
Techniques and Extension Phase II

Dr.Mohammad Walid Tauil
Director General
General Commission for Scientific
Agricultural Research
Ministry of Agriculture and Agrarian
Reform, The Syrian Arab Republic

Discussed and agreed points during the Kick-off Meeting

1. Dr. Walid, Project Director of DEITEX II Project, welcomed all participants of the meeting and emphasized that a kind of link between the Phase I and the Phase II Projects are very important, in order to make full use of the results of the Phase I for sustainable implementation of Project activities.

2. Dr. Matsushima, Japanese team leader of the Project, explained contents of Inception report of the Project, including purpose, major expecting outputs, and major activities of the Project.

3. After Dr. Matsushima's explanation of the Inception report, comments, suggestions and questions were suggested/raised and were discussed by the participants.

4. Dr. Abdullah, the Director of Extension, suggested importance and necessity to learn from previous projects and to make use of the results, such as Ras Al Ain Project in Hassake.

5. Mr. Kadiri, the Director of DMIC, pointed out that research results shall be fully utilized in Project activities, and more farmers' involvement is crucial to improve their irrigation agriculture. Further, the Director also suggested TOT (Training of Trainers) in irrigation has big needs and shall be implemented more.

6. Before closing the meeting, Dr. Awadis concluded the major discussed points during the meeting, and added that the Phase II Project will be expanded by using the same techniques applied in the Phase I, in addition to modernized surface irrigation.

7. Dr. Walid reminded the three points as follows; a) selection and procurement of equipment for the Project shall be discussed later in details, b) results of the Phase I shall be fully utilized in the Phase II Project, and c) results of Ras Al Ain project may also be applicable in Aleppo and Raqqa.

8. All the participants agreed the contents of the Inception report. Dr. Walid suggested all concerned organizations will make comments on the report within ten days, in order to make some adjustment, if necessary.

9. It was agreed that 1st Steering Committee of the Project will be held by the end of February. The Japanese Project team will visit concerned organizations to explain the Inception report in order to get consent on the report from the concerned parties.

Attendants of the Kick-Off Meeting for DEITEX II Project

Monday, January 12, 2009

at the Conference Room in ANRR, GCSAR

Name	Position
Dr.Mohammad Walid Tauil	General Director of GCSAR
Dr.Awadis Arslan	Director of ANRR, GCSAR
Dr.Ahamed Al Abdallah	Director of Extension
Mr.Mohammad Al Kadiri	Director of DMIC
Eng. Ziad Zahraa	Directorate of Training and Qualification
Dr.Ahamed Zlita	Deputy Director of ANRR
Eng.Ali Kaisi	Deputy Director of ANRR
Eng.Bassam Al Husein	ANRR
Eng.Samer Al Ahmed	ANRR
Eng.Nasr Koki	ANRR
Eng.Abd Alsalam Hussain	ANRR
Eng.Mazen Dougouz	ANRR
Eng.Rahaf Shakjo	ANRR
Eng.Hanan Almsalakh	ANRR
Eng.Abdallah Khabaz	Directorate of Extension
Eng.Najeeb Hassoun	DMIC
Eng.Sahar Touban	DMIC
Eng.Ghasan Zeiadeh	Head of Extension Department, Aleppo Governorate
Eng.Abd Al Ghani Alkhalidi	Aleppo Governorate
Eng.Omar Naser	Deputy Director of Raqqa Research Center, Raqqa
Eng.Abd Alrazaq Aldarwish	Head of Extension Department, Raqqa Governorate
Ms.Mayumi Murakami	Assistant Resident Representative, JICA Syria Office
Mr.Hider Hider	Program Oficer, JICA Syria Office
Dr.Shuichi Matsushima	Team Leader, DEITEX II Project Team
Mr.Akira Koto	Deputy Team Leader, DEITEX II Project Team
Mr.Hiroyasu Ohnuma	Team member, DEITEX II Project Team
Mr.Naoki Koga	Team member, DEITEX II Project Team
Mr.Tomoki Hotta	Team member, DEITEX II Project Team

Minutes of Meeting
for
1st Steering Committee Meeting
of
The Project on Development of Efficient Irrigation Techniques and Extension Phase II

The Japan International Cooperation Agency (JICA) dispatched the Project Team (hereinafter referred to as "JICA Team") on Development of Efficient Irrigation Techniques and Extension Phase II to Syria in accordance with the "Record of Discussions" that was signed on October 15, 2008. After arriving in Syria for the JICA Team, Field Work of the Project was started. At the completion of the 1st Field Work, 1st Steering Committee Meeting was held in the conference room of Administration of Natural Resource Research (ANRR) on February 26, 2009.

As a result of the discussion, the JICA Team and the Syrian officers concerned exchanged their opinions and agreed on the matters referred to in the document attached hereto. The names of attendants on the Steering Committee Meeting are shown within the document hereinto.

Damascus, February 26, 2009

Dr.Shuichi MATSUSHIMA
Team Leader
JICA Project Team on
Development of Efficient Irrigation
Techniques and Extension Phase II

Dr.Mohammad Walid Tauil
Director General
General Commission for Scientific
Agricultural Research
Ministry of Agriculture and Agrarian
Reform, The Syrian Arab Republic

Discussed and agreed points during the 1st Steering Committee Meeting

1. Dr. Awadis Arslan, Project Manager of the DEITEX Phase II, opened the meeting and welcomed all participants.

2. Ms. Tomita, Resident Representative of JICA Syria Office, emphasized importance of the DEITEX Project since drought years have been continued in Syria recently, and expressed anticipation of more fruitful results from the DEITEX Phase II.

3. Dr. Matsushima, Japanese team leader of the Project, explained progress of the 1st field work, including review results of the Phase I, tentative results of the baseline survey, and possible approach to collaborate with international organizations. Dr. Matsushima emphasized that contribution of the Syrian side was great even after the termination of the Phase I, and the concerned people tried their best to continue training and extension activities by following the DEITEX system which was developed during the Phase I period. He also mentioned that the Phase II will aim more systematic or institutional development in addition to individual capacity development, and will include improved surface irrigation as well as pressurized irrigation system.

4. After Dr. Matsushima's explanation on the progress of the 1st field work, comments, suggestions and questions were suggested/raised and were discussed by the participants under the chairmanship of Mr. Qadri, the Director of DMIC. The major points discussed included importance of introduction of group irrigation, expansion of Projects outcomes to other governorates, and applying participatory approach in conducting project activities.

5. Before closing the meeting, Dr. Awadis summarized major discussed points during the meeting, and Ms. Tomita provided closing speech with emphasizing participation of all concerned people is crucial to implement the Project activities successfully.

6. All the participants understood and agreed the progress of the 1st field work.

Attendants of 1st Steering Committee Meeting for DEITEX II Project

Thursday, February 26, 2009
at the Conference Room in ANRR, GCSAR

Name	Position
Dr.Awadis Arslan	Director of ANRR, GCSAR
Mr.Mohammad Al Kadiri	Director of DMIC
Dr.Ahamed Zlita	Deputy Director of ANRR
Eng.Ali Kaisi	Deputy Director of ANRR
Dr.Mohammad Barakat Al-Dager	Representative of Ministry of Irrigation
Eng. Mohammad Ziad Zahraa	Representative of Directorate of Training and Qualification
Ms.Maissa Al-Awa	Representative of SPC
Dr.Mahmoud Oudeh	Head of Sustainable Management and Water Use Program, ASCAD
Ms.Samaher Al-Salah	Head of Project Division, International Cooperation, MAAR
Eng.Bassam Al Husein	ANRR
Eng.Samer Al Ahmed	ANRR
Eng.Nasr Koki	ANRR
Eng.Abd Alsalam Hussain	ANRR
Eng.Mazen Dougouz	ANRR
Eng.Rahaf Shakjo	ANRR
Eng.Hanan Almsalakh	ANRR
Eng.Mohammad Al-Bahri	Representative of Directorate of Extension
Ms.Akiko Tomita	Resident Representative, JICA Syria Office
Ms.Mayumi Murakami	Assistant Resident Representative, JICA Syria Office
Mr.Hider Hider	Program Officer, JICA Syria Office
Dr.Shuichi Matsushima	Team Leader, DEITEX II Project Team
Mr.Akira Koto	Deputy Team Leader, DEITEX II Project Team
Mr.Hiroyasu Ohnuma	Team member, DEITEX II Project Team
Mr.Tomoki Hotta	Team member, DEITEX II Project Team
Mr.Masakazu Nakayama	Team member, DEITEX II Project Team
Ms.Razan Al-Kanani	Secretary of the Project Team

Minutes of Meeting
for
2nd Steering Committee Meeting
of
The Project on Development of Efficient Irrigation Techniques and Extension Phase II

The Japan International Cooperation Agency (JICA) dispatched the Project Team (hereinafter referred to as "JICA Team") on Development of Efficient Irrigation Techniques and Extension Phase II to Syria in accordance with the "Record of Discussions" that was signed on October 15, 2008. After arriving in Syria for the JICA Team, Field work of the Project was started. In succession of 1st Field Work which was completed on Mach 2009, 2nd Field Work has been implemented since April 2009. On the halfway of 2nd Field Work, 2nd Steering Committee Meeting was held in the conference room of Administration of Natural Resource Research (ANRR) on October 8, 2009.

As a result of the discussion, the JICA Team and the Syrian officers concerned exchanged their opinions and agreed on the matters referred to in the document attached hereto. The names of attendants on the 2nd Steering Committee Meeting are shown within the document hereinto.

Damascus, October 8, 2009

Dr.Shuichi MATSUSHIMA
Team Leader
JICA Project Team on
Development of Efficient Irrigation
Techniques and Extension Phase II

Dr.Mohammad Walid Tauil
Director General
General Commission for Scientific
Agricultural Research
Ministry of Agriculture and Agrarian

Discussed and Agreed matters in the 2nd Steering Committee Meeting

1. At the opening of the 2nd Steering Committee meeting, Dr.Walid Tauil expressed satisfaction to the successful implementation of the Project. Dr.Walid also expressed an appreciation to JICA for adequately procuring necessary equipment within the Project.

2. The Project Team explained about the results of Baseline Survey. The explanation was especially focused on the subjects of "Classification of irrigated agriculture" and "quantification of PDM indicators". Through the explanation, the proposal on the PDM indicators given in the Baseline Survey Report was basically approved.

3. Counterparts explained about the progress of the project activities in training, extension and establishment of demonstration fields (including the selection of the sites) being taken by the Project during 2nd Field Work. It is also stated that the project is going to make agreement of cooperation with ICARDA, ACSAD, Damascus University and Aleppo University, and keeping collaboration with the rural women development scheme in Subeen, Hama.

4. Dr. Ihab Jnad mentioned to apply research resources and insert it into the extension materials more to the project activities.

5. Dr. Bachar pointed out importance of farmer's activities and farmer's behavioral changes as well as evaluation of training and extension works. He also emphasized the necessities of long span monitoring for the environmental effects including negative ones to be affected by the introduction of modern irrigation. He also roused attention so that the private sector in irrigation is apt to disregard the quality of irrigation equipment.

6. Mr.Kadiri appreciated the project activity for activating group irrigation in Arne. He is eager to expand the success in Arne to the other areas, e.g. Idrib, Raqqa and Hassake. Also he states the needs for training farmers within the scope of extension activities.

7. Dr. Barakat pointed out that extension units are confronted with lack of numbers of qualified staff and shortage of skills. Dr. Abudullah explained the constraints of extension activities due to the fact that the units have shifted from pure extension units to agriculture units. Extension Directorate has made efforts to overcome those situations by establishing support units under the control of Minster of MAAR.

8. Mr.Suhara inquired about the effects of decentralization of governance to the project implementation. The Project team replayed so that the Project could become more attractive by strengthening the relation between central counterparts and local counterparts of the Project.

9. Dr.Awadis summarized the discussions given in the meeting.

10. Mr. Suhara gave a closing word with satisfactory about this meeting, and requested to every attendance to keep on this cooperative relation among every organization concerned in order to achieve the project purpose.

11.Attendants of the 2nd Steering Committee Meeting of the DEITEX II Project

Thursday, October 8, 2009
At the Conference Room in ANRR, GCSAR

Name	Position
Dr.Mohammad Walid Tauil	Director General of GCSAR
Dr.Awadis Aralan	Director of ANRR, GCSAR
Eng. Ahamed Al Kadiri	Director of DMIC
Dr.Mohammad Abdallah	Director of Extension
Eng. Ali Kaisi	Deputy Director of ANRR
Eng.Ziad Zahra	Training Directorate
Dr.Bachar Ibrahim	Department of Rural Engineering, Damascus University
Dr.Ihab Jnad	ACSAD
Eng.Noura Imam	ACSAD
Dr.Barakat Dagher	Ministry of Irrigation
Eng. Bassam Al Husein	ANRR
Eng. Naser Koki	ANRR
Eng. Samer Al Ahmad	ANRR
Eng. Hanan Mosalkh	ANRR
Eng. Mazen Doughouz	ANRR
Eng. Abudsalam Hussain	ANRR
Mr.Takayuki Baba	Secretary of Japan Embassy
Mr.Ghassan Habbal	Assistant, Japan Embassy
Mr.Yasuhiro Suhara	Representative, JICA Syria Office
Mr. Hider Hider	Program Officer, JICA Syria Office
Dr.Shuichi Matsushima	DEITEX II Project
Mr. Naoki Koga	DEITEX II Project
Ms. Razan Alknani	Secretary of DEITEX II Project

MINUTES OF MEETING ON THE STEERING COMMITTEE FOR THE MID-TERM REVIEW REPORT ON THE PROJECT ON DEVELOPMENT OF EFFICIENT IRRIGATION TECHNIQUES AND EXTENSION PHASE II IN SYRIA

The Japanese Mid-term Review Team, organized by the Japan International Cooperation Agency (hereinafter referred to as "JICA") visited the Syrian Arab Republic (hereinafter referred to as "Syria") from November 20th to December 3rd, 2010, for the purpose of conducting the Mid-term Review of the Project on Development of Efficient Irrigation Techniques and Extension Phase II (hereinafter referred to as "the Project").

The Joint Evaluation Team (hereinafter referred to as "the Team"), which consists of 4 members of JICA and 4 members from Syria, was jointly organized for the purpose of conducting the mid-term review and preparation of necessary recommendations to the respective governments.

After intensive study, analysis, discussions of the activities and achievements of the Project, the Team prepared the mid-term review report (hereinafter referred to as "the Report"), which was presented to the Steering Committee for the Project (hereinafter referred to as "the Committee").

The Committee discussed the major issues pointed out in the Report, and agreed to recommend to the respective governments the matters hereto.

Damascus, December 2, 2010

Mr. Kaoru IWASAKI Chief Representative, Japan International Cooperation Agency Syria Office	Dr. M. W. TAWIL Director General, General Commission for Scientific Agricultural Research, Ministry of Agriculture and Agrarian Reform

Main points of discussions and agreement at the Committee

1. The Team presented the Report to the Committee.

2. The Committee accepted the Report and took notes of the recommendations by the Team.

3. The Committee decided to revise Project Design Matrix (PDM) which proposed by the Team as the PDM Version 3.

Attachment 1: PDM Version 3
Attachment 2: The Mid-term Review Report

Activities	Input		
	<Japan>	<Syria>	
(1)-1 Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas. (1)-2 Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas. (1)-3 Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above. (1)-4 Select suitable Project Sites in the Target Areas, and establish the demonstration farms selected within the Project Sites as required. (1)-5 <Small Scale Pressurized Irrigation> (1)-5-1 Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4. (1)-5-2 Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas. (1)-5-3 Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies. (1)-5-4 Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3. (1)-5-5 Support extension activities to be done by the trained extensionists in line with the extension plan above. (1)-6 <Surface Irrigation> (1)-6-1 Advance efficient surface irrigation technique and its related technology for water-saving. (1)-6-2 Prepare a plan of training activities and training tools in accordance with the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6. (1)-6-3 Prepare the technical guideline and materials on surface irrigation technique. (1)-6-4 Implement the training courses on water- saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-6-2. (1)-6-5 Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6. (1)-6-6 Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3. (1)-6-7 Support extension activities to be done by the trained extensionists in line with the extension plan above. (2)-1 Hold regular meetings on promotion of water-saving irrigation among the related agencies. (2)-2 Conduct a baseline survey in the districts excluding the concerned districts which were covered by the Phase I Project. (2)-3 Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas. (2)-4 Establish satellite plots in the districts excluding the concerned districts which were covered by the Phase I Project on the basis of the outcomes of item (2)-2 and (2)-3. (2)-5 Implement the training activities in line with the extension plan of item (2)-6. (2)-6 Revise the plan of extension for "modern irrigation promotion" prepared during Phase I Project. (2)-7 Improve extension tools and methods. (2)-8 Support extension activities to be done by the trained extensionists in line with the extension plan above. (3)-1 Study on the collaboration with universities and international research organizations in Syria, regarding water-saving irrigation techniques. (3)-2 Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the project purpose. (3)-3 Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1 and (3)-2. (3)-4 Accept trainees of the training courses arranged by other organizations. (3)-5 Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.	1. Personnel (1) Long-Term Experts: 3 persons *Project Leader/Irrigation *Training *Extension (2) Short-Term Experts Rural Community Irrigation Facilities Farm Management Others (according to the requirement) 2. Equipment Laser Leveling Units Equipment for Demonstration Farms and research activities for efficient water-saving irrigation Equipment for measurement Equipment for training and extension activities Vehicles Others (according to the requirement) 3. Local costs 1) Seminar etc 4. Training 1) Training in Japan 2) Training in the third countries	1. Personnel Counterpart personnel of the Phase 1 Project, in general. In addition, new personnel will be added as counterparts from the implementation agencies. 2. Facilities 1) Office space Main Office within the building in ANRR, GCSAR. Local Project Office within the concerned offices in the related Governorates. 2) Equipment Satellite Plots in Rural Damascus, Daraa and Hama, for the demonstration activities of the efficient water-saving irrigation. Telephone line and telephone for each Project Office. Necessary furniture in the Project Office. 3) Vehicles Three project cars which were procured by JICA for the implementation of the Phase 1 Project. 3. Local Costs Available for stationary, supplies and small equipment for project activities (including a part of cost for seminars etc.)	[Pre-conditions] Relevant extensionists take part in the project activities

Attachment 1: PDM Version 3

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)
Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates
Target Group :
Direct Beneficiaries ; Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists
Indirect Beneficiaries ; Irrigated Farmers and inhabitants in the Target areas
Duration : from December 2008 to June 2012 (3.5years) Revised: December 2, 2010 (Version 3)

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumption
[Overall Goal] Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.	1) Total amount of irrigation water per unit area decreases more than 10% without yield decrease in Target Area by the end of 2017. 2) More than 50% of total farmers in the other governorates in Syria also recognize the importance and the necessity of water-saving in irrigation.	1) Annual Agricultural Statistics of Syria and data on irrigation water amount estimated by MAAR 2) Survey on relevant agencies/interviews to farmers	・Available amount of water resources for irrigation purpose dose not reduce. ・Irrigated land is not expanded by illegal water source development.
[Project Purpose] The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.	1) The usage of irrigated water for the crops in the Project Sites is reduced by the Project (10 -20%). 2) The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved (number of certified extentionists become more than 40% to the required number of water extensionists).	1) Results of baseline survey and impact survey (interview to farmers) 2) Record of the Project	・Farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Target Areas can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.
[Outputs] (1) Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates. (2) The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Dara Governorates. (3) Measures to improve and operate water-saving irrigation techniques are extended to the rest of Syria and to neighboring countries, through the cooperation with universities and international research organizations in Syria.	(1)-1: Amount of irrigation water used for each crop in the Demonstration Farms in Aleppo and Raqqa Governorates are reduced by 10 -15%. (1)-2: The number of farmers adopting water-saving irrigation technique in the Project Sites in Aleppo and Raqqa Governorates increased by 80 – 100%. (1)-3: The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates is more than 10 times a year. (1)-4: Quality of extension activities by the trained extensionists is at a suitable level. (2)-1: The difficulties after the phase 1 Project are clarified and the countermeasures are established (more than 5 cases). (2)-2: Number of irrigation farmers in the Project Sites adapting modern irrigation technique increases by 30 – 40%. (2)-3: The frequency of regular extension activities implemented by the concerned organizations in Rural Damascus, Hama and Daraa Governorates increases by 25% (3)-1: Cooperated activities on dissemination of measures to improve and operate water-saving irrigation techniques are increased.	(1)-1: Field measurement at the demonstration farms and results of baseline survey (1)-2: Collected data from relevant extension units, results of impact survey (interviews to farmers), and number of farmers who received DMIC's loan (1)-3: Data of Directorate of Agriculture in Aleppo and Raqqa governorates (1)-4: Impact survey (interview to farmers) (2)-1: Record of the Project (2)-2: Collected data from relevant extension units, results of impact survey (interviews to farmers), and number of farmers who received DMIC's loan (2)-3: Collected data from Directorates of Agriculture of Daraa, Hama and Rural Damascas governorates (3)-1: Records of the Project	・There is no major change in the working environment of extensionists, at least, farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Project Sites can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.

Attachment 2

THE MID-TERM REVIEW REPORT

ON THE PROJECT ON DEVELOPMENT OF EFFICIENT IRRIGATION TECHNIQUES AND EXTENSION PHASE II IN SYRIA

Damascus, December 2nd, 2010

Mr. Masayuki TAKAHASHI
Leader,
Japanese Mid-term Review Team,
Japan International Cooperation Agency,
Japan

Dr. M. W. TAWIL
Leader,
Syrian Mid-term Review Team,
Ministry of Agriculture and Agrarian Reform,
Syrian Arab Republic

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1. Introduction

1-1 Objectives of the Mid-term Review

(1) To review the progress and achievements of project activities and to exchange opinions with the Syrian authorities concerned through visiting the project sites,

(2) To evaluate the Project from the view points of 5 evaluation criteria (Relevance, Effectiveness, Efficiency, Impact and Sustainability),

(3) To modify PDM (Project Design Matrix) in order to properly monitor the progress and activities of the Project, if necessary,

(4) To formulate the Joint Mid-term Review Report with Syrian Evaluation Team and make necessary recommendation on the project activities in the remaining period of the Project to both governments,

(5) To participate in the Joint Coordinating Committee in order to present and discuss the results of Mid-term Review on the Project with the Syrian authorities concerned and sign on the Minutes of Meeting.

1-2 Member of the Joint Evaluation Team

1-2-1 Japanese Mid-term Review Team

No.	Field	Name	Present Occupation
1	Leader	Mr. Masayuki TAKAHASHI	Director, Field Crop Based Farming Division 2, Rural Development Department, JICA
2	Dry-land Farming	Prof. Dr. Shinobu INANAGA	Chairperson, JICA Support Committee for Dry-land Farming in Middle East
3	Cooperation Planning	Ms. Yuka ASAKAWA	Program Officer, Field Crop Based Farming Division 2, Rural Development Department, JICA
4	Evaluation and Analysis	Mr. Isao DOJUN	Consultant, Chuo Kaihatsu Corporation

1-2-2 Syrian Mid-term Review Team

No.	Field	Name	Present Occupation
1	Leader	Dr. M. W. TAWIL	Director General, General Commission for Scientific Agricultural Research (GCSAR), Ministry of Agriculture and Agrarian Reform (MAAR)
2	Team Member	Dr. Awadis ARSLAN	Director, Administration of Natural Resources Research (ANRR), GCSAR, MAAR
3	Team Member	Dr. Bashar IBRAHIM	Assoc. Professor, Department of Rural Engineering, Faculty of Agricultural, Damascus University
4	Team Member	Dr. Waeil SEIF	Professor, Water Engineering Division, Faculty of Civil Engineering, Damascus University

1-3 Schedule of Evaluation

The schedule is attached as Annex 1.

1-4 Methodology of the mid-term review

1-4-1 Method of evaluation

The Project was evaluated jointly by the Syrian and Japanese mid-term review teams (the Team) based on materials showing the framework of the Project such as the Project Design Matrix (PDM) and the R/D. The evaluation activities included analysis on reports, field surveys, and interviews with staff of the Ministry of Agriculture and Agrarian Reform, staff of Directorate of Agriculture of governorates concerned, JICA experts, irrigated farmers in the project target areas and other concerned personnel in the Project. Mid-term review was conducted based on the following Five Evaluation Criteria.

1-4-2 Evaluation Criteria (Five Evaluation Criteria)

(1) Relevance

Relevance refers to the validity of the Project Purpose and the Overall Goal in connection with the development policy of the Government of Syria as well as the needs of beneficiaries.

(2) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned. It also examines whether these benefits have been brought about as a result of the Project.

(3) Efficiency

Efficiency refers to the productivity of the implementation process. It examines whether the inputs of the Project have been efficiently converted into outputs.

(4) Impact

Impact refers to direct and indirect, positive and negative impacts caused by the implementation of the Project, including the extent to which the overall goal has been attained.

(5) Sustainability

Sustainability refers to the extent to which the Project can be further developed by the Government of Syria, and the extent to which the benefits generated by the Project can be sustained under national policies, technology, systems and financial state.

2. Outline of the Project

2-1 Background of the Project

Agriculture is one of the important economic sectors in Syria which provides nearly 25% of gross domestic product (GDP). Agriculture is also important for Syria as a source of employment and export earnings. Rainfed agriculture is still prevailing in Syria, which covers more than 75% of the total cultivated area but irrigated agriculture is regarded more preferable in terms of the crop production, because of the uncertainty and the fluctuation of rainfed agriculture production. However, irrigated agriculture consumes water more than 90% of the total water use in Syria, hindering to provide water resource to other sectors such as industry and domestic water use. Therefore, the necessity and importance of water saving irrigation has been emphasized. The 10th Five Year National Development Plan (2006-2010) is one of the simplest examples showing such policy.

Based on the request of the Government of Syrian Arab Republic, the Project on Development of Efficient Irrigation Techniques and Extension was implemented as a Technical Cooperation Project of JICA from March 2005 for three years in order to accelerate the shift from conventional water-consuming irrigation to the modern water-saving irrigation.

The project (phase 1)attained its project purpose with certain amount of reduction of water use with the same level of crop yield in the project sites in Rural Damascus, Daraa and Hama governorates. The terminal evaluation study team for this project suggested that the process accomplished by the efforts of the staff contributed to establishing simple but essential model of changing farmers' awareness of water saving in Syria, and pointed out that the expansion of the activities to other districts in Rural Damascus, Daraa and Hama governorates, furthermore, to other governorates are to be accomplished.

To address these issues, the Government of the Syrian Arab Republic requested Japan a technical cooperation project in order that proper amount of irrigation water is used through expanding the outcome of phase 1 project to the remaining areas in Rural Damascus, Daraa, and Hama governorates and new target area (Aleppo and Raqqa), improving surface irrigation techniques and cooperating with international research organizations. Syrian and Japanese sides agreed and signed on R/D of the project implementation of the phase 2 project and the Project started in December 2008.

2-2 Summary of the Project

Project Design Matrix for the Project was modified (version 2) in March 2010. Project summary described in PDM version 2 is as follows; (For more details, see Annex 2).

(1) Overall Goal

Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded

to other areas in Syria.

(2) Project Purpose

The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.

(3) Outputs

Output 1: Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates.

Output 2: The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Daraa Governorates.

Output 3: Water-saving irrigation techniques developed under the cooperation with universities and international research organizations in Syria are reflected upon Project activities. And, the outcomes are disseminated to the other areas in Syria and neighboring countries.

(4) Activities

(1)-1 Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas.

(1)-2 Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas.

(1)-3 Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above.

(1)-4 Select suitable Project Sites in the Target Areas, and establish the demonstration farms selected within the Project Sites as required.

(1)-5 <Small Scale Pressurized Irrigation>

(1)-5-1 Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4.

(1)-5-2 Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas.

(1)-5-3 Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies.

(1)-5-4 Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3.

(1)-5-5 Support extension activities to be done by the trained extensionists in line with the extension plan above.

(1)-6 <Surface Irrigation>

(1)-6-1 Advance efficient surface irrigation technique and its related technology for water-saving.
(1)-6-2 Prepare a plan of training activities and training tools in accordance with the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6.
(1)-6-3 Prepare the technical guideline and materials on surface irrigation technique.
(1)-6-4 Implement the training courses on water- saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-6-2.
(1)-6-5 Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6.
(1)-6-6 Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3.
(1)-6-7 Support extension activities to be done by the trained extensionists in line with the extension plan above.
(2)-1 Hold regular meetings on promotion of water-saving irrigation among the related agencies.
(2)-2 Conduct a baseline survey in the districts excluding the concerned districts which were covered by the Phase 1 Project.
(2)-3 Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas.
(2)-4 Establish satellite plots in the districts excluding the concerned districts which were covered by the Phase 1 Project on the basis of the outcomes of item (2)-2 and (2)-3.
(2)-5 Implement the training activities in line with the extension plan of item (2)-6.
(2)-6 Revise the plan of extension for "modern irrigation promotion" prepared during Phase I Project.
(2)-7 Improve extension tools and methods.
(2)-8 Support extension activities to be done by the trained extensionists in line with the extension plan above.
(3)-1 Study on the collaboration with universities and international research organizations in Syria, regarding water-saving irrigation techniques.
(3)-2 Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the project purpose.
(3)-3 Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1 and (3)-2.
(3)-4 Accept trainees of the training courses arranged by other organizations.
(3)-5 Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.

3. Achievement of the Project

3-1 Inputs

3-1-1 Japanese side

(1) Dispatch of JICA experts

JICA experts were dispatched to the project site in the following fields: 1) Leader/ Irrigation, 2) Training/ Sub-leader, 3) Extension, 4) Socio-economy/ Farmers Organization, 5) Irrigation System Designing, and 6) Farming Management/ Coordinator. For details, see Annex 3.

(2) Training in Japan and third countries

By the time of the Mid-term Review, 12 counterparts were participated in the training in Japan and 13 counterparts were participated in the training in third countries (Tunisia and Egypt). For details, see Annex 4.

(3) Provision of equipment

Equipments such as pick up tracks, 4WDs, copy machines, irrigation equipments for demonstration farms and other office equipments have been provided for the project activities. Cost for procurement of equipment is 15 million yen and 287 thousand US dollars. For details, see Annex 5.

(4) Local cost allocated by Japanese side

Local cost allocated by JICA for the implementation of the project activities is 82.7 million yen as of first semester of 2010. For details, see Annex 6.

3-1-2 Syrian side

(1) Assignment of Syrian counterparts

Currently, 58 counterparts are assigned (21 persons of central level organizations, 7 persons from Hama governorate, 6 persons from Rural Damascus governorate, 8 persons from Daraa governorate, 8 persons from Aleppo governorate, and 8 persons from Raqqa governorate). For details, see Annex 7.

(2) Project operation cost allocated by Syrian side

Amount of budget allocated by Syrian side is 930,000 Syrian Pound at the time of mid-term review. For details, see Annex 8.

3-2 Outputs

3-2-1 Output 1: Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates.

The current degree of achievement of the following 3 indicators is more than expected in most cases. It is expected that all indicators of the Output 1 will be achieved by the end of the Project as the project activities progress further.

Indicator (1)-1: Amount of irrigation water used for each crop in the Demonstration Farms in Aleppo and Raqqa Governorates are reduced by 10 -15%.

Demonstration farm is established in a site in Aleppo and Raqqa Governorates respectively. The following table shows location, land area, irrigation methods, main crops, and water source of the demonstration farms.

Governorate	Site name (a)	Area	Irrigation method introduced	Main crops	Water source
Aleppo	Jine	7 ha	Movable type sprinkler, drip tube, improved surface irrigation (with gated pipe) (previous irrigation method was surface irrigation)	Wheat, cotton and sugar beet	Well (ground water)
Raqqa	Sukkarie	11 ha	Movable type sprinkler, drip tube, improved surface irrigation (with gated pipe) (previous irrigation method was surface irrigation)	Wheat, cotton and sugar beet	Well (ground water)

(a) Name of extension unit

The following table shows amount of irrigation water used for each crop at the demonstration farms in 2010 (measured data by the Project). Reduction rates of irrigated water are calculated as compared with amounts of irrigated water which obtained by the baseline survey conducted in 2009 by the Project.

Governorate	Crop	Area (ha)	Amount of irrigated water (m3/ha) before the Project (a)	Amount of irrigated water (m3/ha) monitored in 2010	Reduction rate	Introduced irrigation method	Remark (yield)
Aleppo	Sugar beet	2	10,960	7,805	28.8%	Sprinkler	...
	Cotton	1	15,625	8,670	44.5%	Gated pipe	410 kg/donum
	Cotton	1		7,800	50.1%	Drip tube	480 kg/donum
Raqqa	Cotton	0.64	15,625	9,917	36.5%	Gated pipe	362 kg/donum
	Cotton	0.8		8,188	47.6%	Drip tube	381 kg/donum

Remarks:
(a) Data obtained by the baseline survey (2009) through interview with farmers in the selected extension units including the extension unit where the demonstration farms are located. This survey was conducted in 2 extension units in the both Governorates respectively.
(b) donum: 0.1ha

Water-saving irrigation was commenced in 2010 at the demonstration farms introducing various kinds of irrigation methods (gated pipe, sprinkler, and drip tube, etc.). Reduction rates of irrigation water used for sugar beet and cotton recorded between 28.8% and 50.1%.

The rate of water saving is more than targeted reduction rates (10-20%). According to the project team's analysis, one of the factors of this higher reduction rate is farmer's positive engagement in the activities at the demonstration farms. As for yield of cotton at demonstration farms, 4.1 tons/ha with gated pipe and 4.8 tons/ha with drip tube in Aleppo are recorded this year (in average 4.5 tons/ha). 3.6 tons/ha with gated pipe and 3.8 tons/ha with drip tube are recorded in Raqqa (in average 3.7 tons/ha). There is certain difficulty on yield comparison with the average yield of normal year because of general tendency of yield reduction due to unusual high temperature in this summer, 2010. However, according to the Project, these yields of cotton at the demonstration farms are 50% higher than average yield of neighboring farmers.

Indicator (1)-2: The number of farmers adopting water-saving irrigation technique in the Project Sites in Aleppo and Raqqa Governorates increased by 80 - 100%.

(Project Sites: Areas in charge of the extension unit where the demonstration farm is established)

Official statistical information on number of irrigated farmers and number of irrigated farmers with modern irrigation system is not available. Therefore, in order to compare the situation before and after the Project starts, and presume the degree of contribution of the Project on expansion of water-saving irrigation techniques, data on irrigated area and irrigated area with modern irrigation system is used instead of number of farmers adopting water-saving irrigation technique.

The following table shows data collected by the project team in 2009 (this data represent situation in 2008) and data of the impact survey conducted on October 2010 (sample survey).

Project Site	Survey by the project team (data on 2008)				Impact survey (October 2010)			
	Number of irrigated farmers in extension unit	Total irrigated area	Irrigated area with water-saving irrigation system	Ratio	Number of surveyed irrigated farmers	Total irrigated area	Irrigated area with water-saving irrigation system	Ratio
	(household)	(ha)	(ha)	(%)	(household)	(ha)	(ha)	(%)
Jine Extension Unit Area in Aleppo	335	941	159	16.9	30	252	93	36.9
Sukkarie Extension Unit Area in Raqqa	309	1,910	15	0.8	31	557	77	13.8

According to the results of the impact survey in October 2010, ratios of irrigated area with water-saving irrigation system in the Project Sites are changed from 16.9% to 36.9% (increased 217%) in the Project Site in Aleppo and from 0.8% to 13.8% (increased 1,725%) in Raqqa. In case of Raqqa, the ratio of increase is quite high but this is because the area with

water-saving irrigation before the commencement of the Project was very small (only 15 ha).

By conducting the training courses for water extensionists and increasing extension activities on water-saving techniques by the trained water extensionists, it is anticipated that the number of farmers who adopt water-saving irrigation technique will be increased further in the Project Sites in these 2 Governorates.

Indicator (1)-3: The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates increases by 50% and is more than 10 times a year.

The following table shows frequency of extension activities on water-saving irrigation implemented by the trained extensionists and general extensionists in Aleppo and Raqqa Governorates. Training on water extensionists was started in May 2009 for Aleppo and Raqqa Governorates. This training course in 2009 was conducted in 4 separated periods (one week each) and ended in November (the number of trained water extensionists are 22 persons in Aleppo and 22 persons in Raqqa). Therefore, extension activities in 2009 were conducted only by non Water Extensionists.

Governorate	In 2009		In 2010		Increase rate (2010/2009)	
	By general Extensionists	By WE	By general Extensionists	By WE	By general Extensionists	By WE
Aleppo	45	0	90	65	100 %	−%
Raqqa	36	0	54	5	50 %	−%

WE: Water Extensionist

Extension activities on water-saving irrigation techniques by trained water extesionists started in 2010. The number of extension activities are 65 times and 5 times in Aleppo and Raqqa governorates respectively. Frequency of extension activities by trained water extensionists in Raqqa in 2010 is less than 10 times. And collaboration between extensionists and DMIC staff is not sufficient in Aleppo.

The Joint Evaluation Team considered that it is important to evaluate not only the frequency of extension activities but also their quality. Therefore, it is better to add an indicator in PDM which can evaluate the quality of extension activities. A proposed indicator is explained in Chapter 6 as recommendation.

Other outcomes: Guideline/Manual for Water-saving Irrigation

A guideline/manual for water-saving irrigation was produced during the phase 1 project. This guideline/manual is under revision reflecting some instructive lessens obtained through

the project activities and also considering opinions of the Syrian counterparts and researchers of the cooperative external research organizations. Methods and techniques on improved surface irrigation which is under experiment will be added in the guideline/manual. Preparation of the guideline/manual will be completed by autumn 2011. Produced guideline/manual will be distributed to trainees of Water Extensionist course and extension units where water extensionist exist.

3-2-2 Output 2: The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Daraa Governorates.

The current degree of achievement of the following 3 indicators is more than expected in most cases. It is expected that all indicators of the Output 2 will be achieved at a very satisfactory level by the end of the Project as the project activities progress further.

Indicator (2)-1: The difficulties after the phase 1 Project are clarified and the countermeasures are established (more than 5 cases).

At the beginning of the Project, difficulties or issues raised after the completion of the phase 1 project were surveyed and the following 11 issues were identified by the project team. They are 5 issues on training and 6 issues on extension. The following table shows countermeasures on each issue taken by the Project.

Area		Issues identified	Countermeasures/ improvement taken by the Project
Training	1	Duration of training differs by the Governorates.	There is a case that the duration of training on design, operation and maintenance of modern irrigation system has increased from 5 days to 10 days in some governorates. However, this change has been made according to their necessity to make the training better, and this is not a big problem.
	2	It is necessary to grow out of dependence to the project.	Training courses are conducted with the initiative of Syrian C/Ps in each governorate (in Daraa, Hama and Rural Damascus)
	3	It is necessary to modify a part of training curriculum and training materials.	Contents on better methods of extension activities have been introduced..
	4	It is necessary to utilize water extensionist (WE) and SMS more effectively.	WE and SMS are participating to the training courses as trainer or training facilitator.
	5	Follow up training for existing WE and SMS is necessary.	Various follow up trainings are planed and conducted. Details are described as remark (1) below.
Extension	6	It is necessary to confirm effectiveness of farmers' competition events.	Competition events were implemented in collaboration with governmental agencies. See details in remark (2).
	7	Competition events for persons in charge of extension are necessary.	Preparation of an evaluation method on extension activities is underway. It is expected that capability of water extensionists can be enhanced thorough utilization of this evaluation method.
	8	It is necessary for WE to	Identification of farmers needs is considered as an

	identify needs of irrigated farmers further.	important issue in the process of preparation of annual extension plan.
9	It is important to monitor behavior change of extension targeted farmers.	Group extension activity which specifies extension target farmers makes it possible to monitor extension effects continuously in long-term.
10	It is necessary to consider farmer to farmer extension mechanism.	The Project has started group extension activity to develop core farmers who are expected to share and disseminate water-saving irrigation methods with other farmers.
11	Economic aspect of farming should be considered more.	It is possible to make economic analysis of farming when farmers take records data on irrigated farming into irrigation notebook properly.

SMS: Subject Matter Specialist (in irrigation)

Remark (1):

(a) Training on usage of extension tools (discharge measurement kit, irrigation calendar, and irrigation notebook) and explanation method to farmers. The following table shows training courses conducted in each governorate.

Governorates	Date	Participants
Aleppo	7 June, 2010	Water extensionists of the model extension unit (where demonstration farm exists) and its surrounding extension units: 5 water extensionists
Daraa	21 June, 2010	Water extensionists of the model extension unit (where demonstration farm exists) and SMS of supporting units: 4 persons in total
Hama	30 June, 2010	Water extensionists of the model extension unit (where demonstration farm exists) and SMS of supporting units: 6 persons in total
Raqqa	–	–
Rural Damascus	6 July, 2010	Water extensionists of the model extension unit (where demonstration farm exists) and SMS of supporting units: 4 persons in total

(b) Training on editing video movies aiming capacity development of water extensionists on preparation of video extension material

Governorates	Date	Participants
Daraa, Hama, Rural Damascus	9-11, November, 2010	Selected 20 staff who are WE, SMS or DMIC staff in Daraa, Hama and Rural Damascus Governorates and also who showed interest on editing video movies at the time of extension activities.

DMIC: Directorate of Modern Irrigation Conversion

Remark (2)

Excellent farmers who are practicing water-saving irrigated agriculture were selected among the farmers who introduced modern irrigation facilities by using loan service of DMIC as a result of implementation of questionnaire survey and site visit survey. These surveys were conducted in the project targeted governorates in summer of the year 2009 by the survey team composed of staff of GCSAR and DMIC. The selected farmers received official commendations and prizes at the occasion of the project seminar in 2010. The purpose of the competition, method of competition, and survey & selection results are complied in a report by the project team. Interviews were conducted to the excellent farmers in summer of the year 2010, and based on it result, a leaflet is under preparation and after producing this leaflet will be distributed.

Indicator (2)-2: Number of irrigation farmers in the Project Sites adapting modern irrigation technique increases by 30 - 40%.

The following table shows rate of irrigated farmers with modern irrigation (small-scale pressurized irrigation system) among irrigated farmers in the project sites (model extension units).

Governorate	Project site (extension unit)	Collected data by the Project (Survey in 2009)			Data of the Impact survey in October 2010 <sample survey>			Increase
		Total number of irrigated farmers	Number of irrigated farmers with modern irrigation	(%)	Total number of irrigated farmers	Number of irrigated farmers with modern irrigation	(%)	(%)
Daraa	Nawa	1,043	557	53.4	44	38	86.4	61.2
Hama	Halfaya	720	399	55.3	21	14	66.7	20.6
Rural Damascus	B.Saber	410	185	45.1	31	20	64.5	43.0

Remark: The rates of irrigated farmers with modern irrigation following are more than 80% at the following 3 extension units, therefore, these 3 extension units are excluded for evaluation. 1) Surgaya extension unit in Rural Damascus (96.9%), 2) Dack extension unit in Daraa (100%), and 3) Majdal extension unit in Hama (82.2%).
In the case of Arne extension unit, focused project activity is capacity development of a group of irrigated farmers and there is a few extension activities for other farmers. Therefore, the Arne extension unit is also excluded for evaluation.

Rate of increase at the project site (Halfaya extension unit) is 20.6% and this rate is less than the targeted rate (30-40%) yet. Rates of increase at the Nawa extension unit in Daraa and Bait Saber extension unit in Rural Damascus are 61.2% and 43.0% respectively, and these rates are more than the targeted rate.

Indicator (2)-3: The frequency of regular extension activities implemented by the concerned organizations in Rural Damascus, Hama and Daraa Governorates increases by 25%

The following table shows number of extension activities related with water-saving irrigation at Daraa, Hama and Rural Damascus governorates in 2008, 2009 and 2010 (data obtained from extension related offices of the respective Directorate of Agriculture of 3 governorates).

Governorate	2008	2009	Increase rate (2009/2008)	2010	Increase rate (2010/2008)
Daraa	16	36	125.0%	36	125.0%
Hama	25	107	328.0%	133	432.0%
Rural Damascus	28	29	3.6%	39	39.3%

Remark:
1) Number of extension activities in 2010 is data from January to October.
2) Water extensionists trained during the phase 1 project have conducted extension activities on water-saving irrigation with their initiative. However, other extensionists have also conducted. Above data includes number of activities by water extensionists and non water extensionist.

Increase rates of extension activities at 3 governorates are more than 25% (comparison of number of extension in 2008 and 2010). In the case of Daraa and Hama, increase rates are

432.0% and 125.0% respectively and there is significant increase.

3-2-3 Output 3: Water-saving irrigation techniques developed under the cooperation with universities and international research organizations in Syria are reflected upon Project activities. And, the outcomes are disseminated to the other areas in Syria and neighboring countries.

Cooperated activities with universities in Syria and international research organizations are progressing steadily. For example, trainees of "ICARDA's training course for irrigation techniques (co-hosted by JICA and ICARDA)" were visited to the demonstration farm in Jine extension unit in Aleppo. The project team assisted to explain about the demonstration activities (May 2010). Activities for disseminating outcomes on water-saving irrigation techniques to other areas in Syria are not conducted yet.

Indicator (3)-1: More than 3 techniques on water saving irrigation are recommended by the Project under the cooperation with universities and international research organizations.

The following 8 kinds of researches related with irrigation modernization are undertaken at the irrigation stations of ANRR. These researches are considered within framework of the Project. Some researches are undertaken in cooperation with universities and international research organization

No	Theme of research	Cooperated organization	Location of research	Period
1)	Study on the effect of different irrigation methods, continuous flow and intermittent flow method	Aleppo University, Damascus University and ACSAD	Surbaya Irrigation Station of ANRR in Aleppo	2009 - 2012
2)	Study on the efficiency and adaptability of spile irrigation method		Surbaya Irrigation Station of ANRR in Aleppo	2009 - 2011
3)	Study on the efficiency and adaptability of gated pipe irrigation method		Ebb Quien Irrigation Station of ANRR in Raqqa	2009 - 2011
4)	Study on the efficient fertigation method for improved surface irrigation		Ebb Quien Irrigation Station of ANRR in Raqqa	2009 - 2011
5)	Study on water stress in deficient irrigation	Damascus University	Nashabie Irrigation Station of ANRR in Rural Damascus	2009 - 2011
6)	Proper water scheduling of group irrigation and enhancement of group irrigation activities	Damascus university	Extension field for the group irrigation project at Rural Damascus Irnah	2009 - 2011
7)	Establishment of suitable irrigation schedule by using tensiometer		Tizeen Irrigation Station of ANRR in Hama	2009 - 2011
8)	Study on the fertilizer efficiency under different fertigation treatments		Jileen Irrigation Station of ANRR in Daraa	2009 - 2011

Most of researches are ongoing and it is difficult to prospect that useful recommendations can be obtained from these researches at this moment. However, researchers in charge are conducting their researches with strong will. It is expected that useful results or useful recommendations which benefit on improvement of water-saving techniques can be obtained more than 3 subjects in future.

Indicator (3)-2: Among the above recommendations, more than 2 techniques are utilized in the Project and others (Syria and neighboring countries).

As mentioned above, 8 kinds of researches are underway and most of research activities will be completed in 2011. Most of report on research results will be made in 2011. It is expected that some useful recommendations on water-saving techniques will be adopted at field after the year 2012.

Other outcomes of the Project: Extension tools

The following new extension tools are under development by the Project through obtaining suggestions from the persons of universities and international research organizations.

Name of tool	Main purpose	Cooperation with university and research organizations	Utilization (target and distribution, etc.)	Status of development
Irrigation Calendar	Guideline for farmers to identify irrigation hours for specific crop at the specific location	Recommended irrigation period is calculated based on the data obtained from Damascus university and irrigation research stations of GCSAR.	Target for distribution will be decided based on the results of the impact survey. Target of distribution will be irrigated farmers and water extensionists.	Partially completed
Discharge Measurement Kit	Contains water measuring cup, pressure gauge and necessary connections in a portable bag. It is necessary to utilized irrigation calendar effectively.	Suggestion will be obtained from university whether this kit can measure water flow precisely.	Target for distribution will be decided based on the results of the impact survey. This tool will be used with irrigation calendar. Target of distribution will be irrigated farmers and water extensionists.	Mostly completed
Irrigation Notebook	Notebook for recording duration of irrigation and quantity of fertilizer, etc.	Suggestion on improvement is obtained from ACSAD.	Revised notebook will be made based on the opinions of farmers and water extensionist. Dissemination activities will be conducted at the model extension units before the start of next irrigation season. Target of distribution will be irrigated farmers and water extensionists.	Improvement is necessary

Digital Irrigation Note	Computer software for analyzing recorded data in irrigation notebook	Suggestion on improvement is obtained from the university of Damascus and Aleppo.	This software will be distributed mainly supporting units where computer equipment is available. Further improvement will be made by obtaining suggestion from universities and persons utilized this software.	Improvement is necessary

ACSAD: Arab Center for the Study of Arid Zones and Dry Lands

3-3 Project Purpose

Project Purpose: The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.

Considering the favorable degree of achievement of the following 2 indicators at this stage, it is expected that the Project Purpose will be achieved at a satisfactory level at the time of completion of the Project.

Indicator 1) The usage of irrigated water for the crops in the Project Sites is reduced by the Project (10 -20%).

The following table shows amount of irrigation water used per ha by crop and governorate. There are data obtained by the baseline survey (2009) and data obtained by the impact survey (October 2010).

Governorate	Crop	Amount of irrigation water before project (Baseline survey)			Amount of irrigation water (impact survey)					
					Traditional irrigation			Modern irrigation (Dr., Sp.)		
		m3/ha	Irrigation Method	Number of Sample	m3/ha	Number of Sample	Reduction rate %	m3/ha	Number of Sample	Reduction rate %
Aleppo	Sugar Beet	10,960	Tr.	6	–		–	* 3,585	20	–
	Cotton	15,625	Tr.	4	12,800	1	18.1	7,530	15	50.9
	Potato	6,968	Mix	5	–		–	* 3,371	12	–
Daraa	Tomato	10,094	Dr.	10	–		–	5,027	45	50.2
	Watermelon	7,500	Dr.	10	–		–	4,553	7	39.3
	Grape	11,446	Mix.	10	–		–	7,921	25	30.8
Hama	Cotton	14,400	Mix	10	24,000	1	–	–		–
	Potato	12,600	Mix	5	–		–	8,247	16	34.5
	Cucumber	8,725	Sp.	5	–		–	8,952	7	-2.6
Raqqa	Cotton	15,625	Tr.	13	14,702	18	5.9	7,817	3	50.0
	Sugar Beet	9,750	Tr.	7	9,197	13	5.7	–		–
	Watermelon	5,425	Tr.	5	–		–	–		–
Rural Damascus	Apple	6,206	Dr.	7	–		–	4,051	31	34.7
	Peach	6,842	Dr.	5	–		–	3,943	11	42.4
	Pear	6,053	Dr.	6	–		–	5,180	18	14.4

Remark:
1) Mix: using both method (traditional and modern irrigation), Sp: Sprinkler irrigation, Dr.: Drip irrigation, Tr.: Traditional irrigation
2) * Cultivation season of sugar beet and potato in Aleppo is autumn-winter and have effect of rainfall. Therefore, these crops are excluded from the analysis on water-saving.

3) The amounts of irrigation water were surveyed in 2 extension units in each governorate. One of extension units is the extension unit where demonstration farm located and other one is extension unit which has similar agricultural condition.

Although, there is one case that reduction rate is minus, most of cases of modern irrigation where farmers adopted water-saving techniques, reduction rates are between 30% and 50%. This reduction rate is quite better than the targeted rate (10-20%).

Indicator 2) The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved (number of certified extentionists become more than 40% to the required number of water extensionists).

The following table shows numbers of extension units that qualified water extensionist is required and numbers of extension units that have qualified water extensionist (more than one person). Qualified water extensionist means person who participated in the training courses for water extensionist of the Project (including phase 1 project) and who got certification by passing examination (person who got more than 70 points at examination, full score is 100 points).

Governorate	Number of extension units that qualified water extensionist is required (a)	Number of extension units that have qualified water extensionist	Ratio (%)	(Reference data) Total number of units in governorate	Number of 40% units	Insufficiency (persons)
Aleppo	80	17	21.3%	111	32	15
Daraa	38	37	97.4%	63	16	-
Hama	72	32	44.4%	74	29	-
Raqqa	40	14	35.0%	55	16	2
Rural Damascus	52	24	46.2%	63	16	-

Remarks: (a) This numbers were decided based on the percentage of irrigated area in each extension unit (one of the selection criteria is ration of irrigated area is more than 50%). This classification was done by the Project team.

Ratios of Daraa, Hama and Rural Damascus governorates, where trainings on water extensionist was started during the phase 1 project and trainings is continued under the Project, are exceeded targeted ratio (40%) already. Ratios of Aleppo and Raqqa governorates, where trainings started under the Project (from 2009) are 35.0% and 21.3% respectively. It is expected that this indicator (40%) can be achieved by the end of the Project by inviting more persons from Aleppo governorates.

4. Results of Evaluation

4-1 Relevance

Relevance of the Project is considered high in terms of needs of beneficiaries, policies of the Government of Syria, and assistance policy of Japan.

Agriculture and water sectors are very important in Syria. Because of limited water resources and effects of climate change (less rainfall), efficient use of water resource through introduction of water-saving irrigation is quite necessary not only for farmers with irrigation and also for stabilizing agricultural production in the target areas. Efficient irrigation water use can be realized not only installing modern irrigation facilities but also using proper water-saving techniques. One of the objectives of the Project is to strengthen extension of water-saving techniques to farmers through improving capability of extensionists, producing extension materials, and improving linkage among research, training and extension related organizations, etc. Therefore, this project is well consistent with needs of farmers in the target areas and also staff concerned of the Ministry of Agriculture and Agrarian Reform.

Conversion of irrigation system from traditional water consuming irrigation to modern irrigation system (water-saving irrigation system) is regarded one of the important issues in the 10th Five-Year Plan (2006-2010) of Syria. Although, the 11th Five-Year Plan is not publicized yet, it is reported that the importance of further promotion of modern irrigation becomes higher in this plan. The Ministry of Agriculture and Agrarian Reform is promoting conversion of irrigation system to modern irrigation system by proving subsidized loan for purchasing irrigation equipment. Therefore, the objective of the Project is well consistent with the policies of the Government of Syria.

One of the important issues of the assistance policy of the Government of Japan to Syria is water resources management and its effective use. The Project aims enhancement of capacity of extension on water-saving irrigation. Therefore, the Project is well consistent with the assistance policy of Japan.

4-2 Effectiveness

Through the project activities, capacity development of water extensionists who disseminate water-saving irrigation techniques is progressing as scheduled mostly in terms of number of extensionists and capacity of them. Proper amount of irrigation water for each crop is used at most of the demonstration farms in 5 governorates.

As mentioned in the previous chapter, it is expected that the Project Purpose will be achieved at a satisfactory level at the time of completion of the Project. Therefore, the effectiveness of

the Project will be at a satisfactory level.

4-3 Efficiency

Both Syrian and Japanese sides have provided inputs for the project activities appropriately in terms of human resources (Japanese experts and Syrian counterparts), equipment, training in Japan and third countries, and allocation of budget. These inputs and resources have been utilized efficiently in undertaking project activities.

The outcomes of the phase 1 project, such as training materials and training curriculum for water extensionists, extension methods and tools, Syrian counterparts involved in the phase 1 project and water extensionists trained during the phase 1 project, etc., have been utilized or participated effectively for the project activities. This is a factor on efficient progress of the project activities.

Another important factor that contributes to the efficient progress of the project activities is good collaboration and coordination among organizations involved in the project activities, such as GCSAR, DMIC, Directorate of Extension, and Directorate of Training and Qualification of MAAR, Directorates of Agriculture of targeted 5 governorates, and also Damascus University and international research centers such as ICARDA[1].

In conclusion, efficiency of the Project is at a satisfactory level at this stage.

4-4 Impact

It is early to prospect precisely whether the Overall Goal of the Project will be achieved in future. Some positive impacts are observed.

4-4-1 Prospect for achieving the Overall Goal

Overall Goal: Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.

Although it is early to prospect the possibility to achieve the indicator 1) by the end of 2017, it is considered that there is certain good possibility to attain the indicator 1). Because this project is establishing effective extension mechanism in 5 governorates, and based on this mechanism and with continuous efforts of organizations concerned of the Government of Syria after the completion of the project, irrigation water use per unit area can be reduced.

[1] International Center for Agricultural Research in Dry Areas

Indicator 1) Total amount of irrigation water per unit area decreases more than 10% without yield decrease in Target Area by the end of 2017.

This project is contributing reduction of irrigation water use per unit area by extending water-saving techniques to farmers. By increasing farmers adopting efficient water-saving irrigation in terms of techniques and modern irrigation facilities as results of further strengthening of extension activities by water extensionists and also DMIC loan service, it is expected that the amount of irrigation water per unit area will be decreased more than 10% without yield decrease in 5 project targeted governorates by the end of 2017.

The following tables show reference data on irrigated area, the amount of irrigation water used, and estimated amount of irrigation water used per hectare (ha) by source of water in 5 project targeted governorates.

1) Data on irrigated area by source of water in 5 project targeted governorates

(Unit: thousand ha)

Governorate	All water sources			River water			National Irrigation systems			Well		
	Crops	Trees	Total	Crops	Trees	Total	Crops	Trees	Total	Crops	Trees	Total
Aleppo	191,039	15,375	206,414	27,157	1,181	28,338	73,566	12,285	85,851	87,246	4,979	92,225
Daraa	22,852	8,606	31,468	150	0	150	15,985	2,608	18,593	6,142	6,583	12,725
Hama	55,824	15,426	71,250	3,287	1,865	5,152	6,208	443	46,156	13,291	13,291	26,582
Raqqa	176,789	11,142	187,931	40,549	2,234	42,783	78,542	15,858	94,400	50,163	585	50,748
Rural Damascus	22,769	38,322	61,091	5,498	9,946	15,444	0	0	0	16,251	29,396	45,647
Syria	1,184,790	171,695	1,356,485	180,092	28,216	208,308	321,203	65,895	387,098	670,752	90,327	761,079

Source: Annual Agricultural Statistics of Syria

2) Amount of irrigation water used by source of water in 5 project targeted governorates

(Unit: thousand m3)

Governorate	All water sources			River water			National Irrigation systems			Well		
	Crops	Trees	Total	Crops	Trees	Total	Crops	Trees	Total	Crops	Trees	Total
Aleppo	1,812.2	338.5	2,150.7	232.0	23.8	255.8	875.9	231.4	1,107.3	704.3	83.2	787.5
Daraa	172.2	136.5	308.7	0.5	0.0	0.5	123.3	43.2	166.5	48.4	93.4	141.8
Hama	413.0	243.2	656.2	26.5	34.6	61.1	53.0	8.6	61.6	333.6	200.1	533.7
Raqqa	2,486.1	470.9	2,957.0	796.3	53.8	850.1	1,295.0	407.1	1,702.1	394.7	10.0	404.7
Rural Damascus	170.8	733.6	904.4	43.2	185.5	228.7	0.0	0.0	0.0	127.7	548.1	675.8
Syria	11,316.2	3,054.3	14,370.5	2,699.2	579.0	3,278.2	3,648.0	1,085.8	4,733.8	4,969.0	1,389.5	6,358.5

Source: Data of MAAR

3) Estimated amount of irrigation water used per hectare (ha) by source of water in 5 project targeted governorates

(Unit: m3/ha)

Governorate	All water sources			River water			National Irrigation systems			Well		
	Crops	Trees	Total	Crops	Trees	Total	Crops	Trees	Total	Crops	Trees	Total
Aleppo	9,486	22,016	10,419	8,543	20,152	9,027	11,906	18,836	12,898	8,073	16,710	8,539
Daraa	7,532	15,861	9,810	3,333	-	3,333	7,713	16,564	8,955	7,880	14,188	11,143
Hama	7,398	15,766	9,210	8,062	18,552	11,859	8,537	19,413	1,335	25,100	15,055	20,077
Raqqa	14,063	42,264	15,734	19,638	24,082	19,670	16,488	25,672	18,031	7,868	17,094	7,975
Rural Damascus	7,501	19,143	164,496	4,343	18,651	14,808	-	-	-	7,858	18,645	14,805
Syria	9,551	17,789	10,594	14,988	20,520	15,737	11,357	16,478	12,229	7,408	15,383	8,355

Source: Estimated data using data of the above two tables

Indicator 2) More than 50% of total farmers in the other governorates in Syria also recognize the importance and the necessity of water-saving in irrigation.

For achieving this indicator, it is necessary for Syrian organizations concerned to expand extension activities on water-saving irrigation in other governorates in Syria by utilizing results of the Project.

4-4-2 Other Impacts

(1) Increased collaborative relationship among organizations concerned

This project (phase 2 project) and also phase 1 project have been implemented under good cooperation/ collaboration among organizations concerned, such as GCSAR, Directorate of Training and Qualification, Directorate of Extension, DMIC, Directorates of Agriculture of governorates concerned, and Universities in Syria. Similar good collaborative relations come to be seen among them in their regular activities and also other donor supported projects by having realized advantage of good cooperative/ collaborative relations.

(2) Dissemination of water-saving irrigation as effect of the project activities at the demonstration farms

Various extension activities on water-saving irrigation have been implemented at the project sites (model extension units) including the demonstration farms by inviting farmers of surrounding area. As the result of this, for example, farmers in Sukkarie extension unit in Raqqa understood well about advantage for introducing water-saving irrigation and farmers requested DMIC's loan. The evaluation team interviewed with a farmer who attended extension events of the Project and observed the modern irrigation facilities in the demonstration farms in Raqqa. This farmer installed drip and sprinkler irrigation facilities using DMIC loan this year and he successfully cultivated watermelon this summer with less quantity of water (less cost) and better yield. He found out that applied irrigation water under the traditional irrigation method (surface irrigation) was over-irrigation and application of appropriate amount irrigation water brings higher yield.

(3) Farmer to farmer's information dissemination

According to the farmer of the demonstration farm in Raqqa governorates, he has received many visitors (farmers) who interested in the water-saving irrigation and taught his knowledge and experience to them. Other farmer, who introduced modern irrigation facilities this year, has also received farmers and delivered such information on request as procedure on DMIC loan and installation method of modern irrigation equipment, etc. The Team observed same example in Hama, i.e. the farmers of the demonstration farm is receiving neighboring farmers and he delivers his knowledge and experience on water-saving irrigation techniques.

4-5 Sustainability

Policy sustainability will be secured. Although it might be early to prospect sustainability on organizational, financial and technical aspects, some proper financial and organizational arrangement will be necessary.

(1) Policy aspect

As mentioned already, irrigation modernization is regarded important by the Government of Syria in order to use limited water resources efficiently for agricultural production. Because of negative impact of climate change (reduce of rainfall and higher temperature, etc.), stabilized agricultural production becomes more important in Syria from the view point of food security. Therefore, policy sustainability will be secured even after the completion of the Project.

(2) Organizational aspect

The implementing organizations of the Project within MAAR, i.e. GCSAR, Directorate of Extension, Directorate of Training and Qualification, DMIC, and the Directorate of Agriculture of the targeted 5 governorates have clear tasks on research, training, extension, and promotion of modern irrigation. These organizations have sufficient number of staff and long-experiences in respective field of tasks. Therefore, irrigation modernization including extension of water-saving irrigation techniques to farmers can be continued in sustainable manner in general. There is good collaboration and coordination among these organizations, and it seems that this good collaboration is bringing good progress of extension activities in the project target areas. In order to secure efficient and effective progress of extension activities on water-saving irrigation after the completion of the Project in the project areas and also other governorates, certain organization arrangement is necessary in keeping proper

linkage among organization in charge of research, extension, training, and loan services.

(3) Financial aspect

DMIC is providing financial support to farmers for introducing modern irrigation system. Conversion of irrigation methods will be progressing physically with this financial support. Adoption of proper water-saving techniques by farmers is also important for efficient use of limited water resources and increase profitability of agricultural production. In order to expand the extension activities on water-saving irrigation in the project areas and also other governorates after the completion of the Project, it is necessary for the Government of Syria to allocate necessary amount of budget because the target area for extension is bigger.

(4) Technical aspect

Capacity of the Syrian counterparts and staff concerned with the Project has been further developed in the course of implementation of the project activities. The number of water extensionists with proper knowledge and skills is increasing in the 5 governorates. Through practicing extension activities at the demonstration farms or other farmers fields, and also using extension tools developed by the Project and also the phase 1 project, their capability on extension is under strengthening. Capacity of trainers for water extensionist course is also enhancing under the Project. It is expected that their capability will be strengthened in sustainable manner by the end of the Project. It is necessary to continue these kinds of capacity development even after the completion of the Project.

4-6 Conclusion

The project activities have been progressing as scheduled. Most of the project's outcomes to date, such as extension of water-saving irrigation techniques and training for water extensionist, etc, have been achieved as planned. Relevance of the Project is high and effectiveness of the Project will be at a satisfactory level by achieving the Project Purpose by the end of the project period. Efficiency of the Project is also as a satisfactory level and several positive impacts were observed such as: increased collaborative relationship among organizations concerned, dissemination of water-saving irrigation as effect of the project activities at the demonstration and neighboring farms, and farmer to farmer's information dissemination.

There are some important issues in order to have better outcomes of the Project and to ensure the continued effective utilization of the outcomes of the Project after the completion of JICA cooperation. These issues are explained as recommendations.

5. Recommendations

5-1 Recommended actions to be taken by the project team in the remaining project period

(1) It is necessary to strengthen training on communication skills as a subject in the curriculum of the training course for water extensionist in order that trained water extensionits can deliver knowledge and skills more effectively to farmers. In this regard, it is necessary to consider farmer's mentality which differs by regions or areas.

(2) In order to disseminate the outcomes of the Project to other governorates in Syria, it is necessary to conduct a seminar/workshop by inviting persons concerned in these areas in collaboration with regional universities and research organizations.

(3) In order to deliver the outcomes of the Project to neighboring countries, it is necessary to arrange participation to the third country training courses which conducted by ICARDA commissioned by JICA, etc., and make presentation on the project activities and outputs.

5-2 Recommended actions to be taken by the Syrian side

(1) There is very good collaborative relationship among organizations involved in the project activities at present. It is necessary to create certain coordination mechanism within the Ministry of Agriculture and Agrarian Reform in order to keep this situation and accelerate dissemination of water-saving irrigation techniques to other governorates in Syria after the completion of the Project.

(2) The project targeted areas are 5 governorates (Aleppo, Daraa, Hama, Raqqa and Rural Damascus). In order to disseminate the outcomes of the Project to other governorates in Syria and ensure sustainability of training structure and function of the Project, it is necessary to form a national training team to prepare training plan for water extensionist, extension plan for water-saving irrigation techniques, and budgetary plan for implementing these plans.

5-3 Recommendation on revision of current Project Design Matrix (PDM version 2)

The Team conducted evaluation on achievement of the Project based on PDM. The team noticed that some modification on PDM is necessary as a result of examination of current PDM (version 2). Proposed modification and its reasons are described in the following table. Proposed revised PDM is attached as Annex 10.

Table: Major modifications on PDM

Item	Version 2	Proposed revision (Version 3)	Reason of change
Indicator (1)-3 of the Output 1	The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates increases by 50% and is more than 10 times a year.	The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates is more than 10 times a year.	There was no trained water extensionist before the Project in Aleppo and Raqqa Governorates, therefore, increase rate can not be calculated. Words "increases by 50% and" are deleted.
Additional indicator as (1)-4 for the Output 1	---	Quality of extension activities by the trained extensionists is at a suitable level.	It is important to evaluate not only frequency of extension activities but also its quality. Quality of extension will be surveyed before the terminal evaluation by setting proper questions to farmers.
Output 3	Water-saving irrigation techniques developed under the cooperation with universities and international research organizations in Syria are reflected upon Project activities. And, the outcomes are disseminated to the other areas in Syria and neighboring countries	Measures to improve and operate water-saving irrigation techniques are extended to the rest of Syria and to neighboring countries through the cooperation with universities and international research organizations in Syria.	Original project plan dose not intended joint development of water-saving irrigation techniques with universities and research institutes as shown in the Record of Discussion (R/D). Therefore, it is better to use original idea of R/D with minor modification. (Deleted words are "system", and "as ripple effect".
Indicator of the Output 3	(3)-1: More than 3 techniques on water saving irrigation are recommended by the Project under the cooperation with universities and international research organizations. (3)-2: Among the above recommendations, more than 2 techniques are utilized in the Project and others (Syria and neighboring countries).	(3)-1: Cooperated activities on dissemination of measures to improve and operate water-saving irrigation techniques are increased.	In accordance with modification of the Output 3, a new indicator is proposed. Cooperated activities mean cooperated activities on trainings and seminars on water-saving irrigation techniques.
Others	Most of means of verification are modified more appropriate one. For details, see proposed PDM (version 3).		

Annex 2 Project Design Matrix (PDM)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)
Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates
Target Group :
Direct Beneficiaries : Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists
Indirect Beneficiaries : Irrigated Farmers and Inhabitants in the Target areas
Duration : 2008.December~2012.June (3.5years)

Ver.2: 2010.03

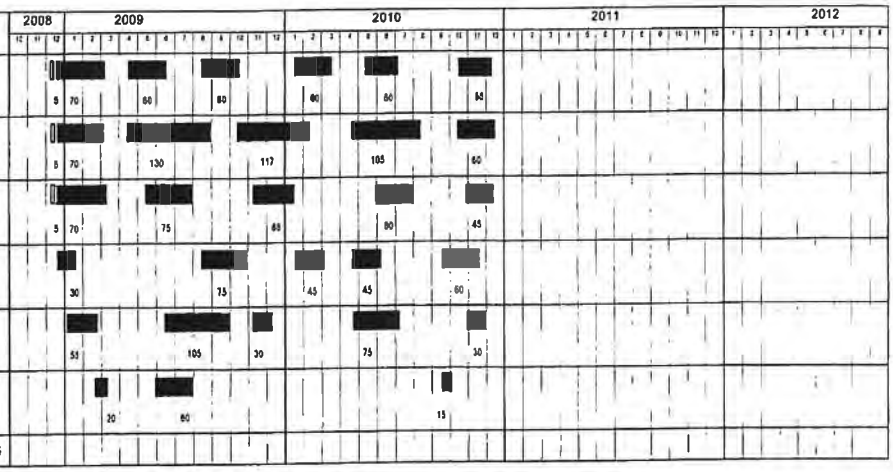
Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumption
[Overall Goal] Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.	1) Total amount of irrigation water per unit area decreases more than 10% without yield decrease in Target Area by the end of 2017. 2) More than 50%of total farmers in the other governorates in Syria also recognize the importance and the necessity of water-saving in irrigation.	- Reports on hydrological conditions in Syria - Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・Available amount of water resources for irrigation purpose dose not reduce. ・Irrigated land is not expanded by illegal water source development.
[Project Purpose] The capability of extensionists and staffs of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites	1) The usage of irrigated water for the crops in the Project Sites is reduced by the Project (10 -20%). 2) The capability of extensionists and staffs of related agencies on extension of water-saving irrigation are improved (number of certified extentionists become more than 40% to the required number of water extensionists).	- Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・Farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Target Areas can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.
[Outputs] (1) Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates. (2) The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Dara Governorates. (3) Water-saving irrigation techniques developed under the cooperation with universities and international research organizations in Syria are reflected upon Project activities. And, the outcomes are disseminated to the other areas in Syria and neighboring countries.	(1)-1: Amount of irrigation water used for each crop in the Demonstration Farms in Aleppo and Raqqa Governorates are reduced by 10 -15%. (1)-2: The number of farmers adopting water-saving irrigation technique in the Project Sites in Aleppo and Raqqa Governorates increased by 80 – 100%. (1)-3: The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates increases by 50% and is more than 10 times a year. (2)-1: The difficulties after the phase I Project are clarified and the countermeasures are established (more than 5 cases). (2)-2: Number of irrigation farmers in the Project Sites adapting modern irrigation technique increases by 30 – 40%. (2)-3: The frequency of regular extension activities implemented by the concerned organizations in Rural Damascus, Hama and Daraa Governorates increases by 25% (3)-1: More than 3 techniques on water saving irrigation are recommended by the Project under the cooperation with universities and international research organizations (3)-2: Among the above recommendations, more than 2 techniques are utilized in the Project and others (Syria and neighboring countries).	- Field measurement in the Target areas - Survey on relevant agencies/interviews to farmers	・There is no major change in the working environment of extensionists, at least, farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Project Sites can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.

Annex 1 Schedule of the Evaluation

	Date		Leader, Cooperation Planning	Dry-land Farming	Evaluation and Analysis	Place to Stay
1	Nov/19	Fri			Narita to Dubai	(on board)
2	Nov/20	Sat			Dubai to Damascus	Damascus
3	Nov/21	Sun			9:00 Courtesy call to Director General of GCSAR 10:00 1st Joint Evaluation Committee 11:00 Interviews with Syrian counterparts of GCSAR 12:30 Interview with Syrian counterparts of DAE 15:00 Interview with Syrian counterparts of DMIC	Damascus
4	Nov/22	Mon	Narita to Dubai	Osaka to Dubai	9:00 Interviews with Japanese experts and collection of information	Damascus
5	Nov/23	Tue	Dubai to Damascus Internal meeting of mission members		(Damascus to Daraa by land) 10:00 Interviews at Directorate of Agriculture in Daraa 12:30 Visit to a Nawa Extension Unit 13:00 Observation of a demonstration farm (satellite plot) and Interviews for farmers (Daraa to Damascus by land)	Damascus
6	Nov/24	Wed			8:30-9:30 Meeting at JICA Syria Office 10:00-11:00 Courtesy call to MAAR (H.E. Dr. Nabi Rasheed Mohammad, Vice-Minister, and Director of Extension, Director of DMIC, Director of ANRR) 12:00 -12:30 Courtesy call to H.E. Minister of Agriculture and Agrarian Reform 13:00-14:00 Courtesy call to GCSAR, Dr. Walid Tawil, Director General (14:30-19:30 Damascus to Aleppo by land)	Aleppo
7	Nov/25	Thu			9:00-10:00 Interviews at Directorate of Agriculture in Aleppo 11:00-12:00 Visit to Jine Model Extension Unit 12:30-13:30 Meeting at Surbaya Irrigation Research Station 14:00-15:30 Meeting at ICARDA	Aleppo
8	Nov/26	Fri			Internal meeting of mission members	Aleppo
9	Nov/27	Sat			(8:30-12:00 Aleppo to Raqqa Demonstration Farm) 12:00-15:30 Visit to Sukkarie Demonstration Farm in Raqqa, Interview with water extensionists and farmer of demonstration farm (15:30-16:30 Raqqa Demonstration Farm to Raqqa city)	Raqqa
10	Nov/28	Sun			9:00-11:30 Interviews at Ebb Quein Irrigation Research Station 11:50-13:00 Interview at Directorate of Raqqa (13:00-17:00 Raqqa to Hama by land)	Hama
11	Nov/29	Mon			9:00-10:00 Interviews to MAAR and Irrigation Research Center 11:00-12:00 Observation at Demonstration Farm, Interviews for farmers in Hama (13:00-17:00 Hama to Damascus by land) Internal meeting of mission members Formulation of Joint Evaluation Report	Damascus
12	Nov/30	Tue			9:00 2nd Joint Evaluation Committee, Formulation of Joint Evaluation Report	Damascus
13	Dec/1	Wed			9:00 Formulation of Joint Evaluation Report	Damascus
14	Dec/2	Thu			10:00 Joint Coordination Committee, Explanation on Joint Evaluation Report, Signing on Minutes of Meeting 14:30 Report to Embassy of Japan	Damascus
15	Dec/3	Fri			Damascus to Dubai	(on board)
16	Dec/4	Sat			Dubai to Osaka / Dubai to Narita	

Annex 3 Dispatch of JICA Experts

No.	Name of JICA Expert	Field of Expert	Total M/M (Man-Month)	Total Days
1	Mr. Shuichi MATSUSHIMA	Leader/ Irrigation	12.00	360
2	Mr.Akira KOTO	Training/ Sub-leader	16.23	487
3	Mr. Hiroyasu OHNUMA	Extension	10.77	323
4	Mr. Naoki KOGA	Socio-economy/ Farmers Organization	8.50	255
5	Mr. Tomoki HOTTA	Irrigation System Designing	9.83	295
6	Mr. Masakazu NAKAYAMA	Farming Management/ Coordinator	3.17	95
		Sub-total	60.50	1,815



Legend: Work in Syria / Work in Japan

Activities	Input		
	<Japan>	<Syria>	
(1)-1 Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas. (1)-2 Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas. (1)-3 Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above. (1)-4 Select suitable Project Sites in the Target Areas, and establish the demonstration farms selected within the Project Sites as required. (1)-5 **<Small Scale Pressurized Irrigation>** (1)-5-1 Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4. (1)-5-2 Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas. (1)-5-3 Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies. (1)-5-4 Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3. (1)-5-5 Support extension activities to be done by the trained extensionists in line with the extension plan above. (1)-6 **<Surface Irrigation>** (1)-6-1Advance efficient surface irrigation technique and its related technology for water-saving. (1)-6-2 Prepare a plan of training activities and training tools in accordance with the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6. (1)-6-3 Prepare the technical guideline and materials on surface irrigation technique. (1)-6-4 Implement the training courses on water- saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-6-2. (1)-6-5 Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6. (1)-6-6 Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3. (1)-6-7 Support extension activities to be done by the trained extensionists in line with the extension plan above. (2)-1 Hold regular meetings on promotion of water-saving irrigation among the related agencies. (2)-2 Conduct a baseline survey in the districts excluding the concerned districts which were covered by the Phase I Project. (2)-3 Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas. (2)-4 Establish satellite plots in the districts excluding the concerned districts which were covered by the Phase I Project on the basis of the outcomes of item (2)-2 and (2)-3. (2)-5 Implement the training activities in line with the extension plan of item (2)-6. (2)-6 Revise the plan of extension for "modern irrigation promotion" prepared during Phase I Project. (2)-7 Improve extension tools and methods. (2)-8 Support extension activities to be done by the trained extensionists in line with the extension plan above. (3)-1 Study on the collaboration with universities and international research organizations in Syria, regarding water-saving irrigation techniques. (3)-2 Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the project purpose. (3)-3 Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1 and (3)-2. (3)-4 Accept trainees of the training courses arranged by other organizations. (3)-5 Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.	1. Personnel (1) Long-Term Experts: 3 persons *Project Leader/Irrigation *Training *Extension (2) Short-Term Experts Rural Community Irrigation Facilities Farm Management Others (according to the requirement) 2. Equipment Laser Leveling Units Equipment for Demonstration Farms and research activities for efficient water-saving irrigation Equipment for measurement Equipment for training and extension activities Vehicles Others (according to the requirement) 3. Local costs 1) Seminar etc. 4. Training 1) Training in Japan 2) Training in the third countries	1. Personnel Counterpart personnel of the Phase I Project, in general. In addition, new personnel will be added as counterparts from the implementation agencies. 2. Facilities 1) Office space Main Office within the building in ANRR, GCSAR. Local Project Office within the concerned offices in the related Governorates. 2) Equipment Satellite Plots in Rural Damascus, Daraa and Hama, for the demonstration activities of the efficient water-saving irrigation. Telephone line and telephone for each Project Office. Necessary furniture in the Project Office. 3) Vehicles Three project cars which were procured by JICA for the implementation of the Phase I Project. 3. Local Costs Available for stationary, supplies and small equipment for project activities (including a part of cost for seminars etc.)	**[Pre-conditions]** Relevant extensionists take part in the project activities

Annex 5 Equipment provided by JICA

Note: R/P: Route of Procurement (J: From Japan, L: Local, E: With Expert)
Frequency of Use (A: Always, B: Often, C: Sometimes)
Condition (A: Good, B: Fair, C: Bad)

No.	Date of Arrival	Description			R/P	Quantity	Unit Price	Sub-total	Place of Storage	Frequency of Use	Condition	Remarks
		Item	Manufacture	Model Number/ Specification								
1	Jan. 2010	Pick up track	Mitsubishi	L200	L	3	US$21,500	US$64,500	GCSAR	A	A	
2	Jan. 2010	4WD	Mitsubishi	PAJERO GLS3.2L	L	1	US$29,500	US$29,500	GCSAR	A	A	
3	Jan. 2009	Copy machine	Canon	Copier IR 2230	L	2		¥721,069	Project office	A	A	
4	Feb. 2009	Fax machine	Panasonic	KX-FL402	L	2		¥83,984	Project office	A	A	
5	Dec. 2009	Irrigation equipment for demonstration farms	Mais (Syria)	composing of many parts of irrigation equipment	L	1		¥10,048,500	Demonstration Farms	A	A	
6	Sep. 2010	Laser levelling equipment (without tractor)	Leica	420GD	L	1	US$70,000	US$70,000	Irrigation Staion (ANRR)	C	A	
7	Sep. 2010	Laser levelling equipment (with tractor)	Leica (Lazar eq.) New Holland (Tractor)	420GD (Lazar eq.) TS-6020 (Tractor)	L	1	US$123,800	US$123,800	Irrigation Staion (ANRR)	C	A	
8	Jul. 2009	Projector/ OHP	Acer	2,000 lumen	L	3		¥220,720	Project office	B	A	
9	Jul. 2009	Screen	Acer	2m x 2m	L	3		¥131,859	Project office	B	A	
10	Jul. 2009 Feb. 2010	Digital camera	Olympus	3 million pixel	L	26		¥287,797	C/Ps	B	B	
11	Jul.2009	Digital Video Camera	Panasonic	HDD	L	3		¥180,809	Project office	B	A	
12	Feb. 2009	Computer (desktop type)	Acer	Windows, Microsoft Office	L	5		¥831,244	Project office	A	A	
13	Mar. 2009	Laser Printer	Canon	A4 paper	L	3		¥94,039	Project office	A	A	
14	Mar. 2009	Inkjet Printer	Hewlett-Packard	A3 paper, Color	L	3		¥84,811	Project office	A	A	
15	Mar. 2009	Inkjet Printer	Canon	A4 paper, Color	L	3		¥99,440	Project office	A	A	
16	Mar. 2009	Flow meter	Fuji electric	for conduit (Ultrasound type)	E	2		¥1,986,000	Project office	C	A	
17	Dec. 2008	Flow meter	Climatec	for open channel (low velocity of flow)	E	1		¥150,000	Project office	C	A	
18	Dec. 2008	Flow meter	Climatec	for open channel (high velocity of flow)	E	1		¥160,000	Project office	C	A	
							Total (US$ portion):	US$287,800				
							Total (Yen portion):	¥15,030,352				

Annex 4 Training in Japan and third countries

(1) Training in Japan

No.	Name	Position and organization	Name of Training Course	Period
1	Mr. Mhammad Bahari	Engineer of Extension Directorate (Damascus)	Study on agricultural extension and training by the central government, prefectural government and local government including training on PDM workshop and Coaching Presentation methods.	From Oct. 3 to Nov.1, 2009
2	Mr. Rateb Raja	Training Officer of Rurla Damascus Agr. Directorate		
3	Mr. Mahmmad Shahadat	Chief of Extension, Daraa Agr. Directorate		
4	Mr. Hikmat Jarah	Extension Officer of Hama Agr. Directorate		
5	Mr. Mazen Doughot	Engineer of ANRR	Filed visit to major irrigation schemes in Japan and manufactures of irrigation equipment. Also included methods on PDM workshop and coaching presentation.	From Sep. 24 to Oct. 25, 2010
6	Ms. Hanan Moselkh	Engineer of ANRR		
7	Mr. Husam Qattan	Engineer of DMIC		
8	Mr. Abed Al-Ghani	Engineer of ANRR, Aleppo		
9	Mr. Ahmad Hafez	Engineer of ANRR, Aleppo		
10	Mr. Othman Al-Ali	Head of DMIC, Raqqa		
11	Mr. Ahammad Al-Kadri	Director of DMIC, MAAR	Learn management of irrigation schemes, training, extension activities in Japan through field visit to major irrigation schemes (Kasumigaura and Toyokawa yosui) and agricultural research stations.	From Oct. 2 to Oct. 10, 2010
12	Mr. Mahamod Al-Taba	Director, Training Center, Training Directorate		

(2) Training in third countries

No.	Name	Position and organization	Name of Training Course	Period
1	Mr. Bassam AlHusein	Irrigation Engineer of ANRR, GCSAR	Study visit to Tunisia on modernized irrigation management and water resource management	From Jul. 31 to Aug. 8, 2009
2	Mr. Samer AlAhmad	Irrigation Engineer of ANRR, GCSAR		
3	Mr. Ahmad Zeita	Chief of CWR section, ANRR, GCSAR		
4	Mr. Abdulhamid AlChara	Deputy Director of DMIC		
5	Mr. Najib Hassoun	Head of DMIC, Rural Damascus		
6	Mr. Ahmad Zoukil	Head of DMIC, Hama		
7	Mr. Mahmoud AlShahadat	DMIC, ANNR		
8	Mr. Bassan Al Husein	Engineer of ANRR	Study visit to Egypt on modernized irrigation under management of farmers' organization and field visit to JICA cooperated project area.	From Oct. 29 to Nov. 5, 2010
9	Mr. Abed Al Slam Hosein	Engineer of ANRR		
10	Mr. Trad Dandal	Head of Irrigation Research Station, Aleppo		
11	Mr. Salm Al Hasan	Head of Irrigation Research Station, Raqqa		
12	Mr. Mohammad Jazar	Head of Irrigation Research Station, Hama		
13	Mr. Fadi Abo Rokba	Head of Irrigation Research Station, Daraa		

Annex 7 Assignment of Syrian Counterparts

No.	Name of Counterpart	Field for the Project	Present Post / Post at assignment time	Working Place	Period of Assignment From	To	2008 2009 2010 2011 2012
1	Dr. Walid Tawil	Project Director	Director General of GCSAR, MAAR	Damascus	Dec. 2008	Present	
2	Dr. Awadis Arslan	Project Manager	Director of ANRR, GCSAR	Damascus	Dec. 2008	Present	
3	Dr. Mohammad Abdallah	Project Manager	Director of Extension, MAAR	Damascus	Dec. 2008	Present	
4	Mr. Ahmad Al-Qadri	Project Manager	Director of DMIC, MAAR	Damascus	Dec. 2008	Present	
5	Mr. Bassam Al-Husein	Project Coordinator	Engineer of ANRR	Damascus	Dec. 2008	Present	
6	Mr. Samer Al-Ahmad		Engineer of ANRR	Damascus	Dec. 2008	Present	
7	Mr. Naser Koki		Engineer of ANRR	Damascus	Dec. 2008	Present	
8	Ms. Rehaf Shekko		Engineer of ANRR	Damascus	Dec. 2008	Present	
9	Ms. Hanan Mosalkh		Engineer of ANRR	Damascus	Dec. 2008	Present	
10	Mr. Mazen Doughot		Engineer of ANRR	Damascus	Dec. 2008	Present	
11	Mr. Abed Al-Salam Hosen		Engineer of ANRR	Damascus	Dec. 2008	Present	
12	Mr. Mahmmod Taba		Director, Sabra Training Center, Training Directorate	Damascus	Dec. 2008	Present	
13	Mr. Ziad Zahra		Engineer of Training Directorate	Damascus	Dec. 2008	Present	
14	Mr. Mohammad Behry		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
15	Mr. Hasan Al-Reshy		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
16	Ms. Najwa Diab		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
17	Mr. Samer Al-Qadi		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
18	Mr. Salah Olhman		Engineer of Extension Directorate	Damascus	Dec. 2008	Present	
19	Mr. Abed Al-Hamed Al-Sharaa		Deputy Director of DMIC	Damascus	Dec. 2008	Present	
20	Ms. Saher Toban		Engineer of DMIC	Damascus	Dec. 2008	Present	
21	Mr. Husam Qattan		Engineer of DMIC	Damascus	Jan. 2010	Present	
22	Dr. Abd Al-Naser Omar		Director of Agricultural Research Center, Hama	Hama	Dec. 2008	Present	
23	Mr. Yeser Al Mohammad		Engineer of Agricultural Research Center, Hama	Hama	Dec. 2008	Present	
24	Mr. Mohammad Jazar		Head of Irrigation Research Station, Hama	Hama	Dec. 2008	Present	
25	Mr. Bassam Al-Bunni		Director of Human Resource Division, Hama Agricultural Directorate	Hama	Dec. 2008	Present	
26	Mr. Husam Obaysi		Extension Officer of Hama Agr. Directorate	Hama	Dec. 2008	Present	
27	Mr. Adnan Khder		Training Officer of Hama Agr. Directorate	Hama	Dec. 2008	Present	
28	Mr. Mohammad Kreim		Head of DMIC, Hama	Hama	Dec. 2008	Jun.2010	
29	Mr. Khudr Hamoud		Engineer of DMIC, Hama	Hama	Dec. 2008	Present	

Annex 6 Local Operation Cost Allocated by Japanese Side

Unit: Japanese Yen

No.	Category	JFY.2008	JFY.2009	JFY.2010 (first semester)	JFY.2010 (second semester)	JFY.2011	JFY.2012	Total
1	Travel expenses	9,314,000	23,269,000	16,486,000				49,069,000
2	Expenses for general administration	3,241,000	7,434,000	6,523,000				17,198,000
3	Procurement of equipment	4,380,000	11,880,000	0				16,260,000
4	Printing	150,000	2,000	0				152,000
	Total	17,085,000	42,585,000	23,009,000				82,679,000

Remark: JFY: Japanese Fiscal Year from April to March

Data of JFY 2008 and JFY 2009 is amount used. Data of JFY (first semester) is planned amount.

Annex 8 Project Operation Cost Allocated by Syrian Side

Unit: Syrian Pound (SYP)

Year	Amount (SYP)	Breakdown	Remarks
FY.2008 (Dec.)	100,000		Budget prepraed for the Project
FY.2009 (Jan.-Dec.)	730,000	400,000	Expenses for electricity, maintenance of vehicles, travel expenses, etc.
		180,000	Expenses for training activities (at governorates)
		150,000	Expenses for extension ativitles (at governorates)
FY.2010 (Jan.-)	100,000		Expenses for electricity, maintenance of vehicles, travel expenses, etc.
FY.2011	-		
FY.2012	-		
Total	930,000		

No.	Name of Counterpart	Field for the Project	Present Post / Post at assignment time	Working Place	Period of Assignment From	To	2008	2009	2010	2011	2012
30	Mr. Ayman Hijazi		Head of Irrigation Research Station, Rural Damascus	Rural Damascus	Dec. 2008	Present					
31	Mr. Marwan Shikh Fatoh		Chief of Extension, Rural Damascus Agr. Directorate	Rural Damascus	Dec. 2008	Present					
32	Mr. Zahr Al-Abdallah		Extension Officer of Rurla Damascus Agr. Directorate	Rural Damascus	Dec. 2008	Present					
33	Mr. Rateb Rajah		Training Officer of Rurla Damascus Agr. Directorate	Rural Damascus	Dec. 2008	Present					
34	Mr. Najeeb Hason		Head of DMIC, Rural Damascus	Rural Damascus	Dec. 2008	Present					
35	Mr. Deab Al-Hanash		Engineer of DMIC, Rural Damascus	Rural Damascus	Dec. 2008	Present					
36	Mr. Husein Kottuma		Director Agr. Research Center, Daraa	Daraa	Dec. 2008	Present					
37	Mr. Mohammad Al-Hayak		Engineer of Irrigation Research Station, Daraa	Daraa	Dec. 2008	Present					
38	Mr. Fabl Abo Rokba		Head of Irrigation Research Station, Daraa	Daraa	Dec. 2008	Present					
39	Mr. Mohammad Shahadat		Chief of Extension, Daraa Agr. Directorate	Daraa	Dec. 2008	Present					
40	Mr. Husein Shinwan		Extension Officer of Daraa Agr. Directorate	Daraa	Dec. 2008	Present					
41	Mr. Mahmmod Al-Namah		Chief of Training, Daraa Agr. Directorate	Daraa	Dec. 2008	Present					
42	Mr. Mahmmod Shahadat		Head of DMIC, Daraa	Daraa	Dec. 2008	Present					
43	Mr. Adham Abo Jlash		Engineer of DMIC, Daraa	Daraa	Dec. 2008	Present					
44	Dr. Bader Jalab		Director Agr. Research Center, Aleppo	Aleppo	Dec. 2008	Present					
45	Mr. Abed Al-Ghani Al-Khaldi		Engineer of ANRR, Aleppo	Aleppo	Dec. 2008	Present					
46	Mr. Trad Dandal		Head of Irrigation Research Station, Aleppo	Aleppo	Dec. 2008	Present					
47	Mr. Mohammad Al-Kahel		Engineer of ANRR, Aleppo	Aleppo	Dec. 2008	Present					
48	Mr. Ghassan Zlada		Director of Human Resource Division, Aleppo Agr. Directorate	Aleppo	Dec. 2008	Present					
49	Mr. Ibraheem Bridy		Extension Officer of Aleppo Agr. Directorate	Aleppo	Dec. 2008	Present					
50	Mr. Ahmmad Al-Hamdan		Chief of Training, Aleppo Agr. Directorate	Aleppo	Dec. 2008	Present					
51	Mr. Hammid Falah		Head of DMIC, Aleppo	Aleppo	Dec. 2008	Sep.2010					
52	Mr. Saheeb Brijawi		Engineer of DMIC, Aleppo	Aleppo	Dec. 2008	Present					
53	Mr. Mahmmod Al-Naif		Director Agr. Research Center, Raqqa	Raqqa	Dec. 2008	Present					
54	Mr. Omar Naser		Engineer of Agr. Research Center, Raqqa	Raqqa	Dec. 2008	Present					
55	Mr. Salm Al-Hasan		Head of Irrigation Research Station, Raqqa	Raqqa	Dec. 2008	Present					
56	Mr. Salah Al-Shably		Chief of Extension, Raqqa Agr. Directorate	Raqqa	Dec. 2008	Present					
57	Mr. Amar Khder		Extension Officer of Raqqa Agr. Directorate	Raqqa	Dec. 2008	Present					
58	Ms. Mnoar Tlar		Engineer of DMIC, Raqqa	Raqqa	Dec. 2008	Present					
59	Mr. Othman Al-Ali		Head of DMIC, Raqqa	Raqqa	Dec. 2008	Present					
60	Mr. Abed Al-Hamud Al-Shadid		Engineer of DMIC, Raqqa	Raqqa	Dec. 2008	Present					

Annex 10 Proposed Revised PDM (Version 3)

Project Title : Project on Development of Efficient Irrigation Techniques and Extension Phase II (DEITEX II)
Target Area : Rural Damascus, Daraa, Hama, Aleppo and Raqqa Governorates
Target Group :
Direct Beneficiaries : Staff of MAAR (GCSAR, DMIC, DAE, DTQ), Extensionists to be trained and Irrigated Farmers serviced by the Extensionists
Indirect Beneficiaries : Irrigated Farmers and inhabitants in the Target areas
Duration : from December 2008 to June 2012 (3.5years) Proposed Revision: December 2, 2010 (Version 3)

Narrative Summary	Verifiable Indicator	Means of Verification	Important Assumption
[Overall Goal] Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.	1) Total amount of irrigation water per unit area decreases more than 10% without yield decrease in Target Area by the end of 2017. 2) More than 50% of total farmers in the other governorates in Syria also recognize the importance and the necessity of water-saving in irrigation.	1) Annual Agricultural Statistics of Syria and data on irrigation water amount estimated by MAAR 2) Survey on relevant agencies/interviews to farmers	・Available amount of water resources for irrigation purpose dose not reduce. ・Irrigated land is not expanded by illegal water source development.
[Project Purpose] The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.	1) The usage of irrigated water for the crops in the Project Sites is reduced by the Project (10 -20%). 2) The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved (number of certified extentionists become more than 40% to the required number of water extensionists).	1) Results of baseline survey and impact survey (interview to farmers) 2) Record of the Project	・Farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Target Areas can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.
[Outputs] (1) Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates.	(1)-1: Amount of irrigation water used for each crop in the Demonstration Farms in Aleppo and Raqqa Governorates are reduced by 10 -15%. (1)-2: The number of farmers adopting water-saving irrigation technique in the Project Sites in Aleppo and Raqqa Governorates increased by 80 – 100%. (1)-3: The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates is more than 10 times a year. (1)-4: Quality of extension activities by the trained extensionists is at a suitable level.	(1)-1: Field measurement at the demonstration farms and results of baseline survey (1)-2: Collected data from relevant extension units, results of impact survey (interviews to farmers), and number of farmers who received DMIC's loan (1)-3: Data of Directorate of Agriculture in Aleppo and Raqqa governorates (1)-4: Impact survey (interview to farmers)	・There is no major change in the working environment of extensionists, at least, farming environment in the Target Areas is not deteriorated unexpectedly. ・Farmers in the Project Sites can establish and operate water-saving irrigation system easily as required in terms of quality and quantity.
(2) The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Dara Governorates.	(2)-1: The difficulties after the phase I Project are clarified and the countermeasures are established (more than 5 cases). (2)-2: Number of irrigation farmers in the Project Sites adapting modern irrigation technique increases by 30 – 40%. (2)-3: The frequency of regular extension activities implemented by the concerned organizations in Rural Damascus, Hama and Daraa Governorates increases by 25%	(2)-1: Record of the Project (2)-2: Collected data from relevant extension units, results of Impact survey (interviews to farmers), and number of farmers who received DMIC's loan (2)-3: Collected data from Directorates of Agriculture of Daraa, Hama and Rural Damascus governorates	
(3) Measures to improve and operate water-saving irrigation techniques are extended to the rest of Syria and to neighboring countries, through the cooperation with universities and international research organizations in Syria.	(3)-1: Cooperated activities on dissemination of measures to improve and operate water-saving irrigation techniques are increased.	(3)-1: Records of the Project	

Annex 9 Provision equipment by Syrian side

Year	Contents	Remarks
2008	3 units of vehicles (4WD including drivers)	These vehicles were donated under the phase 1 project.
2009	3 units of vehicles (4WD including drivers)	These vehicles were donated under the phase 1 project. (1 Unit of 4WD ad 3 units of pick up track were provided under the Phse 2 project)
2010	3 units of vehicles (4WD including drivers) Pick up track (including driver) is used around Damascus and also for transport goods to Aleppo and Raqqa.	1 Unit of 4WD (which provided under the phase 1 project) is replaced with newly provided 4WD due to heavily damaged. Pick up tracks were provided to GCSAR (Damascus), Aleppo (Irrigation Reserch Center), and Raqqa (Irrigation Research Center).
2011	-	-
2012	-	-

Annex 11 Data on the training courses conducted in 2009 and 2010

1. Training courses conducted in 2009

(1) Aleppo / Raqqa

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Field survey and methods for identifying problems	5	24-28/ May	GCSAR/ Extension	Agricultural directorate	22	Engineers
2	Designing & Installing irrigation nets	5	28/June - 2/July	GCSAR/ Extension	Agricultural directorate	22	Engineers
3	Preparing extension material	5	9-13/ August	GCSAR/ Extension	Agricultural directorate	22	Engineers
4	Organizing field day	5	15-19/ November	GCSAR/ Extension	Agricultural directorate	22	Engineers

(2) Daraa

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Field survey and methods for identifying problems	5	7-11/ June	Extension division	Agricultural directorate	15	Technicians
2	Designing irrigation nets	5	23-27/ August	Extension division	Agricultural directorate	15	Technicians
3	Preparing extension material	5	27/Sep - 1/October	Extension division	Agricultural directorate	15	Technicians
4	Organizing field day	5	15-19/ November	Extension division	Agricultural directorate	15	Technicians

(3) Hama

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Field survey and methods for identifying problems	5	15 –19 March	Extension division	Human resource hall	14	Agr/ engineers
2	Designing irrigation nets	5	26-30 April	Extension division	Human resource hall	14	Agr/ engineers
3	Maintenance of irrigation nets	5	19-23 July	Extension division	Human resource hall	14	Agr/ engineers
4	Preparing extension material	5	16-20 August	Extension division	Human resource hall	14	Agr/ engineers
5	Organizing field day	5	8-12 November	Extension division	Human resource hall	14	Agr/ engineers

(4) Rural Damascus

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Field survey and methods for identifying problems	5	14-18/ June	Extension division	Agricultural directorate	12	Engineers
2	Designing irrigation nets	5	28/ June - 2/ July	Extension division	Agricultural directorate	12	Engineers
3	Maintenance of Irrigation Net	5	12-16/ July	Extension division	Agricultural directorate	12	Engineers
4	Preparing extension material	5	26-30/ July	Extension division	Agricultural directorate	12	Engineers
5	Organizing field day	5	16-20/ August	Extension division	Agricultural directorate	12	Engineers

(5) SMS (Subject Matter Specialist) / TOT (Training of Trainers)

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	SMS Training Course	10	19 - 30 / July	GCSAR/ Extension	GCSAR/ Douma	19	Water Extensionist
2	TOT Training Course	10	6 - 17 / Dec	GCSAR/ Extension	Sabboura Trainig Center	21	Water Extensionist

Activities

(1)-1 Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas.
(1)-2 Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas.
(1)-3 Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above.
(1)-4 Select suitable Project Sites in the Target Areas, and establish the demonstration farms selected within the Project Sites as required.
(1)-5 **<Small Scale Pressurized Irrigation>**
(1)-5-1 Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4.
(1)-5-2 Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas.
(1)-5-3 Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies.
(1)-5-4 Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3.
(1)-5-5 Support extension activities to be done by the trained extensionists in line with the extension plan above.
(1)-6 **<Surface Irrigation>**
(1)-6-1Advance efficient surface irrigation technique and its related technology for water-saving.
(1)-6-2 Prepare a plan of training activities and training tools in accordance with the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6.
(1)-6-3 Prepare the technical guideline and materials on surface irrigation technique.
(1)-6-4 Implement the training courses on water- saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-6-2.
(1)-6-5 Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6.
(1)-6-6 Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3.
(1)-6-7 Support extension activities to be done by the trained extensionists in line with the extension plan above.

(2)-1 Hold regular meetings on promotion of water-saving irrigation among the related agencies.
(2)-2 Conduct a baseline survey in the districts excluding the concerned districts which were covered by the Phase I Project.
(2)-3 Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas.
(2)-4 Establish satellite plots in the districts excluding the concerned districts which were covered by the Phase I Project on the basis of the outcomes of item (2)-2 and (2)-3.
(2)-5 Implement the training activities in line with the extension plan of item (2)-6.
(2)-6 Revise the plan of extension for "modern irrigation promotion" prepared during Phase I Project.
(2)-7 Improve extension tools and methods.
(2)-8 Support extension activities to be done by the trained extensionists in line with the extension plan above.

(3)-1 Study on the collaboration with universities and international research organizations in Syria, regarding water-saving irrigation techniques.
(3)-2 Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the project purpose.
(3)-3 Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1 and (3)-2.
(3)-4 Accept trainees of the training courses arranged by other organizations.
(3)-5 Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.

Input

<Japan>
1. Personnel
(1) Long-Term Experts: 3 persons
*Project Leader/Irrigation
*Training
*Extension

(2) Short-Term Experts
Rural Community
Irrigation Facilities
Farm Management
Others (according to the requirement)

2. Equipment
Laser Leveling Units
Equipment for Demonstration Farms and research activities for efficient water-saving irrigation
Equipment for measurement
Equipment for training and extension activities
Vehicles
Others (according to the requirement)

3. Local costs
1) Seminar etc.

4. Training
1) Training in Japan
2) Training in the third countries

<Syria>
1. Personnel
Counterpart personnel of the Phase I Project, in general.
In addition, new personnel will be added as counterparts from the implementation agencies.

2. Facilities
1) Office space
Main Office within the building in ANRR, GCSAR.
Local Project Office within the concerned offices in the related Governorates.

2) Equipment
Satellite Plots in Rural Damascus, Daraa and Hama, for the demonstration activities of the efficient water-saving irrigation.
Telephone line and telephone for each Project Office
Necessary furniture in the Project Office.

3) Vehicles
Three project cars which were procured by JICA for the implementation of the Phase I Project

3. Local Costs
Available for stationary, supplies and small equipment for project activities (including a part of cost for seminars etc.)

[Pre-conditions]

Relevant extensionists take part in the project activities

2. Training courses conducted in 2010

(1) Aleppo / Raqqa

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Field survey and methods for identifying problems	5	23-27/ May	GCSAR/ Extension	Agricultural directorate	22	Engineers
2	Designing & Installing irrigation nets	5	13-17 /June	GCSAR/ Extension	Agricultural directorate	22	Engineers
3	Preparing extension material	5	18-22/ July	GCSAR/ Extension	Agricultural directorate	22	Engineers
4	Organizing field day	5	31 /Oct- 4 /Nov	GCSAR/ Extension	Agricultural directorate	22	Engineers

(2) Daraa

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Field survey and methods for identifying problems	5	20-24/ June	Extension division	Agricultural directorate	15	Technicians
2	Designing irrigation nets	5	11-15/ July	Extension division	Agricultural directorate	15	Technicians
3	Preparing extension material	5	27/Sep - 1/October	Extension division	Agricultural directorate	15	Technicians
4	Organizing field day	5	31 /Oct -4/ Nov	Extension division	Agricultural directorate	15	Technicians

(3) Hama

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Field survey and methods for identifying problems	5	28/ Feb – 4/ Mar	Extension division	Human resource hall	12	Agr/ engineers
2	Designing irrigation nets	5	9-13/ May	Extension division	Human resource hall	12	Agr/ engineers
3	Maintenance of irrigation nets	5	11-15/ July	Extension division	Human resource hall	12	Agr/ engineers
4	Preparing extension material	5	26-30/ Sep	Extension division	Human resource hall	12	Agr/ engineers
5	Organizing field day	5	28/ Nov -2/ Dec	Extension division	Human resource hall	12	Agr/ engineers

(4) Rural Damascus

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Field survey and methods for identifying problems	5	23-27/ May	Extension division	Agricultural directorate	14	Engineers
2	Designing irrigation nets	5	6-10/ June	Extension division	Agricultural directorate	14	Engineers
3	Maintenance of Irrigation Net	5	20-24/ June	Extension division	Agricultural directorate	14	Engineers
4	Preparing extension material	5	11-15/ July	Extension division	Agricultural directorate	14	Engineers
5	Organizing field day	5	1-5/ August	Extension division	Agricultural directorate	14	Engineers

(5) Training Course on Improved Surface Irrigation

No.	Course subject	Duration (days)	Date	Executing part	Location	Number of trainees	Targeted category
1	Improved Surface Irrigation	5	27 / June - 1 / July	GCSAR/ Extension	Raqqa Agricultural directorate	18	Water extensionists in Aleppo & Raqqa

(6) Follow up Training Course

a) Method of use of water measuring kit, irrigation calendar, irrigation notebook (one day course)

No.	Date	Location	Number of trainees	Targeted category
1	7/ June	Aleppo	5	Water extensionist of the model extension unit and water extensionists of surrounding extension units
2	21/ June	Daraa	4	Water extensionist of the model extension unit and SMSs of support units
3	30/ June	Hama	6	Water extensionist of the model extension unit and SMSs of support units
4	6/ July	Rural Damascus	4	Water extensionist of the model extension unit and SMSs of support units

b) Training on video editing for producing extension materials

No.	Date	Number of trainees	Targeted category
1	9-11, November	16	Water extensionists and SMSs who interested in video editing techniques during past extension activities, and staffs of DMIC of Daraa, Hama and Rural Damascus governorates

MINUTES OF MEETING ON

THE STEERING COMMITTEE FOR

THE TERMINAL EVALUATION ON

THE PROJECT ON DEVELOPMENT OF EFFICIENT IRRIGATION TECHNIQUES AND EXTENSION PHASE II IN SYRIA

The Japanese Terminal Evaluation Team, organized by Japan International Cooperation Agency (hereinafter referred to as "JICA") conducted Terminal Evaluation on the Project on Development of Efficient Irrigation Techniques and Extension Phase II (hereinafter referred to as "the Project") jointly with the personnel concerned of Syrian Arab Republic (hereinafter referred to as "Syria") from February 29th to March 19th, 2012.

The Joint Evaluation Team (hereinafter referred to as "the Team"), which consists of 4 members of JICA and 4 members from Syria, jointly worked for the Terminal Evaluation and preparation of nccessary recommendations to the respective governments.

After intensive study, analysis, discussions of the activities and achievements of the Project, the Team prepared the Join Terminal Evaluation Report (hereinafter referred to as "the Report"), which was presented to the Steering Committee for the Project (hereinafter referred to as "the Committee").

The Committee discussed the major issues pointed out in the Report, and agreed to recommend to the respective governments the matters hereto.

Amman, Damascus and Tokyo,

March 19, 2012

武藤亜子

Ms. Ako MUTO

Acting Chief Representative,

Japan International Cooperation AgencySyria Office

AL-Salty M.N.

Dr. Mohammad Naif Al Salty

Director General,

General Commission for Scientific Agricultural Research,

Ministry of Agriculture and Agrarian Reform

Main points of discussion agreed at the Committee

1. The Team presented the Report to the Committee.

2. The Committee accepted the Report and took notes of the recommendations by the Team.

3. The Committee confirmed the significance of the continuous activities of Syrian C/P Team after the project ends that includes a series of the meetings to be held by parties concerned of Syria based on the fruit of the project and the support of JICA Syria Office to it.

4. Syria committee members emphasized the following points and Japanese committee members agreed to them as the subjects to be considered in the future.

1) Emphasizing on the development of Syrian rural community with a focus on modern irrigation techniques

2) Forming a nationally integrated training team in many fields including extension and technical studies.

3) Emphasizing on training for women on the management of modern irrigation techniques

4) Organizing advanced training activities to follow up the updated irrigation technology and science.

5) Organizing awareness campaigns on forming water users associations and disseminating this type of organizations nationwide through training and extension activities for the targeted communities.

The committee highly appreciates the efforts of the leader of Japanese expert team, the Syrian coordinator, the counterparts, Japanese experts who made great efforts in executing the matrix of the project properly. The committee extends its appreciation to JICA Syria office and JICA headquarters for their efforts in supporting the cooperation between Syria and Japan.

4. Attachment:

1)Joint Terminal Evaluation Report

2) Participants list

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JOINT TERMINAL EVALUATION REPORT

OF THE PROJECT ON DEVELOPMENT OF EFFICIENT IRRIGATION TECHNIQUES AND EXTENSION PHASE II (DEITEXII) IN SYRIA

Tokyo and Damascus, March 19th, 2012

Mr. Masayuki Takahashi Leader, Japanese Terminal Evaluation Team, Japan International Cooperation Agency, Japan	Dr. Mohammad Naif Al Salty Leader, Syrian Terminal Evaluation Team, Ministry of Agriculture and Agrarian Reform, Syrian Arab Republic

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1. Introduction

1-1 Objectives of Terminal Evaluation

(1) To review the performance and achievements of the Project comparing to its plan especially shown after the Mid-term Review in December, 2010.

(2) To discuss on necessary actions to be taken in the remaining period and after the Project is over and to exchange opinions with the Syrian authorities concerned through Video Conference.

(3) To make necessary comments and advice on the future plan of activities based on the results of the review taking the current situation in Syria into the consideration.

(4) To formulate a Joint Evaluation Report with Syrian authorities concerned based on the result of the items above, and participate in Steering Committee in order to present and discuss the result of evaluation through Video Conference and to exchange the Minutes of Meeting.

1-2 Member of Joint Terminal Evaluation Team

1-2-1 Japanese Terminal Evaluation Team

No.	Field	Name	Present Occupation
1	Leader	Mr. Masayuki Takahashi	Director, Field Crop Based Farming Division 2, Rural Development Department, JICA
2	Irrigation Agriculture	Dr. Hideyuki Kanamori	Senior Advisor (Operation and Management of Irrigation Systems), JICA
3	Evaluation and Analysis	Dr. Yoshihito Kashiwazaki	Consultant, A & M Consultant Co., Ltd.
4	Cooperation Planning	Ms. Yuka Asakawa	Program Officer, Field Crop Based Farming Division 2, Rural Development Department, JICA

1-2-2 Syrian Terminal Evaluation Team

No.	Field	Name	Present Occupation
1	Leader	Dr. Mohammad Naif Al Salty	Director General, General Commission for Scientific Agricultural Research (GCSAR), Ministry of Agriculture and Agrarian Reform (MAAR)
2	Team Member	Dr. Awadis Arslan	Deputy Director General, GCSAR, MAAR
3	Team Member	Mr. Haitham Al-Ashkar	Deputy Director, National Agricultural Policy Center (NAPC), MAAR
4	Team Member	Dr. Bachar Ibrahim	Head of Rural Engineering Division, Damascus University

1-3 Schedule of Terminal Evaluation

The Terminal Evaluation was conducted under the condition in which entrance of foreigners into Syria is restricted because of the deterioration of the security situation in Syria. Therefore, Japanese Evaluation

Team was not dispatched to Syria but worked in Japan. Joint Evaluation Team started working for this Terminal Evaluation during the last week of February and the Terminal Evaluation was concluded at the Steering Committee held on the 19th of March, 2012. Meetings held during the Terminal Evaluation are as follows;

1) February 29th, 2012 The pre-1st meeting (a video conference)
2) March 6th, 2012 The 1st Joint Evaluation Committee (a video conference)
3) March 14th, 2012 The 2nd Joint Evaluation Committee (a video conference)
4) March 19th, 2012 Steering Committee (a video conference)

1-4 Methodology of Terminal Evaluation

1-4-1 Method of evaluation

The Project was evaluated jointly by the Syrian and Japanese Terminal Evaluation Teams (hereinafter referred to as "the Team") based on materials showing the framework of the Project such as the Project Design Matrix (PDM) and the Record of Discussion (R/D). The evaluation activities were composed of the analysis on reports and the collection of information by interviews with counter personnel of the Project and JICA experts and questionnaire distributed to counter personnel.

As for the criteria of the Terminal Evaluation, the following Five Evaluation Criteria was applied.

1-4-2 Evaluation Criteria (Five Evaluation Criteria)

(1) Relevance

Relevance refers to the validity of the Project Purpose and the Overall Goal in connection with the development policy of the Government of Syria as well as the needs of beneficiaries.

(2) Effectiveness

Effectiveness refers to the extent to which the expected benefits of the Project have been achieved as planned. It also examines whether these benefits have been brought about as a result of the Project.

(3) Efficiency

Efficiency refers to the productivity of the implementation process. It examines whether the inputs of the Project have been efficiently converted into outputs.

(4) Impact

Impact refers to direct and indirect, positive and negative impacts caused by the implementation of the Project, including the extent to which the overall goal has been attained.

(5) Sustainability

Sustainability refers to the extent to which the Project can be further developed by the Government of Syria, and the extent to which the benefits generated by the Project can be sustained under national policies, technology, systems and financial state.

2. Outline of the Project

2-1 Background of the Project

Agriculture is one of the important economic sectors in Syria which provides nearly 25% of gross domestic product (GDP). Agriculture is also important for Syria as a source of employment and export earnings. Rainfed agriculture is still prevailing in Syria, which covers more than 75% of the total cultivated area but irrigated agriculture is regarded more preferable in terms of the crop production, because of the uncertainty and the fluctuation of rainfed agriculture production. However, irrigated agriculture consumes water more than 90% of the total water use in Syria, hindering to provide water resource to other sectors such as industry and domestic water use. Therefore, the necessity and importance of water saving irrigation has been emphasized. The 10th Five Year National Development Plan (2006-2010) is one of the simplest examples showing such policy.

Based on the request of the Government of Syrian Arab Republic, the Project on Development of Efficient Irrigation Techniques and Extension was implemented as a Technical Cooperation Project of JICA from March 2005 for three years in order to accelerate the shift from the conventional water-consuming irrigation to the modern water-saving irrigation.
The project (phase 1)attained its project purpose with certain amount of reduction of water use with the same level of crop yield in the project sites in Rural Damascus, Daraa and Hama governorates. The Terminal Evaluation Study Team for this project suggested that the process accomplished by the efforts of the staff contributed to establishing simple but essential model of changing farmers' awareness of water saving in Syria, and pointed out that the expansion of the activities to other districts in Rural Damascus, Daraa and Hama governorates, furthermore, to other governorates are to be accomplished.

To address these issues, the Government of the Syrian Arab Republic requested Japan another technical cooperation project in order that proper amount of irrigation water is used through expanding the outcome of phase 1 project to the remaining areas in Rural Damascus, Daraa, and Hama governorates and new target area which is the governorates of Aleppo and Raqqa, improving surface irrigation techniques and cooperating with international research organizations. Syrian and Japanese sides agreed and signed on R/D of the project implementation of the phase 2 project and the Project started in December 2008.

2-2 Summary of the Project

Project Design Matrix for the Project was modified (version 3) in December 2010. Project summary described in PDM version 3 is as follows; (For more details, see Annex 1).

(1) Overall Goal

Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.

(2) Project Purpose

The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.

(3) Outputs

Output 1: Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates.

Output 2: The appropriate utilization of small scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Dara Governorates.

Output 3: Measures to improve and operate water-saving irrigation techniques are extended to the rest of Syria and to neighboring countries, through the cooperation with universities and international research organizations in Syria.

(4) Activities

(1)-1 Conduct a baseline survey reviewing the problems of irrigation practice in the Target Areas.
(1)-2 Clarify appropriate water-saving irrigation methods/appliances according to the situation of the Target Areas.
(1)-3 Prepare guideline and manuals based on the result of the item (1)-1 and (1)-2 mentioned above.
(1)-4 Select suitable Project Sites in the Target Areas, and establish the demonstration farms selected within the Project Sites as required.
(1)-5 **<Small Scale Pressurized Irrigation>**
(1)-5-1 Prepare a plan of training activities in accordance with the extension plan of the item (1)-5-4.
(1)-5-2 Revise the Technical Manual which were prepared by the Phase I Project according to the situation of the Target Areas.
(1)-5-3 Implement the training courses on small pressurized irrigation techniques in collaboration with related agencies.
(1)-5-4 Prepare the extension plan on the basis of the outcomes of item (1)-1 and (2)-3.
(1)-5-5 Support extension activities to be done by the trained extensionists in line with the extension plan above.
(1)-6 **<Surface Irrigation>**
(1)-6-1Advance efficient surface irrigation technique and its related technology for water-saving.
(1)-6-2 Prepare a plan of training activities and training tools in accordance with the training plan of the item (1)-5-1 and the extension plan of the item (1)-6-6.
(1)-6-3 Prepare the technical guideline and materials on surface irrigation technique.
(1)-6-4 Implement the training courses on water- saving surface irrigation techniques in collaboration with related agencies in accordance with the item (1)-6-2.
(1)-6-5 Prepare tools for extension activities in accordance with the extension plan of item (1)-6-6.
(1)-6-6 Prepare extension plan on the basis of the outcomes of item (1)-1, (1)-6-1 and (2)-3.
(1)-6-7 Support extension activities to be done by the trained extensionists in line with the extension plan above.

(2)-1 Hold regular meetings on promotion of water-saving irrigation among the related agencies.
(2)-2 Conduct a baseline survey in the districts excluding the concerned districts which were covered by the Phase 1 Project.
(2)-3 Review the current performance of Phase I Project including the problems of irrigation practice in the Target Areas.
(2)-4 Establish satellite plots in the districts excluding the concerned districts which were covered by the

Phase 1 Project on the basis of the outcomes of item (2)-2 and (2)-3.
(2)-5 Implement the training activities in line with the extension plan of item (2)-6.
(2)-6 Revise the plan of extension for "modern irrigation promotion" prepared during Phase I Project.
(2)-7 Improve extension tools and methods.
(2)-8 Support extension activities to be done by the trained extensionists in line with the extension plan above.

(3)-1 Study on the collaboration with universities and international research organizations in Syria, regarding water-saving irrigation techniques.
(3)-2 Hold workshops on water-saving irrigation techniques with universities and international research organizations as far as holding relation with attainment of the project purpose.
(3)-3 Promote public relations on water-saving irrigation technique on the basis of the outcomes of item (3)-1 and (3)-2.
(3)-4 Accept trainees of the training courses arranged by other organizations.
(3)-5 Participate in the international conference on efficient water-saving irrigation as far as holding relation with attainment of the project purpose.

3. Achievement of the Project

3-1 Inputs

3-1-1 Japanese side

(1) Dispatch of JICA experts

JICA experts were dispatched to the project site in the following fields: 1) Leader/ Irrigation, 2) Training/ Sub-leader, 3) Extension, 4) Socio-economy/ Farmers Organization, 5) Irrigation System Designing, and 6) Farming Management/ Coordinator. For details, see Annex 2.

(2) Training in Japan and third countries

By the time of the Terminal Evaluation, 19 counterparts participated in the training in Japan and 15 counterparts participated in the technical exchange or an international conference in third countries (Tunisia, Egypt and Iran). For details, see Annex 3.

(3) Provision of equipment

Equipments such as pick up tracks, 4WD vehicles, copy machines, fax machines, irrigation equipment for demonstration farms, laser leveling equipment and other office equipment have been provided for the project activities. The cost for the procurement of all the equipment is 15 million yen, which is equivalent to 287 thousand US dollars. For details, see Annex 4. All the equipment are maintained in good conditions and frequently utilized although the laser leveling equipment has not been used regularly.

(4) Local cost allocated by Japanese side

The local cost allocated by JICA for the implementation of the project activities is 94.0 million yen as of March 2012. For details, see Annex 5.

3-1-2 Syrian side

(1) Assignment of Syrian counterparts

Currently, 56 counterparts are assigned (20 persons of central level organizations, 6 persons from Hama Governorate, 6 persons from Rural Damascus Governorate, 8 persons from Daraa Governorate, 8 persons from Aleppo Governorate, and 8 persons from Raqqa Governorate). For details, see Annex 6.

(2) Project operation cost allocated by Syrian side

The amount of budget allocated by Syrian side is 2,770,000 Syrian Pound at the time of Terminal Evaluation. For details, see Annex 7.

(3) Provision of equipment

A total of 9 units of 4WD vehicle were provided from the Syrian side during the phase 1 project, of which one unit was replaced with a new vehicle as it was heavily damaged during the Project. A total of 5 units of 4WD vehicle and 5 units of pick-up truck were supplied from the Government of Syria. For details, see Annex 8.

3-2 Measures taken after the Mid-term Review

The following 5 recommendations (in a frame) were proposed through the Mid-term Review, of which the first three (1–3) were for the project team while the last two (4 and 5) for the Syrian side. The countermeasures and actions taken were described after the respective recommendations

(1) It is necessary to strengthen training on communication skills as a subject in the curriculum of the training course for water extensionist in order that trained water extensionits can deliver knowledge and skills more effectively to farmers. In this regard, it is necessary to consider farmer's mentality that differs by regions or areas. (for the project team)

Follow-up trainings were planned in order to strengthen the communication skills of the trained extensionists. The project team reckoned that the supply of practical information to farmers utilizing tools such as video must be effective for the better communication between the extensionists and farmers. Accordingly "Training on video editing for producing extension materials" was planned and implemented in November 2011. The 16 extensionists and SMSs participated and mastered the video editing techniques in a short time, however, were poor at the selection of the appropriate scenes and the creation of the scenario, which are essential for the extension activities attracting farmers' interests. This revealed that the poor communication between the extensionists and farmers resulted not from their poor narrative and bad talking attitude but the facts that the composition of the extension was not based on the farmers' view and that the information supplied was inconsistent. Accordingly, the project team imposed the participants to make a video after the training and held a competition in order to improve their ability.

(2) In order to disseminate the outcomes of the Project to other governorates in Syria, it is necessary to conduct a seminar/workshop by inviting persons concerned in these areas in collaboration with regional universities and research organizations. (for the project team)

The Project has been making efforts to spread the project outcomes to the areas outside the project target areas after the Mid-term Review. The trainings were held collaborating with the other donor projects such

as "Rural Development in the Northeastern Syria" Project (by IFAD) and "Rational Utilization of Resources" Project (by Italia). In addition the Project invited the related staff from the other governorates than the target five to the annual DEITEX seminars.

(3) In order to deliver the outcomes of the Project to neighboring countries, it is necessary to arrange participation to the third country training courses which conducted by ICARDA commissioned by JICA, etc., and make presentation on the project activities and outputs. (for the project team)

"JICA-ICARDA Water Sector Technical Training Aiming at Agricultural Water Productivity" was held in May 2011 and the C/Ps participated as instructor on planning and designing techniques of the modern irrigation system and also presented the introduction of the Project. A field observation of the project demonstration farm was carried out as well. In addition the C/Ps and experts participated in the 21st ICID (International Congress on the Irrigation and Draining) in October 2011 in order to present the outcomes of the Project, which provided a good opportunity to exchange with the researchers and experts of the field and became a very effective activity for public relations of the Project.

(4) There is very good collaborative relationship among organizations involved in the project activities at present. It is necessary to create certain coordination mechanism within the Ministry of Agriculture and Agrarian Reform in order to keep this situation and accelerate dissemination of water-saving irrigation techniques to other governorates in Syria after the completion of the Project. (for the Syrian side)

The relationships between the related organizations have been still close but any effort towards the establishment of "the coordination mechanism" hasn't been observed. However, after the foundation of a group-irrigation in Arne District by the Project, the Ministry of Irrigation has inaugurated several group-irrigation projects in collaboration with MARR and appears to be more cooperative than before. At the governorate level, the qualified water extensionists founded a council of their own for the purpose of mutual cooperation and combination. This could work as a coordinating institution and is a part of "the coordination mechanism" aiming at the promotion of water-saving irrigation.

(5) The project target areas are 5 governorates (Aleppo, Daraa, Hama, Raqqa and Rural Damascus). In order to disseminate the outcomes of the Project to other governorates in Syria and ensure sustainability of training structure and function of the Project, it is necessary to form a national training team to prepare training plan for water extensionist, extension plan for water-saving irrigation techniques, and budgetary plan for implementing these plans. (for the Syrian side)

"The National Training Team" hasn't been established yet. Nevertheless the C/Ps and the related organizations are highly motivated for the foundation of the team. Thus, it is considered to be effective to boost their efforts by the Project.

3-3 Outputs

3-3-1 Output 1: Proper water-saving irrigation technique is devised, and the new water-saving irrigation technique is disseminated in the Project Sites in Aleppo and Raqqa Governorates. And, the training and

extension system for the dissemination of the water-saving irrigation technique is established for the other areas in Aleppo and Raqqa Governorates.

The achievement levels of the following 4 indicators are more than expected in the most cases and it is expected that all the indicators for Output 1 will be achieved by the end of the Project as the activities progress further.

Indicator (1)-1: Amount of irrigation water used for each crop in the Demonstration Farms in Aleppo and Raqqa Governorates are reduced by 10–15%.

A demonstration farm was established in each project site in Aleppo and Raqqa Governorates. The following table shows the location, land area, irrigation methods, main crops, and water source of the demonstration farms.

Governorate	Site name (a)	Area	Irrigation method introduced	Main crops	Water source
Aleppo	Jine	7 ha	Movable type sprinkler, drip tube, improved surface irrigation (with gated pipe) (previous irrigation method was surface irrigation)	Wheat, cotton and sugar beet	Well (ground water)
Raqqa	Sukkarie	11 ha	Movable type sprinkler, drip tube, improved surface irrigation (with gated pipe) (previous irrigation method was surface irrigation)	Wheat, cotton and sugar beet	Well (ground water)

(a) Name of extension unit

The following table shows the amount of the irrigation water used for each crop on the demonstration farms in 2010 (data measured by the Project). The reduction rates of irrigated water were calculated against the amount of irrigated water obtained through the baseline survey conducted in 2009 by the Project.

Governorate & extension Unit	Crop & irrigation methods	Area (ha)	Amount of irrigated water (m^3/ha)	Amount of irrigated water (m^3/ha) monitored		Reduction rate		Yield (kg/ha)	
			Baseline (a)	2010	2011	2010	2011	2010	2011
Jine (Aleppo)	Sugar beet (Sprinkler)	2.0	10,960	7,805	8,640	28.8%	21.2%	–	9,200
	Cotton (Gated pipe)	1.0	15,625	8,670	7,035	44.5%	55.0%	4,100	N.A.
	Cotton (Drip)	1.0		7,800	7,035	50.1%	55.0%	4,800	N.A.
Sukkarie (Raqqa)	Cotton (Gated pipe)	0.64	15,625	9,917	12,430	36.5%	20.4%	3,620	5,300
	Cotton (Drip)	0.8		8,188	13,000	47.6%	16.8%	3,810	5,500

Remarks:
(a) Data obtained through the baseline survey (2009) by interviewing farmers in the selected extension units including the unit where the demonstration farms are located. This survey was conducted in 2 extension units in the both Governorates.
N.A.: not available

Water-saving irrigation was commenced in 2010 on the demonstration farms introducing a variety of irrigation methods (gated pipe, sprinkler, and drip tube, etc.). The reduction rates of irrigation water used

for sugar beet and cotton recorded to 28.8–50.1% in 2010 and 16.8–55 % in 2011, which demonstrated that the rate of water saving was more than the targeted reduction rates (10–15%). The project team analyzed that farmers' positive engagement in the activities on the demonstration farms might result in these high reduction rates. The reduction rates in Raqqa in 2011 became much lower those in 2010, however, they were still higher than the indicator rates. The reason for the lessened reduction rates was that the farmers made so much efforts to reduce the irrigation water in 2010 that the reduction rates were high but it also caused reduced yields (though still better than the average). Therefore, in the year of 2011, the farmers increased the water consumption to the guideline levels set by the Project and consequently the reduction rates became lower.

For the yield of cotton on the demonstration farms, 4.1 tons/ha with gated pipe and 4.8 tons/ha with drip tube were recorded in Aleppo in 2010 (4.5 tons/ha on average) while 5.3 tons/ha with gated pipe and 5.5 tons/ha with drip tube were recorded in Raqqa in 2011 (5.4 tons/ha on average). Although it is not easy to compare "before and after" in the basis of production yield, the project team indicated that the yields of cotton on the demonstration farms were 50% higher than the average yield of the neighboring farmers in 2010 despite the general tendency of yield reduction due to the unusual high temperatures in the summer of that year.

Indicator (1)-2: The number of farmers adopting water-saving irrigation technique in the Project Sites in Aleppo and Raqqa Governorates increased by 80–100%.

(Project Sites: Areas in charge of the extension unit where the demonstration farm is established)

The official statistical information on the number of irrigation farmers with or without modern irrigation system is not available. Therefore, the data on the irrigated areas with or without modern irrigation system were used instead of the number of farmers in order to compare the situations before and after the project commencement and estimate the impact of the Project on expansion of water-saving irrigation techniques.

The following table shows the data collected by the project team in 2009 (this data represent the situation in 2008) and the data of the impact survey conducted in October 2010 (sample survey).

Project Site	Survey by the project team (data on 2008)				Impact survey (October 2010)			
	Number of irrigated farmers in the extension unit	Total irrigated area	Irrigated area with water-saving irrigation system	Ratio	Number of surveyed irrigated farmers	Total irrigated area	Irrigated area with water-saving irrigation system	Ratio
	(houschold)	(ha)	(ha)	(%)	(houschold)	(ha)	(ha)	(%)
Jine Extension Unit Area in Aleppo	335	941	159	16.9	30	252	93	36.9
Sukkarie	309	1,910	15	0.8	31	557	77	13.8

Extension Unit Area in Raqqa								

According to the results of the impact survey in October 2010, the ratios of the irrigated area with water-saving irrigation system in the Project Sites changed from 16.9% to 36.9% (217% increase) in the project site in Aleppo and from 0.8% to 13.8% (1,725% increase) in Raqqa, where the increase ratio was quite high resulting from the fact that the area with water-saving irrigation before the project commencement was very small (only 15 ha).

Another impact survey had been planned to be conducted before the terminal evaluation. However, it was impossible to carry out the survey due to the deterioration of the security situation in Syria. Accordingly, the current irrigated areas with water-saving irrigation system is not clear but it was recognized at the time of Mid-term review that the areas had already expanded much more than expected through the project activities, and it can be presumed that they have been expanding further more since then. The C/Ps reported through a questionnaire survey that the conditions have certainly been improved since the Mid-term Review.

Indicator (1)-3: The frequency of regular extension activities implemented by the trained extensionists in Aleppo and Raqqa Governorates is more than 10 times a year.

The following table shows the frequency of extension activities on water-saving irrigation implemented by the trained water extensionists in Aleppo and Raqqa Governorates. The training on water extensionists commenced in May 2009 for Aleppo and Raqqa Governorates, and subsequently, their activities as trained extensionist started in 2010.

Governorate	Number of extension activities by water extensionists (WE)					
	2009		2010		2011	
	No. of WE	Activities	No. of WE	Activities	No. of WE	Activities
Aleppo	0	0	8	65	17	17 +α
Raqqa	0	0	9	5	17	17 +α

The numbers of extension activities in 2010 were 65 and 5 times in Aleppo and Raqqa Governorates respectively while over 17 times in 2011 for the both governorates, which are well over than the indicator. This is considered to result from the increase in the numbers of the qualified water extensionists in the both governorates. These numbers in 2011 only represent the ones confirmed by the Project (at least once by each extensionist) and more are thought to have conducted.

Indicator (1)-4: Quality of extension activities by the trained extensionists is at a suitable level.

The extension activities had been conducted under rather poor planning without monitoring and evaluation.

The Project proposed an "implementation cycle for extension activities", which includes the preparation of an implementation plan and a post fact meeting for evaluation, and has promoted its establishment in order to improve the quality of extension activities.

At the present the post fact meeting was introduced and evaluation reports are drawn up after the completion of respective extension activities. The project team is expected to conduct a survey by interviewing farmers on their performances in order to monitor the quality of the extension services.

Other outcomes: Manuals and tools for Water-saving Irrigation

A guideline/manual for water-saving irrigation was produced during the phase 1 project and has been under revision reflecting some instructive lessons obtained through the project activities and adopting the opinions of the Syrian counterparts and researchers of the cooperative external research organizations. The methods and techniques on improved surface irrigation currently under experiment will be added in the guideline/manual as well. In addition, the manuals on extension and training, extension tools, and a case study report on extension activities are also under preparation and will be available by the end of the Project.

Among a number of extension tools the C/Ps of the governorates found that the irrigation calendar and records appeared especially effective on water-saving irrigation, which indicates the management skills and schemes are very important elements for the irrigation farmers.

3-3-2 Output 2: The appropriate utilization of small-scale pressurized irrigation is disseminated widely in Rural Damascus, Hama and Daraa Governorates.

The achievement levels of the following 3 indicators are more than expected in the most cases and it is anticipated that all the indicators for Output 2 will be achieved at very satisfactory levels by the end of the Project as the activities progress further.

Indicator (2)-1: The difficulties after the phase 1 Project are clarified and the countermeasures are established (more than 5 cases).

At the beginning of the Project, difficulties or issues raised after the completion of the phase 1 project were surveyed and the following 11 issues identified by the project team. Five issues were on training and 6 issues on extension. The followings are the identified 11 issues. The current conditions were scored by the experts and C/Ps, which are shown in the following table.

Area		Issues identified	Score by experts	Score by C/Ps
Training	1	The duration of the trainings is different according to the Governorates.	5	4
	2	It is necessary to become independent of the project.	5	4
	3	It is necessary to revise a part of the training curriculum and materials.	5	4
	4	It is necessary to utilize WEs and SMSs more effectively.	5	4
	5	Follow up trainings for the WEs and SMSs are necessary.	5	3
Extension	6	It is necessary to study the effectiveness of the farmers' competition events.	4	4
	7	Competition events for the person in-charge of extension are necessary.	3	4
	8	It is necessary for WE to identify the needs of irrigated farmers further.	4	3
	9	It is important to monitor the behavioral change of the extension-targeted farmers.	4	4
	10	It is necessary to promote farmer-to-farmer extension mechanisms.	5	4
	11	Economic aspects of farming should be considered deeper.	5	3

Remarks:
WE: water extensionist
Scores: 1. Worsen, 2. Same as before, 3. Slightly better, 4. Improved, 5. Solved

The countermeasures by the Project for the above issues were summarized through the Mid-term Review (please refer to the Mid-term Review report for the details) and the conditions have mostly been improved, which clearly satisfies the indicator.

Indicator (2)-2: Number of irrigation farmers in the Project Sites adapting modern irrigation technique increases by 30–40%.

The following table shows the proportions of irrigation farmers with modern irrigation (small-scale pressurized irrigation system) among irrigated farmers in the project sites (model extension units). The data are the same as those presented for the Mid-term Review as an impact survey could not be carried out before the terminal evaluation due to deterioration of the security situation in Syria..

Governorate	Project site (extension unit)	Collected data by the Project (Survey in 2009)			Data of the Impact survey in October 2010 <sample survey>			Increase
		Total number of irrigated farmers	Number of irrigated farmers with modern irrigation	(%)	Total number of irrigated farmers	Number of irrigated farmers with modern irrigation	(%)	(%)
Daraa	Nawa	1,043	557	53.4	44	38	86.4	61.2
Hama	Halfaya	720	399	55.3	21	14	66.7	20.6
Rural Damascus	B.Saber	410	185	45.1	31	20	64.5	43.0

Remarks: The proportions of irrigated farmers with modern irrigation were more than 80% in the following 3 extension units therefore these units were excluded for evaluation.
1) Surgaya extension unit in Rural Damascus (96.9%), 2) Daek extension unit in Daraa (100%), and 3) Majdal extension unit in Hama (82.2%).
Arne extension unit is also excluded for evaluation as only the capacity development of irrigated farmers is targeted as project activity in the unit and consequently, a very few extension activities has been carried out for the other farmers.

The increase rates of Nawa extension unit in Daraa and Bait Saber extension unit in Rural Damascus are more than the indicator but not in Halfaya unit in Hama. However, the presented data were as of 2010 and are supposed to reach the indicator level by the end of the Project, which should be confirmed by the

project team when it becomes feasible. Although the data in 2011 are not available, the C/Ps reported through a questionnaire survey that the conditions have certainly been improved since the Mid-term Review and that the number of farmers who practices introduced modern irrigation remarkably increased and the most of them have benefited from the water-saving irrigation by saving not only irrigation water but also fertilizer, diesel oil and even their working time.

Indicator (2)-3: The frequency of regular extension activities implemented by the concerned organizations in Rural Damascus, Hama and Daraa Governorates increases by 25%.

The following table shows the number of extension activities related with water-saving irrigation at Daraa, Hama and Rural Damascus Governorates in 2008, 2009 and 2010. The data are the same as those presented for the Mid-term Review (the reason is the same as above).

Governorate	2008	2009	Increase rate (2009/2008)	2010	Increase rate (2010/2008)
Daraa	16	36	125.0%	36	125.0%
Hama	25	107	328.0%	133	432.0%
Rural Damascus	28	29	3.6%	39	39.3%

Remark:
1) The number of extension activities in 2010 is the data collected from January to October.
2) The water extensionists trained during the phase 1 project have conducted extension activities on water-saving irrigation under their own initiatives while other extensionists have also conducted extension services. The above data includes the number of activities by both water and non-water extensionists.

The increase rates of extension activities in the 3 governorates are more than 25% (based on the data in 2008 and 2010) and considered to be at satisfactory levels for assessing Output 2. Regarding the increase of the number of water extensionists since 2010, 9, 8 and 5 extensionists completed the 4-step training course by the Project in Rural Damascus, Daraa and Hama respectively in 2011. Accordingly, the increase rates in 2011/2008 are expected to become higher than those in 2010/1008. The C/Ps reported through a questionnaire survey that the conditions have certainly been improved since the Mid-term Review.

3-3-3 Output 3: Measures to improve and operate water-saving irrigation techniques are extended to the rest of Syria and to neighboring countries through the cooperation with universities and international research organizations in Syria.

Cooperation activities with the universities in Syria and international research organizations have increased steadily. Activities for disseminating outcomes on water-saving irrigation techniques to the other areas in Syria have been delayed due to the deterioration of the security situation in Syria.

Indicator (3)-1: Cooperated activities on dissemination of measures to improve and operate water-saving irrigation techniques are increased.

The following cooperation activities on improvement and utilization of water-saving irrigation techniques have been under operation in collaboration with the universities and international research organizations.

1) Promoting cooperation activities through the experimental and research activities of the Project (8 cases, confirmed through the Mid-term Review)
2) Obtaining suggestions and advices on development and extension of the extension tools for water-saving irrigation (confirmed through the Mid-term Review)
3) Supporting and co-hosting the training course implemented by ICARDA
4) Establishing the bases of cooperation with the neighboring countries by participating in the 21st International Congress on Irrigation and Drainage organized by International Commission on Irrigation and Drainage (ICID) held in October, 2011 at Tehran and presenting the outcomes of the Project.

The attempt by the Project for cooperation has been conducted through a variety of means, which also contributes to establish good relationships between the persons concerned. The positive effects and the outcomes are expected to come up in due course and the concerned personnel should make efforts to continue those relationships whenever possible.

3-4 Achievement of the Project Purpose

Project Purpose: The capability of extensionists and staff of related agencies on extension of water-saving irrigation are improved, and proper amount of irrigation water is used for each crop in the Project Sites.

It is expected that the Project Purpose will be achieved at satisfactory levels by the time of completion of the Project.

Indicator 1) The usage of irrigated water for the crops in the Project Sites is reduced by the Project (10-20%).

The following table shows the amount of irrigation water used per ha by crop in the respective governorates. The data are obtained through the baseline survey (2009) and the impact survey (October 2010), the same data presented for the Mid-term Review. The planned impact survey was not carried out due to the deterioration of the security situation in Syria since the beginning of the year 2011.

Governorate	Crop	Amount of irrigation water (Baseline survey)			Amount of irrigation water (Impact survey)					
					Traditional irrigation			Modern irrigation (Dr., Sp.)		
		m^3/ha	Irrigation Method	Number of Sample	m^3/ha	Number of Sample	Reduction rate %	m^3/ha	Number of Sample	Reduction rate %
Aleppo	Sugar Beet	10,960	Tr.	6	—		—	* 3,585	20	—
	Cotton	15,625	Tr.	4	12,800	1	18.1	7,530	15	50.9
	Potato	6,968	Mix	5	—		—	* 3,371	12	—
Daraa	Tomato	10,094	Dr.	10	—		—	5,027	45	50.2
	Watermelon	7,500	Dr.	10	—		—	4,553	7	39.3
	Grape	11,446	Mix.	10	—		—	7,921	25	30.8
Hama	Cotton	14,400	Mix	10	24,000	1	—	—	—	—
	Potato	12,600	Mix	5	—		—	8,247	16	34.5
	Cucumber	8,725	Sp.	5	—		—	8,952	7	-2.6

Raqqa	Cotton	15,625	Tr.	13	14,702	18	5.9	7,817	3	50.0
	Sugar Beet	9,750	Tr.	7	9,197	13	5.7	—		—
	Watermelon	5,425	Tr.	5	—		—	—		—
Rural Damascus	Apple	6,206	Dr.	7	—		—	4,051	31	34.7
	Peach	6,842	Dr.	5	—		—	3,943	11	42.4
	Pear	6,053	Dr.	6	—		—	5,180	18	14.4

Remarks:
1) Mix: using both method (traditional and modern irrigation), Sp: Sprinkler irrigation, Dr.: Drip irrigation, Tr.: Traditional irrigation
2) *The cultivation seasons of sugar beet and potato in Aleppo are autumn-winter that has rainfall, therefore, these crops are excluded from the analysis on water saving.
3) The volumes of irrigation water were surveyed in the 2 extension units in each governorate, one with the demonstration farm and the other with similar agricultural conditions.

Although no reduction was observed for cucumber in Hama, the irrigation water was reduced by 34.5% for potato. For all of other crops with available data, the reduction rates were recorded between 30% and 50% in the five governorates. These reduction rates were quite better than the targeted rate (10–20%) and the C/Ps reported through a questionnaire survey that the conditions have certainly been improved since the Mid-term Review. Therefore, it was presumed that the Project Purpose was achieved in terms of Indicator 1.

Indicator 2) The capability of extensionists and staff of related agencies on extension of water-saving irrigation is improved (number of certified extentionists become more than 40% to the required number of water extensionists).

The following table shows the numbers of the extension units that needs qualified water extensionist and the units with (a) qualified water extensionist(s). The qualified water extensionist indicates the person who participated in the training courses on water-saving irrigation by the Project (including those held during the phase 1 project) and received a certificate by passing the examination (over 70 points out of 100).

Governorate	Number of extension units that need qualified water extensionist [a]	Number of extension units with (a) qualified water extensionist(s) [b]		Allocation sufficiency ratio (%) [b]/ [a]		Total number of units in governorate (Reference data)	Number of 40% of the units [c] =[a]x0.4	Insufficiency (person) 2011 [c] – [b]
		2010	2011	2010	2011			
Hama	72	32	33*	44.4%	45.8%	74	29	–4
R. Damascus	52	24	28*	46.2%	53.8%	63	21	–7
Daraa	38	37	30*	97.4%	78.9%	63	16	–14
Aleppo	80	17	27	21.3%	33.8%	111	32	+5
Raqqa	40	14	20	35.0%	50.0%	55	16	–4
Total	282	124	138	44.0%	48.9%	366	114	–24

Remarks:
[a] These numbers were determined based on the percentage of irrigated area in each extension unit (one of the selection criteria is that the ratio of irrigated area is over 50%).
* The reason that the number of extension units with WE decreased (or slightly increased) compared with the previous year is transference of WEs.

The ratios in Daraa, Hama and Rural Damascus Governorates exceeded the targeted ratio (40%) in both

2010 and 2011, which resulted from the advantage that the training on water-saving irrigation started during the phase 1 project and continues under the Project as well. On the other hand, the ratios of Aleppo and Raqqa Governorates, where the training started under the Project (from 2009), were considerably low in 2010 (21.3% and 35.0% respectively), but fairly improved in 2011 (33.8% and 50% likewise). Despite the low ratio in Aleppo (33.8%), the overall allocation sufficiency ratio (48.9%) has satisfied the indicator (40%), which proved the Project purpose was achieved in terms of Indicator 2. The ratio in Aleppo is also expected to rise to over 40% by inviting a sufficient number of Aleppo staff to the training course towards the end of the Project.

4. Results of Evaluation

4-1 Relevance

Relevance of the Project is considered high in terms of needs of beneficiaries, policies of the Government of Syria, and assistance policy of Japan.

Agriculture in Syria occupies 25% share in GDP and is also significant in terms of employment and export. However, 75% of the cultivated land still relies only on rainfalls, and accordingly, the irrigated agriculture is preferred. On the other hand the irrigation has been consuming over 90% of all the water used in Syria, competing with drinking and industrial use. Hence, the water-saving irrigation is considered to be very important in Syria and its importance was emphasized in the 10th Five-Year Plan (2006-2010) of Syria.

Due to the limited water resources and influence of the climate change (less rainfall), efficient utilization of water resources by the introduction of water-saving irrigation is quite necessary not only for farmers with irrigation but also for stabilizing agricultural production in the target areas. The efficient irrigation water use can be achieved by installing modern irrigation facilities with proper water-saving techniques. One of the objectives of the Project is the extension of water-saving techniques to farmers by improving the capability of extensionists, preparing extension materials, and strengthening the relationships among search, training and extension related organizations. As a result, the Project scheme is regarded well consistent with the needs of the farmers in the target areas and the personnel concerned in the water sector.

In addition, the conversion of irrigation system from the traditional water-consuming irrigation to modern (water-saving) irrigation system is regarded as one of the most important issues in the 10th Five-Year Plan (2006-2010) of Syria. Although the approval of the 11th Five-Year Plan has been delayed due to the deterioration of the security situation in Syria, it was reported that the importance of the further promotion of modern irrigation was stressed more in the Plan. The Ministry of Agriculture and Agrarian Reform (MAAR) has been promoting the conversion of irrigation system by providing a subsidized loan for the purchase of the irrigation equipment, therefore, the objective of the Project is well consistent with the policies of the Government of Syria.

One of the important fields of the assistance policy of the Government of Japan for Syria is the water resource management and its effective use, and the Project aims at the improvement of the capacity on the extension of water-saving irrigation therefore the Project is well accorded with the assistance policy of Japan.

4-2 Efficiency

The Project has not been fully functioning due to the deterioration of the security situation in Syria since the beginning of the year 2011 nevertheless the activities have been under operation with a physically limited scale. A small part of the indicators for the Project purpose has not been achieved yet but will be accomplished by the end of the Project (the details were discussed in the previous chapter).

The personnel concerned in the Project have established excellent relationships not only within the Project but also with the farmers and other institutions (in terms of collaboration and coordination), which positively affected on the effectiveness of the Project functions. The deterioration of the security situation in Syria might negatively influence the remaining activities but it is expected that difficulties can be overcome by the strong relationships borne by the Project.

In addition, the Government of Syria established the Directorate of National Project of Modern Irrigation Conversion (DMIC) and has been providing a grant and loan to the farmers in order to activate the introduction of irrigation equipment. This policy enabled for the both parties to share the roles as the hardware by the Syrian side and the software by the Japanese side with the players from the both sides.

As a result the efficiency of the Project is at an excellent level.

4-3 Effectiveness

The outputs of the Project have been produced satisfactorily as mentioned in the previous chapter. The indicator (1)-4 "Quality of extension activities by the trained extensionists is at a suitable level" has not been confirmed yet due to the deterioration of the security situation in Syria. Nevertheless, a countermeasure to improve the extensionists' performance has already been taken and established by means of monitoring and evaluation in the "implementation cycle". Accordingly, the indicator will be assessed once the result and the progress of the activities conducted within this improved framework and is expected to be proved as satisfactory by the end of the Project.

Both Syrian and Japanese sides have appropriately provided the inputs for the project activities in terms of human resources (Japanese experts and Syrian counterparts), equipment, trainings in Japan, the technical exchange in third countries, and the budget. These inputs and resources have been utilized effectively for the implementation of the project activities.

The products of the phase 1 project such as the training materials and curriculums for water extensionists, and the extension methods and tools have been utilized effectively during the Project. Similarly for the human resources, the Syrian counterparts involved in the phase 1 as well as the water extensionists trained during the previous project effectively participated in the project activities, which have significantly contributed to the management of the project operation.

In conclusion, the effectiveness of the Project is at a satisfactory level.

4-4 Impact

Although it is still early to prospect precisely whether the Overall Goal of the Project will be achieved in future, some positive impacts that have already been observed are summarized below.

4-4-1 Prospects for achieving the Overall Goal

Overall Goal: Proper amount of irrigation water is used by means of adopting efficient water-saving irrigation in the Target Areas. And, awareness of efficient water-saving irrigation is expanded to other areas in Syria.

Indicator 1) Total amount of irrigation water per unit area decreases more than 10% without yield decrease in Target Area by the end of 2017.

Consulting the tables presented for Output Indicator (1)-1 and Project Purpose indicator (1), it was observed that the irrigation water decreased well over 10% for a variety of crops in all the project sites with yield increase for cotton in Raqqa. These data are based on the impact survey in 2010 and limited in terms of the scale but they strongly indicate positive prospects for achievement of the Overall Goal Indicator 1) as 5 extra years are still given to the responsible organizations.

Indicator 2) More than 50% of total farmers in the other governorates in Syria also recognize the importance and the necessity of water saving in irrigation.

For achieving the indicator, it is necessary for the responsible organizations to extensively carry out the extension activities on water-saving irrigation in the other governorates in Syria utilizing the experiences, relationships and skills yielded through the Project as well as the products and tools. Consequently the establishment of a National Training Team is identified to be an imminent matter in order to train a sufficient number of water extensionists as player in the field.

4-4-2 Efforts to achieve the Overall Goal

At the central level the Ministry of Irrigation has inaugurated several group-irrigation projects in collaboration with MARR and appears to be more cooperative than before. In addition, as mentioned above, MARR is planning to set up "National Training Team" for the training of water extensionists countrywide though it's not been started yet. On the other hand at the governorate level, the qualified water extensionists founded a council of their own for the purpose of mutual cooperation and combination. This could work as a coordinating institution and is a part of "the coordination mechanism" aiming at the promotion of water-saving irrigation though the mechanism should be established at the central level.

4-4-3 Other Impacts

(1) Increased collaborative relationship between the organizations concerned

The both phase 1 and 2 project have been implemented under good cooperation/collaboration between the organizations concerned including GCSAR, DTQ, DAE, DMIC, the directorates of agriculture of governorates concerned, and universities in Syria. The close collaborative relations have been observed even through their regular activities and also with other projects supported by different donors as they have realized the advantage of working under good cooperative/ collaborative relations.

(2) Competitive mind in farmers

In the project sites, a kind of feeling of competition has been grown up among farmers in terms of the efficient water use and the production yield, which accelerated the introduction of water-saving irrigation into the areas.

(3) Newly introduced irrigation approach; the group-irrigation program

The group-irrigation program was first introduced in Ame, Rural Damascus, by the Project, and then the system expanded to the other areas through the project activities as well as the efforts made by the Ministry of Irrigation. This kind of approach for irrigation has never been conducted in Syria. As the public awareness on the group-irrigation increased, the number of application for the official license (issued by DMIC) to establish an association of irrigation increased. The further efforts by the Project to extend the group-irrigation are expected while ongoing water-saving irrigation based on individual farmers continues.

(4) Comprehensive training course

The training course on water extensionists established by the Project is very comprehensive which consists of the following 5 stages: 1) Field survey and methods for identifying problems, 2) Designing & installing irrigation nets, 3) Maintenance of irrigation nets, 4) Preparing extension material, 5) Organizing field day. The whole curriculum was adopted as an official system in the yearly plan by the MAAR.

(5) Positive impacts observed in demonstration farms

The irrigation system applied by the Project in the demonstration farms created the following positive impacts.

1. The irrigation scheduling saves the working time.
2. The water-saving irrigation saves diesel and fertilizer applied.
3. The water-saving irrigation improved the quantity of crops.

(6) Dissemination of water-saving irrigation as effect of the project activities at the demonstration farms

Various extension activities on water-saving irrigation have been implemented at the project sites (model extension units) such as inviting farmers to the demonstration farms from the surrounding area. As a result of this event, for example, farmers in Sukkarie extension unit in Raqqa recognized the advantage of the water-saving irrigation over the traditional method, which resulted in the farmers' request for the DMIC's loan. One of the farmers installed drip and sprinkler irrigation facilities using the loan and successfully cultivated watermelon in the year of 2010 with less quantity of water (less cost) and better yield. He found out that the traditional irrigation method (surface irrigation) gave excess water causing poor yield while the appropriate amount of irrigation water brought higher yield.

(7) The paradoxical impact of the absence of the Japanese experts

Unfortunately for the Project, the security situation has been deteriorated in Syria and the Japanese experts had to leave the country in the end of April, 2011. Since then, the Japanese experts have still been unable to work in Syria and the project activities run by the Syrian C/Ps with remote supports by Japanese experts from Japan. However, the Project has been managed properly and steadily as analyzed above while the

security situation has not yet been improved, and thus, the unfortunate event turned out to be the opportunity for the Syrian C/Ps to develop the management ability and ownership. This is not a kind of impact derived from the project activities but something that should be reported as what happed after the Mid-term Review.

4-5 Sustainability

(1) Political aspect

As mentioned earlier, the Government of Syria has placed great importance on the modernization of irrigation in order to efficiently utilize the limited water resources for agricultural production. Due to the negative influences by the climatic changes (reduced rainfall, higher temperature, etc.), the stability of the agriculture production becomes more and more important in Syria in terms of food security. Consequently the policy sustainability will be secured regardless of the current confusion which may bring some change.

(2) Organizational aspect

The implementing organizations of the Project within MAAR, i.e., GCSAR, DTQ, DAE, DMIC, and the directorate of agriculture of the targeted 5 governorates have well defined tasks on research, training, extension, and promotion of modern irrigation. These organizations have sufficient number of staff and long-experiences in the respective field of tasks. Therefore, the modernization of irrigation by the extension of water-saving irrigation techniques to the farmers will be continued in a sustainable manner. As repeatedly emphasized, the good collaboration and coordination have been established between the organizations concerned, and it seems feasible that these relationships will bear fruitful progress in extension activities in the near future. In order to secure efficient and effective progress of extension activities on water-saving irrigation after the completion of the Project, "the coordinating mechanism" along with "National Training Team" is necessary to be founded for keeping the official linkage between the organizations concerned.

(3) Financial aspect

DMIC has been providing a financial support for farmers to introduce modern irrigation system and the conversion of irrigation methods on farms has greatly been promoted by this financial support. The adoption of proper water-saving techniques by farmers is also an important issue for the efficient use of limited water resources and the increase of profitability on agricultural production. In order to expand the extension activities on water-saving irrigation nationwide after the completion of the Project (the Overall Goal), it is needless to mention that the Government of Syria should allocate a sufficient amount of the budget.

(4) Technical aspect

The capacity of the Syrian C/Ps and staff concerned with the Project has developed not only the techniques on modern irrigation but also the management skills in through the implementation of the project activities. The number of water extensionists with proper knowledge and skills has been increasing in the 5 governorates, and furthermore, their capability on extension has been improving through the daily

activities. The capacity of the trainers of training courses for water extensionist has also been enriched under the Project, which should be continued in a sustainable manner not only by the end of the Project but also after the completion of the Project. In addition, the Project organized some training courses on management and maintenance of the equipment, which have been very effective on the proper utilization of the equipment provided by the Project with extensive care.

(5) Social, cultural and environmental aspects

A unique training course which is "the home garden irrigation and the role of rural women in the irrigation management" was organized for the female engineers by the Project in Supeen Village in Hama and was adopted in the annual training program of Extension Directorate. However, the number of the participants has not reached to a sufficient level to achieve the targeted goal, and subsequently, the components should be modified based on the development of the local society and be continued to hold the courses.

For the environment, the following aspects have been considered by the Project.

1) Reduction of water seepage, especially groundwater
2) Rationalization of fertilizer
3) Fair supply of water among the farmers (between the upstream and downstream) in some project areas

However, counter measures of the following negative effects would be considered.

1) Environmental influence from farm equipment waste
2) Social influence of job opportunities for irrigated agricultural workers

4-6. Conclusions

As analyzed above, the Project has continued its activities even under the current difficult situation in Syria although a part of the activities has been postponed and has kept producing its outputs with a satisfactory level. Some of the main activities such as extension of water-saving irrigation techniques and training for water extensionists have been conducted in the form of improved style in accordance with recommendations proposed at Mid-term Review. These facts enable it to conclude that the Project is expected to complete its period by achieving the Project Purpose by the end of the Project.

Having said that, since the dispatch of Japanese experts was partially restricted due to Japan's security instructions, some activities have been postponed because of the security issues, and this Terminal Evaluation was carried out under the condition in which surveys on the spot could not be conducted, the Joint Evaluation Team has found out some issues to be addressed for overcoming these restrictions. The issues are mentioned as recommendations as below.

5. Recommendations

1) Since the Joint Evaluation Team for this Terminal Evaluation could not conduct any surveys in the field and some updated information regarding the indicators of each output and the Project Purpose was

missing, a field survey is recommended to be jointly carried out by Syria and Japan to collect those missing information and to find out the real achievement once the situation in Syria is settled down. It is also possible to have discussion in that occasion on necessary and possible future cooperation between Syria and Japan in case some specific needs and feasible activities are clarified.

2) As recommended at Mid-term Review, in order to disseminate the outcomes of the Project to other governorates in Syria and ensure the sustainability of training structure and the function of the Project, it is strongly recommended once again that the idea of forming a National Training Team within the MAAR is realized so that a training plan for water extensionist, an extension plan for water-saving irrigation techniques and budgetary plan for implementing these plans are prepared.

3) In order to further enhance the communication between the extensionests and farmers, it is recommended for the project team to add a training item on "attitude" to the curriculum in the remaining period.

4) In order to conduct further water saving, research on other measures than pressurized irrigation should be sustained on managerial, institutional and agronomical approaches for maximizing water productivity.

6. Lessons Learnt

1) Intermediate of supporting favorable relationships beyond departments and/or directorates

The presence of Japanese experts functioned as intermediate to promote establishing favorable relationships among organizations beyond departments and/or directorates that are responsible for different tasks, and this brought collaborative works. Therefore, implementing a project that intermediates several organizations is effective to accelerate collaboration among related parties.

2) Key factors for a successful technical cooperation; Issues to be addressed and a financial back-up in the beneficial country

This project has addressed one of the most crucial development issues of Syria which is the effective use of water resources and relevant institutions like DMIC providing subsidies for farmers to introduce modern irrigation techniques have already existed. It is no doubt that these facts contributed for the success of this Project. Hence, to address one of the most crucial development issues and to have financial back-up for supporting core activities of the project in the beneficial country are some of the key factors for a successful technical cooperation. These factors need to be surely considered when projects are formulated.

Annex 4

Details of the Training Course Program

Structure of the SMS Training Course

Introduction

Training Course Orientation	Pre-evaluation	Role of SMS

Lecture	Practice
Day 1: Investigation for Irrigation Net Design	**Day 2: Field Survey Practice**
Lecture: Site Investigation for Irrigation Net Design	**Field Survey**: Topographic Survey by using GPS
Lecture: Field Practice for Site Investigation	**Practice**: Drawing of topographic Map
Day 3 & 4: Hydraulic Design (1) & (2)	
Lecture: Hydraulic Design for GR and Sprinkler	**Practice**: Hydraulic Design for GR and Sprinkler
Lecture: Hydraulic Design for Pipeline Network	**Practice**: Hydraulic Design for Pipeline Network
Day 5: Pumping Unit / Cost Estimation	
Lecture: Pumping Unit	**Practice**: Pumping Unit
Lecture: Drawings, Cost Estimation and Supervision	
	Day 6: Field Practice on Installation / Discharge
	Field Practice: Pipe Installation
	Field Practice: Measurement of Discharge and Pressure
Day 7 & 8: CWR & Irrigation Scheduling	
Lecture: CWR (Crop Water Requirement)	**Practice**: Calculation of ETo
Lecture: Water Management	**Practice**: Irrigation Scheduling
	Day 9: Field Visit
Lecture & Discussion: Group Irrigation in Japan	**Field Visit**: Group Irrigation Project Site

Examination & Final Evaluation

Examination	Final Evaluation

Major Subjects of the SMS Training Course:

Week	Day	Major Subject	Venue
1st Week	Day 1	Site Investigation for Irrigation Net Design	Training Room
	Day 2	Field Survey Practice	Irrigation Research Station
	Day 3	Hydraulic design for GR, Drip emitter, sprinkler irrigation (1)	Training Room
	Day 4	Hydraulic design for GR, Drip emitter, sprinkler irrigation (2)	Training Room
	Day 5	Pumping Unit / Cos Estimation	Training Room
2nd Week	Day 6	Field Practice: Installation / Discharge Measurement	Irrigation Research Station
	Day 7	Crop Water Requirement	Training Room
	Day 8	Irrigation Scheduling	Training Room
	Day 9	Field Visit: Group Irrigation	Group Irrigation Project Site
	Day 10	Examination & Final Evaluation	Training Room

Program of the SMS Training Course:

1st week:

Day	Time	Subject	Teaching Material	Venue
Day 1	10:00 – 10:30	Opening and Orientation		GCSAR (Douma)
	10:30 – 11:00	Explanation on progress of DEITEX project and role of SMS		
	11:30 – 12:30	Pre-evaluation		
	12:30 – 13:00	(Break)		
	13:00 – 14:00	**Lecture**: Investigation for Irrigation net design **Lecture**: Field practice for site investigation	PP1 PP3	
Day 2	10:00 – 12:00	**Field Survey**: Topographic survey by using GPS devise (Pump capacity)		Irrigation Research Station (Nashabia)
	12:00 – 12:30	(Break)		
	12:30 – 14:00	**Practice**: Drawing of topographic map		
Day 3	09:00 – 11:00	**Lecture**: Hydraulic design for GR, Drip emitter, sprinkler irrigation (Layout)	PP4	GCSAR (Douma)
	11:00 – 11:30	(Break)		
	11:30 – 14:00	**Practice**: Hydraulic design for GR, Drip emitter, sprinkler irrigation		
Day 4	09:00 – 11:00	**Lecture**: Hydraulic design for pipeline network (Hydraulic calculation)	PP5	GCSAR (Douma)
	11:00 – 11:30	(Break)		
	11.30 – 14:00	**Practice**: Hydraulic design for pipeline network (Hydraulic calculation)		
Day 5	09:00 – 11:30	**Review of 1st week Practice**		GCSAR (Douma)
		Lecture: Hydraulic design for group irrigation		
	11:30 – 12:00	(Break)		
	12:00 – 13:00	**Lecture & Practice**: Pumping unit	PP6	
	13:00 – 14:00	**Lecture**: Drawings, cost estimation, construction supervision	PP7	

2nd week:

Day	Time	Subject	Material	Place
Day 6	09:00 – 11:30	Field Practice: Pipe Installation	PP8	Irrigation Research Station (Nashabia)
	11:30 – 12:00	(Break)		
	12:00 –14:00	Field Practice: Measurement of discharge, pressure and soil moisture		
Day 7	09:00 –11:00	Lecture: Crop Water Requirement	PP2	GCSAR (Douma)
	11:00 – 11:30	(Break)		
	11:30 – 14:00	Practice: Calculation of ETo		
Day 8	09:00 –11:00	**Lecture**: Water management	PP9	GCSAR (Douma)
	11:00 – 11:30	(Break)		
	11:30 – 14:00	**Practice**: Irrigation scheduling (Sprinkler, GR, Drip emitter, Micro sprinkler)		
Day 9	09:00 – 12:00	**Site Visit**: Group Irrigation Site		Group Irrigation Site
	12:00 – 12:30	(Break)		
	12:30 – 14:00	**Lecture and discussion:** Group irrigation in Japan		
Day 10	09:00 – 10:30	Examination		GCSAR (Douma)
	10:30 – 11:00	(Break)		
	11:00 – 12:00	Final Evaluation		
	12:00 – 13:00	Closing of the Training Course		

Structure of the TOT Course for the WE (Water Extensionist) Training

General Subjects for Trainers (1st Week)	Specific Subjects for the DEITEX WE Training (2nd Week)
Communication Skills	**Knowledge & Skills for the DEITEX Training-Extension System**
Windows of "JoeHary"	Training Structure for WE
Communication Principles	DEITEX Training & Extension System
Communication Difficulties	Preparing Action Plan of Extension Activity
Characteristics of Adult Learning	Management of Training Courses
Teaching Methods	**Teaching Skills**
Lecture	How to conduct Lectures and Practices effectively
Group Discussion	Notes for Trainers to make Training Course effectively
Role Play	Practice to provide Lecture
Case Study	
Brain Storming	
Planning of Training Course	**Tools for the WE Training**
Training Goals	Evaluation of Trainer
Lesson Plan	Evaluation of Training Course
	Training Guideline for WE Training Courses

TOT (Training of Trainers) for the Water Extensionist (WE) training has been established, consisting of two important components such as a) general subjects for trainers, and b) specific subjects for the DEITEX WE training. The general subjects include communication skills, teaching skills, and teaching methods, which is considered as indispensable abilities for trainers. On the other hand, the specific subjects cover knowledge and skills which is necessary to conduct the DEITEX WE training courses successfully. The specific subjects include knowledge & skills for the DEITEX training and extension system, tools for the WE training, and teaching skills to be useful to conduct WE training courses. The useful tools consist of WE training guideline, and evaluation forms of trainer and training course.

After completing the TOT course successfully, those who are qualified as SMS are supposed to be trainers of WE training course in governorates. Therefore, the TOT course program has been carefully prepared so that the participants will be able to acquire useful and necessary knowledge and skills to conduct the WE training courses as trainers.

The training program for TOT is shown in the following table.

1st week:

Day	Time	Subject
Day 1 (SUN)	09:00 – 09:30	Opening of the Training Course
	09:30 – 10:00	Pre-Evaluation of the participants
	10:00 – 10:30	(Break)
	10:30 – 11:30	Participants Expectation / Program View
	11:30 – 12:00	(Break)
	12:00 – 14:00	Method of Introduction / Windows of "JoeHary" / Feed Back
Day 2 (MON)	09:00 – 10:30	Characteristics of Adult Learning
	10:30 – 11:00	(Break)
	11:00 – 12:30	Communication Principles
	12:30 – 12:45	(Break)
	12:45 – 14:00	Communication Difficulties
Day 3 (TUE)	09:00 – 10:30	Training Goals
	10:30 – 11:00	(Break)
	11:00 – 12:30	Typical Lesson Plan
	12:30 – 12:45	(Break)
	12:45 – 14:00	Teaching Methods
Day 4 (WED)	09:00 – 10:30	Brain Storming
	10:30 – 11:00	(Break)
	11:00 – 12:30	Case Study
	12:30 – 12:45	(Break)
	12:45 – 14:00	Role Playing and Application
Day 5 (THU)	09:00 – 10:00	Role of Water Extensionist and DEITEX Training Structure for Water Extensionists Training and Extension System in the DEITEX Project
	10:00 – 10:30	(Break)
	10:30 – 11:15	How to conduct Lectures and Practices effectively (Impotant Points identified through the DEITEX Project Implementation)
	11:15 – 12:30	Introduction to theTraining Guideline of Water Extensionists Training
	12:30 – 13:00	Examination & Final Evaluation

2nd week:

Day	Time	Subject
Day 6 (SUN)	09:00 – 10:30	Evaluation of Trainer (Evaluation Form & Example of Analysis)
	10:30 – 11:00	(Break)
	11:00 – 12:00	Important Points which Trainers should keep in their Minds
	12:00 – 12:15	(Break)
	12:15 – 14:00	Evaluation of Presentsation by Video
Day 7 (MON)	09:00 – 10:30	Presentation by the Participants
	10:30 – 11:00	(Break)
	11:00 – 12:30	Presentation by the Participants
	12:30 – 13:00	(Break)
	13:00 – 14:30	Presentation by the Participants
Day 8 (TUE)	09:00 – 10:30	Presentation by the Participants
	10:30 – 11:00	(Break)
	11:00 – 12:30	Presentation by the Participants
	12:00 – 12:30	(Break)
	12:30 – 14:00	Presentation by the Participants
Day 9 (WED)	09:00 – 09:30	General Evaluation of the Presentation
	09:30 – 10:30	Problem Analysis Workshop
	10:30 – 11:00	(Break)
	11:00 – 12:30	Preparing Action Plan of Extension Activity
	12:00 – 12:30	(Break)
	12:30 – 14:00	Example of Action Plan prepared by Water Extensionists
Day 10 (THU)	09:00 – 10:00	Management of Training Course / Training course evaluation
	10:00 – 10:30	(Break)
	10:30 – 11:30	Final Examination
	11:30 – 12:00	Final Evaluation
	12:00 – 13:00	Closing

Training Course for ISI (Improved Surface Irrigation)

Outline of the Training Course

Objectives of the Training Course	Delivering basic knowledge about improved surface irrigation to Water Extensionists, which is useful for them to conduct extension activities on the relevant subject.
Target people	Water extensionist who has completed the four steps of WE training courses in Aleppo and Raqqa
Training Period	5 days
Major contents of the training course	- Lectures on different kinds of improved surface irrigation - Field visit to improved surface irrigation farmer - Group discussion on farm survey questionnaire on improved surface irrigation
Method of Training	Lecture, Group Discussion, Field Visit, and Field Practice

Training Course Program

Day	Time	Subject	Venue
Day 1 (SUN)	10:00 – 10:30	Opening and Orientation	Training Room
	10:30 – 11:15	Pre-evaluation	
	11:15 – 12:45	**Lecture:** Introduction of improved surface irrigation **Lecture:** Survey result on ISI (Homework of the ISI training course in the previous year)	
	12:45 –13:00	(Break)	
	13:00 – 14:00	**Lecture:** Land laser leveling	
Day 2 (MON)	09:00 – 10:15	**Lecture:** Furrow irrigation (and border irrigation)	Training Room
	10:15 – 10:45	(Break)	
	10:45 –12:00	**Lecture:** Siphon and Gated pipe irrigation	
	12:00– 12:15	(Break)	
	12:15 – 12:45	**Lecture**: Surge flow irrigation	
	12:45 – 14:00	Preparation of farmer's field visit	
Day 3 (TUE)	09:00 – 14:00	**Field Visit**: Siphon irrigation field Gated pipe irrigation field Fields that land laser leveling was implemented.	Farmer's Field
Day 4 (WED)	09:00 – 14:00	**Lecture and Field practice**: Land laser leveling	Training Room & Training Field
Day 5 (THU)	09:00 – 10:00	**Discussion**: Result of the field visit	Training Room
	10:00 – 10:30	(Break)	
	10:30 – 11:15	Examination	
	11:15 – 11:30	(Break)	
	11:30 – 12:15	Final Evaluation	
	12:15 – 13:00	Closing of the Training Course	

Follow-up Training Course on Editing Extension Movies

Outline of Training Course of Editing Extension Movies

Objectives of the Training Course	Providing basic knowledge and skills about editing movies, which is useful for extensionists to produce extension movies to be used in conducting extension activities.
Target people	Water extensionist and SMS in R Damascus, Daraa and Hama.
Training Period	3 days
Major contents of the training course	- Lectures and practices on basic knowledge and skills to edit movies, - Lectures and practices on using video camera, and - Lecture and group discussion on importance of making good scenario for extension movies.
Method of Training	Lecture, Practice, and Group Discussion,
Materials to be used	Video Camera, Computer, and Movie Maker (Software to edit movies)

Training Course Program for Editing Extension Movies

Day	Time	Subject
Day 1	09:00 – 09:10	Opening & Training Course Orientation
	09:10 – 09:20	Pre-Evaluation of the Participants
	09:20 – 10:00	**Lecture**: How to use Movie Maker - Basic skills to edit movies–
	10:00 – 11:00	**Practice 1**:Basic skills to edit movies
	11:00 – 11:30	Break
	11:30 – 13:00	**Practice 2 & 3**: Editing Movie (1)
	13:00 – 13:30	Presentation of the products by the trainees
Day 2	09:00 – 09:30	Review of the Day 1 practices
	09:30 – 10:00	**Lecture**: How to use Movie Maker - Editing Movie (2)–
	10:00 – 11:00	**Practice 4**: Editing Movie (2) – Importance of scenario
	11:00 – 11:30	Break
	11:30 – 13:00	**Practice 5 & 6**: Editing Movie (3)
	13:00 – 14:00	Adding Music/Narration
Day 3	09:00 – 09:30	Review of the Day 2 practices
	09:30 – 10:00	How to use Video Camera
	10:00 – 10:30	How to convert video files (Video Conversion to WMV)
	10:30 – 11:00	**Practice 7**: Video Conversion
	11:00 – 11:30	Break
	11:30－13:00	Making Scenario of Movie: Example of Scenario: GR Emitter Clogging, How to store modern irrigation system during off-season, Maintenance of modern irrigation system
	13:00－	Closing the Course

Homework	1) Preparation of Scenario related to the subject of Extension activity (based on Farmer's needs/ problems)
	2) Taking video shots
	3) Editing Movie

Annex 5

List of the Trained SMS and WE

List of Qualified Water Extensionist as of July 2012

No	Name	Governorate	Employment	Specialty	Age	Year
1	Majd Al Housh	R.Damascus	Arne	Field Crops	40	2006
2	Salim Shahin	R.Damascus	Arne	Vegetable Production	53	2006
3	Amal Nour Din	R.Damascus	Bait Tima	Vegetable Production	42	2006
4	Zuhair Rajeh	R.Damascus	Bait Tima	Agricultural Observer	57	2006
5	Wassim Ramadan	R.Damascus	Bait Saber	Vegetable Production	33	2006
6	Ahmad Ali Mhammad	R.Damascus	Bait Saber	Agricultural Observer	30	2006
7	Walif Hassoun	R.Damascus	Haramoun Maslaha	Engineering	38	2006
8	Amer Mazoukh	R.Damascus	Kafr Hour	Animal Production	42	2006
9	Hussam Nakhleh	R.Damascus	Surghaya	Vegetable Production	32	2006
10	Hussam Ghabra	R.Damascus	Dimas	General	41	2006
11	Ilham Zaidan	R.Damascus	Deir Qanoun	Land Reform	43	2006
12	Zaher Abdallah	R.Damascus	Extension, Sahanaya	Farms	37	2006
13	Janet Hasan	R.Damascus	R Woman, Sahanaya	Civil Eng. Assis	32	2006
14	Ossama Muhanna	R.Damascus	Zubdin, Gouta	Field Crops	43	2007
15	Rafiq Labbad	R.Damascus	Nashabiah	Vegetable Production	50	2007
16	Dalal Koshuha	R.Damascus	Haran	Agricultural Observer	49	2007
17	Amar Al Deen Al Madanly	R.Damascus	Doma	Animal Production	37	2009
18	Yousef Salah Issa	R.Damascus	Rihan	Plant Protection	47	2009
19	Jamal Abdah	R.Damascus	Balah	General	27	2009
20	Basem Sami Mohammad	R.Damascus	Sahanaya	Orchard	34	2009
21	Ahmad Sliman	R.Damascus	Haran			2009
22	Mohammad Sabry Shawish	R.Damascus	Nashabiah	Animal Production	33	2009
23	Jihad Hmadah	R.Damascus	Midaa			2009
24	Walid Orfaly	R.Damascus	Halbon			2009
25	Masoud Shaheen	R.Damascus	Deer Ali	Crops	37	2009
26	Mostafa Khzai	R.Damascus	Al Otibah	Animal Production	32	2009
27	Asaad Ashy	R.Damascus	Al Tal	Field Crops	28	2009
28	Lobna Hasan Qtine	R.Damascus	Al Tal	General	33	2009
29	Mohammad Diaf Allah Al Hoish	R.Damascus	Kiswah	General	57	2009
30	Yousef Al Sady	R.Damascus	Kiswah	General	57	2009
31	Khald Bankadi	R.Damascus	Douma			2010
32	Khald Al Hawash	R.Damascus	Kafer Batnah			2010
33	Ilahm Al Zeen	R.Damascus	Deer Kanon			2010
34	Randa Habal	R.Damascus	Darya			2010
35	Josephen Zarak	R.Damascus	Qatana			2010
36	Rola Hadad	R.Damascus	Artoz	Agricultural Econony	33	2010
37	Yousef Shaby	R.Damascus	Hjirah			2010
38	Khald Trad	R.Damascus	Al Otibah	Soil and Land Reform	43	2010
39	Jamel Kholy	R.Damascus	Al Ghzlaniah			2010
40	Adnan Hmamah	R.Damascus	Haran			2010
41	Majed Abd Allah	R.Damascus	Halbon			2010
42	Manar Al Shably	R.Damascus	Al Tal			2010
43	Sadkah Hosian	R.Damascus	Al Adliah			2010
44	Maisa Isber	R.Damascus	Kiswah			2010
45	Weaam Qasem	R.Damascus	Al Otaiba	Orchard	27	2011
46	Iman Al Shaikha	R.Damascus	Qutaifa	Forest	27	2011
47	Ahmad Maher	R.Damascus	Maslaha	Rural Engineering	37	2011
48	Nadia Shaaban	R.Damascus	Saboura	Animal Production	26	2011
49	Haian Al Muhamad	R.Damascus	Harran	Rural Engineering	26	2011
50	Basem Kharboutly	R.Damascus	Dair Salman	Orchard	50	2011
51	Farzat Mustafa	R.Damascus	Muaadamia	General	31	2011
52	Mustafa Daioub	R.Damascus	Badda	Crops	36	2011
53	Radwan Seour	R.Damascus	Mneen	Animal Production	40	2011
54	Raafat Laqteena	R.Damascus	Qatana	Orchard	41	2011
55	Rania Al Hafian	R.Damascus	Central Directorate	Orchard	38	2011
56	Marwan Kiwan	Daraa	Tafas	Agronomy	38	2006
57	Waleed Al Sharif	Daraa	Daiel	Animal Production	41	2006
58	Khalid Al Masri	Daraa	Daiel	Field Crops	43	2006
59	Mohamed Al Husain	Daraa	Ebbta	Fields	39	2006

No	Name	Governorate	Employment	Specialty	Age	Year
60	Muamar Al Khalil	Daraa	Mzerieb	General	37	2006
61	Husain Ramadan	Daraa	Jileen	Agronomy	40	2006
62	Muneeb Al Jibawi	Daraa	Jasem	Agricultural Planning	46	2006
63	Kasem Abou Jabal	Daraa	Sheikh Saed	Field Research	38	2006
64	Ayham Zain Abideen	Daraa	Tseel	Animal Production	31	2006
65	Haisam Al Jelm	Daraa	Jasem	Animal Production	31	2006
66	Nidar Al Khalil	Daraa	Nawa	Agricultural Observer	38	2006
67	Husain Shinowan	Daraa	Extension, Daraa	Vegetable Production	37	2006
68	Nabeel Kiwan	Daraa	Tafas Maslaha	General	47	2006
69	Ibrahim Teisan	Daraa	Nawa Maslaha	Farms and Forestry	46	2006
70	Mhamad Abdoullah	Daraa	Daraa Agriculture D	Animal Production	60	2006
71	Muneer Warad	Daraa	Daraa Agriculture D	General	60	2006
72	Mhamad Khraiba	Daraa	Jileen Irrigation S	Rural Engineering	34	2006
73	Imad Al Haj Ali	Daraa	Ghazale	Agricultural Observer	31	2007
74	Abdul Razak Saleme	Daraa	Karak	Agronomy	34	2007
75	Ahmad Ali Rifai	Daraa	Sanamein	Vegetable Production	36	2007
76	Abdul Hakim Al Hamid	Daraa	Enkhal		35	2007
77	Khaldoun Al Ghazale	Daraa	Namer	Animal Production	34	2007
78	Ghasan Al Sabsby	Daraa	Mzereeb	Animal Production	40	2009
79	Mohammad Al Yousef	Daraa	Jleen	Plant Protection	28	2009
80	Kasem Al Nator	Daraa	Sheikh Saad	Plant Protection	29	2009
81	Talat Mohsen	Daraa	Quia	Rural Engineering	33	2009
82	Amar Al Hamad	Daraa	Yadora	Field Crops	41	2009
83	Ahmad Al Jundi	Daraa	Nawa	Animal Production	40	2009
84	Hkmat Al Zuaby	Daraa	Mliha Al-Garbiah	Animal Production	36	2009
85	Naziah Qadah	Daraa	Hrak	Plant Protection	41	2009
86	Naseem Salamah	Daraa	Quniah	Seed Technology	42	2009
87	Basher Al Naser	Daraa	Khabab	Agricultural Economy	39	2009
88	Yaser Ershid	Daraa	Msifra supporting	Animal Production		2010
89	Mnahal Abou Alsal	Daraa	Sheikh Saad	Animal Production		2010
90	Ayman Mhamad Al Shraa	Daraa	Dael	General		2010
91	Yaser Mhamad Aun	Daraa	Nawa	Plant Protection		2010
92	Mhamad Nour Brumow	Daraa	Mzereeb	Crops		2010
93	AbdalRahman Abdullatif Al Khrat	Daraa	Hrak	General		2010
94	Ayman Yousef Al Muzeeb	Daraa	Sheikh Saad	Agricultural Economy		2010
95	Mhamoud Mhamad Abou Nqta	Daraa	Tafas	General		2010
96	Ahamad Mustafa	Daraa	Yadooda	Rural Engineering	26	2011
97	Aamer Barmo	Daraa	Mzereeb	Environment	27	2011
98	Wedam Muslem	Daraa	Sheikh Saad	General	26	2011
99	Muhammad Bashir Hareeri	Daraa	Ebtta	Animal Production	26	2011
100	Rana Musa	Daraa	Ghariey Shargi	Orchard	24	2011
101	Haitham Isawi	Daraa	Daraa	Animal Production	26	2011
102	Safaa Hareeri	Daraa	Sheikh Meskeen	Crops	25	2011
103	Ahamad Abu Khashreen	Daraa	Ain Thiker	Plant Protection	26	2011
104	Umara Faleh	Daraa	Tal shhab	Plant Protection	27	2011
105	Mhamad Haj Hasan	Hama	Kafr Zeita	Orchard	36	2006
106	Omar Omar	Hama	Latamne	Field Crops	50	2006
107	AbdulNasr Al Qasoum	Hama	Hamamiat	General	52	2006
108	Hasan Bazow	Hama	Kafr Zeita	Environment & Forest	33	2006
109	AbdulMonam Al Shaar	Hama	Kafr Zeita	General	51	2006
110	Asi Asi	Hama	Majdal	Animal Production	49	2006
111	Ahmad Othman	Hama	Halfaya	General	44	2006
112	Ahmad AbdulMalik	Hama	Maerzaf	Soil & Land Reform	36	2006
113	Mahmoud Aziz A Abd	Hama	Zalaqiat		54	2006
114	Mohamad Omar	Hama	Shaikha	Field Crops	55	2006
115	Saleh Mansour	Hama	Rabiaa	General	52	2006
116	Mohamad Moafak Al Najar	Hama	Tizeen	General	48	2006
117	Obaida Agha	Hama	Hama	Orchard	36	2006
118	Husam Obaysi	Hama	Extension, Hama	General	51	2006
119	Mahmoud Al Nahir	Hama	Extension, Hama		54	2006

No	Name	Governorate	Employment	Specialty	Age	Year
120	Mhamad Al Khalil	Hama	Tibet Al Imam, Soran	Agricultural Observer	56	2007
121	Mohidin Adel Al Khalaf	Hama	Morek, Soran	Vegetable Production	45	2007
122	Abdul Moaen Gazallah	Hama	Khatab, Hama	General	50	2007
123	Abdullah Hayder	Hama	Tal Al Dara, Salamie	Land Reform	56	2007
124	Hasan Shino	Hama	Deir Al Fardes,	Farms	55	2007
125	Hoda Al-Dobiat	Hama	Akyrbat	General	43	2009
126	Ahmad Al-Najar	Hama	Al Shiha	Animal Production	28	2009
127	Abed Al-Kareem Al Hamud	Hama	Mourk	Field Crops	38	2009
128	Mostafa Al Thaljah	Hama	Zlakiat	Field Crops	47	2009
129	Wadiaa Khalil	Hama	Misiaf center	Soil	30	2009
130	Baseem Al Boudi	Hama	Bareen	General	28	2009
131	Ibraheem Farasha	Hama	Al-Hamra supporting	Environment & Forest	30	2009
132	Ghada Abaad	Hama	Taldara supporting unit	Plant Protection	30	2009
133	George Al Sager	Hama	Mazraf	General	47	2009
134	Faisal Ahamad Al Mahmud	Hama	Tizeen	Soil	27	2010
135	Usam Suidan	Hama	Akarib unit	Environment	29	2010
136	Abeer Garatly	Hama	Om Al Omad	Environment & Forest	27	2010
137	Abd Allah Daoun	Hama	Khnafis	Orchard	41	2010
138	Ali Abo Al Jadel	Hama	Rabo	Environment & Forest	28	2010
139	Yousef Al Mohammad	Hama	Bareen	General	27	2010
140	Mahmud Al Khatab	Hama	Mardas	Animal Production	28	2010
141	Safouan Madhy	Hama	Majdal	Rural Engineering	27	2010
142	Abed Al Kareem Al Qadour	Hama	Hamamaiat	Rural Engineering	27	2010
143	Mohammad Wasouf	Hama	Kafer Kadah		29	2010
144	Najat Sfaf	Hama	Hama Extension	Nutrient Science	30	2010
145	Najwa Meny	Hama	Salamia	Environment	26	2011
146	Bahaa Alden Jammal	Hama	Sheeha	Orchard	28	2011
147	Usama Al Fahed	Hama	Khattab	General	27	2011
148	Ghasan Hamad	Hama	Rabeeaa	Soil Reclamation	28	2011
149	Mustafa Al Khani	Hama	Dair Al Fardis	Animal Production	27	2011
150	Farah Al Qaseer	Hama	Saboura	Orchard	26	2011
151	Hanna Sawaf	Hama	Maarzaf	Rural Engineering	26	2011
152	Abd Al Mutaleb Ahmad	Hama	Dair Al Fardis	General	26	2011
153	Hassan Houri	Aleppo	Kafar Nouran	General	50	2009
154	Samr Shamoqa	Aleppo	Agricultural Dept	Food sciences	31	2009
155	Ibrahim Bridi	Aleppo	Agricultural Dept	Food Industry	29	2009
156	Alli Alhallaq	Aleppo	Al Atareb	Field Crops	38	2009
157	Ahmad Houri	Aleppo	Jine	Basic sciences	52	2009
158	Jumaa Bakkour	Aleppo	Ibin	Horticulture	38	2009
159	Maroan Naoazi	Aleppo	Batbo	Basic sciences	57	2009
160	Alli Naji Alhusain Alobaid	Aleppo	Al Eis supporting	Soil Reclamation	41	2009
161	Ramadan Mohammad Al Shikh	Aleppo	Al Bab	General(Irrigation/Orchard)	47	2010
162	Wahib Balwi	Aleppo	Nbel	Plant Protection	41	2010
163	Mustafa Moslem	Aleppo	Om Hosh	Irrigation	57	2010
164	Taha Al Saeed	Aleppo	Agricultural Dept	Plant Protection	29	2010
165	Hasan Sheikh Miro	Aleppo	Maskan	Plant Protection	47	2010
166	Ayman Aboud	Aleppo	Al Kabisah	Crops	46	2010
167	Radwan Abed Al Rahman	Aleppo	Al Ghazawiah	Plant Protection	32	2010
168	Ahmad Issa Basha	Aleppo	Job Al Safa	Animal Production	43	2010
169	Salman Al Tanje	Aleppo	Shioukh Fokani	Orchard	33	2010
170	Hadi Istanbouly	Aleppo	Al Ais	Plant Protection	27	2011
171	Mhammad Hasan Mhammad	Aleppo	Hameema Kabir	General	50	2011
172	Zakaria Kujuk	Aleppo	Al Sfeera	Soil Reclamation	37	2011
173	Mhammad Anas Alafandi	Aleppo	Tal Alm	Nutrient Science	31	2011
174	Abd Al Rahman Al Mousa	Aleppo	Al Maamoura	Orchard	30	2011
175	Abbas Dada	Aleppo	Ajar Kabeer	Animal Production	25	2011
176	Usama Ali Yousef	Aleppo	Kharous	Nutrient Science	27	2011
177	Ahmad Darweesh	Aleppo	Ain Dara	General	48	2011
178	Maha Blal	Aleppo	Haretan	General	52	2011
179	Haji Ibraheem	Aleppo	Al Safeera	General	54	2011
180	Mansour Haji	Aleppo	Afreen	Animal Production	33	2011

No	Name	Governorate	Employment	Specialty	Age	Year
181	Mhamad Al Abdo	Raqqa	Alskaria, Tal Abiad	Agronomist	41	2009
182	AbdulRahman Deko	Raqqa	Tel abiad	Agronomist assistant	43	2009
183	Rashid Ismael	Raqqa	Beer Arab supporting	Rural Engineering	31	2009
184	Khalil Al Alawy	Raqqa	Hammam Altrkman	Agronomist – Forests &	30	2009
185	Mhamad Ali Arab	Raqqa	Ein Issa	Agronomist – Plant	33	2009
186	Awad AbdulRahman	Raqqa	Selwok	Field Crops	32	2009
187	Amar Al Khdhr	Raqqa	Extension section	Agriculture	31	2009
188	Saleh AlShwakh	Raqqa	Agricultural Dept	Forests and Environment	35	2009
189	Ibraheem Moslem	Raqqa	Kherbat Al Riz	Soil and Land Reform	32	2010
190	Amer Al Said	Raqqa	Soukaria Al Jukhadar	General	31	2010
191	Fares Al Hamdon	Raqqa	Al Badia, Tal Abyad	Orchard	28	2010
192	Saer Hamodah	Raqqa	Al Wibda	Plant Protection	30	2010
193	Abd Al Kareem Al Bakr	Raqqa	Al Khaialah	Orchard	40	2010
194	Bassam Al Mohsen	Raqqa	Hazimah	General	34	2010
195	Loai Al Masri	Raqqa	Salhabia Sharqia	Animal Production	35	2010
196	Waseem Dagmeh	Raqqa	Tishreen	Soil and Land Reform	31	2010
197	Basel Amash	Raqqa	Agriculture Dept	Soil	31	2011
198	Rasheed Al Saiad	Raqqa	Agriculture Dept	Food Production	30	2011
199	Shaweesh Al Sherida	Raqqa	Al Sabkha	General	53	2011
200	Mohamad Al Ibraheem	Raqqa	Al Sabkha	Animal Production	35	2011
201	Taeemah Al Abed Alaha	Raqqa	Al Nemsa	General	48	2011
202	Mohamad Al Hamaad	Raqqa	Tal Abyad	Animal Production	28	2011
203	Ibraheem Al Akrab	Raqqa	Ain Esah	General	35	2011
204	Ali Al Jabaree	Raqqa	Ber Al Hashem	Animal Production	33	2011
205	Ali Alhouseen	Raqqa	Ber Al Hashem	Orchard	34	2011
206	Mohamad Ahmad Omar	Raqqa	Khas Ojeel	General	28	2011
207	Yaser Al Anzee	Raqqa	Al Karamah	Food Production	27	2011
208	Housemen Al Shekh	Raqqa	Al Karamah	Animal Production	30	2011
209	Abed Alrazak Hamedi	Raqqa	Slook	Soil	51	2011
210	Abed Almajeed Al Nayef	Raqqa	Al Mansoora	Food Production	29	2011
211	Mohamad Helal	Raqqa	Al Mansoora	Field Crops	33	2011
1	Ily Hadad	RDamascus	DMIC	Agronomy	37	2006
2	Diab Al Hanash	RDamascus	DMIC	Irrigation Engineer	43	2006
3	Rasha Al Nabwanee	RDamascus	DMIC	Environment & forest	32	2006
4	Safa Muhana	RDamascus	DMIC	Agricultural Engineering	42	2006
5	Abdul Karem Wassof	RDamascus	DMIC		44	2006
6	Samar Dibyat	RDamascus	DMIC	Irrigation Engineer	49	2007
7	Shaker Zneqa	Daraa	DMIC	Soil & Land Reform	32	2006
8	Mhamoud Shahadat	Daraa	DMIC	Orchard	36	2006
9	Snaa Issa	Daraa	DMIC	Rural Engineering	34	2009
10	Shadi Farouh	Hama	DMIC	Orchard	32	2006
11	Khudr Hamoud	Hama	DMIC	General	31	2006
12	Hanan Abidow	Hama	DMIC	General	46	2006
13	Sulaiman Shahin	Ghab	DMIC	Civil Eng. Assis	47	2007
14	Ali Saleh Rabia	Lattakia	DMIC	Agricultural Engineering	43	2007
15	Osama Douba	Aleppo	DMIC	Agronomist - Rural	28	2009
16	Othman Al Ali	Raqqa	DMIC	Basic sciences – diploma	45	2009
17	AbdulHamoud AlShdeed	Raqqa	DMIC	Field Crops	41	2009
18	Rokaia Deeb	Raqqa	DMIC	Rural Engineering	28	2010
19	Jasem Al Ramo	Raqqa	DMIC	Agricultural Engineering	34	2010
20	Iad Al Arat	Raqqa	DMIC	Soil and Land Reform	31	2010
21	Heba Al Khalaf	Raqqa	DMIC	Irrigation & Drainage	26	2011
22	Mostafa Al Oboo	Raqqa	DMIC	Environment	33	2011
23	Khalf AlAbdullah	Raqqa	Irrigation Research, Raqqa	Rural Engineering	29	2009

List of Qualified Irrigation SMS as of July 2012

No	Photo	Name	Governorate	Place of Employment	Specialty	Age	WE	SMS
1		Ahmad Ali Mhammad	R.Damascus	Bait Saber	Agricultural Observer	28	2006	2007
2		Amer Mazoukh	R.Damascus	Kafr Hour	Animal Production	40	2006	2007
3		Majd Al Housh	R.Damascus	Arne	Field Crops	38	2006	2007
4		Walif Hassoun	R.Damascus	Haramoun Maslaha	Engineering	36	2006	2007
5		Zaher Abdallah	R.Damascus	Kiswe	Farms	35	2006	2007
6		Hussam Nakhleh	R.Damascus	Surghaya	Vegetable Production	29	2006	2009
7		Wassim Ramadan	R.Damascus	Bait Saber	Vegetable Production	30	2006	2009
8		Dalal Koshuha	R.Damascus	Haran	Agricultural Observer	46	2007	2009
9		Ossama Muhanna	R.Damascus	Sahanaya, Extension Section	Field Crops	40	2007	2009
10		Khalid Trad	R.Damascus	Al Otibah	Soil and Land Reform	43	2010	2011
11		Rola Hadad	R.Damascus	Artouz	Agricultural Econony	33	2010	2011
12		Haisam Al Jelm	Daraa	Jasem	Animal Production	29	2006	2007
13		Kasem Abou Jabal	Daraa	Sheikh Saad	Field Research	36	2006	2007
14		Husain Shinowan	Daraa	Extension section, Daraa	Vegetable Production	34	2006	2009
15		Ibrahim Teisan	Daraa	Nawa Maslaha	Farms and Forestry	43	2006	2009
16		Marwan Kiwan	Daraa	Tal Shahab	Agronomy	36	2006	2009
17		Nabel Kiwan	Daraa	Nawa	General	45	2006	2009
18		Ahmad Al Rifai	Daraa	Sanamein	Vegetable Production	33	2007	2009
19		Imad Al Haj Ali	Daraa	Ghazale	Agricultural Observer	37	2007	2009
20		Khaldoun Al Ghazale	Daraa	Namer	Animal Production	31	2007	2009
21		Ahmad Al Jundi	Daraa	Sheikh Saad	Animal Production	39	2009	2011
22		Ghasan Al Sabsby	Daraa	Mzerieb	Animal Production	39	2009	2011
23		Hasan Bazow	Hama	Kafr Zeita Maslaha	Environment & Forest	31	2006	2007
24		Husam Obaysi	Hama	Hama Extension Section	General	49	2006	2007
25		Mahmoud Al Nahir	Hama	Hama Extension Section	General	46	2006	2007

No	Photo	Name	Governorate	Place of Employment	Specialty	Age	WE	SMS
26		Mohamad Moafak Al Najar	Hama	Tizeen	General	52	2006	2007
27		Omar Omar	Hama	Latamne	Field Crops	47	2006	2007
28		Abdul Munem Shaar	Hama	Latmeen	General	48	2006	2009
29		Ahmad Abdul Malek Hasan	Hama	Maerzaf	Soil & Land Reform	33	2006	2009
30		Mohidin Adel Al Khalaf	Hama	Morek, Soran	Vegetable Production	42	2007	2009
31		Abed Al Kareem Al Hamud	Hama	Mourk	Field Crops	38	2009	2011
32		Najat Sfaf	Hama	Hama Extension division	Nutrient Science	30	2010	2011
33		Ahmad Houri	Aleppo	Jine	Basic sciences	51	2009	2011
34		Alli Alhallaq	Aleppo	Al Atareb	Field Crops	37	2009	2011
35		Hassan Houri	Aleppo	Kafar Nouran	General	49	2009	2011
36		Samr Shamoqa	Aleppo	Agricultural extension Department	Food sciences	30	2009	2011
37		Ayman Aboud	Aleppo	Al Kabisah	Crops	45	2010	2011
38		Hasan Sheikh Miro	Aleppo	Maskan	Plant Protection	46	2010	2011
39		Taha Al Saeed	Aleppo	Agricultural extension Department	Plant Protection	28	2010	2011
40		Wahib Balwi	Aleppo	Nbel	Plant Protection	40	2010	2011
41		AbdulRahman Deko	Raqqa	Tal abiad	Agronomist assistant	42	2009	2011
42		Rashid Ismael	Raqqa	Beer Arab	Rural Engineering	30	2009	2011
43		Abd Al Kareem Al Bakr	Raqqa	Al-Khaialah	Orchard	39	2010	2011
44		Fares Al Hamdow	Raqqa	Al Badia (Tal Abyad)	Orchard	27	2010	2011
45		Loai Al Masri	Raqqa	Salhabia Sharqia	Animal Production	34	2010	2011
46		Waseem Dagmeh	Raqqa	Tishreen	Soil and Land Reform	30	2010	2011
47		Ily Hadad	R.Damascus	DMIC	Agronomy	37	2006	2007
48		Rasha Al Nabwanee	R.Damascus	DMIC	Environment & forest	32	2006	2009
49		Shaker Zneqa	Daraa	DMIC	Soil & Land Reform	32	2006	2007
50		Shadi Farouh	Hama	DMIC	Orchard	32	2006	2007
51		Khudr Hamoud	Hama	DMIC	General	31	2006	2009

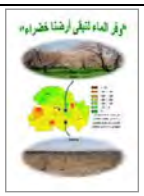
No	Photo	Name	Governorate	Place of Employment	Specialty	Age	WE	SMS
52		Jasem Al Ramo	Raqqa	DMIC	Agricultural Engineering	34	2010	2011

Annex 6

Distributed Extension Materials

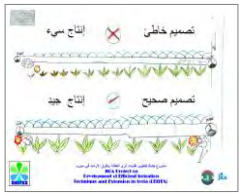
List of Posters Produced under DEITEX

Number of Poster		**No. 1**	**No. 2**	**No. 3**	**No. 4**
Title of Poster		Control Unit	Filter Cleaning	Sprinkler	Flow Meter
Image of Poster					
Contents of Poster		Typical Layout of Control Unit	Importance of Cleaning Filter in Proper Manner	Importance of Fixing Rubber Fitting for Sprinkler Riser	Importance of Installing Flow Meter in Control Unit
Distributed To	Damascus	225	225	225	225
	Daraa	225	225	225	225
	Hama	225	225	225	225
	Aleppo				
	Raqqa				
	Total	**800 in All Syria**	**800 in All Syria**	**800 in All Syria**	**800 in All Syria**

Number of Poster		**No. 5**	**No. 6**	**No. 7**	**No. 8**
Title of Poster		Spagetti Tube	Water Saving	Water Saving	Warning
Image of Poster					
Contents of Poster		Importance of Fix Emitter at the End of Spagetti Tube	Importance of Saving Irrigation Water	Importance of Saving Irrigation Water	Present Situation of Groundwater Depletion
Distributed To	Damascus	225		225	
	Daraa	225		225	
	Hama	225		225	
	Aleppo				
	Raqqa				
	Total	**800 in All Syria**	**21 in All Syria**	**800 in All Syria**	**30 in All Syria**

Number of Poster		**No. 9**	**No. 10**	**No. 11**	**No. 12**
Title of Poster		Water Conservation	Water Saving	Water Saving	Water Saving
Image of Poster					
Contents of Poster		Modern Irrigation for Water Conservation	Importance of Saving Irrigation Water	Importance of Saving Irrigation Water	Importance of Saving Irrigation Water
Distributed To	Damascus			225	
	Daraa			225	
	Hama			225	
	Aleppo				
	Raqqa				
	Total	**5,000 in All Syria**	**50 in All Syria**	**800 in All Syria**	**50 in All Syria**

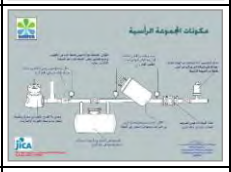
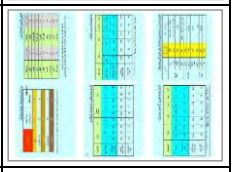
List of posters produced under DEITEX 2

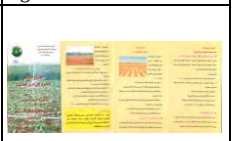
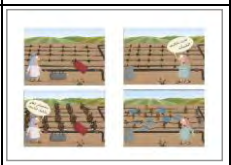
Number of Poster		**No. 13**	**No. 14**	**No. 15**	**No. 16**
Title of Poster		Drip Emitter	Warning	Water Saving	Sprinkler
Image of Poster					
Contents of Poster		Drip Emitter For Tree	Importance of Water Conservation	Importance of Water Saving	Pressure Control for Sprinkler
Distributed To	Damascus				
	Daraa				
	Hama				
	Aleppo	25	25	25	25
	Raqqa	25	25	25	25
	Total	**50**	**50**	**50**	**50**

Number of Poster		**No. 17**	**No. 18**	**No. 19**	**No. 20**
Title of Poster		Advantage	Warning	Advantage	Control Unit
Image of Poster					
Contents of Poster		Advantage of Modern Irrigation	Warning	Advantage of modern irrigation	Equipment in control unit
Distributed To	Damascus	225		150	150
	Daraa	225		150	150
	Hama	225		150	150
	Aleppo			150	150
	Raqqa			150	150
	Total	**800 in All Syria**		**750**	**750**

Number of Poster		**No. 21**	**No. 22**	**No. 23**	**No. 24**
Title of Poster		Proper water amount	Extension activity	Training activity	
Image of Poster					
Contents of Poster		150	Extension activity	Training activity	
Distributed To	Damascus	150	150	150	
	Daraa	150	150	150	
	Hama	150	150	150	
	Aleppo	150	150	150	
	Raqqa	150	150	150	
	Total	**750**	**750**	**750**	

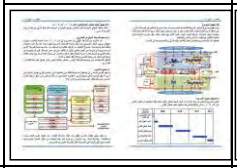
List of Brochures Produced under DEITEX

Number of Brochure		**No. 1**	**No. 2**	**No. 3**	**No. 4**
Title of Brochure		DEITEX	Filter Cleaning	Installation	Crop Water Requirement
Image of Brochure					
					
Contents of Brochure		Introduction of DEITEX Project	Timing and Method of Filter Cleaning	Proper Installation of Irrigation System	Calculation of Irrigation Interval and Irrigation
Distributed To	Damascus	200	2500	2500	2500
	Daraa	200	2500	2500	2500
	Hama	200	2500	2500	2500
	Others	1,400	1500	1500	500
	Total	**2,000**	**9000**	**9000**	**8000**

Number of Brochure		**No. 5**	**No. 6**	**No. 7**	**No. 8**
Title of Brochure		Upper and Lower Stream	Improper Irrigation System	Water Conservation	Agricultural Loan
Image of Brochure					
					
Contents of Brochure		Water Resource is Common Resource for All	Improper System does not assure anticipated yield	Modern Irrigation for Water Conservation	Agricultural Loan for Modern Irrigation
Distributed To	Damascus	2500	2500	2500	
	Daraa	2500	2500	2500	
	Hama	2500	2500	2500	
	Others	500	500	500	
	Total	**8,000**	**8,000**	**8,000**	**15,000 in All Syria**

Number of Brochure		**No. 9**	**No. 10**	**No. 11**	**No. 12**
Title of Brochure		Advantage	Improved surface irrigation	Irrigation notebook	
Image of Brochure					
					
Contents of Brochure		Advantage of Modern Irrigation	Various methods of improved surface	How to use irrigation notebook	
Distributed To	Damascus	2500		200	
	Daraa	2500		200	
	Hama	2500		200	
	Aleppo	500	500	200	
	Raqqa		500	200	
	Total	**8,000**	**1,000**	**1,000**	

List of DEITEX news

Number of Newsletter		**No. 1**	**No. 2**	**No. 3**	**No. 4**
Date of issue		May, 2009	August, 2009	November, 2009	February, 2010
Image of Newsletter		 	 	 	 
Contents		Introduction of DEITEX Project	Introduction of training activity	Introduction of demonstration farm and extension activity	Holding DEITEX seminar and taskforce meeting
Distributed To	Damascus	100	100	100	100
	Daraa	100	100	100	100
	Hama	100	100	100	100
	Aleppo	100	100	100	100
	Raqqa	100	100	100	100
	Total	**500**	**500**	**500**	**500**

Number of Newsletter		**No. 5**	**No. 6**	**No. 7**	**No. 8**
Date of issue		May, 2010	August, 2010	November, 2010	February, 2011
Image of Newsletter		 	 	 	 
Contents		Holding GCSAR workshop and reports from local WEs	Opening ceremony of Arne satellite plot	Training course in Japan and reports from local WEs	Midterm eveluation and reports from local WEs
Distributed To	Damascus	100	320	250	250
	Daraa	100	320	250	250
	Hama	100	320	250	250
	Aleppo	100	320	250	250
	Raqqa	100	320	250	250
	Total	**500**	**1,600**	**1,250**	**1,250**

Number of Newsletter		**No. 9**	**No. 10**	**No. 11**	**No. 12**
Date of issue		May, 2011	December, 2011		
Image of Newsletter		 	 		
Contents		Holding DEITEX seminar and reports from local WEs	Training course in Japan and reports from local WEs		
Distributed To	Damascus	250	240		
	Daraa	250	240		
	Hama	250	240		
	Aleppo	250	240		
	Raqqa	250	240		
	Total	**1,250**	**1,200**		

List of Extension tools Produced under DEITEX

Number	**No. 1**	**No. 2**	**No. 3**
Name	Discharge measurement kit	Irrigation calendar (vegetable)	Irrigation calendar (trees)
Image			
Distribution	**150 farmers**	**500 Farmers** **(4 kinds of crops for 5 governorates)**	**30 Farmers** **(Rural Damascus only)**

Number	**No. 4**	**No. 5**	**No. 6**
Name	Irrigation notebook	Digital irrigation note	
Image			
Distribution	**1000 books printed**	**8 Extension units**	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