

Country Name	<b>Project for Spreading Water Users Associations for the Efficient Use of Irrigation Water</b>
Republic of Iraq	

**I. Project Outline**

Background	<p>Agriculture, especially irrigated agriculture, is a very important sector for Iraq. However, at the time of ex-ante evaluation, the productivity of agriculture in Iraq remained low due to many reasons, including deterioration of agricultural infrastructure, salt accumulation in the irrigated land, and lack of knowledge and techniques on agriculture. The situation became even worse due to reduced in-flow into rivers in Iraq, as neighboring countries constructed large dams and developed vast areas of irrigated agricultural land. Therefore, it was essential to facilitate more efficient use of water through strengthening capacity for operation and maintenance of irrigation and drainage infrastructure, fair and optimal water distribution, raising awareness for water conservation, and introducing water-saving technology. Under such situation, JICA carried out “Karbala Project” (2006-2008) (Third Country Training Program), in which training programs were conducted on Water Users Associations (WUAs) systems and techniques of water-saving irrigation. The Government of Iraq (GOI) requested further cooperation in order to disseminate the achievements and good practices of the project in the country.</p>				
Objectives of the Project	<p>Through improving the capacity of relevant agencies on irrigated agriculture to manage and monitor projects, facilitate the activities of WUAs and Project Management Teams (PMTs), and extend improved irrigation farming practices, the project aims at developing these agencies’ capacity to guide WUAs to manage irrigation water in the pilot project sites, thereby contributing to efficient irrigation water management by WUAs in the pilot project sites.</p> <ol style="list-style-type: none"> <li>Overall Goal: Efficient irrigation water management by WUAs is conducted in the pilot project sites.</li> <li>Project Purpose: Relevant agencies<sup>1</sup> on irrigated agriculture develop their capacity for irrigation water management by WUAs in the pilot project sites.</li> </ol>				
Activities of the Project	<ol style="list-style-type: none"> <li>Project Site: 17 pilot project sites in 15 governorates (Najaf, Diwaniya, Wasit, Salah Al-Din, Kirkuk, Anbar, Diyala, Babil, Dhi-Qar, Ninawa, Baghdad, Karbala, Muthanna, Maysan, and Basrah)<sup>2</sup></li> <li>Main Activities: (1) Conduct trainings for relevant officials on project management, establishment, operation, management, and extension of WUAs, operation and maintenance (O&amp;M) of water management facilities, improved irrigation farming practices and extension skills; (2) Monitor pilot projects, advise relevant officials for improvement and share lessons from each pilot project among stakeholders; and (3) Conduct trainings for key farmers from the pilot project sites on WUA activities and improved irrigation farming practices etc.</li> <li>Inputs (to carry out above activities) <table border="0" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <b>Japanese Side</b>            1) Experts: 5 persons            2) Trainees Received in Japan: 32 persons            3) Trainees Received in Third Countries (Jordan: 239, Turkey: 94 and Egypt: 12 persons)            4) Equipment: Laptop PCs, digital cameras, PC software, GPS receivers, web meeting speakers, EC meters, pH meters etc.            5) Local operation cost         </td> <td style="width: 50%; vertical-align: top;"> <b>Iraqi Side</b>            1) Staff Allocated: 4 persons            2) Land and Facility: Meeting rooms in MOWR, etc.            3) Operation Cost: Salary of counterpart personnel (CPs), airfare from Baghdad to Amman, etc.         </td> </tr> </table> </li> </ol>			<b>Japanese Side</b> 1) Experts: 5 persons 2) Trainees Received in Japan: 32 persons 3) Trainees Received in Third Countries (Jordan: 239, Turkey: 94 and Egypt: 12 persons) 4) Equipment: Laptop PCs, digital cameras, PC software, GPS receivers, web meeting speakers, EC meters, pH meters etc. 5) Local operation cost	<b>Iraqi Side</b> 1) Staff Allocated: 4 persons 2) Land and Facility: Meeting rooms in MOWR, etc. 3) Operation Cost: Salary of counterpart personnel (CPs), airfare from Baghdad to Amman, etc.
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Project Period	(ex-ante) March 2012 – March 2015 (actual) April 2012 – March 2015	Project Cost	(ex-ante) 252 million yen, (actual) 382 million yen		
Implementing Agency	Ministry of Water Resources (MOWR)				
Cooperation Agency in Japan	Kaihatsu Management Consulting, Inc.				

**II. Result of the Evaluation**

## &lt;Constraints on Evaluation&gt;

- In this Ex-Post Evaluation, due to the security situation in Iraq, JICA made an evaluation judgment by analyzing information acquired by sending and collecting questionnaires, and through telephone and e-mail interviews with persons concerned. No field survey was conducted.

**1 Relevance/Coherence**

## [Relevance]

## &lt;Consistency with the Development Policy of Iraq at the Time of Ex-Ante Evaluation&gt;

The project was consistent with the development policy of Iraq such as “the reduction of poverty in rural areas through increased agricultural production” and “efficient use and conservation of water resources” as set forth in the “National Development Plan (NDP) (2010-2014)” at the time of ex-ante evaluation.

<sup>1</sup> “Relevant agencies” includes Ministry of Water Resources (MOWR), The Prime Minister’s Supreme Commission of Agricultural Initiative (SCoAI), Ministry of Planning (MOP), Ministry of Agriculture (MOA), and regional offices of MOWR and MOA.

<sup>2</sup> Pilot projects were conducted in 17 locations in total (in addition to one pilot project in each of the 15 target governorates, one pilot project in Ishaque, which is located between Baghdad and Salah Al-Din governorates, and another pilot project in Mabain Al-Nahrain, which is located between Baghdad and Babil governorates were added).

<Consistency with the Development Needs of Iraq at the Time of Ex-Ante Evaluation>

The project was consistent with the development needs of Iraq for efficient water use due to the decrease in the amount of available water inflow into Iraq accompanying the development of large dams and irrigation in neighboring countries and inappropriate domestic water resource management at the time of ex-ante evaluation.

<Appropriateness of Project Design/Approach>

No problem attributed to the project design/approach was confirmed, and thus the project design/approach was appropriate.

<Evaluation Result>

In light of the above, the relevance of the project is ③. (④ : very high, ③ : high, ② : moderately low, ① : low. \*To be the same afterwards.).

[Coherence]

<Consistency with Japan's ODA Policy at the Time of Ex-Ante Evaluation>

The project was consistent with Japan's ODA policy<sup>3</sup> to Iraq to strengthen the foundation for economic growth including oil and gas, agriculture, mining, and manufacturing sectors at the time of ex-ante evaluation.

<Collaboration/Coordination with other JICA's interventions>

The collaboration/coordination between the project and the "Irrigation Sector Loan" (ODA loan, 2008-2017) of JICA was planned at the time of ex-ante evaluation. A direct positive effect was not confirmed, as large equipment procured under the loan such as tankers, rollers, and excavators were provided not to WUAs but to MOWR's governorate offices. However, indirect positive effect, such as contribution to appropriate water distribution in project sites through dredging and other maintenance works in irrigation canals by MOWR's governorate offices utilizing the equipment procured under the loan, was confirmed at the time of ex-post evaluation.

<Cooperation with other institutions/ Coordination with international framework>

Any cooperation/coordination with other donors, NGOs, universities or private companies was not clearly planned at the time of ex-ante evaluation.

<Evaluation Result>

In light of the above, the coherence of the project is ③.

[Evaluation Result of Relevance/Coherence]

In light of the above, the relevance/coherence of the project is ③.

2 Effectiveness/Impact

<Status of Achievement of the Project Purpose at the Time of Project Completion>

At the time of project completion, the Project Purpose was mostly achieved as planned. Indicator 1 was evaluated as achieved as planned, since 60% of the approved WUAs in the pilot project sites started implementing their action plans. Indicator 2 was also evaluated as mostly achieved as planned, based on the fact that (1) 87% of PMTs targeted for Phase 1 and 2<sup>4</sup> excluding those unable to continue activities due to deteriorating security conditions started implementing their water extension plans, and (2) 71% of PMTs including those targeted for Phase 3 started implementing their water extension plans.

<Continuation Status of Project Effects at the Time of Ex-Post Evaluation>

By the time of the ex-post evaluation, the project effects have continued and further developed. As for Indicator 1, over 60% of the approved WUAs in the pilot project sites have continued to implement their action plans. Moreover, the establishment of WUAs has been encouraged by MOWR owing to this project, 70 new WUAs in total have been established and operating in most governorates. As for Indicator 2, after project completion, the role of PMT was transferred to the WUA Section of the Directorate of Water Resources (DOWR) which was established in each governorate. In addition, after 2016, activities related to water extension plans have been conducted not only by WUA Sections in governorates but also by all the departments/sections of MOWR. Thus, the implementation of water extension plans can be said to have further developed beyond what was aimed in the project.

<Status of Achievement of the Overall Goal at the Time of Ex-Post Evaluation>

At the time of the ex-post evaluation, the Overall Goal has been mostly achieved as planned. Indicator 1 was evaluated as achieved beyond the plan, since over 80% of the approved WUAs in the pilot project sites have implemented their action plans. However, Indicator 2 was evaluated as partially achieved, since the number of complaints from farmers on water distribution could not be said as decreased, due to severe water scarcity in Iraq, accompanying illegal usage of water, and control and destruction of several water resources and irrigation facilities by the Islamic State in Iraq and Syria (ISIS).

<Other Impacts at the Time of Ex-Post Evaluation>

WUAs consist of small-scale farmers including female farmers who have a vulnerable status in Iraqi culture. Female farmers are involved in farming and some of them have land ownership. The project promoted information sharing on WUAs and efficient water uses among family members, since female farmers often cannot attend WUA meetings due to traditional custom in rural areas, which has led to empowerment of female farmers.

<Evaluation Result>

In light of the above, the effectiveness/impact of the project is ③.

Achievement of Project Purpose and Overall Goal

Aim	Indicators	Results	Source
(Project Purpose) Relevant agencies on irrigated agriculture develop their capacity for irrigation water	Indicator 1 60% of the approved WUAs in the pilot project sites implement their action plans as planned.	Status of the Achievement (Status of the Continuation): achieved as planned (continued and further developed) (Project Completion) 15 WUAs were approved in total, of which nine WUAs (60%) started implementing their action plans. One of major activities	source : Project Completion Report, Answers to the questionnaire (MOWR)

<sup>3</sup> ODA country data collection (2011)

<sup>4</sup> The project period was divided into three phases (the first year was the Phase 1, the second year was the Phase 2, and the final year was the Phase 3).

management by WUAs in the pilot project sites.		<p>implemented was the selection of board members of WUAs. (Ex-Post Evaluation)</p> <p>17 WUAs have been established and operating in the pilot project sites till the time of ex-post evaluation. Well over 60% of the approved WUAs have implemented their action plans. In addition, 70 new WUAs in total have been established and operating in most governorates after project completion<sup>5</sup>.</p> <table border="1" data-bbox="719 275 1299 607"> <thead> <tr> <th>Year</th> <th>Number of WUAs prepared and implemented action plans in the pilot project sites</th> <th>Percentage</th> </tr> </thead> <tbody> <tr> <td>2015</td> <td>17</td> <td>100%</td> </tr> <tr> <td>2016</td> <td>Data not available</td> <td>N/A</td> </tr> <tr> <td>2017</td> <td>Data not available</td> <td>N/A</td> </tr> <tr> <td>2018</td> <td>Data not available</td> <td>N/A</td> </tr> <tr> <td>2019</td> <td>17</td> <td>100%</td> </tr> <tr> <td>2020</td> <td>15</td> <td>88%</td> </tr> <tr> <td>2021</td> <td>14</td> <td>82%</td> </tr> </tbody> </table>	Year	Number of WUAs prepared and implemented action plans in the pilot project sites	Percentage	2015	17	100%	2016	Data not available	N/A	2017	Data not available	N/A	2018	Data not available	N/A	2019	17	100%	2020	15	88%	2021	14	82%	
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	<p>Indicator 2</p> <p>80% of PMTs of Phase 1 and Phase 2 implement their water extension plans as planned.</p> <p>* “Water extension plan” = water-saving irrigation extension plan</p>	<p>Status of the Achievement (Status of the Continuation): mostly achieved as planned (continued and further developed) (Project Completion)</p> <p>Out of 11 PMTs targeted for Phase 1 and 2, seven PMTs (64%) started implementing their water extension plans. Reasons for not starting the implementation of water extension plans in Salah Al-Din, Anbar and Kirkuk governorates were that governorate offices of MOWR were closed and/or officers could not go to fields due to deteriorating security conditions. Excluding these three PMTs, the achievement rate was 87%. Moreover, five PMTs targeted for Phase 3 already started implementing their water extension plans. Including PMTs targeted for Phase 3, 12 (71%) out of 17 PMTs in total started implementing their water extension plans. (Ex-Post Evaluation)</p> <p>The role of PMT, including the implementation of water extension plans, was transferred to the WUA Section of DOWR which was established in all of 15 governorates. After 2016, the MOWR recognized and prioritized the importance of water extension plans, so that activities related to water extension plans have been conducted throughout the MOWR including WUA sections in 15 governorates as one of the important activities.</p>	source : Project Completion Report, Answers to the questionnaire (MOWR)																								
(Overall Goal) Efficient irrigation water management by WUAs is conducted in the pilot project sites.	<p>Indicator 1</p> <p>80% of the approved WUAs in the pilot project sites prepare their action plan and implement as planned.</p>	(Ex-Post Evaluation) achieved beyond the plan See Indicator 1 of the Project Purpose.	source : N/A																								
	<p>Indicator 2</p> <p>The number of complaints from farmers on water distribution in the pilot project sites is decreased after the WUA manage irrigation water.</p>	(Ex-Post Evaluation) partially achieved All the WUA Sections in the pilot project sites have received complaints from farmers on water distribution, since Iraq has faced severe water scarcity and illegal usage of water. In addition, several water resources were controlled by ISIS and irrigation facilities were destroyed, which had negative impact on water distribution.	source : Answers to the questionnaire (MOWR)																								

### 3 Efficiency

Although the project period was within the plan (the ratio against the plan: 97%), the project cost considerably exceeded the plan (the ratio against the plan: 152%). One of the reasons for exceeding the planned cost was that, due to the deteriorating security condition in Iraq during the project implementation because of ISIS, it was necessary to change the training location (originally in Iraq) to third countries and to cover the travel expenses of CPs, which increased the project cost.

Outputs were produced as planned.

In light of the above, the efficiency of the project is ②.

### 4 Sustainability

<Policy Aspect>

The needs for competent management of water resources and improvement of on-farm irrigation efficiency through integrated water

<sup>5</sup> Due to the recent severe shortage of water, Iraqi government restricted or cancelled the agricultural plan in each governorate depending on the situation. Some WUAs have recently not been able to implement their action plans since agriculture plans of their governorates were cancelled (no distribution of irrigation water).

resource management are stated in “NDP (2018-2022)”.

<Institutional/Organizational Aspect>

At the time of the ex-post evaluation, MOWR (the headquarter (HQ)) was in the process of changing its organizational structure in order to improve efficiency of WUA related works, through establishing the WUA Department and integrating all the sections in charge of WUA related works into the department. On the other hand, as stated above, at the governorate level, the WUA Section has been established as an official and permanent section in each DOWR after project completion, which has the same responsibility as PMTs that were temporary units. At the time of the ex-post evaluation, only five staff was assigned at the WUA Department in MOWR HQ, and only one or two staff was assigned at the WUA Section of each DOWR. The number of staff at both the central and governorate levels was limited due to the shortage of staff and budget, however, MOWR was making efforts to improve the situation at the time of the ex-post evaluation. On the other hand, according to MOWR, the number of members in most WUAs in the pilot project sites was generally sufficient to conduct irrigation water management by themselves, although further increase of the number of members would be desirable in the future.

<Technical Aspect>

MOWR started a training system for staff of MOWR and MOA in 2022, in which training on how to involve WUAs in the initial irrigation management was provided to 18 to 22 participants. The idea of the training was inspired by this project, and contents of the training system has been developed during the subsequent project (Project for Sustainable Irrigation Water Management through Water Users Associations). In addition, MOWR has conducted several workshops and training courses for its staff including those at the governorate level and published some articles in MOWR’s internal magazine after the project completion. Thus, staff of MOWR and DOWRs have necessary skills and knowledge to promote and disseminate efficient irrigation water management by WUAs. On the other hand, although no regular and systematized training has been established for WUAs, DOWRs have conducted workshops and trainings for WUAs upon necessity. The level of knowledge and skills of WUA members is different among different WUAs. Some WUAs lack sufficient technical skills, and it is necessary to build their capacity and to enable them to manage the irrigation facilities. As the subsequent project is focused more on establishing the training systems, knowledge and skills of WUAs were being strengthened through the subsequent project at the time of the ex-post evaluation.

<Financial Aspect>

Due to the difficulties of financial situation of Iraqi government, only a limited amount of budget has been allocated to the WUA Department at the HQ of MOWR. The amount of budget allocated was 6,400 thousand Iraqi Dinar in 2019, 2,000 thousand Iraqi Dinar in 2020, and 4,325 thousand Iraqi Dinar in 2021. The budget is mainly used to conduct trainings on WUA activities, while staff salaries and other necessary expenses have been covered by other types of national budget. At the time of the ex-post evaluation, there is no system of collecting irrigation fees, since the law on the collection of irrigation fees has been pending for many years. However, MOWR has a plan to collect irrigation fees, and water users fee from WUAs and farmers to increase their budget, and this idea has been promoted through the subsequent project.

<Environmental and Social Aspect>

As stated above, Iraq has faced with severe water shortages due to the climate change and the development of large dams and irrigation in neighboring countries. These are external factors, however, MOWR has been trying to mitigate such impact through disseminating efficient irrigation water management by WUAs.

<Evaluation Result>

In light of the above, some problems have been observed in terms of the institutional, financial and environmental and social aspects of the implementing agency. Therefore, the sustainability of the project effects is ②.

5 Summary of the Evaluation

The project mostly achieved developing relevant agencies’ capacity for irrigation water management by WUAs in the pilot project sites as planned, and mostly achieved efficient irrigation water management by WUAs in the pilot project sites as planned. After the project completion, relevant agencies’ capacity for irrigation water management by WUAs have continued and further developed. As for sustainability, the number of staff at both the central and governorate levels was limited due to the shortage of staff and budget, and Iraq has also faced with severe water shortages. However, MOWR has maintained technical skills through provision of trainings and workshops. As for efficiency, the project cost significantly exceeded the plan.

Considering all of the above points, this project is evaluated to be satisfactory.

**III. Non-score Items**

Adaption and Contribution:

Since this project was conducted at a time of frequent changes in the security situation in Iraq, JICA carefully consulted with the implementing agency and JICA experts on the project activities in order to ensure the safety of relevant persons and achieve the project objective. Moreover, although the project had to change the plan due to the unstable security situation in Iraq, JICA experts worked hard to adjust the project components to achieve the project objective through communicating with counterparts and other related people.

**IV. Recommendations & Lessons Learned**

Recommendations for Implementing Agency:

For MOWR and MOA:

As capacity development requires a long time and the idea of irrigation water management by WUAs is relatively new to Iraq, it is crucial to continue to promote the understanding of the idea in relevant organizations for obtaining their support. Thus, MOWR and MOA should continue implementation of workshops and training courses for officials of MOWR, MOA, their governorate offices and relevant organizations to promote their understanding.

Lessons Learned for JICA:

As stated above, MOWR and its governorate offices have faced with the shortage of staff and budget. When a similar project is to be implemented in future, project components to strengthen the organizational structure and financial basis of an implementing agency should

also be included to enable the agency to maintain and expand important activities introduced by the project.



WUA meeting in Missan Governorate



Training session in Diyala Governorate