

## Looking back on the DEITEX Project

### 1. DEITEX as a project

Syria's land area is about half of that of Japan and has a population of about 20 million. The land is relatively flat, much of it is semi desert and not particularly hospitable at first glance but it is endowed with many ancient ruins. In different parts of the country, one can feel the majestic and noble atmosphere of ancient civilizations. The DEITEX Project was run in the country to make the most of Syria's many natural and cultural features and its dishes which every visitor loves. The Syrians have somewhat similar sensitivities and compassion as the Japanese people. The full name of the project was the Development of Efficient Irrigation Techniques and Extension Project. The project was implemented as phase 1 and 2 from April 2005 to July 2012, and AAI has participated in the activities throughout the duration.

As in most arid areas, water security is the most important and pressing issue for people. In Syria's largest city, Damascus, its population has increased from around 50,000 in the 16th century when the Ottoman Empire ruled the area, to a current level of roughly 4 million people. Even in this city, which was once called the Garden of Eden, water shortage is a dire issue. Other regions were less endowed with water resources from the beginning and water security has been a major issue for many centuries.



Traditional irrigation in Syria  
(Left: Zigzag irrigation; Right: basin irrigation)

The average annual rainfall in the country is around 250 mm. Although it has the River Euphrates with an ample water volume flowing through the country, the Euphrates is an international river and there are strict water use agreements between the countries that share its bounty. In Syria, in the 1990s, pump technology introduction for water wells rapidly increased the number of household wells. During the period, the size of irrigation area also increased so fast nationwide. What people also saw was a lowering of the groundwater table and an increase in dried-up wells. The cause was obviously excessive pumping of groundwater, and if the situation was left as such, ground water resources all over the country could have been depleted.

Given the situation, as approximately 90% of water

demands of Syria was for irrigation, the Syrian Government decided to promote water saving in irrigation to alleviate the problem of water shortage and resource depletion. Therefore the Government requested the Government of Japan for technical cooperation to implement the project.

How do we achieve water saving in irrigation facilities? It seems that a combination of "carrot and stick" is the most quick and effective strategy to ensure that each farmer controls irrigation water use at an appropriate level. The Syrian Government had established a variety of water use restrictions and penalties however, water use did not go down. According to the "social dilemma" theory, leading and forcing people for societal actions (in this case water saving) tends to incur huge costs for monitoring and control, while reducing people's will to take initiatives for action. In Syria, it also became apparent that enhancement of water saving monitoring and control alone would not achieve the objective.

There are many different reasons for over usage of water. Some may not have necessary knowledge for improving water use efficiency. Some have no awareness of wasting water. Some may know that he/she is wasting water, but feels no need for taking action as using as much water as possible is advantageous for him/her. Therefore the remedial actions are to raise awareness of those who are not aware, and to make people realize that consuming a large amount of water is actually not advantageous for them. In the project, we considered that leading each farmer to understand the merit of water saving and select water saving technologies through extension activities would be the most reliable and sustainable way of achieving water saving objectives. In addition, if forms and methods for water saving to be introduced are seen as "beneficial" to them, the use will spread among the farmers. Therefore, the project promoted understanding of the fact that a shift from traditional irrigation to modern irrigation would lead to water saving, ensuring a variety of incentives for farmers. The project decided to work on extension activities for introducing modern water saving irrigation, with full consideration for appropriate methods and application forms that suited individual farmers' realities and needs.

The project approaches were as follows: (1) review the existing modern irrigation technologies and augment them where certain technologies were lacking; (2) Nurture human resources that could implement the technologies; and (3) develop and operationalize methods and systems for effective extension activities by those who are trained. In particular, in the training and extension activities, the project placed great emphasis on implementing these activities in practical and cooperative ways, based on lessons learned from the past work as well as on clear objectives that are aligned with farmers' needs.