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Report from the third country training in Tunisia

I visited Tunisia with seven Syrian counterparts from July 31 to August 8, 2009. It was the third country training, part of JICA's support for Development of Efficient Irrigation Techniques and Extension in Syria phase II. All counterparts were irrigation system specialists. Three were from the General Commission for Scientific Agricultural Research, four were from the Directorate of Modern Irrigation Conversion. The purpose of this training was to visit research facilities and extension centers, and to learn about irrigation systems managed collectively by farmer's groups. We visited the Commissariats Regionaux au Developpement Agricole (CRDA) and the Groupement de Développement Agricole (GDA) that administers shared wells in three prefectures, namely Nabeul, Kairouan and Monastir, where modern irrigation-based agriculture is in operation.

Responding to enthusiastic requests from the counterpart, on the first day, we visited a factory producing polyethylene pipes and PVC pipes for irrigation. They were particularly interested in the process of printing model numbers on the pipes. In Syria, the pipes produced in town factories do not have model numbers and there is little quality control. Therefore, farmers in Syria cannot judge the quality of pipes, often resulting in the use of low quality pipes. These farmers have little trust in irrigation equipment in general, and tend to become negative towards modernization of irrigation facilities. Proper quality inspection and control of irrigation pipes is an important issue to be tackled in Syria.

On the second day we visited the national research organization. From the third day we traveled to the three prefectures. In each prefecture we first visited CRDA and learned about the state of agriculture from the staff, followed by a visit to the GDA. GDAs are cooperatives of farmers for joint irrigation system management. They are financed from water fees collected from participating farmers. The GDA committee members have two-year terms of service, and six members are elected by the participating farmers. The committee is responsible for water resource management including development and maintenance of wells and water fee collection. To dig one well, the participation of a minimum of 15-16 farming households are necessary. When there is good rain, the number of participating farming households decrease, which creates budgetary problems. However, just one prefecture such as Kairouan has nearly 300 active GDAs, and it seemed that communal use of wells is very well accepted by many farmers. There is even an annual competition among the GDA units nationwide. The Bekalta 1 GDA unit in Monastir prefecture, which has won the competition in the past, has sophisticated organizational administration. It not only manages irrigation systems, but also distributes fertilizers, pesticides and mulching materials to farmers as well as collecting used plastic containers for recycling. In Tunisia, through the use of communal wells, farmers can irrigate their lands at a low cost. By contrast, in Syria, individual farmers dig their own wells on their own land, and irrigation activities are also carried out on an individual basis. This situation is considered to pose a major obstacle for achieving water savings.

Tunisia and Syria are both Arabic speaking countries despite the different dialects. The fact that participants could communicate directly with their hosts without an interpreter was a definite advantage for the training. I was the only person who could not understand Arabic, and our counterparts from Syria had active exchanges enjoying the dialectic difference. There was no need for an interpreter, and lively discussions and debates took place between participants, as well as a significant amount of opinion/information exchange. For me, it presented a great opportunity to get to know Syrian people, through traveling with them. For example, I learned that they take everything necessary from their home country, even when traveling to another country with a shared culture. Items carried included sugar, tea, herb tea and bread. Although it was only nine days, traveling together it helped cement the bond among the counterparts. I hope that we will be able to make the most of this experience in the future project implementation. (By Nakayama)

Counterpart participants listening to a presentation at the GDA unit

Group photo at the farm

Vegetable cultivation technology training course: Reflecting on individual experiments in the last 5 years

AAI ran vegetable cultivation technology training courses at JICA Tsukuba from 2005 to 2009. The training courses aimed at making the overseas participants master cultivation technologies and consisted of lectures, experiments and practices, and field visits. From 2010, the course name has been changed to "vegetable cultivation technology for small scale farmers." In these courses, since 2006, we introduced into the curriculum individual experiments that are relevant to participants' work in their home countries, with a view to realize the training impacts quickly. Individual experiments aim to provide techniques and information which can be immediately useful and transferable for solving problems the participants encounter in their countries in the vegetable production process. We provide individual support to participants in making a plan for individual experiments, ranging from raising seedlings to crop management, to report writing at the end of the experiments. The experiment themes of individual participants are determined after a thorough selection process at different stages including the inception report presentation, technical interviews and individual experiment plan presentation. Here, I would like to review the results of individual experiments supported in the last five years.

To date, 47 participants have conducted individual experiments, dealing with 13 vegetables (Figure 1). Tomato, potato and cabbage share a commonly high demand in the participants' countries. In addition, these are representative vegetables of fruit, root and leaf vegetables, which require vegetable type specific cultivation technologies. Therefore, we believe it is important to increase the understanding and skill enhancement of participants regarding the characteristic physiology and ecology of various types of vegetables. For other types of vegetables, demands differ from country to country. Therefore, it is critical that training takes into account the differences in the cultivation environments such as latitude and climate.

There was a total of 17 items of handling elements within the experimentation objectives in individual experiments. About 34% of the objectives were to do with the effects of chemical fertilizer (N and P_2O_5) and organic fertilizer/compost application. This was followed by experiments on the effects of pruning/thinning, varietals trial, and experiments related to soil-borne diseases and virus diseases (Figure 2). A variety of experiments were undertaken regarding tomato which was chosen by many participants. Teaching required a significant amount of preparation in order to ensure that we could respond to the variety of experiments, including perusal of related documents such as academic papers and reports from research centers. We had to read a lot to ensure that individual experiments were rationally conducted in accordance with the experimentation objectives and the background of the issues in the trainees' home countries.

In most participants' countries the climate is severe and cultivation conditions are far from satisfactory. This means that technologies that require various materials and facilities, which Japan has, may not be necessarily appropriate for their countries. Often, it is therefore difficult to directly apply the cultivation technologies participants learn in our training courses in their home countries. Hence, our teaching focused on nurturing understanding of the core principles of the cultivation technologies, so that participants would be able to evaluate them and conduct necessary experiments in their own countries, resulting in application of the technologies in a locally appropriate manner. It is also necessary to provide useful ideas that can be used in their own countries, with materials that are relatively easy to obtain; for example, a skill of using organic fertilizers, with a small amount of chemical fertilizers to use as starter at initial growth stage, and use of chicken dung as fermented fertilizer, simultaneously helping to solve the waste issue of chicken excrement on farms.

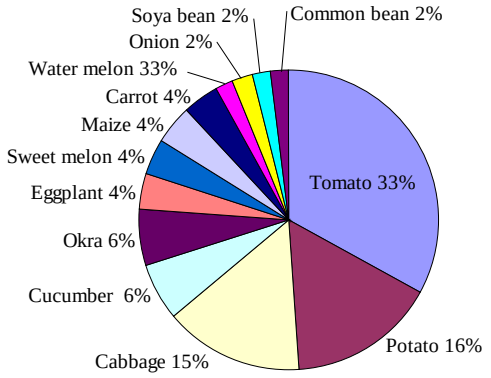

Figure 1: Vegetables targeted by Individual Experiment (2006-2009)

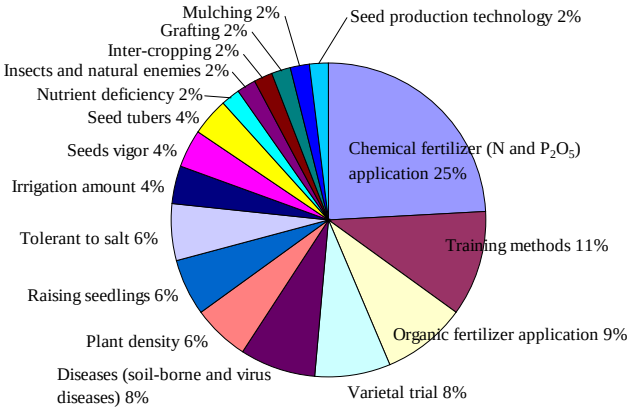

Figure 2: Elements of Individual Experiments (2006-2009)

Rice cultivation in Africa <Part 2>

Lessons learned in the Development Study on National Irrigation Master Plan in Tanzania

The Tanzanian government requested Japan to assist with the formulation of National Irrigation Master Plan, preparation of action plans, as well as verification studies on urgent actions, with an aim to develop effective irrigation development and planning in the country. The study was conducted for three years since 2001.

Due to the rapid rise in the population and an increase in rice consumption, from the viewpoint of food security, the increase in steady rice production is one of the most important challenges facing Tanzania. To achieve the objective of increased production, irrigation development at the national level is vital. The reality of the government is that it does not only lack financial resources, but also has insufficient government organizational and staff capacities. It is not yet in a situation to be able to perform effective irrigation development. Overall, there are two major issues with regards to types and promotion methods of irrigation development in a country-specific manner. One is the establishment of appropriate irrigation development scale and levels. The other issue is to establish implementation frameworks and organizations for realistic irrigation development. In addition, as it is difficult to expect sufficient financial and technical inputs from the central government, it was considered to be more appropriate to choose an implementation system whereby local governments become the promoters of the irrigation development with the full participation of the farmers themselves. Given this, it was deemed appropriate to focus on development of small scale irrigation systems based on traditional irrigation methods. They would be modernized where possible, using modern technologies, under appropriate development levels. For this, it was seen as important to produce manuals for irrigation techniques, which fit with small scale irrigation system and non-high-tech development levels. As for the implementation frameworks and organizations, it was suggested to promote irrigation development at the prefecture level based on direct participation by farmers. Through verification studies, the feasibility of this type of system was confirmed and necessary guidelines were prepared.

During the verification study stage, feasibility studies were conducted at potential priority areas for irrigation development, which were selected based on rapid field trips. For the priority areas that were confirmed as having high potential, we aimed to establish a system for prefectural technicians to integrate the irrigation development in the prefectural development plan and implement it. Throughout these activities, we continued to improve the manuals and guidelines, by using them in our actual field works. We found unexpectedly large number of issues arose when it came to the actual use by technicians on the ground. For example, the manual describes how to measure the inflow to know the water resource amount that can be supplied to the target sites. However we realized we needed to also include how often one should measure the inflow, when there are large annual fluctuations. Similarly, where there are prominent seasonal changes, it was found to be necessary to describe possible ranges of average rice yields and selling prices in target areas rather than provide exact expected figures. Moreover, we were obliged to improve the manuals so that users can automatically read crop water requirement and internal rates of return from a table as opposed to having to calculate them. Many technicians expressed strong interest in the usefulness of processes such as the simulation of irrigation areas by simple measurement using GPS. This has been used as a tool for irrigation development in the country to date, contributing to efficient irrigation development.

In the National Rice Development Strategy for Tanzania formulated last year with guidance from the CARD (Coalition for African Rice Development), the establishment of irrigation facilities is stated as being one of the main pillars for rice production enhancement. Similarly, improvement of irrigation and water harvesting techniques are two more of the fundamental strategies. Furthermore, increased rice production through the irrigation schemes in selected areas is one of the short-term strategies. Spatial distribution of areas with different irrigation potential and irrigation facility development plans, which were developed as part of the Master Plan Study, were utilized in the strategy paper, forming the foundation for the irrigated rice field development plan. Tanzania's irrigation development is a typical plan in Africa. This Master Plan Study has taught us about the fact that there is a form of development which is different from that in developed countries and in countries which have already developed an extensive irrigation network.

Prefectural government staff

conducting field survey following the guidelines

New Series

Bridging training and extension activities <Part 1>

Case study: Conducting training that contributes to the clarification on training needs and extension activities in Syria

Training should not be a stand-alone activity. We can only expect effective application of outputs from training, through using what is acquired in related work and activities. It is relatively easy to link training and action plans when training activities are conducted as part of a project on the ground. In this case, action plans can be directly based on training contents and training contents can be designed to suit the extension activities of the project concerned. By contrast, in the case of training in Japan, bridging between training and actual activities on the ground becomes more difficult, for reasons such as the fact that it is not necessarily guaranteed that the trainees can engage in the relevant activities once they return home. In this mini-series, we would like to introduce different mechanisms and innovations to link training with extension activities so that training will become more beneficial.

This time, we would like to introduce the project on Development of Efficient Irrigation Techniques and Extension in Syria. In this project, to promote the mindset of water saving irrigation to decrease water use for agriculture and to extend relevant technologies, a training course was organized targeting irrigation extension staff. The training was structured in "four steps", aiming to provide skills and knowledge to them to deal with issues related to water saving irrigation, which farmers are facing. In the first step, training focused on teaching examples of surveys on farmers so that the trainees can understand water saving irrigation circumstances and the related issues farmers face. In the second step, training was provided on basic issues related to design and installation of water saving irrigation facilities, as well as operation and maintenance of the facilities. The third step focused on development of extension materials such as posters and pamphlets which will be useful for future extension activities. In step 4, trainees developed and implemented an action plan to implement extension activities fully utilizing knowledge and techniques they acquired in the training and extension materials that were developed during the training. As a follow up activity, support for implementation of the action plans was continued. The support action plan included organization of a field day, field visits, seminars, mobile theater, and poster competitions. Well conceived or priority actions were selected from the plan, and projects, in the form of OJT and were implemented by dividing staff into groups.

Previously, training courses were mainly lectures in classroom, explaining old teaching documents. They felt that they had no techniques nor information to extend, did not have the know-how, and did not have confidence to teach farmers. The practical training this project offered provided the extension staff with the necessary means to deliver concrete and practical advices and supports to farmers. Moreover, in the past, extension activities were neither properly prepared nor planned. However, in the extension activities under this project, the staff set clear objectives based on farmers needs', developed plans and undertook the activities after thorough discussions and preparation. As a result, extension activities could respond better to the farmers' needs, and extension staff capacities increased. Furthermore, various efforts such as evaluation of understanding of participating farmers and review meetings after extension activities made the whole work much more solid and fruitful compared with the way things were done in Syria previously. Irrigation extension staff's ability continues to improve.

This project consists of a cycle comprising; identification of training needs – selection of training themes – training implementation for trainee extension staff – implementation of extension activities by trainee extension staff – extension to farmers (resolving of farmers problems). Through this cycle, we could establish the "results-oriented training and extension method". The main characteristic of this method is that trainees acquire knowledge and techniques that are actually needed on the ground, and the project provide "places" and "opportunities" to use them in the form of follow up projects.

The future challenge is how to make the results-oriented training and extension method as a norm and replicate it in other regions. Extension activities in Syria are not confined to irrigation, and it is necessary to apply this method in other extension activities.

At the irrigation research station

Problem analysis session

Extension activity

Discussion with farmers