

Market-oriented agriculture in Palestine <Part 6>

Future development

In this series over the last five parts, we introduced demonstration activities of various candidate technologies that are considered effective for further promotion of market-oriented agriculture in Palestine. In this last part of the series, we put together the table below after considering lessons from our activities and suggestions for future development.

For candidate technology introduction impact, we provided farmers who indicated interest in evaluating the difference in profitability with or without technology introduction of some materials and machinery from our project. They received technical advice from the project, and they took records and compared profits with or without technology. To facilitate their work, we developed a special notebook for farming records that can be easily filled in by farmers and conducted training

sessions on how to use the notebook. This farming notebook enables farmers to compare profit margins among different crops and those differences in various cycles of the same crop. Many farmers perceived this notebook as an extremely effective tool to consider farming plans based on crop budgets.

Based on the experience gained through the technical verification activities conducted during the project, posters and brochures were developed to showcase the usefulness of individual technologies and a manual for different technologies was put together to guide future extension activities. From now on, the Ministry of Agriculture of Palestine plans to utilize this technical manual and extends their work to areas outside of the project target areas. We sincerely hope that the individual technologies will be used appropriately by farmers and that this will lead to an improvement of local people's livelihoods.

Introduced technology	Lessons from activities	Possible future development
Diagnosis of irrigation facility	Education for farmers covering "soft" areas such as appropriate amount and frequency of irrigation is extremely important in the long run, because use of tensiometers and improvement in irrigation network does lead to water saving and production increase. Therefore, we paid special attention to strengthen extension workers' ability to diagnose irrigation facilities so that they can provide effective advice to farmers to improve "soft" elements of irrigation.	Extension workers who participated in various activities are improving their technologies and knowledge through applying what they learned in practice. Irrigation facility diagnosis itself does not cost very much. Thanks to awareness raising on the usefulness of irrigation facility diagnosis services using various opportunities, the number of farmers requesting the diagnosis services is increasing. In future, it is hoped that farmers addressing recommendations from diagnosis will lead to improvement in their profitability.
Grafted seedlings	Success of grafting cultivation significantly depends on the quality of grafted seedlings. Hence seedling companies and farmer groups that produce grafted seedlings must be able to establish the trust with farmers, by ensuring avoidance of contamination of different varieties, prevention of pest and disease infection and timely shipping to facilitate planting in the right season. It is also important for farmers not to entirely leave quality maintenance and management of grafted seedlings to producers. It is also important for farmers to be able to watch the quality of grafted seedlings.	Prior to grafting cultivation, it is desirable to fully explain to farmers the difference between grafting cultivation and conventional cultivation, so that farmers can start planting seedlings with a good understanding of the pros and cons of grafting cultivation. In addition, further improvement in cultivation management technologies and examination on the profitability are required for grafting cultivation with tomato, cucumber and water melon.
Compost	As for production and use of compost, users of compost produced at individual compost production centers provided basically positive evaluations. However, use of compost is still limited. Some of the reasons for the low uptake rate are insufficient knowledge about ideal application amounts and suboptimal understanding of the roles of compost by farmers. Many farmers consider compost as an alternative to chemical fertilizer and expect compost input to increase yields.	Although compost has fertilizing effects, it should be basically used for soil improvement to increase soil fertility through repeated application. In future, through training and demonstration, compost's features need to be explained to farmers in an easily understandable manner so that compost is applied in accordance to its properties.
Silage	Given that there are many cases where machinery provided by donors is being left unused, this project promoted shared use of production machinery through a rental system. Through this, we tried to establish a sustainable system for machinery maintenance and management. However, given that there were organizations that continued to provide free machinery, it was felt necessary to coordinate approach between activities of donors and NGOs.	Introduction of machinery led to increased production of silage by farmers. However, methods for feeding with silage varied between different farmers. In some cases, inappropriate feeding had negative impacts on animals. Silage use experiment was limited to a very simple experiment to compare silage use and hay use. In future, more detailed experiments should be conducted to analyze the nutritional difference between various types of fodder at an experiment and research center. Based on the results, it is hoped that more appropriate guidance to farmers can be provided.