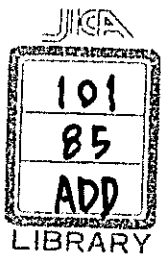


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REPORT ON HORTICULTURAL DEVELOPMENT SURVEY
IN
BANGLADESH

January, 1977

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)



國際協力事業団	
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25 January, 1977

Dear sir,

It is my great pleasure to send the report on Horticultural Development Survey in Bangladesh on behalf of the Team organized by the Japan International Cooperation Agency, (JICA).

The Team consisting of four members has stayed in Bangladesh for 15 days since 13 August 1976 to study citrus and vegetable seed production in the country and to formulate the future possible technical cooperation program to be performed by Bangladesh and Japan, through the discussions with government officers concerned of Bangladesh and field survey.

Copies of the Report will be also forwarded to the proper authorities of the Government of Japan through JICA as the recommendation of the Team.

On this good occasion, the team wish to extend our sincere appreciation and gratitude for the fruitful discussions with your colleagues and staff-members and helpful assistance and cooperation extended to the team during our work.

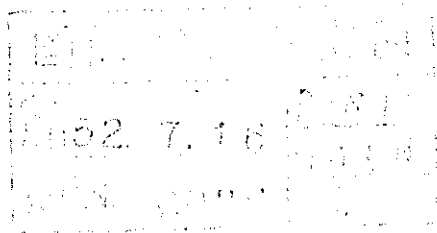
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Sincerely yours,

Dr. K NAGASAWA
Leader of the JICA, Horticultural
Development Survey Team



REPORT ON HORTICULTURAL DEVELOPMENT SURVEY IN BANGLADESH

1. Purpose of the survey

The Japan International Cooperation Agency despatched a horticultural development survey team to Bangladesh for a fifteen-day period from August 13 to 27, 1976. During its stay there, the team conducted field survey and discussed with the Bangladesh experts, in order to promote the plans for improvement of citrus and vegetable seed multiplication.

Its main tasks included:

- (1) Study on the present citrus and vegetable seed multiplication situation to supplement the previous dry-season survey and then grasping of the whole-year farming activities and situation; and
- (2) Understanding of Bangladesh's policies on the system formation for citrus improvement and vegetable seed multiplication and discussions over the feasibility of Japan's cooperation, the scope and methodology of cooperation.

2. Summary of the survey

The Team conducted field survey in the rainy season to supplement the previous dry-season survey and also made inquiries into the circumstances surrounding the policies and concepts standing behind the project envisioned by the Bangladesh authorities, stated the views of Japan about the cooperation in the project, and exchange views about the various subjects with the Bangladesh officer concerned.

3. Findings of field survey

The survey team has been impressed with the enthusiasm shown by the Bangladesh authorities toward improving and developing the citrus and the vegetable seed multiplication as early as possible because they have realized the importance of such improvement and development.

The members of the survey team personally investigated the local facilities and research and farming activities and learned that there are many problems to be solved for the purpose of improving and developing the citrus and vegetable seed multiplication and for increasing the self-sufficiency level of vegetable seeds.

These problems may be summarized as follows.

- (1) The existing conditions have not been clarified as yet.
For the purpose of increasing the production of citrus and vegetables, it is essential to select types and varieties which are best adaptable to given local conditions and to establish the technologies that are necessary to tap the best out of them.

In other words, the adaptability to localities and the productivity of the local varieties must be investigated first in order to find out qualified varieties.

It will be worthy of mention that in the history of horticultural development in Japan, the special production localities have been formed through comparing merits and demerits of local varieties and making the most adaptable varieties known to the public.

In view of this, it is recommended to have the farmers bring their horticultural crops at a place several times a year at respective harvests to hold agricultural fairs for the purpose of comparison study of merchandizability and productivity, etc.

As regards citrus, for example, it is known that there are varieties having different adaptive characters. Their qualities, merchandizability, and productivity (incl. acclimatizability and resistance to disease) are not likely to have been studied thoroughly in Bangladesh.

If these varieties are brought together for comparison study and commendation of meritorious formers, it might possibly put a premium on the farmers' research and development activities for all that the cost for it would be comparatively low.

(2) Lack of basic studies

It is understood that efforts have been made to answer the ever-increasing demand for citrus and vegetables. It should be borne in mind however that there is a correct order in doing anything.

As regards the citrus, for example, feverish efforts have been made for propagation. But, of the distributed seedlings, there are many which are considered affected by viruses; therefore some have been blighted in a few years after plantation. For the purpose of improvement and propagation of citrus, it is necessary to find out virus-free individuals and take care to protect them from infection, and cut scions from the healthy, virus-free trees for grafting. What is considered another matter of urgency is to prompt the selective test through which to single out rootstocks.

(3) Technical level leaving much to be improved

Increased production of citrus and vegetables must start with discovery and selection of excellent types and varieties which should be followed by the formulation of technologies for raising and production of seedlings. Furthermore, the cultivation techniques should be improved and then extended to the farmers to follow.

The survey team investigated the nursery farms of citrus, and found that the rooting rate was too low. It seems to me that, there are many problems to be identified and solved, including grafting timing, grafting method, control of nursery farm (drainage problem, etc.). It's effective way to hold the standing crops fair and similar ones in order to upgrade and extend techniques for plantlet nursery and vegetable cultivation.

4. Guide line for cooperation

(1) Field of cooperation

It is considered proper to count both citrus improvement and vegetable seed multiplication as cooperation fields as requested by the Bangladesh Government.

(2) Scope of cooperation

For both fields referred to above (1), fundamental study is considered most important and urgent. For this reason, Japan's cooperation should preferably place emphasis on the research activities in both fields for the time being.

(3) Research subjects

Improvement of citrus

1) Breeding and improvement of varieties (selection and improvement of varieties, and testing)

2) Cultivation, nutrition and plant physiology (cultivation methods, fertilizing, etc.)

3) Pest (virus detection, pest control, etc.) With reference to the above, the fundamental research and adaptability test will be necessitated. Of them, Japan's cooperation will concentrate on the basic research.

Vegetable seed multiplication

1) Breeding (search of excellent local varieties, introduction and acclimatization test of foreign varieties, examination of disease resistance)

2) Production of breeder's seeds and foundation seeds

3) Examination of seed production and cultivation methods

In this field, it is also required to carry out fundamental study and adaptability tests. Japan's cooperation will focus on the basic research activities.

As regards the propagation (propagation of seedlings for extension and propagation of extension seeds), it will be reasonable to limit the cooperation activities only to necessary technical guidance by making rounds of local farms of ARI and/or HDB local stations.

On the other hand, the planning of the overall plan covering the activities of the project from fundamental research to propagation and extension should preferably be counted in as one of the cooperation subjects.

(4) Project Site

In view of the cooperation concentrating on the research activities, the fundamental study for both improvement of citrus and breeding of vegetable seed multiplication should preferably be conducted at A.B.C. Complex in Jaydepur near Dacca as center where ARI Central Research Institute is located.

The acclimatizability test should be conducted at the experiment stations of ARI.

The fruits experiment station in Sylhet and ARI's experiment stations in Chittagong and Rajshahi are considered eligible for the testing of citrus, while experiment stations in Ijurdi, etc. will be suitable for vegetable seed testing.

Either way, details should be determined upon arrangement between Japan and Bangladesh.

As regards the propagation, particularly of vegetable seeds, H.D.B. or B.A.D.C. has been taking an active part. Cooperation through round trip guidance and supply of materials and equipment will be desirable to help enhance the activities.

(5) Assignment of Japanese experts

The resident experts will be assigned to "Citrus Improvement and Vegetable Seed Multiplication Project (tentative name)" in the Ministry of Agriculture, and the principal place of the Project should preferably be in a quarter of the so-called "ABC Complex" in Jaydepur where the ARI's Central Research Institute is to be established.

To this end, however, it is required to install new buildings for the project, and Japan should take into account grant aid or other suitable measures to assist in the construction of such buildings.

(6) Period of cooperation

A long-term cooperation is desirable because the Project covers a wide range of activities from basic study to propagation and extension.

Of the overall plan, however the scope of cooperation to be offered by Japan is likely to be limited to the research for the time being. It is observed that substantial achievements will be acquired in at least 3 years of cooperation. For the time being, some 5 years of cooperation will be reasonable. It is considered adequate to begin the cooperation from around July 1977.

(7) Despatch of experts

It is projected that the one each experts for the improvement of citrus and vegetable seed multiplication will be despatched respectively for the first year of cooperation with their number increased in keeping with the progress of the Project and in the final stage up to about five.

(8) Supply of materials and equipment

It is desirable to supply laboratory equipment, machinery and seed production materials and equipment to the center of cooperation, ARI's experiment stations and H.D.B.'s seed farms.

(9) Acceptance of trainees

It is preferable to accommodate technical trainees mainly from the counterpart personnel engaged in the improvement of citrus and vegetable seed multiplication.

(10) Others

For the purpose of the Project, the preparation of its implementation program is required. It is also considered important to assist in it.

For the preparation of the implementation program, one to two short-term experts should be dispatched as soon as possible.

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