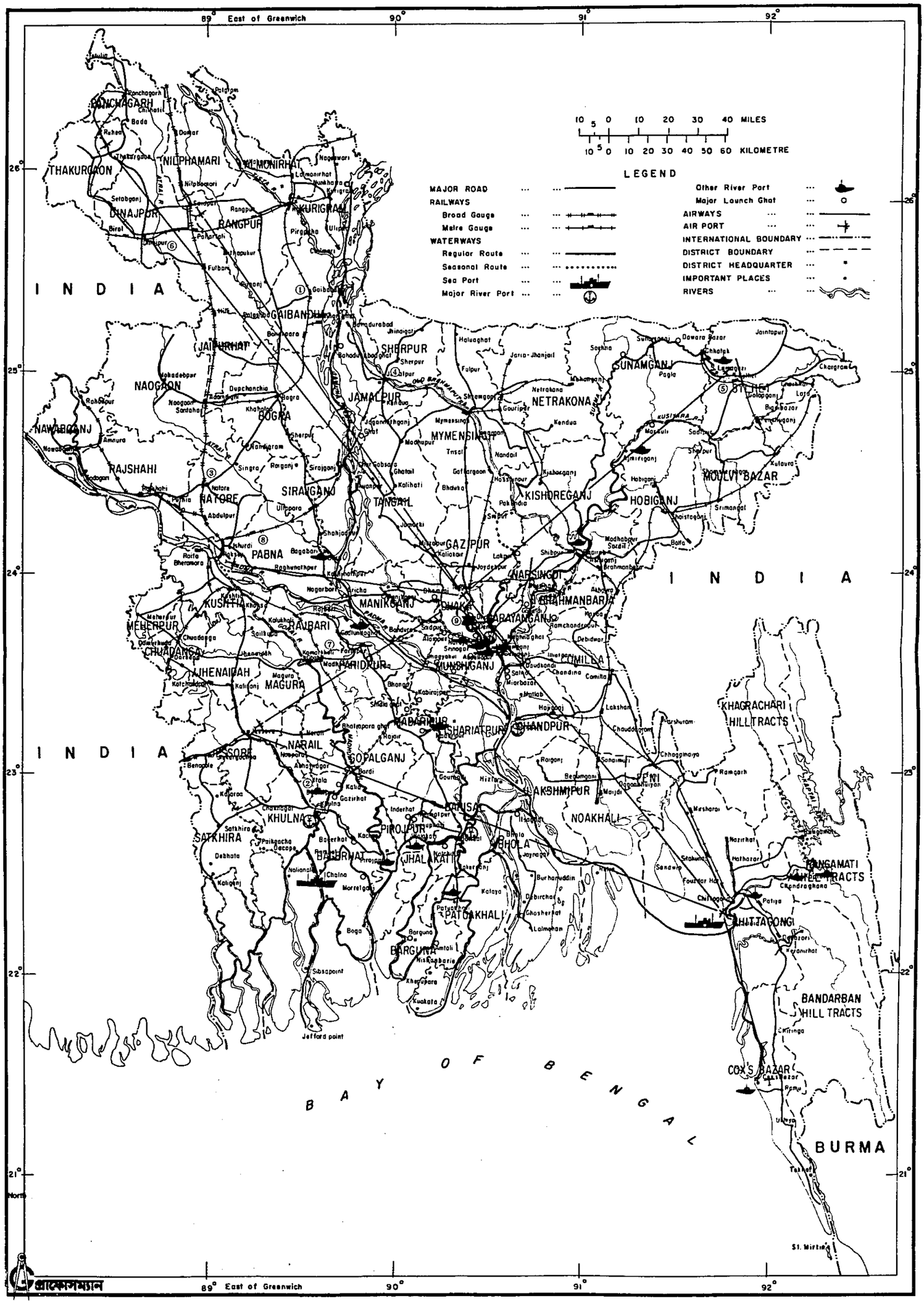
JAPANESE AGRICULTURAL COOPERATION IN BANGLADESH

—AN EXAMPLE OF TECHNICAL COOPERATION TO A.E.T.I.S BY J.O.C.V. IN BANGLADESH—

J.O.C.V. JUNIOR EXPERTS
IN
A.E.T.I.S

MARCH 1985

JAPAN OVERSEAS COOPERATION VOLUNTEERS
(J.O.C.V.)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CONTENTS

I. Purpose of the Report

The Japan Overseas Cooperation Volunteers (J.O.C.V.) programme in Bangladesh was implemented in 1973, by dispatching 3 (three) Junior Experts in the Agricultural Extension Training Institute (A.E.T.I.), Daulatpur. They were Mr. T. Oshima (Rice Culture), Mr. H. Ouchi (Horticulture), Mr. Y. Tanikawa (Agricultural Machinery). Since the inception of the programme 57 (fifty seven) J.O.C.V. Junior Experts have so far been involved in A.E.T.I., including 3 (three) female Junior Experts in the field of Home Economics who came in 1983 and are now working at A.E.T.I. Gaibandha, Faridpur and Tejgaon.

In January 1983, the Director General, Department of Agricultural Extension formed a committee headed by Mr. A.N.M. Shamsul Huda, Executive Director of Central Extension Resources Development Institute (C.E.R.D.I.), to evaluate the activities of J.O.C.V. Junior Experts in different A.E.T.I.s. The committee submitted its report in June 1983. The committee, in their report, has clearly stated the qualification of J.O.C.V. Junior Experts to be dispatched to the A.E.T.I. and the condition of their services. The report also suggested that the activities of J.O.C.V. Junior Experts be re-assessed after April 1985 to decide whether or not their services are required for A.E.T.I. Meanwhile, the Department of Agricultural Extension has requested for replacement and extension of J.O.C.V. Junior Experts services. But under such circumstances, J.O.C.V. cannot dispatch Junior Experts in A.E.T.I., as it is not sure what will happen to J.O.C.V. Junior Experts after April 1985. It should be noted here that J.O.C.V. cannot dispatch a Junior Expert for less than two years term. Also the term period of all J.O.C.V. Junior Experts working in different A.E.T.I.s will expire in April 1985, and there will be break-up of procuring J.O.C.V. Junior Experts in the A.E.T.I.s.

The purpose of the report is to describe J.O.C.V. activities in A.E.T.I. and to analize how J.O.C.V. programme effected A.E.T.I.s. We hope that this report will become a very useful reference for our head office and J.O.C.V. Junior Experts who may work for A.E.T.I. in future. In this connection, we have also made suggestions for the development of A.E.T.I., activities and agricultural development of Bangladesh at large.

II. History of Agricultural Cooperation by the Japanese Government

After the Second World War, developed countries and the United Nations Organizations (U.N.O.) have been assisting developing countries by providing technology and material for their village development, agricultural promotion, agricultural adjustment and establishment of agricultural base. There has been a close cooperation in the agricultural development of Bangladesh since the then East Pakistan.

Pakistan requested Japanese cooperation for its agricultural development in East Pakistan in 1952-53. A formal request to this effect was made via Colombo Plan in 1956.

The agricultural cooperation between Japan and Pakistan was commenced under Colombo Plan in 1956. The programme included training in Japan for Pakistani nationals, dispatch of Japanese agricultural experts to Pakistan, building Technological Development Centres, providing agricultural material to Pakistan and conducting agricultural development survey in Pakistan.

The training programme of Pakistani nationals in Japan was started in 1954 and upto March 1963 a total of 457 persons received training in Japan. Among them 56 received training on agriculture. On the other hand, a total number of 131 Japanese experts and specialists were dispatched to Pakistan from 1953 upto 1969. Among them 67 experts were in the field of agriculture, out of this 67 experts, 31 experts were assigned to East Pakistan. They continued their assignment upto 1970 till the War of Independence which continued for 15 years. The experts of this mission had training experiences in United States. Their term of service was basically for two years. The programme was named "Agricultural Mission". The first group of Japanese experts worked in Tongi. They served at A.E.T.I. Daulatpur for two years and at Gauripur for one year. Their works included making demonstration farms, imparting training to the farmers and providing agricultural guidance to them. This programme had left epoch making effects in the rural agricultural development. The American adviser also got interested in the programme. They introduced the idea of selecting model farmers. This was later adopted by the Comilla Bangladesh Academy for Rural Development (B.A.R.D.) project.

After the liberation of Bangladesh, in January 1973, a Record of Discussion (R/D) was made between the Government of the People's Republic of

Bangladesh and the Government of Japan, to reopen the agricultural cooperation programme in Bangladesh. After the liberation of Bangladesh there was a strong international awareness and mood to give relief and assistance to Bangladesh. In accordance with this mood, an agreement was signed on 24th March 1973 between the Governments of Bangladesh and Japan, to dispatch J.O.C.V. Junior Experts to Bangladesh for its agricultural development. As a part of agricultural development plan, the Japanese Government has introduced C.E.R.D.I. in Bangladesh on 13th October 1978 which continued upto 1983. The project included construction of a building, dispatching experts, training the Bangladeshi nationals in Japan, materials grant, agricultural education and technological cooperation for agricultural research. The C.E.R.D.I., along with International Bank for Reconstruction and Development (I.B.R.D.) and United Nations Development Program (U.N.D.P.), had a very useful contribution in the agricultural extension work of the Bangladesh Government.

III. Movement of Agricultural Development in Bangladesh

In the decade of 1960-1970, the agricultural growth rate in Pakistan was 2.5%, whereas the population growth rate was 3% per year. In the 1st 5 Year Plan, the Government of Bangladesh had set a target of 5.5% economic growth rate, self-sufficiency in food production and village development. To achieve the target, the number of extension workers had to be increased upto 15,000 and their quality had to be standardized. The quality development training of this 15,000 extension workers was conducted by A.E.T.I.s in Bangladesh. After the 1st 5 Year Plan of 1973-1978, there was 2 Year Plan covering 1979 and 1980. Then the 2nd 5 Year Plan was launched to cover 1980-1985.

In the 1st 5 Year Plan, the budget allocation for agriculture was 35% of the total budget. During the 1st 5 Year Plan, the country experienced a worst drought in 1972-73, followed by a devastating flood in 1974. As a result, agricultural production could not be raised, moreover it suffered a setback. As a result of oil-shock in 1973, international aid fund was delayed and international price of all commodities including food stuff and agricultural material was soared very high. So the 1st 5 Year Plan turned unsuccessful. With the setback of the 1st 5 Year Plan, 2 Year Plan was taken to complete the ongoing projects of the 1st Plan with the available resources. But due to unseasonable climate and drought in 1979 and the 2nd oil-shock, the agricultural production could not be increased.

The 2nd 5 Year Plan (1980-1985) has a target to increase food grain production by 24% in comparison with the production level of the 2 Year Plan. The target cannot be achieved without the hard work of the local agricultural workers, specially the Block Supervisor (B.S.) group, who are working on agricultural extension at grass-root level.

IV. Movement of A.E.T.I.

In the era of 1940, the Government established Thana Agricultural Extension Office in every Thana, and started its agricultural extension programme by placing extension workers under this office. The A.E.T.I.s which were formerly known as V-A.I.D. (Village Agricultural and Industrial Development) Training Institute, was set up under the V-A.I.D. Programme in 1953. The programme was financed by Ford Foundation of the United State. A total number of 8 Institutes were established under this programme. The aim of the programme was to train up new extension workers. The course was for one year and qualification to participate in the course was Secondary School Certificate (S.S.C.).

Meanwhile when the Government decided to start agricultural extension programme, the Jute extension workers were hurriedly taken to work for the agricultural extension programme. In agricultural extension, field work is very important, especially when Bangladesh is trying hard for self-sufficiency in food. But the hurriedly drawn Jute extension workers were not capable of discharging this responsibility and the training of the Institute was of very low standard.

The V-A.I.D. Programme was closed down in 1959 for want of fund. In 1962 the Institutes were handed over to the District Agriculture Authority, and the Institutes were named National Development Training Institute (N.D.T.I.). In 1969 the N.D.T.I.s were renamed A.E.T.I., and its Principal's rank was upgraded one rank to that of District Agricultural Officer. The training course was extended to 2 years from one year. Subject matter and training system were also improved in cooperation with I.B.R.D. and U.N.D.P. In 1983, the name of the Institutes was again shortened to Agricultural Training Institute (A.T.I.), instead of Agricultural Extension Training Institute.

The minimum qualification to be admitted into A.T.I.s is 2nd division in S.S.C. from science group. After completion of the 2 year course, the trainees face final examination. On successful completion of the course, trainees are given diploma certificate from the Department of Agricultural Extension.

V. Dispatch of J.O.C.V. Junior Experts

The J.O.C.V. programme in Bangladesh was implemented in August 1973 by dispatching 3 J.O.C.V. Junior Experts in A.E.T.I. Daulatpur, to educate agricultural extension workers. They imparted mainly practical training to the A.E.T.I. trainees. In October 1973, a group of 3 J.O.C.V. Junior Experts were dispatched to each A.E.T.I. at Gaibandha, Nator, and Sherpur. In 1974, they arrived at A.E.T.I. Tejgaon.

The J.O.C.V. office had conducted a survey to find out the shortcomings of the A.E.T.I. and what works the experts are supported to do in the field and so on. The intention of the inquiry was to equip the incumbent experts in that line with the necessary background information. Findings of the inquiry were as follows.

1. To improve the practical class for agricultural extension training and to increase extension work with the farmers around the A.E.T.I.
2. To plan actual teaching method.
3. To motivate the instructors to change their mentality and participate in the field works.
4. To use grant materials effectively.
5. To train up the instructors on farm machinery who were not educated on agricultural machinery course.

The Department of Agricultural Extension conducted the survey on the activities of J.O.C.V. Junior Experts in A.E.T.I.s from January to June 1983. The committee, in their report, has clearly given their opinion regarding the condition of the J.O.C.V. Junior Experts to be dispatched in the Department of Agricultural Extension and the condition of their services.

After submission of the report, the Department of Agricultural Extension has requested for replacement and extension of J.O.C.V. Junior Experts services in October and November 1983. However, according to the report, after April 1985, activities of the J.O.C.V. Junior Experts will be examined again and they decide whether or not their services are required for A.E.T.I. In these circumstances, J.O.C.V. cannot dispatch Junior Experts to A.E.T.I., as it is not sure what will happen to J.O.C.V. Junior Experts after April 1985.

VI. History of J.O.C.V. Junior Experts Activities

1. A.E.T.I. Gaibandha

a) History of Gaibandha

In the era of N.D.T.I., under the Colombo Plan, there were 4 (four) Japanese experts in A.E.T.I. Gaibandha. They were (1) Mr. Kinoshita (2) Mr. Morita (3) Mr. Osaki and (4) Mr. Kodachi. They worked as instructors and imparted training to the Institutes trainees and worked as advisor to the farm manager. 12 J.O.C.V. Junior Experts have so far worked in A.E.T.I. Gaibandha.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Gaibandha

Technical field	Name	Terms
Rice Culture	Mr. K. Takahashi	October 1973 - October 1975
" "	Mr. Y. Nawa	March 1976 - April 1978
" "	Mr. K. Motosugi	February1978 - February1980
" "	Mr. K. Sunada	February1980 - July 1982
" "	Mr. T. Honda	October 1982 - October 1984
Vegetable Growing	Mr. T. Saito	October 1973 - October 1975
" "	Mr. N. Tezuka	March 1976 - March 1978
" "	Mr. S. Okuda	August 1978 - August 1980
" "	Mr. T. Baba	April 1981 - April 1983
Agricultural Machinery	Mr. N. Shutani	October 1973 - October 1976
" "	Mr. I. Okae	January 1981 - July 1983
Home Economics	Miss C. Hasegawa	April 1983 - April 1985

b) Activities

(1973 - 1975)

In this period, 3 J.O.C.V. Junior Experts were dispatched to A.E.T.I. Gaibandha. There was no trainee in the A.E.T.I. from August 1974 to March 1975. But J.O.C.V. Junior Experts were engaged in preparing text book and workshop management. In August 1974, there was a heavy flood which caused a great damage to the food crops of Gaibandha. In cooperation with A.E.T.I. and Thana Agricultural Extension Office at that time, the J.O.C.V. Junior Experts distributed seedlings and food crops to the farmers on the basis of free cost. In cooperation with A.E.T.I. and Thana Agricultural Extension

Office, J.O.C.V. undertook the 1st hand tube well pump distribution programme to the farmers. The hand tube wells were donated by J.O.C.V. The purpose of the programme was to upgrade the economic condition of the farmers and to encourage model farmers development drive.

(1976 - 1980)

In this period 4 J.O.C.V. Junior Experts were dispatched to A.E.T.I. Gaibandha. They conducted survey on the effects of the 1st hand tube well pump distribution programme, and undertook the 2nd hand tube well pump distribution programme. They distributed 240 pumps. In the year 1978, they formed a committee of "Agricultural Extension Programme for A.E.T.I. students", which was headed by the Principal of A.E.T.I. Gaibandha. Through this committee they distributed hand tube well pumps to farmers. They also opened practical class, theoritical class and set up experimental plots for the trainees.

(1980 - 1985)

In this period a total number of 5 Junior Experts have come in A.E.T.I. Gaibandha with introduction of one expert in the field of Home Economics. They have conducted survey on the effect of using hand tube well pump and its diversified uses. They also continued distribution of hand tube well pumps. The purpose of hand tube well pump distribution has been changed every year. At the 1st stage, the purpose of programme was taken as a part of extension activities, but not it has become a point of practical education to A.E.T.I. trainees. Furthermore, they have opened rental system of agricultural machineries to farmers to be used effectively. There is no counterpart of the Home Economics. Teaching facilities and materials for practical class are insufficient. The job opportunity for the Home Economics trainees is very poor, so the future of Home Economics subject is in question in A.E.T.I. Gaibandha.

2. A.E.T.I. Daulatpur

a) History of Daulatpur

The A.E.T.I. Daulatpur is one of the oldest Agricultural Institutes as same as A.E.T.I.s, Gaibandha and Tejgaon. This Institute was established in the V-A.I.D. period. It is to this A.E.T.I. that the first batch of J.O.C.V. Junior Experts in Bangladesh was dispatched. A total number of 14 J.O.C.V. Junior Experts have so far come to this Institute.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Daulatpur

Technical Field	Name	Terms
Rice Culture	Mr. T. Oshima	August 1973 - November 1975
" "	Mr. K. Masubuchi	August 1975 - September 1978
" "	Mr. S. Hirao	August 1978 - September 1981
" "	Mr. H. Ito	January 1982 - January 1984
Vegetable Growing	Mr. H. Ouchi	August 1973 - August 1975
" "	Mr. T. Sekiya	December 1975 - January 1977
" "	Mr. N. Hayashi	October 1976 - April 1979
" "	Mr. Y. Kitai	October 1979 - November 1982
" "	Mr. S. Hyodo	October 1982 - November 1984
Agricultural Machinery	Mr. Y. Tanikawa	August 1973 - August 1975
" "	Mr. T. Karasawa	December 1975 - October 1976
" "	Mr. M. Tatsuwaki	August 1976 - February 1979
" "	Mr. M. Hori	October 1978 - October 1981
" "	Mr. S. Miyawaki	January 1983 - January 1985

b) Activities

(1973 - 1976)

The J.O.C.V. programme was implemented in Bangladesh by dispatching 3 J.O.C.V. Junior Experts in A.E.T.I. Daulatpur in August 1973. When the experts reached the Institute, it was the ending month of one training term. 130 trainees were set for examination. The J.O.C.V. Junior Experts had to wait upto the entrance of new trainees batch. But entrance of the new batch was delayed.

The entrance of the new batch was delayed because of the following causes.

(1) The trainees demanded higher stipend but the Government did not have the fund.

(2) Minimum qualification for entering into the training course was not fixed clearly.

(3) The advertisement system for admission in A.E.T.I. was not effective.

At this period 5 A.E.T.I.s took up a short training programme for the Thana Agricultural Officer and Union Agricultural Assistant. This three months programme was conducted from June to August 1974.

By this time the J.O.C.V. Junior Experts, other than conducting the training programme, also prepared (1) Training programme and system (2) Arrangement of teaching materials and making up the text book for the trainees (3) The workship in A.E.T.I. which was not running properly. The J.O.C.V. Junior Experts developed a system to run the workshop. They also developed ways to use the irrigation canal, dug new canal and conducted a survey for future development of irrigation facilities. (4) The J.O.C.V. Junior Experts improved the extension works of A.E.T.I., by going to the farmers door to door, to listen to their problems and make suggessions for improvement.

(1976 - 1980)

In this period, 5 J.O.C.V. Junior Experts were attached to the Institute. They extended irrigation canal. They made a plan for procuring irrigation pump from the J.O.C.V. headquarters. The plan was accepted by the J.O.C.V. headquarters. They undertook mini rice culture project in the nearby villages of A.E.T.I. In this project seeds of High Yield Variety (H.Y.V.) were distributed among farmers and vigorous extension works were undertaken. They also set demonstrating plot as reference to the trainees for theoretical class and practical working situation.

(1980 - 1985)

In this period, 5 J.O.C.V. Junior Experts were attached to A.E.T.I. The irrigation canal extension programme was completed in March 1979 and was handed over to A.E.T.I. in May 1979. By this time, Mr. S. Hyodo, a J.O.C.V. Junior Expert in the field of Horticulture, compiled a text book on vegetable growing (Japanese, English and Bengali) namely "Horticulture Guide".

c) Extension Activities

1) Vegetable Cultivation Mini Project

(1) Objective: To train farmers and trainees, cultivation of dry season vegetable and extension.

(2) Enforcement: J.O.C.V. Junior Experts, in cooperation with their respective counterpart, trained the trainees on dry season vegetable cultivation in the practical classes. Participants

in one year fresher course were given individual plot to see the result of the imparted training. The experts went to the farmers houses to train them on vegetable cultivation as part of extension cultivation.

(3) Conclusion: Bangladesh imports varieties of improved seed for cultivation. But the technology of cultivation is still conventional. Moreover, proper care is not taken for cultivation. Instructors and extension workers' knowledge on modern technology is superficial. It is insufficient for practical work. The J.O.C.V. Junior Experts introduced new technology of cultivation and made both farmers and trainees familiar with the new technology. The farmers yielded improved quality vegetables by using this new technology like measured fertilizer, proper irrigation and planned plantation. They undertook importance of using modern technology of cultivation.

2) *Rice Cultivation Mini Project*

(1) Objective: The J.O.C.V. Junior Experts working in A.E.T.I. Daulatpur took part in the extension programme of H.Y.V. While working on the extension of modern cultivation technology, the introduced modern system of using fertilizer, in terms of quantity and time to the trainees and farmers. This is also emphasised by the Government. In their extension programme of modern cultivation technology they used H.Y.V. seed like IR-20, BR-4, and Nizarsail a variety of Local Improvement Variety (L.I.V.).

(2) Ways of Extension: In the extension programme, J.O.C.V. donated fertilizer, seed and chemical to the farmers. The farmers contributed by providing land, labour cost, cultivation cost and weeding cost. The products went to the hands of farmers. All the material donated to the farmers went to them via a Chairman and a Member selected by the farmers. In the programme, A.E.T.I. provided 4 weeders and 2 hand sprayers.

(3) Result:(a) Chemical fertilizer use: Out of the 11 farmers of the programme, only 3 were using fertilizer. Only one was using Nitrogen, Phosphoric Acid and Potash. Of the remaining two, one was using Nitrogen and the other was using Nitrogen and Potash.

As a result of using these three fertilizer, the yield of H.Y.V. has increased upto 746-821 kg. per acre. The farmers do know that the production can be increased by using fertilizer, but they are ignorant of the quantity

of fertilizer to be used and the right time of using it. Moreover, as a result of using fertilizer, the crops become more vulnerable to insect attack. To protect the crops from insect damage, pesticide should be used. But that will increase the production cost. This damage can also be minimized by enough irrigation. Consideration must be made regarding the quantity of fertilizer to be used as farmers are not familiar with the use of pesticide and larger quantity of fertilizer increases diseases and insect damages.

(b) Use of H.Y.V.: The BR-4 is popular among the farmers because of its plant height and plant type of BR-4 is also better than that of IR-20. Nizersail, among L.I.V., is much more cultivated. But its fertilizer resistance is low, so production can not be increased by using additional fertilizer after a certain point.

(4) Problem and Discussion: (a) It is true that production can be increased by using fertilizer. But if the farmers are to use fertilizer according to the Government recommendation, they should also use pesticide and have hand sprayer to use them. But the small farmers do not have the financial capacity to buy that.

(b) If some of the farmers use fertilizer and pesticide according to the Government recommendation and the rest of the neighbouring block do not follow such recommendation, the farmers who are using fertilizer and pesticide will not be able to raise high yield to cover their unput cost. The reason is that, their field will be inflicted with insect damage and diseases of the neighbouring block.

(c) This year, J.O.C.V. borne all materials cost of the project and the farmers' share was minimum. But to continue the project J.O.C.V. must find out ways so that total cultivation cost can be borne by the respective farmer.

(d) The frequent connection between the J.O.C.V. members and all the project farmers turned out to be a bar for the development of an organization for the farmers themselves.

(e) The suitable land for cultivation of H.Y.V. is middle level land, although high land can also be used. But low land is not the right place for H.Y.V. cultivation. And at least 40 are (three bigha) land is required for cultivation of H.Y.V. by using enough fertilizer. As it is expensive cultivation,

only owner farmers and some of the capable tennant farmers can cultivate H.Y.V.

3) Power Window Selector (Dhan Urani)

(1) Purpose: At present, 16 hectare of A.E.T.I. land has been taken under "Aman" cultivation. After threshing the rice, it is taken to automatic thresher machine for selection. But for over-work of the thresher machine, stones and impurities with the rice, the thresher breaks down frequently. So a power window selector should be attached for smooth operation.

(2) Result: The rice which is dropped within 2 meters from the selector is 90% and the ripen percentage is 96%.

4) Extension of Simple Water Wheel

(1) Purpose: One of the main problem of Bangladesh agriculture is dry season irrigation. The Government organizations involved in agriculture have rental system of their power pumps. But the number of power pumps is less than the requirement. To facilitate dry season irrigation, either the tradition system of irrigation should be improved or low lift pump should be extended.

(2) Making: The water wheel is made mostly of bamboo, and the pipe (water lifting pump) is also made of bamboo and tin plate. Price of the water wheel is Tk. 57,200.00 only.

(3) Result: The water wheel can be operated by one person without being tired. But the diameter of the wheel cannot be increased after a certain point as that will be dangerous for the operator. But still the water wheel irrigation capacity can be increased upto 12.3 m^3/hrs. within the present stature.

3. A.E.T.I. Nator

a) History of Nator

The A.E.T.I. Nator, formerly known as Pre-service Training Institute, was established in 1961 as one of the 7 Pre-service Training Institute in the country. A total number of 11 J.O.C.V. Junior Experts were attached to the Institute from October 1973 to August 1982 when the Institute was formally been closed down.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Nator

Technical Field	Name	Terms
Rice Culture	Mr. S. Takeuchi	October 1973 - October 1975
" "	Mr. H. Sato	October 1974 - February 1977
" "	Mr. M. Otsuka	December 1975 - December 1977
" "	Mr. H. Yoshino	April 1978 - April 1981
" "	Mr. Y. Kondo	October 1980 - August 1982
Vegetable Growing	Mr. T. Takada	October 1978 - April 1981
" "	Mr. Y. Niinuma	April 1981 - August 1982
Agricultural Machinery	Mr. T. Ooe	October 1973 - October 1975
" "	Mr. T. Hiramatsu	May 1976 - June 1978
" "	Mr. Y. Nakazawa	February 1979 - February 1981
" "	Mr. N. Sakata	April 1981 - August 1982

b) Activities

(1973 - 1978)

In this period, a total of 5 J.O.C.V. Junior Experts came in this Institute. In the period from October 1973 to April 1974, there was no trainee in the Institute. From September 1974, the J.O.C.V. Junior Experts were engaged in cultivating water melon. In the dry season they engaged themselves in the extension programme of cultivation.

In the "Aus" season, they conducted experiment on finding right variety of rice for "Aus" season. They also attached individual plot to the trainee to see the practical output of the imparted training. In the month of January to February 1976, the J.O.C.V. Junior Experts along with the trainee visited villages to conduct a survey on the condition of agriculture in Bangladesh and to identify what role J.O.C.V. can play. They initiated a dry season vegetable cultivation extension programme through hand tube well irrigation.

(1978 - 1981)

In this period, 3 J.O.C.V. Junior Experts came into this Institute. They continued the vegetable cultivation extension programme. At the J.O.C.V. farm in A.E.T.I., they demonstrated the Japanese system of rice and vegetable cultivation to the trainees. They also underwent experiment on modern cultivation, they attached individual plot to the trainees to see for themselves the outcome of the imparted training.

(1981 - 1984)

Three J.O.C.V. Junior Experts continued their vegetable cultivation extension programme. They completed the plan for hand sprayer extension programme. At the J.O.C.V. farm in A.E.T.I., they held demonstration of cultivating rice, wheat, vegetable for the trainees and farmers. A.E.T.I. Nator was closed down by the Government in 1982.

In August 1982, two of the three Junior Experts were transfered to A.E.T.I. Dinajpur, and the other to A.E.T.I. Faridpur.

c) Extension Activities

1) Water Melon Project

(1) Purpose: The purpose of the programme was introduction and extension of Japanese water melon in the A.E.T.I. Nator area and familiarization for the trainees with the cultivation of the Japanese water melon.

(2) Result: The programme did not turned out very successful because of insufficient technology, thefting and unexpected weeds. In future, a step should be taken for early cultivation so that production be marketed before the market is packed up with water melon. Transport facility must be made available so that product can be carried to big towns and city markets. Big and thick skin variety should be chosen to avoid transportation damage.

J.O.C.V. distributed 2,000 seedlings and seed among 40 farmers through the Principal of A.E.T.I. and with the help of I.R.D.P. Out of this forty, 15 farmers could not cultivate properly due to drought, but the rest of the farmers could cultivate properly.

2) Dry Season Vegetable Cultivation Extension

(1) Purpose: In the dry season, farmers usually cultivate oil-seeds and nuts, as these does not require water. J.O.C.V. took a programme for dry season vegetable cultivation. They cultivated cabbage, and water melon. They experimented one new system of water lifting by using bull to lift water instead of manpower.

(2) Number of hand tube well pump: J.O.C.V. distributed 40 hand tube well pumps, 6 bull drawn water pumps and 4 bamboo tube well pumps.

(3) Result: Average land of the pump machine recipient farmers is

1.00 ha. (0.27 - 1.7 ha.). As a result of the pump distribution, the production of potatoes, pulse and spices decreased. But the production of water melon increased and the farmers also gain facilities to cultivate some other varieties of vegetables.

(4) A.E.T.I. effects: The participation of J.O.C.V. Junior Experts in the extension programme worked as stimula for the instructors. J.O.C.V. Junior Experts organized farmers school which was held every Saturday.

(5) Problems and Countermeasures:

(a) Technology gap among the farmers —Door to door visits to the farmers' working places and giving lectures to the farmers in the school.

(b) Faulty pump — Supply of new pumps and operator dispatch.

(c) Seed supply — Supply of good quality seeds.

(d) Diseases and insects damage —Hand sprayer supply.

3) Publication of "A practical guide for cultivation of paddy (intended for Gram Krishi Karmi)"

This book was published to improve practical class on rice cultivation in A.E.T.I. Nator. This book includes record of 2 years experiment on rice cultivation by J.O.C.V. Junior Experts, and very much useful for the B.S.

4. A.E.T.I. Sherpur

a) History of Sherpur

This is one of the oldest A.E.T.I. in Bangladesh. A total number of 10 J.O.C.V. Junior Experts has so far worked in this A.E.T.I., since April 1974.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Sherpur

Technical Field	Name	Terms
Rice Culture	Mr. H. Horikoshi	April 1974 - June 1976
" "	Mr. T. Ogawa	October 1974 - December 1976
" "	Mr. T. Kuniyoshi	October 1976 - October 1979
" "	Mr. K. Takimoto	August 1979 - August 1981
Vegetable Growing	Mr. N. Nagai	March 1976 - March 1979
" "	Mr. Y. Maeda	April 1979 - April 1981
" "	Mr. R. Sakamoto	April 1982 - September 1984
Agricultural Machinery	Mr. Y. Katsuki	October 1974 - October 1976
" "	Mr. K. Takayanagi	October 1979 - January 1982
" "	Mr. H. Yamamoto	October 1981 - October 1983

b) Activities

(1974 - 1979)

In this period, there were 5 J.O.C.V. Junior Experts in this A.E.T.I. J.O.C.V. Junior Experts distributed paddy hand weeder to A.E.T.I., Bangladesh Agricultural Development Corporation (B.A.D.C.) and farmers. They conducted experiment on use of fertilizer. They made variety demonstration plot and attached individual plot to the trainees. In the dry season, they supplied seedlings and seed of carrot, cauliflower, tomato etc. to the nearby farmers of A.E.T.I.

(1979 - 1984)

In this period, there were 4 J.O.C.V. Junior Experts in this Institute. They developed the paddy hand weeder and extended the weeder distribution programme. Previously weeder was only used in the "Boro" season but not used in the "Aman" season as farmers are now practicing line planting. Mr. R. Sakamoto, J.O.C.V. Junior Expert, attached to this Institute, wrote a book on Horticulture in Bangladesh namely "Bangladesh Uddan Tatta". He distributed this book to different A.E.T.I., to the Department of Agricultural Extension, Mymensingh Agricultural University and other agricultural organizations.

c) Extension Activities

1) Production of paddy hand weeder

(1) Present condition of weeding in Bangladesh: There are three types of weeding (i) Hand weeding (Nirani) (ii) Japanese weeder, which is

copied and made by some factories of Dhaka and Comilla.
(iii) Herbicide weeding, which is not used generally.

(2) Significance of making hand weeder

Government is working on H.Y.V. cultivation for increasing production. But a large number of farmers are not practicing line planting. Without line planting, proper farm control cannot be practiced and the production will not increase to the level of expection. Without line planting, weeder cannot run. Fertilizer cannot be distributed equally and irrigation will become improper.

The weeder which is copied from a Japanese one cost Tk. 150.00. The price is too much for the farmers. Moreover this weeder cannot be repaired at the farmer's village repair shop. The local type which cost Tk. 15.00 is time-taking and power-consuming. In this situation, J.O.C.V. Junior Experts developed a new paddy hand weeder which is in-between the Japanese model and the local model. This weeder cost Tk. 70.00 and it is less time-taking and less power-consuming. It is also used in the practical training class of A.E.T.I. trainees. This will have effect on the trainees when they become B.S. They will motivate the farmers to use the weeder.

(3) Production and sale

J.O.C.V. Junior Experts made 120 pieces of hand weeder at a cost of Tk. 110.00 each. They distributed 30 weeders among farmers, 35 to the trainees and 45 pieces of weeders to the Government. In case of selling weeders to the farmers, J.O.C.V. provides Tk. 40.00 and farmers Tk. 70.00 for one weeder. In case of selling to the trainees, J.O.C.V. share was Tk. 50.00 and trainees Tk. 60.00. The Government organizations were given the weeder free of cost.

5. A.E.T.I. Khadimnagar

a) History of Khadimnagar

In the year 1961, this Institute was established as N.D.T.I. In 1964, it was turned into Basic Democratic Training Institute and finally in the year 1976, it was made A.E.T.I. After the establishment of A.E.T.I., many infrastructural buildings were constructed by the World Bank Aid. Since April 1981, 2 J.O.C.V. Junior Experts have so far come to this Institute.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Khadimnagar

Technical Field	Name	Terms
Vegetable Growing	Mr. H. Fukuhiro	April 1981 - April 1983
Agricultural Machinery	Mr. H. Habazaki	October 1981 - January 1985

b) Activities

Since J.O.C.V. Junior Experts came, they developed training materials, run the workshops, and set vegetable demonstration projects. They prepared campus may upon the Principal's request. They initiated hand sprayer extension programme and made paddle thresher for the extension programme.

6. A.E.T.I. Dinajpur

a) History of Dinajpur

This newly constructed A.E.T.I. was formally opened in 1979. 2 J.O.C.V. Junior Experts were transfered to A.E.T.I. Dinajpur from A.E.T.I. Nator. More 2 J.O.C.V. Junior Experts were dispatched in this A.E.T.I. in 1983.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Dinajpur

Technical Field	Name	Terms
Rice Culture	Mr. Y. Kondo	September 1982 - October 1983
" "	Mr. S. Obuchi	April 1983 - April 1985
Agricultural Machinery	Mr. N. Sakata	September 1982 - July 1983
" "	Mr. K. Harano	January 1983 - April 1985

b) Activities

J.O.C.V. Junior Experts took part in the hand sprayer extension programme in 1983. They let 7 hand sprayers to the farmers of the locally. Before lending the hand sprayers, they gave lecture to the farmers on different aspects of agriculture. At the same time, they worked for the low lift pump extension programme.

After the completion of the hand spray lending programme, the instructors,

trainees and J.O.C.V. Junior Experts gave guidance on cultivation of rice and vegetables. They provided guidance on controlling of diseases and insects damages. J.O.C.V. Junior Experts made paddle thresher for demonstration to the trainees and farmers. Mr. K. Harano, J.O.C.V. Junior Expert attached to this Institute, wrote a book on diesel engine in Bengali.

c) Extension Activities

1) Low Lift Pump Project

This project was intended for effective irrigation system, irrigation of canal digging, crop cultivation system and for the field training of the instructors and trainees.

7. A.E.T.I. Faridpur

a) History of Faridpur

This newly constructed A.E.T.I. was established in 1979. 2 J.O.C.V. Junior Experts were dispatched to this Institute and one more Junior Expert was transfered from A.E.T.I. Nator in September 1982. A new J.O.C.V. Junior Expert in the field of Home Economics was dispatched to this Institute in April 1983. A Junior Expert was transfered to A.E.T.I. Tejgaon as classes of Home Economics were suspened in the A.E.T.I. Faridpur.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Faridpur

Technical Field	Name	Terms
Vegetable Growing	Mr. M. Oka	April 1982 - August 1982
" "	Mr. Y. Niinuma	September 1982 - April 1984
Agricultural Machinery	Mr. H. Kogen	October 1981 - October 1983
Home Economics	Miss I. Kuno	April 1983 - December 1983

b) Activities

At the request of the A.E.T.I. Principal, J.O.C.V. donated 100 (one hundred) ducks to A.E.T.I. Faridpur for development of the poultry section of the Institute. They initiated the hand sprayer extension programme of J.O.C.V. and lent hand sprayers to the farmers.

8. A.E.T.I. Ishurdi

a) History of Ishurdi

This Institute was also formally opened in 1979. 3 J.O.C.V. Junior Experts have so far dispatched to this Institute.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Ishurdi

Technical Field	Name	Terms
Rice Culture	Mr. Y. Furumura	July 1982 - August 1984
Vegetable Growing	Mr. M. Oka	August 1982 - December 1982
Agricultural Machinery	Mr. M. Kitagawa	July 1981 - July 1983

b) Activities

J.O.C.V. Junior Experts made two power threshers which are better and developed than the paddle threshers previously made by the J.O.C.V. Junior Experts. In cooperation with his counterpart, Mr. M. Kitagawa, J.O.C.V. Junior Expert attached to the Institute, wrote a book on Farm Machinery in Bengali namely "Adhunie Krishi Jantrapati" (Modern Agricultural Machinery in Bangladesh). In September 1983, J.O.C.V. Junior Experts waged J.O.C.V. hand sprayer extension programme and continued upto May 1984.

c) Extension Activities

1) Making Power Thresher

(1) Purpose: (a) To be used as a practical training material.

(b) To make farmers understand that wheat threshing is easy and to increase cultivation area of wheat thereby.

(c) To reduce labour cost and to make farmers understand the advantage of using machines.

(d) To reduce farming time.

(2) Improving point:

(a) The machine can be used for both rice threshing and wheat threshing as it is provided with a lid at the bottom for opening and closing.

(b) The funnel, where unthreshed wheat and rice is given, was enlarged. The area where wheat is dropped was also widen.

(c) The machine can run either by motor or by paddling.

(3) Extension: (a) The machine was used for threshing local variety mustard at Sugarcane Research and Training Institute (S.R.T.I.). It was found that the machines performance in threashing mustard is better than that of the tractor. It takes less time and it threshes all mustard, whereas the tractor leaves some residue.

(b) The machine was shown at an exhibition organized by Bangladesh Agricultural Research Institute (B.A.R.I.) on the celebration of farmers day.

(c) The machine was also used for threshing H.Y.V. mustard. It was found little bit difficult to thresh the H.Y.V. mustard as its stem is big, hard and get entangled with the drum. When paddle thresher is used for threshing wheat, it was found that the paddle get out of the bar. The wheat bundle is usually big. So when it is taken for threshing in the power thresher, a considerable quantity of wheat remains with the bundle.

9. A.E.T.I. Tejgaon

a) History of Tejgaon

This is one of the oldest Institutes like the A.E.T.I. Gaibandha, Daulatpur and Sherpur. There were 7 Japanese experts in the Institute during 1963 to 1965. 3 J.O.C.V. Junior Experts were attached to A.E.T.I. in 1974 for a period of one year. In December 1975, one Junior Expert was transfered to A.E.T.I. Nator, and the other two Junior Experts to A.E.T.I. Daulatpur. In April 1983, one J.O.C.V. Junior Expert in the field of Home Economics was attached. In December 1984, one more J.O.C.V. Junior Expert was transfered to this Institute from A.E.T.I. Faridpur.

Graph of J.O.C.V. Junior Experts in A.E.T.I. Tejgaon

Technical Field	Name	Terms
Rice Culture	Mr. M. Otsuka	November 1974 - December 1975
Vegetable Growing	Mr. T. Sekiya	November 1974 - December 1975
Agricultural Machinery	Mr. T. Karasawa	November 1974 - December 1975
Home Economics	Miss A. Okada	April 1983 - October 1983
" "	Miss I. Kuno	December 1984 - April 1985

b) Activity

(1974 - 1975)

J.O.C.V. Junior Experts conducted practical land survey with the trainees. They imparted training on modern vegetable cultivation system. For the first time, they introduced individual plot attachment to the trainees in all A.E.T.I.s.

(1981 - 1985)

Home Economics was not taught in this Institute before the J.O.C.V. Junior Experts came. So J.O.C.V. Junior Experts had to prepare training materials for the incoming Home Economics trainees. They have been imparting training on sewing, dress making, cooking, interior decoration and house keeping.

VII. Problems in A.E.T.I.

For the last twelve years, 57 J.O.C.V. Junior Experts have worked in nine A.E.T.I.s. They pointed the following problems.

1. The trainees who came in A.E.T.I. face examinations
The trainees are not interested in their studies, and they do not have the consciousness of their duty. It appears that they are here only to have a extension worker's certificate rather than study and prepare for the future duty.

2. The syllabus on A.E.T.I. has given a wide spread outline, touching all aspect of agriculture without concentrating in any particular aspect of agriculture. So it is a question whether the B.S. with this shallow knowledge will be of any help for the farmers. Moreover, it is found that there are some extension workers who in their long 10 to 12 years services have not taken part in any physical activities in the fields to demonstrate a modern system and technique of cultivation.

3. In Bangladesh, service of physical labour is despised. So the instructors in A.E.T.I. are less interested in practical class. For these two reasons, practical class in A.E.T.I. is given less importance and avoided if possible.

4. The Institutes have shortage of teaching materials and accommodation due to available teaching materials are under-used in terms of efficiency. As a result, the training programme run mostly on reading and writing.

5. The routine is not uniform at all A.E.T.I.s. As a result, quality of classes differs from one another. In the long run, this has an effect on examination and the quality of B.S.

6. There is no any text book in A.E.T.I. The instructors prepare their teaching materials from different books according to this personal choice. As a result, the quality of trainees education varies upon the ability of the instructors.

7. Transfer of instructors is irregular. Moreover the transfer is also made between A.E.T.I.s and different non-educational offices. The department deputes instructors without considering his/her speciality or background. For these two reasons, quality of instructors could not be improved.

8. Yearly scheduled programme is an essential guide for smooth functioning of the Institute. But for a long period, there is no such forcasted programme. Therefore, the Institute are facing many problems in their every day activities.

9. A.E.T.I. farm is meant for the practical training of A.E.T.I. trainees. But the administration wants to cultivate the land mainly for production purposes. Under these circumstances, it is difficult to make planning to use the land for practical training with pure educational effect in mind.

10. The Department of Agricultural Extension and A.E.T.I.s do not have same understanding of J.O.C.V. activities. Now and again the department changes their decision. So J.O.C.V. Junior Experts cannot understand the department authority and cannot keep confidence on them.

VIII. Proposal

In the last 12 years, a total number of 57 J.O.C.V. Junior Experts have so far came in different A.E.T.I.s. In the light of this long attachment, we would like to make some proposals for development of A.E.T.I. and agricultural development of Bangladesh at large. We feel that the agricultural extension programme of Bangladesh is facing the following problems.

1. There is a lack of coordination among different wings of the Department of Agricultural Extension, those are the Training, Field Services, Plant Protection, Cash Crop, and Food Crop. As a result, it is difficult to solve any problem integratedly and smoothly. So the quality of the organization has to be developed and concerted effort from all wings should be made to promote extension works.

2. Research organizations have done many experimentals but the results have not gone to the field. This is because the level of farmers' technological knowledge is poor, shortage of fund, lack of irrigation facility, small area of land, shortage of fertilizer, seed and pesticides, and absence of farmers cooperatives. On the other hand, the research organization does not take initiative to introduce their research results to the farmers.

3. The farmers must be organized under their own organization. Through this organization, technology should be given to the farmers for high yielding cultivation. A suitable marketing channel must be made to sell their products.

4. The quality of the extension workers and their number should be increased to identify the problems of agricultural extension and to tie-up the technology and extension programme to solve the same. To strengthen extension programme, collaboration should be made with the other organizations engaged in extension works.

5. A sufficient amount of low interest agricultural credit in time is a pre-condition for extension of technology to the farmers. So a system of low interest agricultural credit should be made available to the farmers.

6. Block supervisors problems. Upto 1984, the total number of B.S. in whole of Bangladesh is 9,165, which fall short of the requirement. Their training is

insufficient to extend the latest agricultural technology. The treatment is insufficient to extend the latest agricultural technology. The treatment offered to B.S. is not good. Their area of jurisdiction is big and their content of guidance is becoming complicated and there is a lack of adjustment in activities circumstance.

7. Technological knowledge of the extension workers should be improved with increased amount of latest information. There is a shortage of extension materials. Also the content of the extension materials is not easy to understand for the illiterate farmers. So nature of extension materials has to be adjusted befitting to the illiterate farmers.

A.E.T.I. is not supposed to impart training and technology only, but to create such extension workers who will take leadership in the agricultural development of his area. A.E.T.I. has to educate the trainees of their responsibility. The training policy of A.E.T.I. should be framed in such a way that the trainees grasp the present agricultural condition from its all perspective.

To fulfill the above needs, A.E.T.I.s are to take the following steps.

1. Preparation of yearly programme.
2. Quality improvement and upgradation of status of the instructors.
3. Preparation of text books.

J.O.C.V. Junior Experts have repeatedly been requestioning the Directors to make improvement in A.E.T.I. in the above points. But the department did not take any action complying with the suggestions. Also the Principals and the instructors of all A.E.T.I.s are supposed to send request in the above to the department for development of A.E.T.I. according to the proposals.

In near future, J.O.C.V. Junior Experts will leave A.E.T.I. We hope that the Department of Agricultural Extension authority, Principals, instructors and all others concerned with A.E.T.I. will do their best to develop A.E.T.I.

A.E.T.I. should work as centre for all agricultural development activities of its encompassing area. With this view in mind, A.E.T.I. should catch the present agricultural condition in the village and solve the problems by involving the trainees in extension works and projects works as parts of their practical classes. The present system of training consists mostly of reading

and writing. This is lagging far behind from the best condition for training of the extension workers. J.O.C.V. Junior Experts were dispatched to A.E.T.I. to reduce this lagging in A.E.T.I.'s training programme.

At farmers request, J.O.C.V. Junior Experts went to farmers' places to solve their cultivation problems. As a part of their A.E.T.I. assignments, these field activities of J.O.C.V. Junior Experts have a significant effect on the agricultural extension work in Bangladesh.

IX. Reference

1.	J.O.C.V.	:	Japan Overseas Cooperation Volunteers
2.	A.E.T.I.	:	Agricultural Extension Training Institute
3.	C.E.R.D.I.	:	Central Extension Resources Development Institute
4.	U.N.O.	:	United Nations Organizations
5.	B.A.R.D.	:	Bangladesh Academy for Rural Development
6.	R/D	:	Record of Discussion
7.	I.B.R.D.	:	International Bank for Reconstruction and Development
8.	U.N.D.P.	:	United Nations Development Program
9.	B.S.	:	Block Supervisor
10.	V-A.I.D.	:	Village Agricultural and Industrial Development
11.	S.S.C.	:	Secondary School Certificate
12.	N.D.T.I.	:	National Development Training Institute
13.	A.T.I.	:	Agricultural Training Institute
14.	T.A.O.	:	Thana Agricultural Officer
15.	U.A.A.	:	Union Agricultural Assistant
16.	H.Y.V.	:	High Yield Variety
17.	L.I.V.	:	Local Improvement Variety
18.	T.C.C.A.	:	Thana Central Cooperative Association
19.	B.A.D.C.	:	Bangladesh Agricultural Development Corporation
20.	B.D.T.I.	:	Basic Democratic Training Institute
21.	D.E.C.	:	District Extension Officer
22.	S.R.T.I.	:	Sugarcane Research and Training Institute
23.	B.A.R.I.	:	Bangladesh Agricultural Research Institute
24.	D.T.W. Pump	:	Deep Tube Well Pump
25.	S.T.W. Pump	:	Shallow Tube Well Pump
26.	B.S.C.I.C.	:	Bangladesh Small Cottage and Industrial Corporation

X. Appendices

Appendix - 1

We, J.O.C.V. Junior Experts, asked to the Principals and pre-Principals in A.E.T.I.s about the activities of J.O.C.V. Junior Experts.

These are Questionnaires and Results.

Questionnaires on the activities of the J.O.C.V. Junior Experts:

1. Name of the J.O.C.V. Junior Experts.
   Mr./Miss:

2. What kind of work/assistance was expected from J.O.C.V. Junior Expert?
   1) By through J.O.C.V. Junior Expert.

   2) Any other assistance by J.O.C.V.

3. What kind of assignment work accomplished by the J.O.C.V. Junior Expert (Mark the following series).
   a) Mainly teached in practical class.
   b) Mainly teached in theoretical class.
   c) Management of A.E.T.I. farm/A.E.T.I. workshop.
   d) Extension work around the A.E.T.I.
   e) Other work (if any, please mention).

4. Is the technical knowledge and skill of the J.O.C.V. Junior Expert quite enough to accomplish his/her assignment work?
   a) Quite enough.
   b) Enough.
   c) Deficient.

   If you feel deficient, please mention your idea.

5. How was the J.O.C.V. Junior Expert's existance and work effects for the improvement/development of your A.E.T.I.

   1) To the Counterpart.

      a) Very effective, b) Effective, c) Ineffective.

      If you feel ineffective, please mention more detail.

2) To the Practical Class.

a) Very effective, b) Effective, c) Ineffective.

If you feel ineffective, please mention more detail.

3) To the Theoretical Class.

a) Very effective, b) Effective, c) Ineffective.

If you feel ineffective, please mention more detail.

4) To the A.E.T.I. farm/A.E.T.I. workship.

a) Very effective, b) Effective, c) Ineffective.

If you feel ineffective, please mention more detail.

5) To the Staffs of A.E.T.I. farm/A.E.T.I. workship.

a) Very effective, b) Effective, c) Ineffective.

If you feel ineffective, please mention more detail.

6. If there any plan to request for extension/replacement of his/her or for another J.O.C.V. Junior Experts for new field.

If so, what kind of work/assistance will be needed from J.O.C.V. Junior Expert.

1) By through J.O.C.V. Junior Expert.

2) Any other assistance by J.O.C.V.

7. Any other comment related to J.O.C.V. Junior Experts?

Results:

Q. 2 : 1) (1) Technical know how
(2) Management of workshop.
(3) Maintenance of farm equipments.
(4) Preparation of annual plan.
(5) Conducting practical classes and demonstration plots.

2) (1) Teaching aid materials.

Q. 3 : a) or b)

Q. 4 : a) or b)

Q. 5 : 1) a) or b)
2) a) or b)
3) b) or c) (because some J.O.C.V. Junior Experts did not take theoretical classes.)
4) a) or b)
5) a) or b)

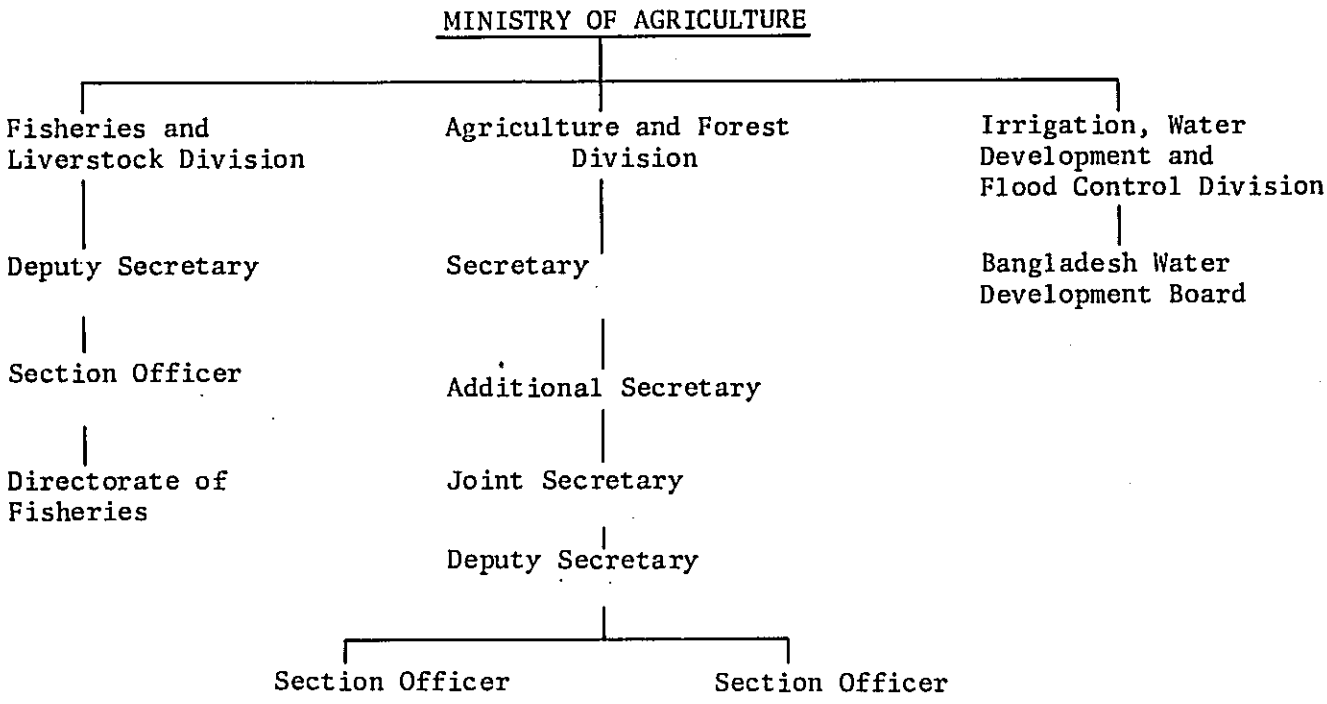
Q. 6 : 1) J.O.C.V. Junior Experts are very useful to improve practical training and field activite of the A.E.T.I., so requested for extension or replacement.

2) Some teaching aid materials.

Q. 7 : J.O.C.V. Junior Experts are helpful in development activities.

Appendix - 2

The organization of Ministry of Agriculture (as of August 1984):



Department and Directorate of the Ministry of Agriculture

Agriculture and Forest

1. Department of Agricultural Extension
2. Department of Agriculture Marketing
3. Soil Resources Development Institute
4. Office of Chief Conservator of Forests
5. Agriculture Information Services
6. Bangladesh Cotton Development Board
7. Agricultural University
8. Bangladesh Agricultural Development Corporation
9. Bangladesh Rice Research Institute
10. Bangladesh Agricultural Research Institute
11. Bangladesh Agricultural Research Council
12. Bangladesh Forest Industries Development Corporation

Fisheries and Liverstock Division

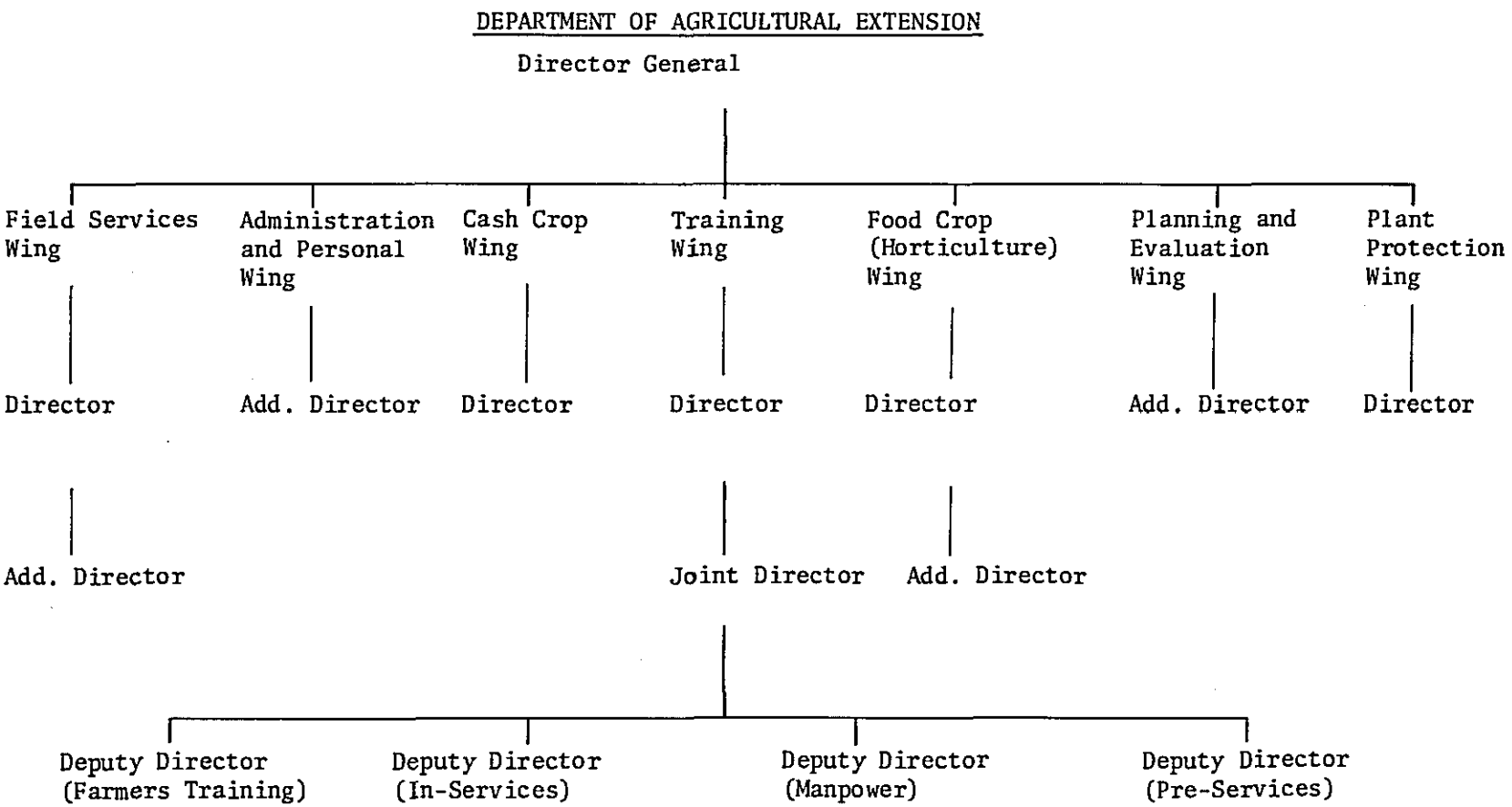
1. Department of Fisheries
2. Department of Libestock Division
3. Bangladesh Fisheries Development Corporation

Irrigation, Water Development and Flood Control Division

1. Water Development Board

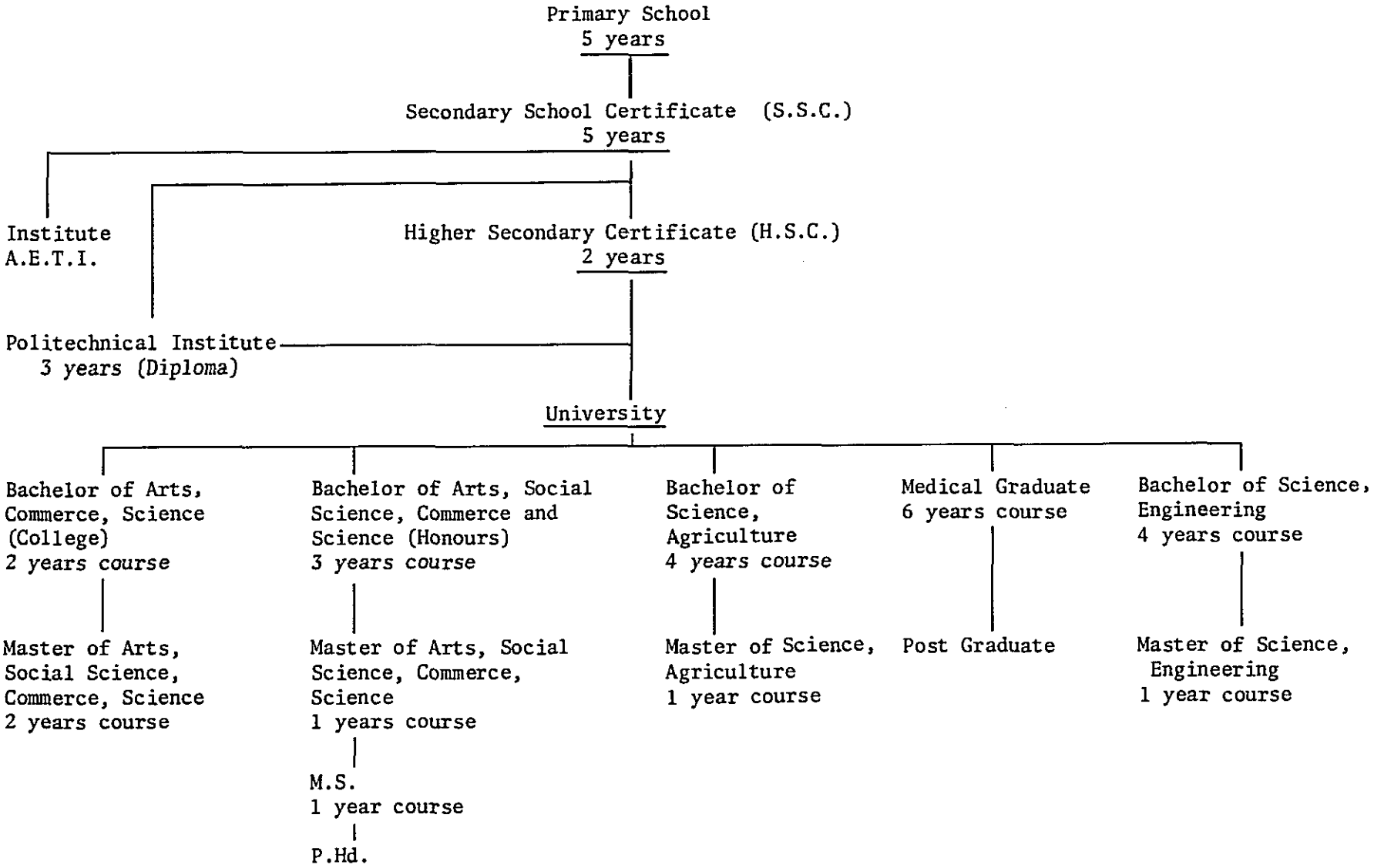
Appendix - 3

The organization of Department of Agricultural Extension (as of August 1984):



Appendix - 4

Educational System in Bangladesh:



Appendix - 5

Name and term of Principals in each A.E.T.I.:

1. A.E.T.I. Gaibandha

Sl.No.	Name	Date of Joining	Date of Departure
1.	Mr. Md. Aktar Hossain	10/2/54	31/3/55
2.	Mr. M.A. Talukdar	1/4/55	5/1/61
3.	Mr. Md. Shamsul Huq	6/1/61	31/5/62
4.	Mr. Abdul Huq Bhuyan	1/6/62	6/2/66
5.	Mr. Md. Lutful Huq	7/2/66	9/9/69
6.	Mr. Md. Monsur Ahmed Sharkar	29/9/69	27/3/73
7.	Mr. Nurul Hossain	29/9/75	21/8/76
8.	Mr. Sakendar Ali Miah	12/11/76	22/3/79
9.	Mr. Abdul Kuddus Miah	31/3/79	8/3/81
10.	Mr. Khandakar Abdul Rahman	9/3/81	9/12/82
11.	Mr. M.S. Ali	9/12/82	28/5/83
12.	Mr. Habibur Rahman (in-charge)	28/5/83	12/7/84
13.	Mr. Moslehuddin Ahmed	12/7/84	

2. A.E.T.I. Daulatpur

Sl.No.	Name	Date of Joining	Date of Departure
1.	Mr. A. Moment Ahmed	18/11/53	13/1/55
2.	Mr. Abdul Latif	14/1/55	1/8/58
3.	Mr. Abdul Awal	2/8/58	3/10/60
4.	Mr. M.A.Y. Taslim Uddin Ahmed	4/10/60	12/5/63
5.	Mr. A.M. Mozammil Hossain	20/5/63	2/1/64
6.	Mr. S.M. Fazlul Huq Chowdhury	24/1/64	5/7/66
7.	Mr. S.A. Khan	10/10/66	22/9/67
8.	Mr. Meslehuddin Ahmed	1/10/67	18/7/73
9.	Mr. Abul Hashen	22/8/73	16/10/74
10.	Mr. M.A. Mannan	11/8/75	14/4/78
11.	Mr. Syed Imam Hossain Kazi	15/4/78	14/10/82
12.	Mr. Md. Aminul Islam	14/2/83	

3. A.E.T.I. Nator

Sl.No.	Name
1.	Mr. A.N. Safiuddin Ahmed
2.	Mr. M.A. Gofur Khan

4. A.E.T.I. Sherpur

No Data

5. A.E.T.I. Khadimnagor

Sl.No.	Name	Date of Joining	Date of Departure
1.	Mr. Syed Sijuli Islam	5/6/74	7/5/76
2.	Mr. Syed Abdur Mumim	13/12/76	30/11/82
3.	Mr. Shudangsu Bhusan Sarkar	6/3/83	25/4/84
4.	Mr. Syed Sarwar Hossain	26/4/84	

6. A.E.T.I. Dinajpur

Sl.No.	Name	Date of Joining	Date of Departure
1.	Mr. Zubaid Ali	5/5/79	17/5/82
2.	Mr. Mokhlesur Rahaman (in-charge)	18/5/82	31/5/82
3.	Mr. M.A. Awal	1/6/82	12/1/83
4.	Mr. Eunus Ali (in-charge)	13/1/83	13/2/83
5.	Mr. Amzad Hossain	14/2/83	

7. A.E.T.I. Faridpur

Sl.No.	Name	Date of Joining	Date of Departure
1.	Mr. Bellar Hossain		
2.	Mr. Shillaz Uddin	8/83	

8. A.E.T.I. Ishurdi

Sl.No.	Name	Date of Joining	Date of Departure
1.	Mr. M.R. Sharif	5/79	9/82
2.	Mr. S.I.H. Kazi	9/82	6/84
3.	Mr. Khairul Islam (in-charge)	6/84	9/84

9. A.E.T.I. Tejgaon

Sl.No.	Name	Date of Joining	Date of Departure
1.	Mr. A.M. Chowdhury	7/54	18/1/66
2.	Mr. M.A. Sami	19/1/66	16/5/66
3.	Mr. M.R. Talukder	17/5/66	28/7/69
4.	Mr. Md. Sirajul Hoq	29/7/69	29/10/70
5.	Mr. Naziruddin Ahmed	30/10/70	29/6/72
6.	Mr. Md. Lutful Hoq	30/6/72	20/10/76
7.	Mr. N.M. Momtazuddin Khan	21/10/76	31/8/79
8.	Mr. Md. Mojibur Rahman	6/11/79	31/12/80
9.	Mr. A.B.M. Afzal Khan	1/1/81	19/8/83 (Died)
10.	Mr. Shafiuddin Bhuiya (in-charge)	21/8/83	10/1/84
11.	Mr. Abdul Wadud Chowdhury	10/1/84	

Appendix - 6 The list of J.O.C.V. Junior Experts in A.E.T.I.s:

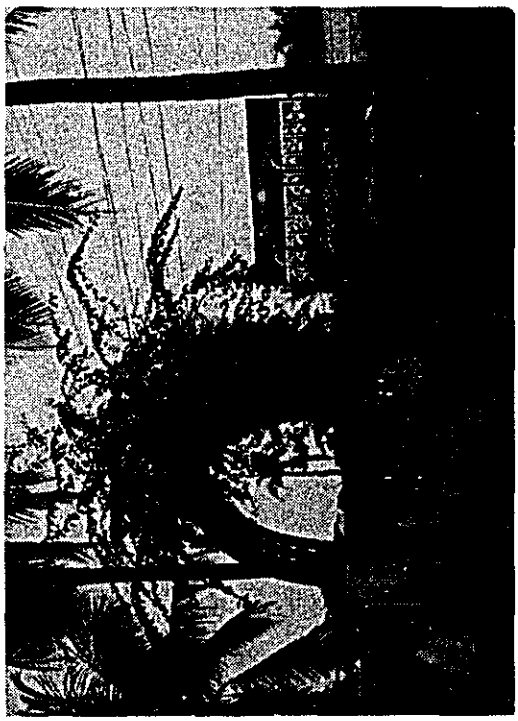
NAME	FIELD OF TECHNIQUE	PLACE OF ASSIGNMENT	DATE OF ARRIVAL	DATE OF EXPIRY
1. Mr. Takeo Oshima	Rice Culture	1. A.E.T.I. Daulatpur	20th Aug., 1973	Nov., 1975
		2. S.R.T.I. Ishurdi	30th Nov., 1975	
		3. Ctg.University R.Dev.	7th May, 1979	25th May, 1981
2. Mr. Yoshio Tanikawa	Agricultural Machinery	A.E.T.I. Daulatpur	20th Aug., 1973	18th Aug., 1975
3. Mr. Hikaru Ouchi	Horticulture	A.E.T.I. Daulatpur	20th Aug., 1973	18th Aug., 1975
4. Mr. Kiyoshi Takahashi	Rice Culture	A.E.T.I. Gaibandhan	31st Oct., 1973	29th Oct., 1975
5. Mr. Noriyuki Shutani	Agricultural Machinery	A.E.T.I. Gaibandha	31st Oct., 1973	29th Oct., 1976
6. Mr. Tadashi Saito	Horticulture	A.E.T.I. Gaibandha	31st Oct., 1973	29th Oct., 1975
7. Mr. Sadayoshi Takeuchi	Rice Culture	A.E.T.I. Nator	31st Oct., 1973	29th Oct., 1975
8. Mr. Tomoaki Ooe	Agricultural Machinery	A.E.T.I. Nator	31st Oct., 1973	29th Oct., 1975
9. Mr. Hiroyoshi Sato	Rice Culture	A.E.T.I. Nator	23rd Oct., 1974	21st Feb., 1977
10. Mr. Hitoshi Horikoshi	Rice Culture	1. A.E.T.I. Sherpur	8th Apr., 1974	Jun., 1976
		2. B.A.R.D. Comilla	15th June, 1976	29th Oct., 1977
11. Mr. Takafumi Ogawa	Rice Culture	A.E.T.I. Sherpur	23rd Oct., 1974	21st Dec., 1976
12. Mr. Yuji Katsuki	Agricultural Machinery	A.E.T.I. Sherpur	23rd Oct., 1974	21st Oct., 1976
13. Mr. Masaaki Otsuka	Rice Culture	1. A.E.T.I. Tejgaon	22nd Nov., 1974	Dec., 1975
		2. A.E.T.I. Nator	18th Dec., 1975	18th Dec., 1977
14. Mr. Tsuyoshi Karasawa	Agricultural Machinery	1. A.E.T.I. Tejgaon	23rd Oct., 1974	Dec., 1975
		2. A.E.T.I. Daulatpur	18th Dec., 1975	21st Oct., 1976
15. Mr. Tsutomu Sekiya	Horticulture	1. A.E.T.I. Tejgaon	23rd Oct., 1974	Dec., 1975
		2. A.E.T.I. Daulatpur	18th Dec., 1975	1st Jan., 1977
16. Mr. Kiyoshi Masubuchi	Rice Culture	A.E.T.I. Daulatpur	12th Aug., 1975	8th Sept.,1978
17. Mr. Yoshiharu Nawa	Rice Culture	A.E.T.I. Gaibandha	17th Mar., 1976	28th Apr., 1978
18. Mr. Norikazu Nagai	Horticulture	A.E.T.I. Sherpur	17th Mar., 1976	12th Mar., 1979
19. Mr. Norifumi Tezuka	Horticulture	A.E.T.I. Gaibandha	17th Mar., 1976	12th Mar., 1978
20. Mr. Tatsuhiro Hiramatsu	Agricultural Machinery	A.E.T.I. Nator	14th May, 1976	10th Jun., 1978

NAME	FIELD OF TECHNIQUE	PLACE OF ASSIGNMENT	DATE OF ARRIVAL	DATE OF EXPIRY
21. Mr. Mikio Tatsuwaki	Agricultural Machinery	A.E.T.I. Daulatpur	24th Aug., 1976	20th Feb., 1979
22. Mr. Naofumi Hayashi	Horticulture	A.E.T.I. Daulatpur	19th Oct., 1976	15th Apr., 1979
23. Mr. Toshiyuki Kuniyoshi	Rice Culture	A.E.T.I. Sherpur	19th Oct., 1976	15th Oct., 1979
24. Mr. Kazuhide Motosugi	Rice Culture	A.E.T.I. Gaibandha	17th Feb., 1978	13th Feb., 1980
25. Mr. Harunobu Yoshino	Rice Culture	A.E.T.I. Nator	9th Apr., 1978	7th Apr., 1981
26. Mr. Seiji Hirao	Rice Culture	A.E.T.I. Daulatpur	9th Aug., 1978	7th Sept., 1981
27. Mr. Saneyuki Okuda	Horticulture	A.E.T.I. Daulatpur	9th Aug., 1978	7th Aug., 1980
28. Mr. Masato Hori	Agricultural Machinery	A.E.T.I. Daulatpur	3rd Oct., 1978	9th Oct., 1981
29. Mr. Takashi Takada	Horticulture	A.E.T.I. Nator	3rd Oct., 1978	30th Mar. 1981
30. Mr. Yoshio Nakazawa	Agricultural Machinery	A.E.T.I. Nator	11th Feb., 1979	9th Feb., 1981
31. Mr. Yoshinori Maeda	Horticulture	A.E.T.I. Sherpur	8th Apr., 1979	6th Apr., 1981
32. Mr. Kiyohiro Takimoto	Rice Culture	A.E.T.I. Sherpur	7th Aug., 1979	5th Aug., 1981
33. Mr. Kiyotada Takayanagi	Agricultural Machinery	A.E.T.I. Sherpur	17th Oct., 1979	25th Jan., 1982
34. Mr. Yoshinori Kitai	Horticulture	A.E.T.I. Daulatpur	17th Oct., 1979	5th Nov., 1982
35. Mr. Kozo Sunada	Rice Culture	A.E.T.I. Gaibandha	5th Feb., 1980	28th Jul. 1982
36. Mr. Yojiro Kondo	Rice Culture	1. A.E.T.I. Nator	2nd Oct., 1980	Aug., 1982
		2. A.E.T.I. Dinajpur	Sept.,1982	30th Sept.,1983
37. Mr. Issei Okae	Agricultural Machinery	A.E.T.I. Gaibandha	23rd Jan., 1981	21st Jul., 1983
38. Mr. Yoshikazu Niinuma	Horticulture	1. A.E.T.I. Nator	4th Apr., 1981	Aug., 1982
		2. A.E.T.I. Faridpur	Sept.,1982	Apr., 1984
		3. B.S.C.I.C. Noakhali		2nd Apr., 1985
39. Mr. Toshiharu Baba	Horticulture	A.E.T.I. Gaibandha	4th Apr., 1981	2nd Apr., 1983
40. Mr. Hirotoshi Fukuhiro	Horticulture	A.E.T.I. Khadimnagar	4th Apr., 1981	2nd Apr., 1983

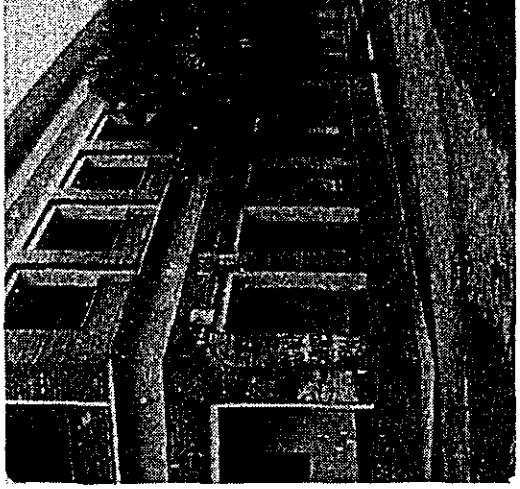
NAME	FIELD OF TECHNIQUE	PLACE OF ASSIGNMENT	DATE OF ARRIVAL	DATE OF EXPIRY
41. Mr. Noritoshi Sakata	Agricultural Machinery	1. A.E.T.I. Nator	4th Apr., 1981	Aug., 1982
		2. A.E.T.I. Dinajpur	Sept.,1982	2nd Jul., 1983
42. Mr. Mikio Kitagawa	Agricultural Machinery	A.E.T.I. Ishurdi	25th July, 1981	23rd Jul., 1983
43. Mr. Hidetaka Kogen	Agricultural Machinery	A.E.T.I. Faridpur	9th Oct., 1981	7th Oct., 1983
44. Mr. Hiroshi Habazaki	Agricultural Machinery	A.E.T.I. Khadimnagar	9th Oct., 1981	7th Jan., 1985
45. Mr. Hideo Yamamoto	Agricultural Machinery	A.E.T.I. Sherpur	9th Oct., 1981	7th Oct., 1983
46. Mr. Hitoshi Ito	Rice Culture	A.E.T.I. Daulatpur	27th Jan., 1982	25th Jan., 1984
47. Mr. Mitsuo Oka	Vegetable Growing	1. A.E.T.I. Faridpur	8th Apr., 1982	Aug., 1982
		2. A.E.T.I. Ishurdi	Aug., 1982	Dec., 1982
48. Mr. Ryoji Sakamoto	Vegetable Growing	A.E.T.I. Sherpur	8th Apr., 1982	6th Sept., 1984
49. Mr. Yo Furumura	Rice Culture	A.E.T.I. Ishurdi	28th Jul., 1982	26th Aug., 1984
50. Mr. Tatsuo Honda	Rice Culture	A.E.T.I. Gaibandha	4th Oct., 1982	2nd Oct., 1984
51. Mr. Shuya Hyodo	Vegetable Growing	A.E.T.I. Daulatpur	4th Oct., 1982	2nd Nov., 1984
52. Mr. Katsuhiro Harano	Agricultural Machinery	A.E.T.I. Dinajpur	23rd Jan., 1983	21st Apr., 1985
53. Mr. Shoichi Miyawaki	Agricultural Machinery	A.E.T.I. Daulatpur	23rd Jan., 1983	21st Jan., 1985
54. Mr. Shinji Obuchi	Rice Culture	A.E.T.I. Dinajpur	3rd Apr., 1983	1st Apr., 1985
55. Miss Akemi Okada	Home Economics	A.E.T.I. Tejgaon	3rd Apr., 1983	1st Oct., 1983
56. Miss Ihoko Kuno	Home Economics	1. A.E.T.I. Faridpur	3rd Apr., 1983	Dec., 1983
		2. A.E.T.I. Tejgaon	Dec., 1983	1st Apr., 1985
57. Miss Chisako Hasegawa	Home Economics	A.E.T.I. Gaibandha	3rd Apr., 1983	1st Apr., 1985

Appendix - 7 Photographs of each A.E.T.I.:

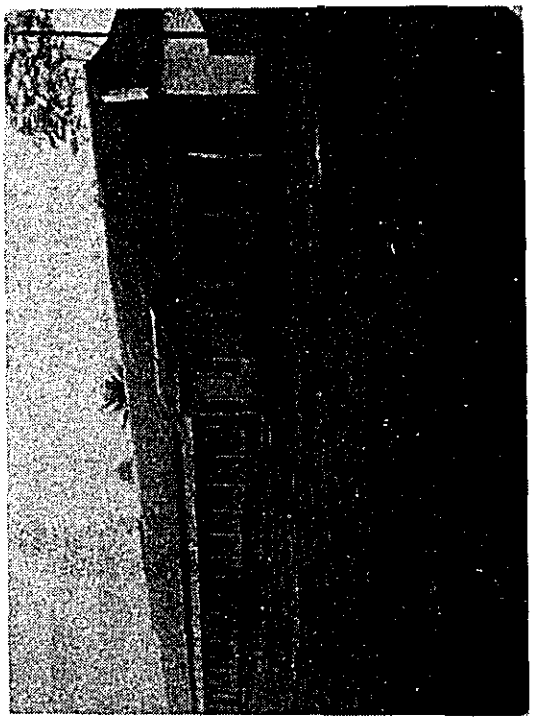
1. A.E.T.I. Daulatpur



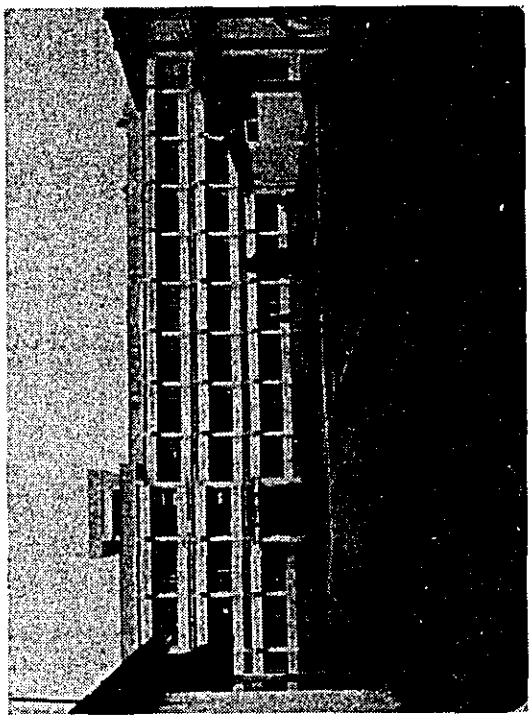
1) Front gate



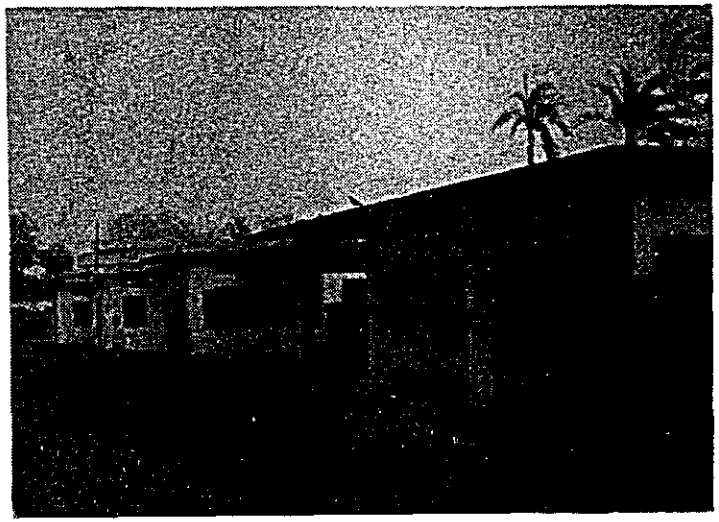
2) office. Instructors' rooms(first floor) and Class rooms(second floor).



3) Class room



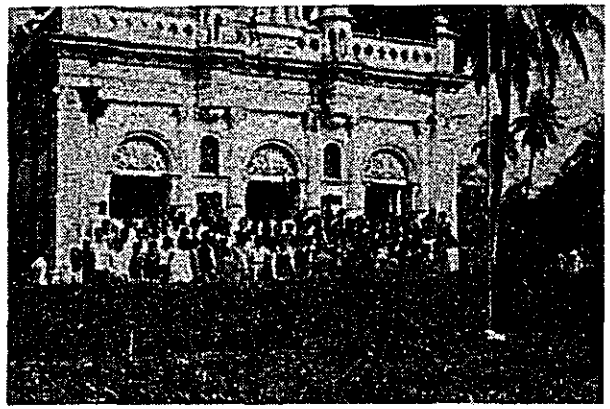
4) Hostel



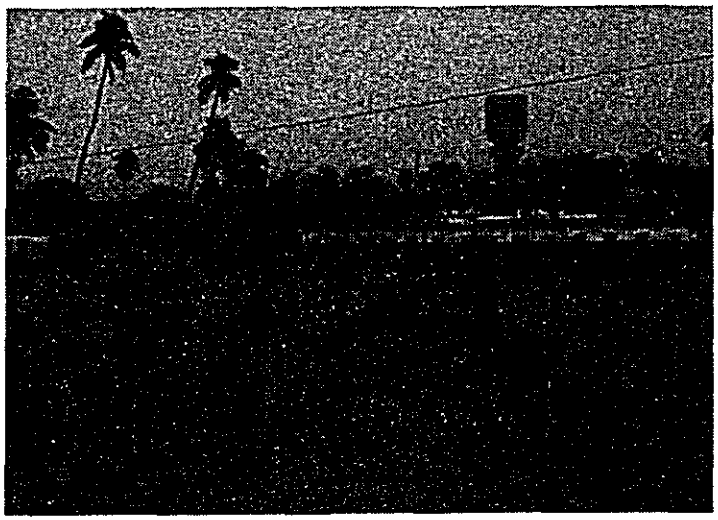
5) staffs' quarters.

6) Instructors' quarters.

2) Side of the A.E.T.I.



1) Frontage.

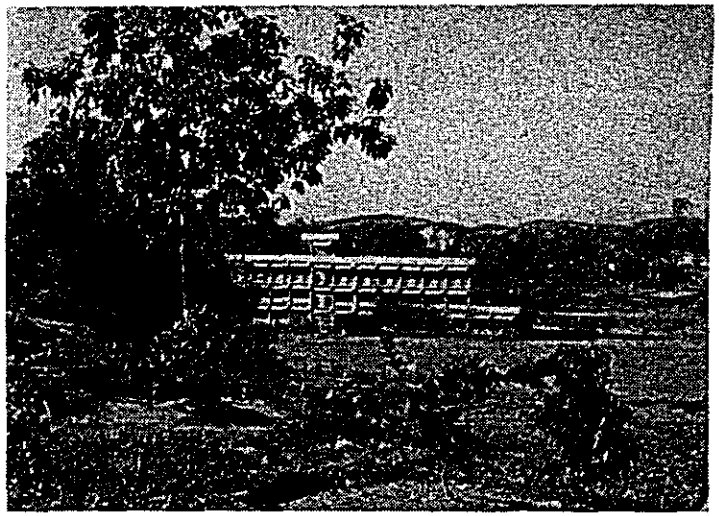


3) Scene of working.

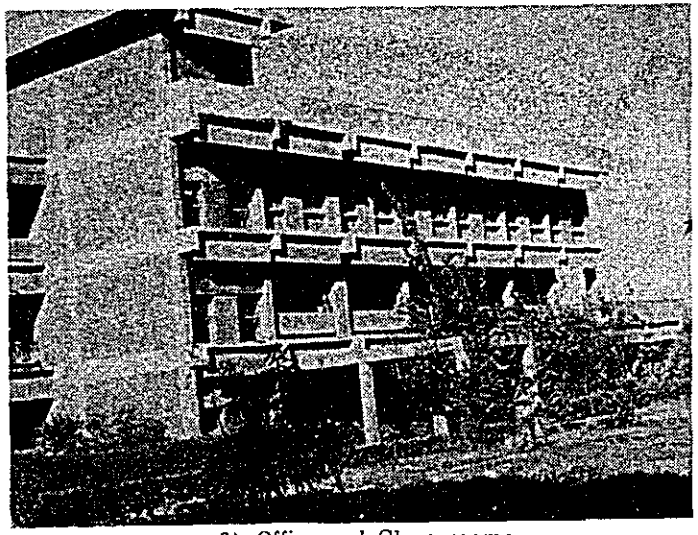
2. A.E.T.I. Sherpur

3. A.E.T.I. Khadimnagar

1) Front gate.

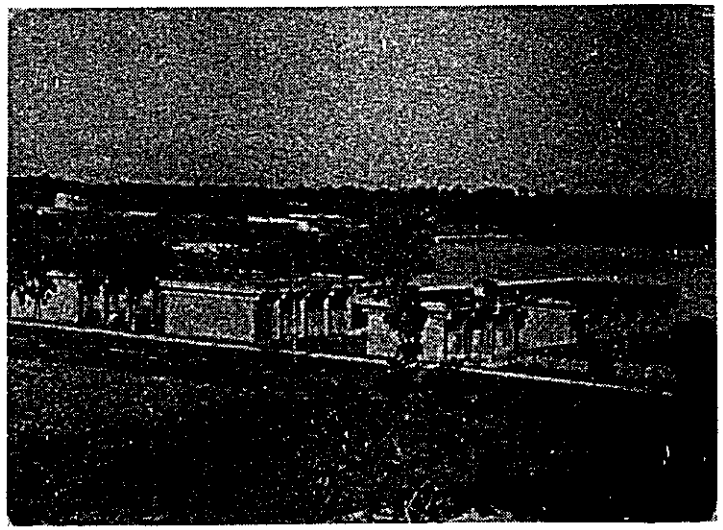


2) Panoramic view.

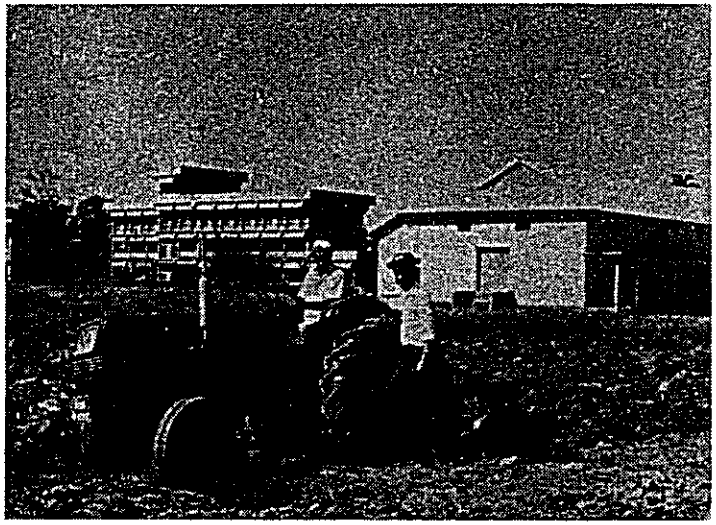


3) Office and Class rooms.

4) Auditorium.

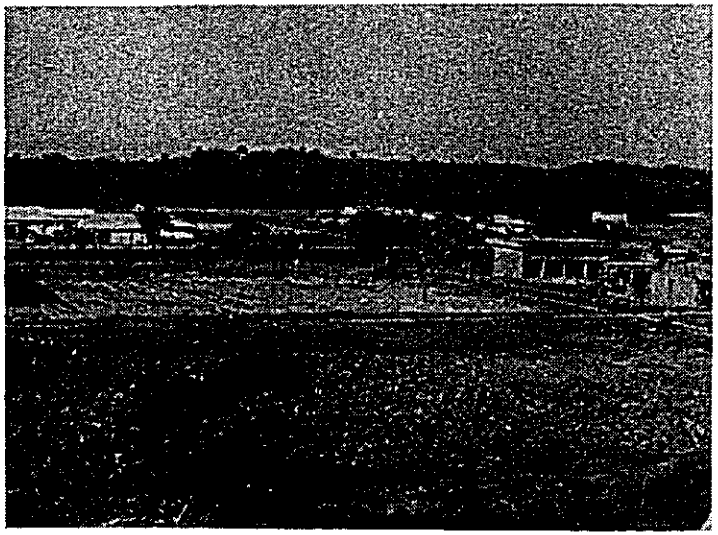


5) Workshop.



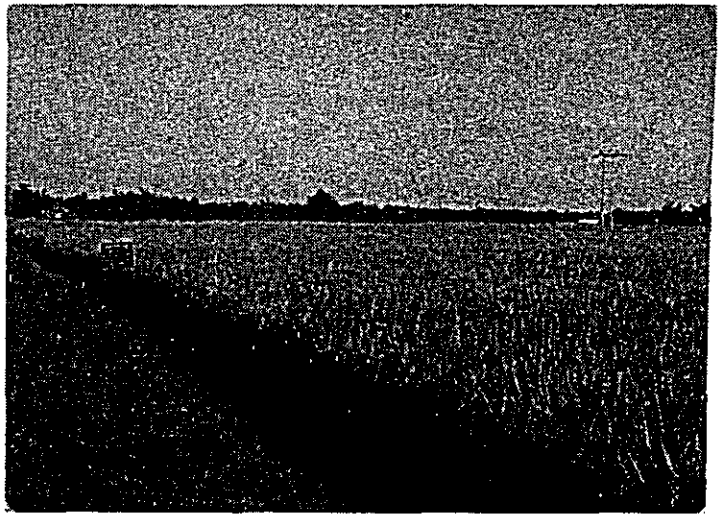
6) Mr. H. Habazaki and tractor driver.

7) Seedbed of vegetable.

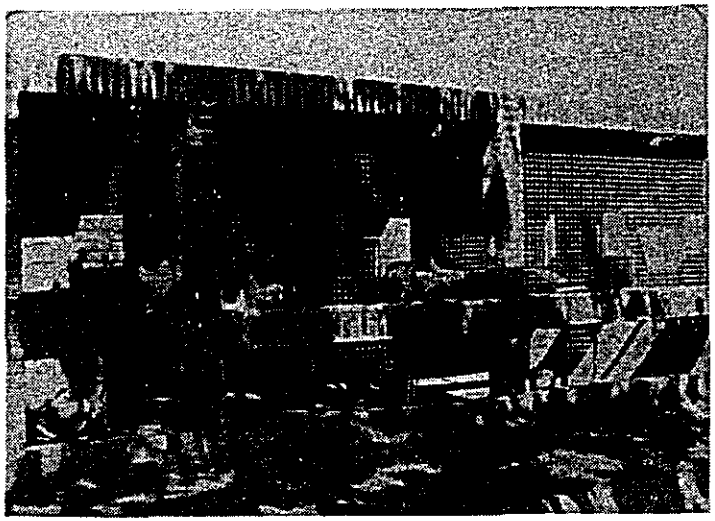


8) Individual plots of trainees.

9) Fruit field.



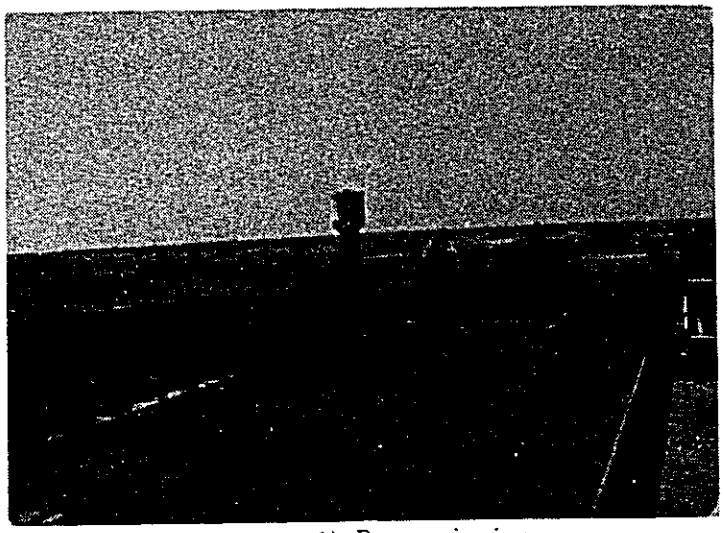
10) Rice field.



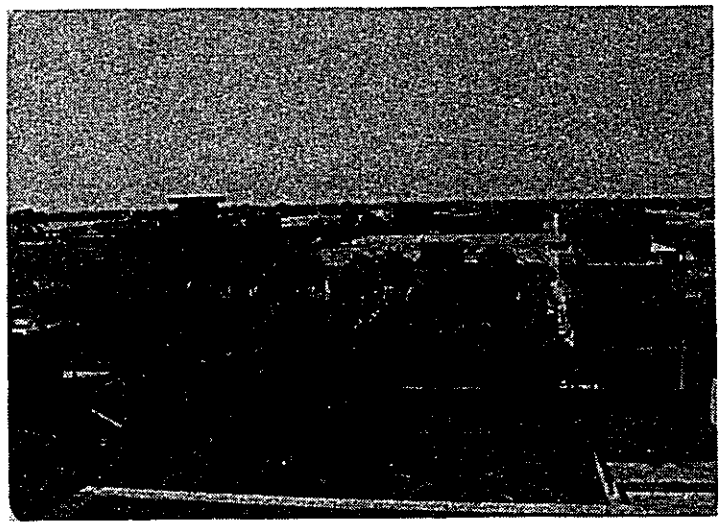
11) poultry house.

12) Cow house.

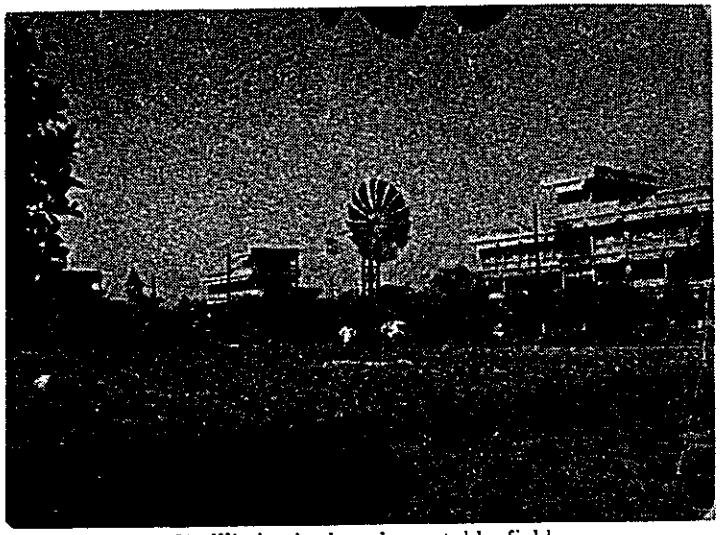
4. A.E.T.I. Dinajpur



1) Panoramic view.

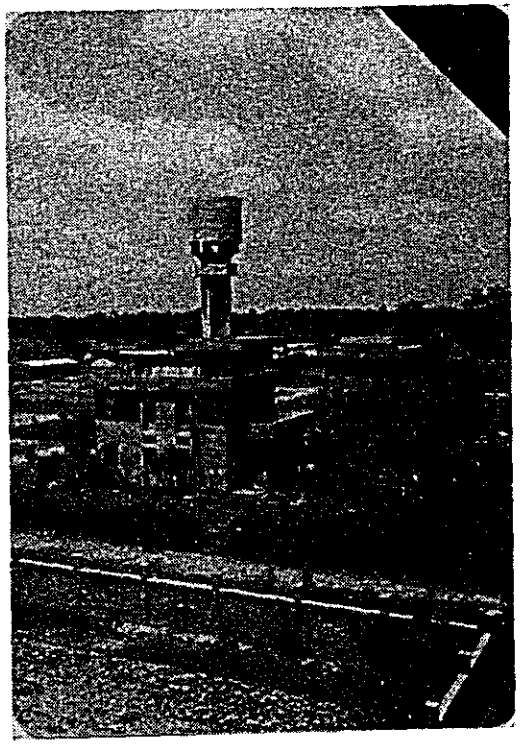


2) Panoramic view.

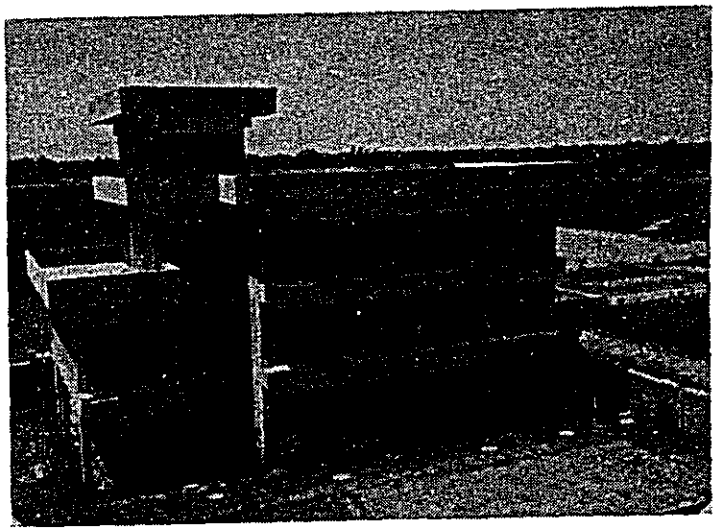


3) Wind wheel and vegetable field.

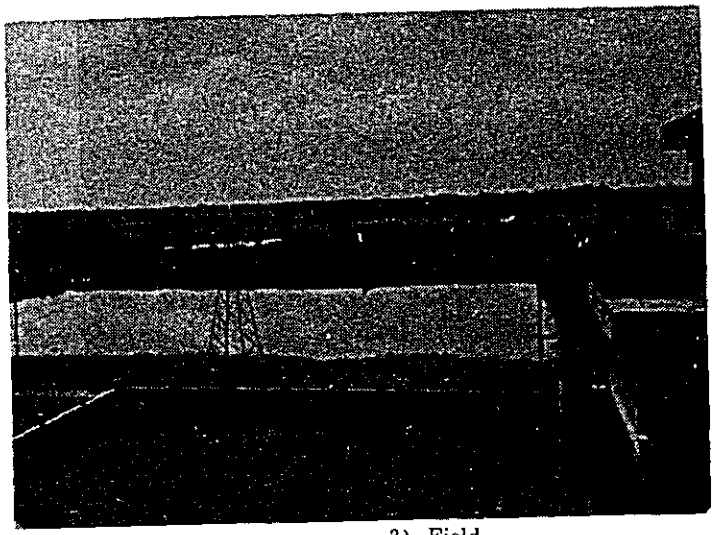
5. A.E.T.I. Faridpur



1) Principal quarters.

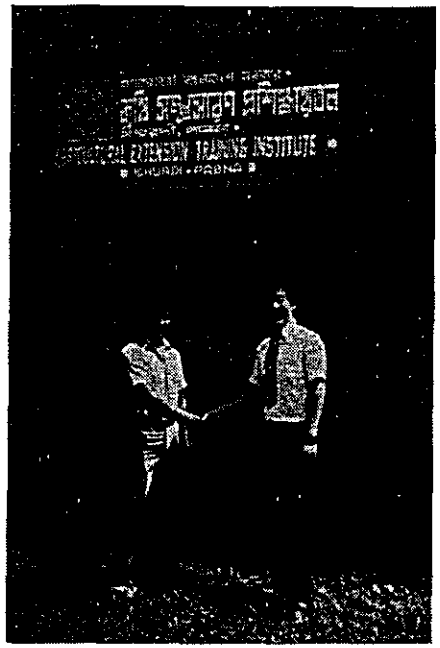


2) Instructors' quarters.

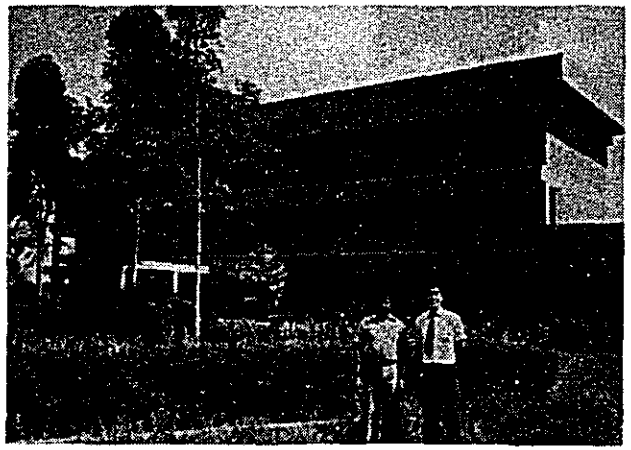


3) Field.

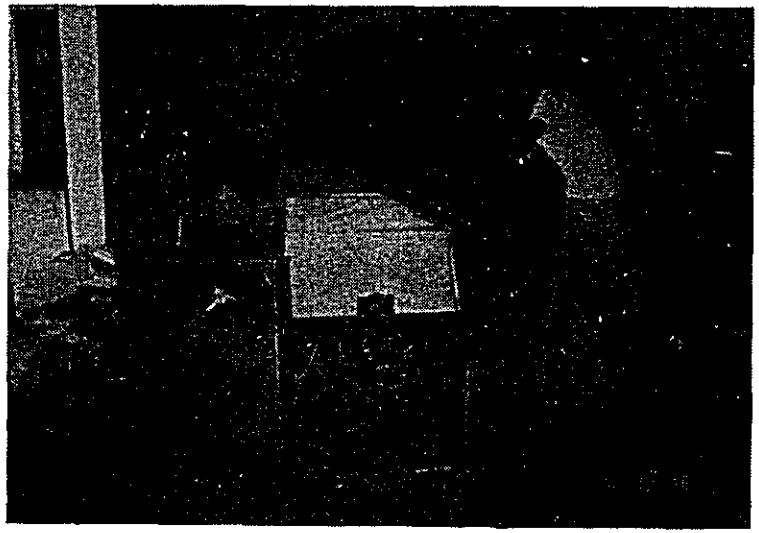
6. A.E.T.I. *Ishurdi*



1) Mr. Y. Furumura and
his counterpart.



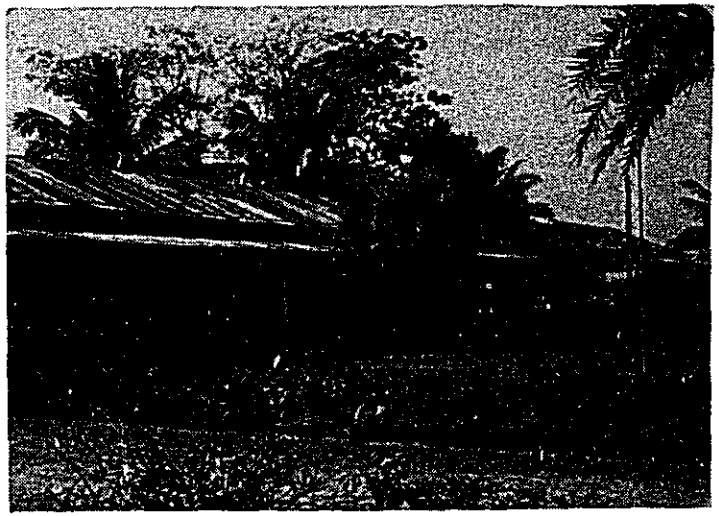
2) Office and Class rooms.



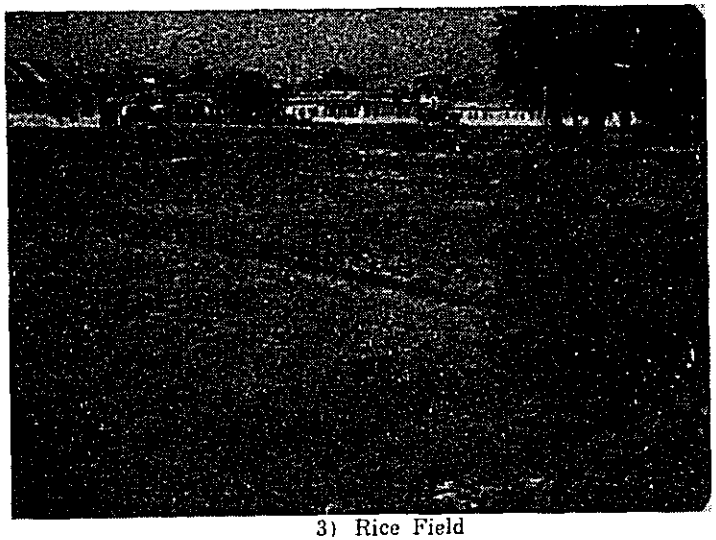
3) Mr. Kitagawa and
a power thresher.

7. A.E.T.I. Tejgaon

1) Office and Instructors' rooms.



2) Office and Instructors' rom



3) Rice Field