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Ex-Post Evaluation Study for

the Project of The Haraz

Agricultural Human

Resource Development

Report

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March 2008

**Japan International
Cooperation Agency
(JICA)
Iran Office**

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**Ex-Post Evaluation Study for the Project of
The Haraz Agricultural Human Resources Development Center**

March 2008

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The Haraz Agricultural Human Resources Development Center
(HAHRDC)**



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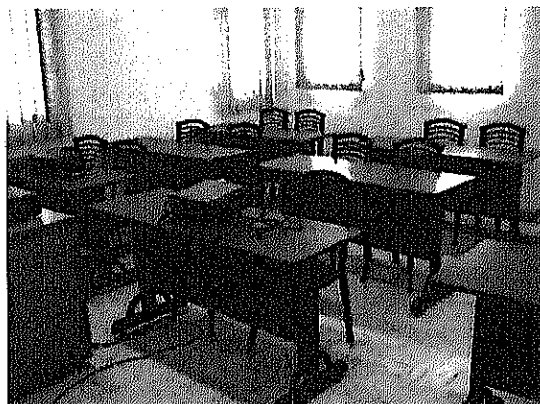
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Abbreviation List

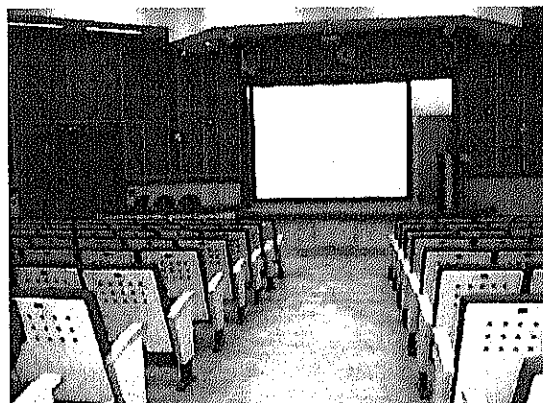
CAPIC	Caspian Sea Coastal Area Agricultural Development Project – Pilot Implementation Center
HHRDC	Haraz Agricultural Human Resources Development Center
JICA	Japan International Cooperation Agency
MOJA	Ministry of Jihad-e-Agriculture
MPO	Management and Planning Organization
ODA	Official Development Assistance
PDMe	Project Design Matrix for Evaluation
PO	Plan of Operation



Center building



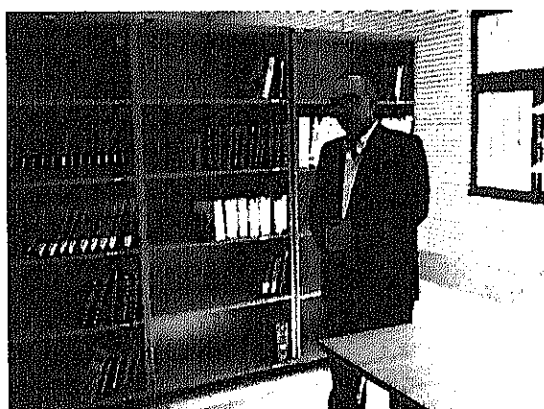
Classroom



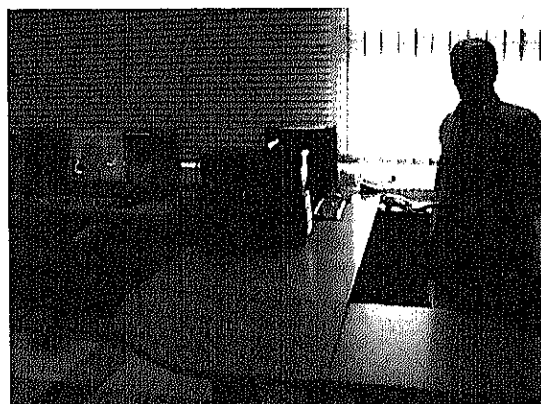
Conference room



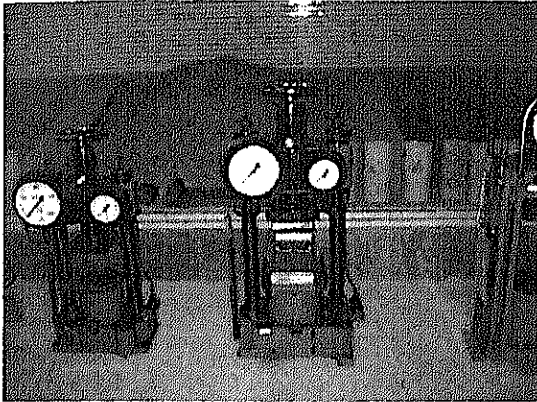
Textbooks for training courses



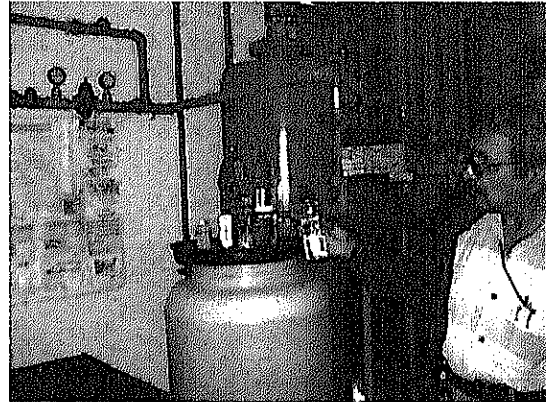
Library



Computer Center



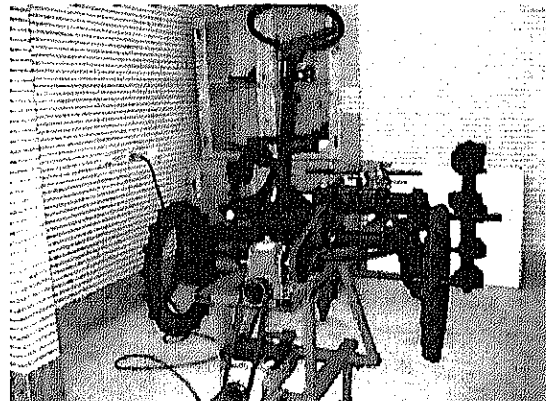
Equipment for soil testing



Equipment for water testing



Dryer machine



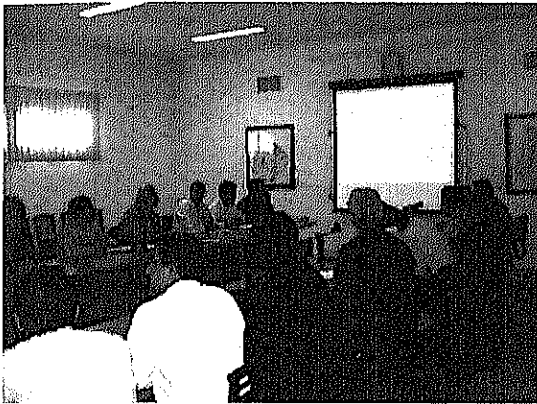
Model of agricultural machine



Greenhouse



Second crop



Training course for engineers



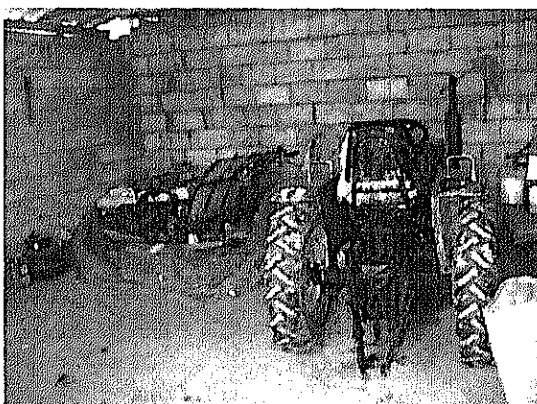
Workshop with university students



Pilot farm



Second crop in pilot farm



Machines of an ex-trainee farmer



Fields of an ex-trainee farmer

Summary

Evaluation conducted by: JICA Iran Office

1. Outline of the Project	
Country: The Islamic Republic of Iran	Project title: The Project of The Haraz Agricultural Human Resources Development Center
Issue/sector: Agriculture/General	Cooperation scheme: Technical cooperation
Division in charge: Rural Development Department	Total cost: 880 million Yen
Period of Cooperation	July 1 st 1999 to June 30 th 2004
	Partner Country's Implementing Organization: Ministry of Jihad-e-Agriculture
	Supporting Organization in Japan: Ministry of Agriculture, Forestry and Fisheries
Related Cooperation: None	
<p>1-1. Background of the Project</p> <p>In Iran, agriculture is a main industry sector comparable with oil industry, accounting for 20 percent of GDP and 25 percent of total workforce. On the other hand, agricultural land accounts for mere 10 percent of the country's total land area. Several measures are necessary to be taken, including irrigation development, improvement of cultivation techniques, acceleration of motivation to produce rice with stable cultivation, and improvement of distribution system. Increase in rice production, one of major cereals of the country, has been suffering from slowing down because area of paddy fields has not impressively expanded in recent years. Therefore measures are required to promote rice production, as well as improvement of land productivity with efficient utilization of paddy fields.</p> <p>1-2. Project Overview</p> <p>In order to disseminate rice crop agricultural technologies demonstrated in the previous cooperation project "Caspian Sea Coast Area Agriculture Development Center Project (CAPICS)", which aimed to transfer the skill of land consolidation, farm mechanization and other advanced agriculture technologies, the Government of Iran made a formal request to the Government of Japan for another project under the project-type technical cooperation scheme. The Project aimed to strengthen and enrich the Center's training functions for engineers, technicians and farmers.</p> <p>(1) Overall Goal Productivity of rice is improved and rice production yield is increased.</p> <p>(2) Intermediate Goal Land consolidation is developed and technology for rice cultivation is improved.</p> <p>(3) Project Purpose The Haraz Agricultural Human Resources Development Center functions as a technology center for developing human resources concerned with land consolidation and rice production in consolidated land.</p> <p>(4) Outputs</p> <ol style="list-style-type: none"> 1. A system for training implementation is completed. 2. Teaching materials are prepared. 3. Lecturers for training are secured. 4. Training for engineers, technicians and farmers is implemented on accordance with the training implementation plan. 5. Pilot model farms are operated as a base for demonstration and dissemination of appropriate mechanized cultivation technology in Haraz basin area. <p>(5) Inputs (as of Project's termination)</p> <p>Japanese side:</p> <ul style="list-style-type: none"> Long-term experts: 8 experts Short-term expert: 48 experts Acceptance of Iranian trainees: 22 trainees Provision of equipment: US\$ 1,154 thousand Project operation cost: US\$ 270 thousand <p>Iranian side:</p> <ul style="list-style-type: none"> Counterpart personnel: 38 persons and supporting staff 	

Land, buildings and facility Project cost: US\$ 5 million, including construction of a new building and facility		
2. Evaluation Team		
Members of Evaluation Team	JICA Iran Office Commissioned to: Mr. Izumi Sakaya – Japanese Consultant Dr. Mohammad Hassan Jouri – National Consultant	
Period of Evaluation	October 2 nd to December 15 th , 2006	Type of Evaluation: Ex-post
3. Results of Evaluation		
3-1. Summary of Evaluation Results		
(1) Impact		
The Project has had a huge impact on activities of the Haraz Technology Extension and Development Center (renamed from Haraz Agricultural Human Resources Development Center; HAHRDC). Since the completion of a new building, the Center has become capable of full-fledged activities by utilizing its knowledge and skills obtained by the Project. On the other hand, the magnitude of impact in terms of overall goal and intermediate goal is still difficult to estimate.		
1) Overall goal		
Indicators to measure achievement of the Overall goal show the mixed results as production cost of rice has been rising recently. Those indicators are likely to be affected by various factors and therefore it is extremely difficult to identify causal relationship with activities of the Center, taking account of the fact that only two and a half years have passed since the Project was terminated. At this moment, the followings are observed;		
a. production cost of rice has been risen,		
b. productivity of rice per hecter has been slightly improved, (2004-2006 11.66%up)		
c. paddy field area in Iran has been slightly enlarged, (2004-2006 3% up)		
2) Intermediate goal		
Indicators to measure achievement of the Intermediate goal show good performances for recent years, and the activities of the Center have obviously made significant contributions. Increase in paddy field area in the both provinces would support this assumption. In addition, another data reveals that the farmers who participated in the training courses of the Center increased their unit yield of rice, making it clear that technology for rice cultivation was upgraded in Mazandaran province, at least for the farmers whom the Center provided with knowledge and skills		
3) Others		
There are impacts such as;		
i) raising income and reducing working hours of farmers -which partially justified by the interviews with those involved-		
ii) Positive environmental impact of land consolidation by flood and erosion.		
iii) Restraint of negative social impact of land consolidation, offering the training of conflict prevention among the parties involved upon the consolidation process.		
and		
iv) Publicity of Japanese ODA, since the project is a fruit of some 20 years-long cooperation in the region between Iran and Japan and quite well-known to the local society as a symbol of agriculture development supported by Japan.		
Especially, the Center has contributed much to prevention of disputes which are associated with land consolidation by focusing on the issue in its training curriculum.		
(2) Sustainability		
Since the termination of the Project, the Center has been expanding its activities with stable institutional and financial conditions, proving high sustainability. Machinery and equipment are generally well maintained and appropriately used, though further efforts are required to fully utilize its facility in some cases.		
1) Policy/Institutional aspect		
<ul style="list-style-type: none"> The activities of the Center are totally consistent with the current national development plan (the 4th Five Year Plan 2005-2009) Chapter 1. Article 18, as the development plocy of MoJA which emphasizes the importance of promotion of land consolidation and self-sustenance of rice. 		
2) Organizational/Financial aspect		
<ul style="list-style-type: none"> The Center has consolidated its status in the Ministry of Jihad-e-Agriculture (MOJA) and expansion of the organization is expected. Most of professional staff members of the HAHRDC are still working in the Center and no staff has left his profession who benefit from technology transfer during the Project, which proves high sustainability of human 		

<p>resources. The budget of the Center has been stable since the commencement of the Project.</p> <p>3) Technological aspect</p> <ul style="list-style-type: none">• Since the opening of the new building, training courses of the Center has been fully activated as much larger number of trainees participated in various training courses in the last two years than during the Project period. Also, with accommodation facility, many trainees from remote areas have participated in training courses, enlarging the scope of impact of the Center.• Training courses are by and large highly evaluated by trainees as the results of surveys of trainees indicate that they are mostly satisfied with contents and modes of the training they attended, as well as capability of course lectures.• As for research activities, since the termination of the project, staff members have produced three books, more than 150 papers and articles for seminars scientific journals and other periodicals demonstrating that their ability and willingness for research and development are quite high.• The negative aspect would be that the professional staff members do not have many opportunities to attend trainings themselves to freshen up and update their knowledge and skills in their respective field.• Machinery and equipment are in general utilized and well maintained and they look quite new. Maintenance system is properly established and budget for maintenance is secured every year to such an extent that most of machinery and equipment are operated and utilized adequately.• On the other hand, however, a few Japanese machines are out of order because parts are not available. According to the Center, import procedure of Japanese-made parts is complicated and the prices of those parts are expensive while replacement with Iranian parts or other cheaper parts is difficult.
<p>3-2. Factors that have promoted project</p> <p>3-2-1. Sustainability</p> <ul style="list-style-type: none">• Most importantly, completion and opening of the main building has greatly accelerated the activities of the Center.• The Center keeps a good reputation among MOJA and Management and Planning Organization which is supervising the ministries/organization's performance. <p>3-2-2. Impact</p> <ul style="list-style-type: none">• High capability of both top managers and staff members of the Center is appreciated by trainees.
<p>3-3. Factors that have inhibited project</p> <p>3-3-1. Impact</p> <ul style="list-style-type: none">• Delay in construction of the main building brought about adverse effects in Project activities. Although the Project set a target of the number of trainees as 1400, less than half the number was achieved due to the delay. While the completion was initially scheduled in 2001, official opening of the building was March 2005, eight month after the termination of the Project. <p>3-3-2. Sustainability</p> <ul style="list-style-type: none">• Some of machines are not used because of difficulty in obtaining parts., which could have been avoided with more careful selection of machines to be installed for the Project <p>3-3-3. Others</p> <ul style="list-style-type: none">• Iranian side alleges that technology transfer during the Project was not fully practiced, hindering current activities of the Center, such as soil mechanic testing.
<p>3-4. Conclusions</p> <ul style="list-style-type: none">• The HAHRDC Project is totally consistent with the present agricultural policy of the Iranian Government and the Center has more importance in its roles and functions than before.• The Project has had positive impact on agricultural development of Mazandaran province and its surrounding area in the sense that skills and knowledge transferred to the staff of the Center have defused to engineers, technicians and farmers in the area.• Although it may take some time before intermediate goal and overall goal are judged to be achieved, it is presumed that the Center will continue to contribute to the promotion of land consolidation and rice cultivation of Iran, with reasonably high sustainability of the Project in terms of policy, institutional, organizational, financial and technological aspects.
<p>3-5. Recommendations</p> <p>(1) Iranian side</p> <ul style="list-style-type: none">• The Center is expected to play a role as research and training center to defuse its skills, knowledge, and technology to neighboring countries by fully utilizing its human resources and facility.• To further improve and strengthen its training courses, the Center should establish a monitoring system of

ex-trainees by regularly keeping in touch with them to verify the effects of training.

- More opportunities for the staff members to attend professional training are desired. In order for the center to perform as a research and training institution, especially, but not limited to, the land consolidation and mechanization.
- The Center is expected to make further efforts on its own, for instance, contacting foreign manufacturers of machines or inquiring of relevant institutions about operation of equipment for scientific experiments.

(2) Japanese side

- JICA may consider future cooperation with the Center in terms of schemes for "Third Country Training" and "Triangle Cooperation" involving neighboring countries, to utilize human resources and facility of the Center.
- The Iranian side is eager for JICA's further technical cooperation for the activities of the Center. JICA could sincerely scrutinize the requests by the Iranian side, as stated in the Terminal Evaluation Study report.

3-6. Lessons learned

- The most serious impediment of the Project was the delay in construction of the main building of the Center, which brought about adverse effects in Project activities. Although many factors were responsible, the delay could have been predicted. It is desired that a realistic and cautious schedule be designed for construction of main facilities by scrutinizing local conditions.
- For selection of machinery and equipment to be introduced for projects, it should be noted that the maintenance of those machinery and equipment is secured with parts readily available even after the termination of the project.
- The Ex-post Evaluation Study for this project could be conducted

1. Outline of the Ex-post Evaluation Study

1.1 Purpose of the Ex-post Evaluation Study

The purpose of ex-post evaluation study is to verify whether the outcomes that the project aimed for are continuing after a certain period of time since the end of the cooperation. The results of these evaluations are fed back to similar JICA projects in the planning phase or to the formulation of programs on the macro level, for example JICA's Country Programs. They are reflected in the effective and efficient implementation of these projects. Since the cooperation of JICA has already ended, the evaluation result of ex-post evaluations also includes recommendations for the partner country organization that is continuing the activities. Additionally, an important factor is that concrete recommendations and lessons learned for JICA's future efforts are extracted from the aspect of management of the organization as a whole.

In ex-post evaluations, the studies focus on two evaluation criteria: "impact" – which is expected to appear after a certain period of time after the end of the cooperation, and "sustainability" – where evaluators look at whether the effect is continually produced after the end of the cooperation. Up to the terminal evaluation, these criteria were always examined on the basis of its prospects, but in the ex-post evaluation, they are examined on the basis of performance.

In this particular ex-post evaluation, the Project of the Haraz Agricultural Human Resources Development Center (HAHRDC) practiced for the period of five years from 1999 to 2004, was studied for the above-mentioned purpose.

1.2 Method of Study

Study methods for the evaluation include, 1) survey of reference materials, 2) questionnaire survey of the staff of HAHRDC, 3) interviews with various stakeholders, and 4) site inspection.

1) Survey of reference materials

Apart from project documents and evaluation reports in the past, current activity reports of HAHRDC and relevant data and statistics were collected and scrutinized.

2) Questionnaire survey of the staff of HAHRDC

Questionnaire was prepared for present staff of HAHRDC. See Annex xx

3) Interviews with various stakeholders

Intensive interviews with main stakeholders of the HAHRDC Project were carried out. Interviewees were:

- (1) Top management and individual staff of HAHRDC, including ex-staff who were involved with the training activities during the project period,
- (2) Target group of the HAHRDC Project, i.e. key farmers and engineers and technicians concerning land consolidation (ex-trainees of HAHRDC), and
- (3) Staff of Ministry of Jihad-e-Agriculture (MOJA) who are responsible to the HAHRDC.

As for the interviews with MOJA and top management of HAHRDC, major questions and issues for discussion were sent to them in advance to facilitate efficient interviews.

(4) Site inspection

Besides the facility of HAHRDC, i.e. buildings, machinery and equipment, and agricultural fields, the study team visited and inspected a pilot farm of HAHRDC and farms of ex-trainees.

1.3 Study Team and Study Period

1) Study team members

The ex-post evaluation study team consisting of the following two members conducted the study under the guidance of JICA Iran office.

Mr. Izumi Sakaya	Consultant (evaluation specialist)
Dr. Mohammad Hassan Jouri	Head, Natural Resources Department, Islamic Azad University of Nour Branch

2) Study period

The evaluation study was conducted from October 2nd to December 15th, 2006, of which the field survey at the project site was carried out for the period of 10 days from November 5th to 14th.

2 Outline of the Project

2.1 Background of the Project

In Iran, agriculture is a main industry sector comparable with oil industry, accounting for 20 percent of GDP and 25 percent of total workforce. On the other hand, agricultural land accounts for mere 10 percent of the country's total land area. Several measures are necessary to be taken, including irrigation development, improvement of cultivation techniques, acceleration of motivation to produce rice with stable cultivation, and improvement of distribution system. Increase in rice production, one of major cereals of the country, has been suffering from slowing down because area of paddy fields has not impressively expanded in recent years. Therefore measures are required to promote rice production, as well as improvement of land productivity with efficient utilization of paddy fields.

After implementation of two development studies on rice crop in Caspian Sea coastal area, demonstration and exhibition of rice crop agricultural technologies were carried out through a project under the JICA's project-type technical cooperation scheme titled "The Caspian Sea Coastal Area Agricultural Development Project – Pilot Implementation Center (CAPIC)" from 1990 to 1996. In order to disseminate these technologies, the Government of Iran made a formal request to the Government of Japan for another project under the project-type technical cooperation scheme titled "Haraz Agricultural Human Resources Development Center Project". The Project would aim to strengthen and enrich the Center's training functions for engineers.

In response to this project, the Government of Japan dispatched a Basic Study Team, Preliminary Study Team, and Supplementary Study Team to Iran to confirm the necessity of assistance and to discuss the details of the Project with the Iranian side. This resulted in the signing of the Record of Discussions for the Project by Implementation Study Team on April 20, 1999. The Project was scheduled to be commenced in July 1999 and continued for five years' period until July 2004.

In April 2004, Management Consultation Team was dispatched to Iran to discuss and prepare PDM, PO, and monitoring and evaluation plan.

After two and half years from the commencement of the Project, Mid-term Evaluation Team was dispatched in February 2002 with the aim to evaluate the progress of the Project as well as to modify the Project activities thereafter. In February 2004, five

months before the termination of the Project, Terminal Evaluation Study Team was dispatched in order to examine the achievement of the Project based on five evaluation criteria, i.e. relevance, effectiveness, efficiency, impact and sustainability, and to identify lessons and recommendations to improve the Project activities. Following the conclusion of the Terminal Evaluation Study that the purpose of the Project had been appropriately achieved, the Project was terminated at the end of July 2004 as per the schedule.

2.2 Project Summary

The basic information of the Project is summarized below.

Project Title: The Project of the Haraz Agricultural Human Resources Development Center

Project Period: July 1st, 1999 to June 30th, 2004 (five years)

Project Site: Amol, Mazandaran Province

Target Group: Engineers and technicians concerning land consolidation and farmers

Overall goal: Productivity of rice is improved and rice production yield is increased.

Intermediate goal: Land consolidation is developed and technology for rice cultivation is improved.

Project Purpose: The Haraz Agricultural Human Resources Development Center functions as a technology center for developing human resources concerned with land consolidation and rice production in consolidated land.

Outputs:

6. A system for training implementation is completed.
7. Teaching materials are prepared.
8. Lecturers for training are secured.
9. Training for engineers, technicians and farmers is implemented on accordance with the training implementation plan.
10. Pilot model farms are operated as a base for demonstration and dissemination of appropriate mechanized cultivation technology in Haraz basin area.

Inputs – Japanese side:

Long-term experts: 8 experts

Short-term expert: 48 experts

Acceptance of Iranian trainees: 22 trainees

Provision of equipment: US\$ 1,154 thousand

Project operation cost: US\$ 270 thousand

Inputs – Iranian side:

Counterpart personnel: 38 persons and supporting staff

Land, buildings and facility

Project cost: US\$ 5 million, including construction of a new building and facility

Project design matrix for evaluation (PDMe), an overview of project information, is shown in **Annex 1**.

3 Study Results

3.1 Current Status and Activities

Before presenting the evaluation results, current status and activities of the HAHRDC are summarized in this section.

1) Status

The HAHRDC was renamed in August 2006 as the Haraz Technology Extension and Development Center, following the formal approval of Management and Planning Organization (MPO) of the Government. A new main building, construction of which was initially scheduled to be finished in 2001, was completed and officially opened in March 12, 2005¹.

2) Personnel

The Haraz Technology Extension and Development Center, hereinafter referred to as the Center, has 55 staff members at the time of Ex-post Evaluation Study, of which three are managers, 33 are professional staff, and remaining 19 are administration or supporting staff.

3) Function and activities

Activities of the Center are entirely aimed at human resources development. The organization of the Center has six research and training groups² (apart from administration section), namely:

- (i) Infrastructure group, consisting of sub groups of;
 - Land consolidation,
 - Basic technology,
 - Survey, plan and design, and
 - Cost estimation and management of construction
- (ii) Agronomy group
- (iii) Machinery group
- (iv) Second crop group
- (v) Organic farming group

¹ Various factors are responsible for the delay in construction, such as price hike of cement and alteration of designing of the building in the wake of huge earthquake in Bam in 2002. However, it is more likely that construction schedule was too tight from the beginning. The official opening of the Center building was further delayed due to political reason with the Presidential election and the change of the Minister in charge.

² The organization of the Center is currently under review and subject to change.

(vi) Training group

Activities of the Center are roughly classified into 5 categories; (1) training, (2) research, (3) cooperation with universities, (4) technical consultation, and (5) other activities, though contents of the activities vary from group to group.

(1) Training

Training activities include preparing textbooks and teaching materials, and execution of training courses. The detailed list of training courses from 2000 to October 2006 is shown in **Annex 3**. During the period 70 training courses were held with a total of 1,451 participants.

(2) Research

Numerous research and experiment activities are conducted by each group, such as study on drainage system, organic rice cultivation, rice milling technique, and hybrid rice cultivar. The staff members of the Center have produced three books and more than 150 papers and articles and taken part in many seminars since the termination of the HAHRDC Project. The Center staff participated in the World Bank seminar on land and water management held in the Center building.

(3) Cooperation with universities

The Center has a good relation with academic institutions, by conducting several cooperation activities, such as organizing visits of university students to the Center and farms, offering practical training courses for students, and supervising post graduate students. See **Annex 4** for the participation of students to activities of the Center.

(4) Technical consultation

The Center extend consulting and advisory services to engineers and technicians of provincial agricultural offices, farmers and others in various fields such as rice cultivation, mechanization and land consolidation.

(5) Other activities

Each group has its unique field activities. Agronomy group is responsible for mechanized rice cultivation at the Center's own field; Infrastructure group conducts measuring, gathering and analyzing of meteorological data at the meteorological station; Organic farming group makes organic fertilizers with various materials; Second crop group

introduces new crops and new varieties at the pilot farms.

The Center conducted the training of soil

3.2 Impact

The Project has had a huge impact on activities of the Center. Since the completion of a new building, the Center has become capable of full-fledged activities by utilizing its knowledge and skills obtained by the Project. On the other hand, the magnitude of impact in terms of overall goal and intermediate goal is still difficult to estimate.

1) Overall goal

In PDME the indicators of achievement of overall goal of the Project “Productivity of rice is improved and rice production yield is increased.” are set as:

- i) Cost for rice production is lowered;
- ii) Unit production yield of rice in Iran is increased; and
- iii) Area for rice planting is enlarged.

As shown in Table 1 below, production cost of various cultivars of rice has been rising in recent few years. Especially the cost increased significantly in 2005 even compared with inflation rates of the country³, because of hike of wages, increase in price of machinery, and reduction of government subsidies for fertilizers and fuels. Table 2 shows unit production yield of various cultivars of rice, indicating improvement in productivity from 4,158 kg/ha in 2004 to 4,707 kg/ha in 2005 for all cultivars. Table 3 shows paddy field area in Mazandaran and Gilan provinces and the country as a whole. Although area was markedly enlarged in both provinces in 2006, it was slightly enlarged for Iran as total, implying the area for paddy field area in other provinces was decreased⁴.

Table 1 Production cost of various cultivars of rice (Riels/kg)

	Khazar	Neda	Sepidrood	Amol 2, 3
2001	4,499	3,657	3,956	
2002	4,695	4,057	4,192	3,237
2003	5,308	4,189	4,653	3,491
2004	5,188	4,345	4,965	3,802
2005	6,617	5,557	5,815	4,417

Source: MOJA

³ The changes in consumer price index in 2002, 2003 and 2004 were 15.8%, 15.6% and 15.2% respectively.

⁴ The reason is that shortage of water in other provinces for the season of 2006 caused conversion of paddy production to vegetables. Meanwhile, it is alleged that the statistics itself is not highly reliable.

Table 2 Average yield of various cultivars of rice (kg/ha)

	Khazar	Neda	Sepidrood	Other HYV	All Cultivars
2004	6,200	7,100	6,500	5,000	4,158
2005	5,700	7,100	5,815	5,600	4,707

Note: HYV stands for high yield varieties

Source: MOJA

Table 3 Paddy field area (ha)

	Mazandaran	Gilan	Iran
2004	200,583	198,327	611,453
2005	201,793	199,057	628,105
2006	238,500	238,000	630,000

Source: MOJA

It should be noted that these indicators are likely to be affected by various factors and therefore it is extremely difficult to identify causal relationship with activities of the Center, taking account of the fact that only two and a half years have passed since the Project was terminated.

2) Intermediate goal

The indicators of intermediate goal of the Project "Land consolidation is developed and technology for rice cultivation is improved." are set as:

- i) Unit production yield of rice for farm households that have consolidated lands in Mazandaran and Gilan provinces increases up to the end of 2009; and
- ii) Consolidated land area in Mazandaran and Gilan provinces is increased.

Table 4 shows that land productivity of rice in consolidated land in Mazandaran and Gilan provinces has gradually improved. Mazandaran province, especially, has demonstrated a good performance. Table 5 shows annual increase of consolidated paddy field area in both provinces. In Gilan the area increased by more than 7,000 ha every year from 2002 to 2005, while in Mazandaran province, after significant increases of more than 6,400 ha in 2002 and 2003, the newly consolidated areas in 2004 and 2005 were decreased to less than 4,000. The reason behind this is that limitation of budget for land consolidation in Mazandaran province in the both years, according to the Center⁵.

⁵ Another reason of the decrease in area may be that new land consolidation becomes difficult year by year as land consolidation is generally preceded from the land where coordination is relatively easy, therefore the 'difficult' area is left out for the later stages of land consolidation.

Table 4 Average paddy yield under consolidated land (kg/ha)

	Mazandaran		Gilan	
	Local Variety	HYV	Local Variety	HYV
2004	4,210	5,801	4,000	6,500
2005	4,172	5,123	4,200	6,950
2006	4,314	6,346	4,350	7,200

Source: MOJA

Table 5 Consolidated paddy field area in Mazandaran and Gilan (ha)

	Mazandaran	Gilan	Iran
2001	4,308	4,582	13,940
2002	6,400	7,100	16,072
2003	6,450	8,190	18,423
2004	3,904	8,674	17,868
2005	3,100	6,617	14,931

Source: MOJA

Although it is again difficult to assume to what extent the Center has been responsible for the improvements in these indicators, the activities of the Center have obviously made significant contributions. Increase in paddy field area in the both provinces, as seen in Table 3, would support this assumption.

In addition, another data provided by the Center reveals that the farmers who participated in the training courses of the Center increased their unit yield of rice by 7 to 16 percent, making it clear that technology for rice cultivation was upgraded in Mazandaran province, at least for the farmers whom the Center provided with knowledge and skills.

3) Other impacts

(1) Technology transfer to the Center staff, trainees and beyond

Because the activities of the Center have been quite successful as seen in the previous section, it is assumed that technology of transfer was mostly appropriately practiced during the period of the Project.

After the new Center building was opened, training course programs have attracted many participants; engineers, technicians, farmers and university students and contributed to improvement in their capability at both theoretical and practical levels. In addition to the effects on trained farmers as mentioned above, skills and knowledge are spreading to those farmers who have not attended the training courses but visited and learned from

trained farmers.

(2) Income and working hours of farmers

It is reasonably assumed that the income level of those farmers who benefited from the activities of the Center, especially promotion of mechanization and second crop cultivation, has increased, though definitive data to support this is not available except that a survey shows that mechanized transplanting led cost reduction for some farmers.

It appears that working hours of farmers who introduced mechanized rice cultivation and farmers with fields under land consolidation, have been reduced, according to interviews with those involved.

(3) Environmental impact of land consolidation

Land consolidation, as is the case in general, has had positive effects on environment by preventing flood and erosion.

(4) Social impact of land consolidation

Procedure of land consolidation necessarily involves coordination of interest among land owners and other parties concerned, which often causes disputes. The Center has contributed very much to facilitation of land consolidation process, in other words, to restraint of negative social impact, by introducing in its curriculum of training programs for land consolidation, the methods on how to reach agreement and how to organize farmers. In fact, there have been no serious disputes for the land consolidation procedure so far, for cases that the Center was involved in.

(5) Publicity of Japanese cooperation

The HAHRDC Project is a fruit of some 20 year-long cooperation in the region between Iran and Japan, commencing in the mid 1980s. It is well known to the local people even after the Project was terminated that the Center is a symbol of agricultural development supported by Japan. The project has had a significant impact in terms of publicity of Japanese ODA.

3.3 Sustainability

Since the termination of the Project, the Center has been expanding its activities with stable institutional and financial conditions, proving high sustainability. Machinery and equipment are generally well maintained and appropriately used, though further efforts

are required to fully utilize its facility in some cases.

1) Policy/Institutional aspect

(1) National Development Plan

Agricultural development plan under the present National Economic social Cultural Development Plan (the 4th Five Year Plan 2005 – 2009), emphasizes the importance of promotion of promotion of land consolidation and self-sustenance of rice. The function and activities of the Center are perfectly consistent with the Government policy.

(2) Issuing official certificate for training courses

The Center issues certificates for trainees who completed its training course. Based on the Center's certificates, MOJA issues official certificates for Government officials which will be part conditions for promotion of the officials concerned, giving incentives for them to participate in the Center's training, therefore activating training courses⁶.

2) Organizational/Financial aspect

(1) Importance of the Center in MOJA

As mentioned earlier, the position of the Center in MOJA was upgraded from "project" to "organization" with the approval of MPO in August 2006. With a fresh name of the Haraz Technology Extension and Development Center, the Center is positioned under the Deputy Minister of Extension and Farming Systems. See Annex 8 for organization chart of Ministry of Jihad-e-Agriculture. This has consolidated the status of the Center⁷.

Although, the Government of Iran as a whole, including MOJA, has adopted policy of downsizing the public sector, it is scheduled that the Centre will strengthen and expand its function as the activities of the Center are highly evaluated within the Ministry.

(2) Personnel issues

Eighteen of 21 professional staff members of the HAHRDC are still working in the Center, while the two have jobs in the same field after retiring of age and the remaining one has been transferred to Tehran agricultural office. This means virtually no staff has

⁶ The system was introduced recently and issuing of proper certificates had been recommended in the Terminal Evaluation Study.

⁷ Until then the status of the Center was obscure as an organization, leaving its future roles also unclear. This issue too, was pointed out in the Terminal Evaluation Study.

left his profession who benefit from technology transfer during the Project.

The top management of the Center has a practical plan to increase its number of staff from about 55 at present to 60-70 in a few years, to strengthen activities especially related to agronomy and rural community development.

The present staff members of Center occasionally attend various seminars and short term training courses, but many of them desire further and long term training in order to keep their knowledge and skills up to date. Keeping up with latest technology is quite important for a research and training institution like the Center.

(3) Financial sustainability

The budget of the Center has been stable since the commencement of the HAHRDC Project. Table 6 shows the annual budget received from treasury since 2000. Although the total budget sharply decreased in 2004, this is because budget up to 2003 includes construction cost of a new Center building and budget for current expenditure is on an increasing trend⁸.

Table 6 Approved budget and received funds of the Center (in Million Riels)

	2000	2001	2002	2003	2004	2005	2006
Approved Budget	6,000	8,500	8,500	8,500	8,500	7,500	6,800
Received Funds	6,000	8,500	8,375	7,650	4,515	5,750	6,800

Source: MOJA

Since the Center has a good relation with MPO and has a high reputation among MOJA as mentioned before, it is predicted that the Center will continue to receive reasonable amount of budget sufficient to secure its activities. Even so, the Center is planning to discuss with the MPO the possibility of its own revenue such as earnings from sale of rice produced in its own fields, fees for consulting and advisory services, and training fees⁹. If the Center has its own revenue sources, not only the Center would secure financial independency, but also could broaden the scope of its activities.

⁸ However, the detailed breakdown of the budget was not available for the Ex-post Evaluation Study. The assessment is based on interviews with top management of the Center.

⁹ At the moment revenue from sale of the rice are totally transferred to national treasury and fees for training, consulting and advisory services are free because the Government rule does not allow the Center to charge any fees.

3) Technological aspect

(1) Implementation of training courses

Up to July 2006, the Center provided 70 training courses for 1,451 trainees. Although the Project planned to provide 58 training courses for 1,400 trainees¹⁰, at the end of the Project 52 courses were completed for only 628 trainees, or 45 percent of the scheduled number of trainees. The main reason of low rate of achievement was the fact that the construction of a new building was extremely delayed for various reasons as mentioned earlier. However, as seen in Table 7, after the termination of the Project and opening of the new building in March 2005, the Center accelerated the training activities to accept a large number of trainees and the target number of total 1,400 trainees was finally achieved in July 2006¹¹. Since the completion of a new building with accommodation facility, an increasing number of trainees from remote areas have participated in training courses, enlarging the scope of impact of the Center. As such, the Center has not only sustained activities of the HAHRDC Project but expanded them.

Table 7 Number of training courses and trainees

		April 2000 to June 2004	August 2004 to October 2006	Total
Training Courses	Total	52	18	70
Trainees	Total	628	823	1,451
	Engineers	237	749	986
	Technicians	116	0	116
	Farmers	275	74	349

Source: MOJA

The Center provided the training course of soil mechanic and concrete tests for visiting experts of Afghanistan in cooperation with JICA. By increasing this type of technical cooperation activities with neighboring countries, the Center has prospects to become a regional hub for training and research of rice cultivation, land consolidation and related fields.

Training courses are by and large highly evaluated by trainees. Results of surveys of trainees, which are conducted by the Center for each training course, clearly indicate that they are mostly satisfied with contents and modes of the training they attended, as well as

¹⁰ The numbers of training courses and trainees were set as targets, part of indicators to measure the degree of achievement of the project purpose. Despite poor performance in these indicators, the Terminal Evaluation Study concluded that the project purpose was mostly achieved.

¹¹ See Annex 3 for the detail of training activities.

capability of course lectures (**Annex 8**), while ex-trainees with whom the Ex-post Evaluation Study team interviewed also express their satisfaction and appreciate the positive effects of the training courses (**Annex 7**).

It is however desired that monitoring system to verify the effects of training be further developed. Currently, the Center provides ex-trainees with advisory services when approached by them, whereas no follow-up system, such as surveys of ex-trainees, is established though the Center maintains a certain database of them, keeping records of their background and training attendance.

(2) Capacity of professional and management staff

As seen in the previous section above, professional staff of the Center is highly appreciated as lecturers of training courses. According to assessment of the Ex-post Evaluation Study Team, too, their capacity of delivering lectures seems satisfactory, as well as command of English language.

As for research activities, since the termination of the project, staff members have authored three books and produced more than 150 papers and articles for seminars, scientific journals, and other periodicals. Their ability and willingness for research and development appear to be quite high.

The negative aspect would be that the professional staff members do not have many opportunities to attend trainings themselves to freshen up and update their knowledge and skills in their respective field, as already mentioned. To secure sustainability of the Project activities, more efforts will be needed to have the staff equipped with the latest technology.

Management of the Center, on the other hand, is well organized and conducted by top management staff. By keeping good relation with staff members, various activities are efficiently implemented.

(3) Maintenance and operation of machinery and equipment

A new building of the Center has sophisticated facility for training, such as an internet center and a conference room. This facility was utilized in the World Bank seminar.

Machinery and equipment, many of which were installed during the Project period, are in

general utilized and well maintained and they look quite new¹². See **Annex 2** for the detailed conditions of machinery and equipment. It seems that maintenance system is properly established and budget for maintenance is secured every year to such an extent that most of machinery and equipment are operated and utilized adequately. Some machines are still securely used after the period of durability with good maintenance whereas some machines are adjusted to local conditions.

On the other hand, however, a few Japanese machines are out of order because parts are not available. According to the Center, import procedure of Japanese-made parts is complicated and the prices of those parts are expensive while replacement with Iranian parts or other cheaper parts is difficult. The Center stresses their keen requests to JICA for assistance in this regard.

Another particular situation is about equipment for soil mechanic testing. Some of them are not used because operation manuals for the proper use of the equipment are not available which should have been provided by Japanese experts during the Project period. Therefore the Center requests for further assistance. However, it is difficult to judge whether the Center is able to prepare or obtain the manuals by its own efforts.

3.4 Conclusions

The HAHRDC Project is totally consistent with the present agricultural policy of the Iranian Government and the Center, by expanding the scope of activities of the Project, has more importance in its roles and functions than before.

The Project has had positive impact on agricultural development of Mazandaran province and its surrounding area in the sense that skills and knowledge transferred to the staff of the Center have defused to engineers, technicians and farmers in the area.

Although it may take some time before intermediate goal and overall goal are judged to be achieved, it is presumed that the Center will continue to contribute to the promotion of land consolidation and rice cultivation of Iran, with reasonably high sustainability of the Project in terms of policy, institutional, organizational, financial and technological aspects.

¹² One of reasons is that some equipment was not used until the new Center building was opened in 2005.

4 Lessons and Recommendations

4.1 Recommendations

1) The Center and Iranian Government

With a successful experience of implementing a training course for Afghanistan experts, the Center is expected to play a role as research and training center to defuse its skills, knowledge, and technology to neighboring countries by fully utilizing its human resources and facility.

To further improve and strengthen its training courses, the Center should establish a monitoring system of ex-trainees by regularly keeping in touch with them to verify the effects of training.

It is essential for a research and training institution like the Center to keep its staff familiar with latest technology. For this purpose, more opportunities for the staff members to attend professional training are desired.

To fully make use of machinery and equipment, some of which are not utilized for certain reasons, it is suggested that the Center make further efforts on its own, for instance, contacting foreign manufacturers of machines or inquiring of relevant institutions about operation of equipment for scientific experiments.

2) JICA and Japanese Government

JICA should consider future cooperation with the Center in terms of schemes for “Third Country Training” and “Triangle Cooperation” involving neighboring countries, to utilize human resources and facility of the Center.

The Iranian side is eager for JICA’s further technical cooperation for the activities of the Center as the Iranian side believes that technical transfer during the Project period was not as completely finished as planned. JICA should sincerely scrutinize the requests by the Iranian side, as stated in the Terminal Evaluation Study report.

4.2 Lessons Learned

The most serious impediment of the Project was the delay in construction of the main building of the Center, which brought about adverse effects in Project activities. Although many factors were responsible, the delay could have been predicted because overly tight

schedule seems to have been obvious for some parties concerned at the planning stage. It is desired that a realistic and cautious schedule be designed for construction of main facilities by scrutinizing local conditions.

For selection of machinery and equipment to be introduced for projects, it should be noted that the maintenance of those machinery and equipment is secured with parts readily available even after the termination of the project, by taking into consideration that Japanese machine parts are rather expensive.

Annex 1: Project design matrix for evaluation (PDMe)

Target group: Engineers and Technicians concerning Land Consolidation and Farms		Objectively Verifiable Indicators		Important Assumptions	
Narrative Summary		Means of Verification		Important Assumptions	
<p>Overall Goal Productivity of rice is improved and rice production yield is increased.</p> <p>Intermediate Goal Land consolidation is developed and technology for rice cultivation is improved</p> <p>Project Purpose The Heraz Agricultural Human Resources Development Center functions as a technology center for developing human resources concerned with land consolidation and rice production in consolidated land. (Agricultural engineers, technicians and farmers master developed technologies and use them.)</p>	<ul style="list-style-type: none"> - Cost for rice production is lowered. - Unit production yield of rice in farm is increased. - Area for rice planting is enlarged. - Unit production yield of rice for farm households that have consolidated lands Mazandaran and Gilan provinces increases up to the end of 2009. - Consolidated land area in Mazandaran and Gilan provinces is increased. - There is an existence of training management system and its functions. - Number of engineer, technician and farmer as trainees per year in the above areas. - Total number of trainees is 1,400. - Total number of training course is 58. - Situation and potential for utilization and technology that graduated participants attain. 	<ul style="list-style-type: none"> - Statistical data of provincial office of agriculture. - Report of the Ministry of Agricultural Jihad. - Statistical data of provincial office of agriculture. - Results of land consolidation project. - Report of the Ministry of Agricultural Jihad. - Project Implementation Record - Project Implementation Record - Project Implementation Record *1: The number of trainees who leave the project midway maybe considered. The basis would be on the number of trainees who are given certificates of completion. Only engineers and technicians may take an examination for completion. *2: This indicator may not be used unless the number of trainees matches the capacity of each training course. - Follow-up survey (Questionnaire) 	<ul style="list-style-type: none"> - National Policy on Agriculture does not change. - Growth of rice is not affected by drought, flood etc. - National Policy on Agriculture does not change. - Agricultural extension system functions well. - Main facility for drainage is prepared. - Land consolidation plan is made and an institution for land consolidation is prepared. - Budget for land consolidation is secured. - Farmers actively participate in land consolidation projects. - Agricultural extension system functions well. - Budget for operation and manpower of the center is sustainably secured. 		
<p>Outputs</p> <ol style="list-style-type: none"> 1. A system for training implementation is completed. 2. Teaching materials are prepared. 3. Lecturers for training are secured. 4. Training for engineers, technicians and farmers is implemented in accordance with the training implementation plan. 5. Pilot model farms are operated as a base for demonstration and dissemination of appropriate mechanized cultivation technology in Heraz basin area. 	<ol style="list-style-type: none"> 1-1 A plan for annual training implementation exists and it is evaluated and modified. 1-2 Training curriculums for each course exist and they are evaluated and modified. 1-3 Syllabuses for each training subject exist and it is evaluated and modified. 2-1 The number of training textbooks is 64. 2-2 The number of training manuals is 31. 3-1 At least 12 counterparts can teach trainees by themselves. 4-1 The total training hours is 5,800. 5-1 The average yield of rice per unit is 5% higher than on other farm lands. 5-2 The average working hours per unit is 468 hours lower than on other farm lands. 5-3 Number of farmers and extension officers who observe or experience the pilot model farms is 1,000 persons. 	<ul style="list-style-type: none"> - Importance of roles and functions of the center is promoted by the central government or local government, and a supporting system is made. - Farmers participate actively. - External institutions cooperate with the project. 			

Activities	Experts (Japan)	(Iran)	Important Assumptions
1-1 Survey and review existing technology in each training subject 1-2 Prepare training curriculums for each training course 1-3 Prepare syllabuses for training for each training subject 2-1 Prepare textbooks for training for each training subject and target group 2-2 Prepare supplementary teaching materials for training for each training subject 3-1 Conduct training on educational methodology for newly assigned teachers. 3-2 Evaluate the abilities and skills of counterpart Lecturers 3-3 Coordinate and cooperate with external institutions 4-1 Implement training by training courses 4-2 Evaluate each training course 5-1 Consolidate three pilot model farms 5-2 Demonstrate mechanized rice culture in pilot model farms 5-3 Demonstrate winter crops culture in pilot model farms 5-4 Conduct exercises for trainees and farmers who live near the pilot model farms 5-5 Reflect results of activities at the pilot model farms in the center's report 5-6 Demonstrate mechanized rice cultivation and winter crop in CAPIC field.	1. Personnel 1-1 Long-term experts: Project leader/institution Project coordinator Basic technology Survey, plan and design Cost estimation, construction and management of construction 2 experts 1 expert 2 experts 1 expert 1-2 Short-term experts Rice cultivation Rice mechanization Soil test Environmental agriculture Guidance for cement concrete test Mechanized rice farming system Map drawing Programming system of estimation for construction by computer Cost benefit analysis 2. Acceptance of trainees 3 persons (1999) 4 persons (2000) 2 persons (2001) 6 persons (2002) 2 persons (2003) 3. Provision of equipment Equipment for concrete test Equipment for soil test Tractor, combine etc. Spare parts for Agricultural Machinery Laboratory racks 4. Project operation cost general Cost for local language textbooks Cost for technical exchange program in China	1. Personnel 1-1 Project director 1-2 Project manager 1-3 Site manager 1-4 Counterpart personnel Principle Basic technology Survey, plan and design Cost estimation, construction and management of construction Cultivation Mechanization 2. Supporting staff Secretary Driver Others 3. Land, Building and Facilities Building cost Local Cost Mobilization cost Gas and electric Running cost Total 40 approx. 1.148 million US\$	Counterpart personnel are allocated continuously. Capability for acceptance of participants is ensured. Organizational share of role between operations of center's attached farm and training implementation is separated. Facility for training is established in the appropriate time. Capable personnel are allocated to appropriate positions as counterpart personnel. Customs clearance for necessary equipment is executed smoothly.
	2 experts 1 expert 2 experts 1 expert	3 persons 7 persons 3 persons 4 persons 11 persons 7 persons	Preconditions Facility for training is established in the appropriate time. Capable personnel are allocated to appropriate positions as counterpart personnel. Customs clearance for necessary equipment is executed smoothly.
	approx. 0.21 million US\$ approx. 20,000 US\$ approx. 19,000 US\$	approx. 2.63 million US\$ approx. 0.66 million US\$ approx. 0.046 million US\$ approx. 1.7 million US\$	

Annex 2: Current conditions of equipment provided during the Project

ANNEXS

Provision of Machinery and Equipment

Note:
 Frequency of Use (A: Always - B: Often - C: Sometimes)
 Condition (A: Good - B: Fair - C: Bad)

No	Items	Qty	Unit Price (US\$)	Price (US\$)	Place of Storage	Frequency of Use	Condition	Remarks
1	Laboratory Equipment (Concrete & Soil)							
1	1x Charlier Flask	1	160	160	Lab	A	A	
2	Standard Sieves (IS 7 880) Set	1	64	64		A	A	
3	Balance	1	168	168		A	A	
4	Autocure Set	1	1,115	1,115		B	A	
5	Plan Air-Temperature Apparatus	1	925	925		A	A	
6	Standard Sieves	1	64	64		A	A	
7	Beaker Apparatus	1	802	802		A	A	
8	Moisture Mixing Bowl & Spoon	1	69	69		A	A	
9	Standard Sieves	1	58	58		A	A	
10	Standard Sieves	1	58	58		A	A	
11	Standard Sieves	1	58	58		A	A	
12	Standard Sieves	1	58	58		A	A	
13	Standard Sieves	1	58	58		A	A	
14	Standard Sieves	1	58	58		A	A	
15	Standard Sieves	1	58	58		A	A	
16	Standard Sieves	1	58	58		A	A	
17	Standard Sieves	1	58	58		A	A	
18	Flow Scale	1	1,415	1,415	Lab	A	A	
19	Master Mold	1	1,131	1,131		A	A	
20	Lumping Rod	1	66	66		A	A	
21	Irregular Straggles	1	164	164		A	A	
22	Carrying Box	1	54	54		A	A	
23	Mechanics Cement Flexure Tester	1	6,415	6,415		A	A	
24	Loading Attachment	1	855	855		A	A	
25	Moisture Compaction Test Machine	1	13,020	13,020		A	A	
26	Spoon	1	15	15		A	A	
27	Sample Vial	1	62	62		A	A	
28	Standard Sieves (IS 7 880)	1	64	64		A	A	
29	Hand Sieve Shaker	1	925	925		A	A	
30	Electric Oven	1	358	358		A	A	
31	Platform Scale	1	660	660		A	A	
32	Concrete Mixing Pan	1	660	660		A	A	
33	Aggregate Sieves Set	1	1,613	1,613		A	A	
34	Electronic Balance	1	95	95		A	A	
35	Soil Absorption Cone	1	802	802		A	A	
36	Moisture Flask	1	36	36		A	A	
37	Measuring Prism	1	164	164		A	A	
38	Churnam Flask	1	660	660		A	A	
39	1 Lit (Mercurium) LSH Set	1	425	425		A	A	
40	Sharp Test Apparatus	1	1,132	1,132		A	A	
41	Air Meter	1	164	164		A	A	
42	Cylinder Mold for Compression Test	1	412	412		A	A	
43	Capping Plate	1	412	412		A	A	
44	Specimen Grip	1	58	58		A	A	
45	Vernier Caliper	1	51	51		A	A	
46	Lumping Rod	1	66	66		A	A	
47	Beam Panne	1	58	58		A	A	
48	Beam Panne	1	58	58		A	A	
49	Beam Panne	1	58	58		A	A	
50	Unmixed Thermometer	1	31	31		A	A	
51	Mixed Thermometer	1	31	31		A	A	

No	Items	Qty	Unit Price (US\$)	Price (US\$)	Place of Storage	Frequency of Use	Condition	Remarks
52	Revolving Hydrometer	1	1,000	1,000		B	A	
53	Loose Penetrometer	1	1,811	1,811		A	A	
54	Planimeter	1	3,726	3,726		A	A	
55	Concrete Mixer	1	19	19		A	A	
56	Roller	1	4377	4377		A	A	
57	Lumping Rod	1	66	66		A	A	
58	Revolving Paper Pen Test Set	1	10,850	10,850		B	A	
59	Loose Penetrometer	1	1,811	1,811		A	A	
60	Compression and Bonding Testing Machine	1	9,434	9,434		C	B	
61	Standard Soil Color Chart	1	226	226		C	A	
62	Soil Moisture	1	520	520		A	A	
63	Soil Moisture	1	520	520		A	A	
64	Soil Moisture	1	520	520		A	A	
65	Mechanical Analysis Shifter	1	1,887	1,887	Lab	A	A	
66	Liquid Limit Test Set	1	472	472		B	A	
67	Glass Plate for Plastic Limit Test	2	30	60		B	A	
68	Soil Sampling Box	2	38	76		B	A	
69	Shrinkage Limit Test Set	1	555	555		B	A	
70	Soil Moisture	1	520	520		B	A	
71	Mechanical Soil Compactor	1	1,132	1,132		A	A	
72	CBR Soil Compactor	1	1,644	1,644		B	A	
73	Compaction Head Penetrometer	1	2,364	2,364		B	A	
74	Falling Head Penetrometer	1	2,311	2,311		B	A	
75	Standard Consolidation Apparatus	1	19,653	19,653		C	A	
76	Direct Shear Apparatus	1	2,358	2,358		C	A	
77	Compression Apparatus	1	4,099	4,099		B	A	
78	Standard Penetration Test Apparatus	1	4,434	4,434		C	A	
79	Penetration Test Apparatus Sweden	1	2,830	2,830		C	A	
80	Rosin Filter	1	1,981	1,981		C	A	
81	Direct Shear Apparatus	1	9,150	9,150		C	A	
82	Penetrometer	1	4,717	4,717		B	A	
83	Plate Bearing Test	1	2,132	2,132		C	A	
84	Water Flow	1	860	860		B	A	
85	Reducing Water Level Recorder	1	2,991	2,991		B	A	
86	Agricultural Machinery & Materials							
87	Tractor	1	50,943	50,943	Machin	A	A	
88	Drive Harrow	1	7,841	7,841		B	A	
89	Reaper	1	8,099	8,099		B	A	
90	Combine Harvester	1	103,311	103,311		B	C	
91	Combine Harvester	1	16,843	16,843		B	A	
92	Yield Vehicle	1	31,122	31,122	JICA	B	B	
93	Office Equipment							
94	Computer Printer	1	1,887	1,887	JICA	C	B	
95	Computer Printer	1	4,868	4,868	JICA	A	P	
96	Computer Printer	1	4,868	4,868	JICA	A	P	
97	Computer Printer	1	4,868	4,868	JICA	A	P	
98	Computer Printer	1	4,868	4,868	JICA	A	P	
99	Computer Printer	1	4,868	4,868	JICA	A	P	
100	Computer Printer	1	4,868	4,868	JICA	A	P	

Provision of Machinery and Equipment

Note: Frequency of Use (A: Always - B: Often - C: Sometimes)
Condition: (A: Good - B: Fair - C: Bad)

No	Items	Qty	Unit Price (US\$)	Price (US\$)	Place of Storage	Frequency of Use	Condition	Remarks
1	Laboratory Equipment (Concrete & Soil)							
1	1 Lit. Chisel Flask	1	150	150	Lab	A	A	
2	Sample Preparation Sieve CM2-A	2	60	120		A	A	
3	Table Balance G17-A	1	155	155		A	A	
4	Hydrometer Set	2	900	1800		A	A	
5	Blaan Air-Permeability Apparatus	1	1,318	1,318		B	A	
6	Electronic Balance	1	1,118	1,118		C	A	
7	Standard Sieves	2	60	120		C	A	
8	Standard Vial Apparatus	3	750	2,250		C	A	
9	Equipment for Mercuric Nitrate	1	600	600		C	A	
10	Mechanical Cylinder G18	1	27	27		B	A	
11	Table Balance 53-44	1	562	562		C	A	
12	Pat Glass Piece	1	14	14		C	A	
13	Concrete Knife	1	25	25		B	A	
14	Boiling Pan	1	242	242		C	A	
15	Mortar Mixer C-527	1	352	352		B	A	
16	Table Platform Scale	1	222	222		B	A	
17	Mortar Flow Table	1	1,318	1,318		B	A	
18	Flow Scale	2	552	1,104	Lab	B	A	
19	Mortar Mold C-48	1	552	552		B	A	
20	Lumping Rod	1	62	62		B	A	
21	Triangular Straightedge	2	150	300		B	A	
22	Coring Box	1	954	954		B	A	
23	Mechanical Cement Flexure Tester	1	5,990	5,990		B	A	
24	Loading Attachment	2	127	254		C	A	
25	Large Spoon	2	127	254		C	A	
26	Sample Sphers	2	1,262	2,524		C	A	
27	Standard Sieves Set CM-24	1	873	873		B	A	
28	Hand Sieves Shaker	2	332	664		C	A	
29	Concrete Mixing Pan	2	85	170		C	A	
30	Sand Absorption Cone	1	380	380		C	A	
31	Electronic Flask	1	750	750		C	A	
32	Desiccator	1	20	20		C	A	
33	Measuring Pipette	3	55	165		C	A	
34	Water Fun	1	180	180		C	A	
35	Table for Balance	1	222	222		C	A	
36	Table for Balance	1	150	150		C	A	
37	Clamp for Flask	1	30	30		C	A	
38	Lumping Glass Plate	3	88	264		A	A	
39	Specimen Grip	2	195	390		B	A	
40	Vermer Caliper	2	485	970		B	A	
41	Beam Frame	1	15	15		B	A	
42	Hand Scoop	1	635	635		B	A	
43	Recording Hydro-Thermometer	1	1,651	1,651	Lab	A	A	
44	Cone Penetrometer	1	1,481	1,481		A	A	
45	Concrete Mixer	2	48	96		B	A	
46	Roller	2	17	34		B	A	
47	Lumping Rod	1	1,090	1,090		B	A	
48	Loose Aggregate Specific Gravity Test Set	1	4,090	4,090		B	A	
49	Vermer Caliper	1	200	200		B	A	
50	Lumping Rod	3	17	51		B	A	
51	Beam Frame	1	500	500		B	A	

Provision of Machinery and Equipment

Note: Frequency of Use (A: Always - B: Often - C: Sometimes)
Condition: (A: Good - B: Fair - C: Bad)

No	Items	Qty	Unit Price (US\$)	Price (US\$)	Place of Storage	Frequency of Use	Condition	Remarks
1	Laboratory Equipment (Concrete & Soil)							
1	1 Lit. Chisel Flask	1	16	16	Lab	A	A	
2	Standard Sieves (IS Z 8801) Set	1	62	62		A	A	
3	Balance	1	162	162		A	A	
4	Hydrometer Set	1	927	927		A	A	
5	Blaan Air-Permeability Apparatus	1	1,501	1,501		B	A	
6	Electronic Balance	1	890	890		A	A	
7	Standard Sieves	2	61	122		A	A	
8	Beaker Apparatus	1	773	773		A	A	
9	Mortar Mixing Bowl & Spoon	1	66	66		A	A	
10	Cylinder Graduated	2	28	56		B	A	
11	Balance	1	41	41		A	A	
12	Pat Glass Plate	1	14	14		A	A	
13	Cement Knife	1	27	27		A	A	
14	Distortion Container	1	255	255		A	A	
15	Mortar Mixer	1	472	472		A	A	
16	Platform Scale	1	2,300	2,300		A	A	
17	Mortar Flow Apparatus	1	1,364	1,364		A	A	
18	Flow Scale	1	564	564	Lab	A	A	
19	Mortar Mold	1	564	564		A	A	
20	Lumping Rod	1	64	64		A	A	
21	Triangular Straightedge	1	155	155		A	A	
22	Coring Box	1	2,273	2,273		A	A	
23	Mechanical Cement Flexure Tester	1	6,182	6,182		A	A	
24	Loading Attachment	1	127	127		A	A	
25	Mortar Compression Test Machine	1	12,545	12,545		A	A	
26	Spoon	1	132	132		A	A	
27	Sample Splitter	1	518	518		A	A	
28	Standard Sieves (IS Z 8801)	1	600	600		A	A	
29	Hand Sieves Shaker	1	891	891		A	A	
30	Electric Oven	1	682	682		A	A	
31	Platform Scale	1	345	345		A	A	
32	Concrete Mixing Pan	1	636	636		A	A	
33	Aggregate Test Sieves Set	1	1,573	1,573		A	A	
34	Electronic Balance	1	910	910		A	A	
35	Sand Absorption Cone	2	79	158		A	A	
36	Vermer's Flask	1	19	19		A	A	
37	Desiccator	1	57	57		A	A	
38	Measuring Pipette	3	86	258		A	A	
39	Bea-Let	1	186	186		A	A	
40	Bucket	1	436	436		A	A	
41	Table for Balance	1	155	155		A	A	
42	Clamp for Flask	1	465	465		A	A	
43	Unit Determination Test Set	1	636	636		A	A	
44	Shrimp Test Apparatus	1	409	409	Lab	A	A	
45	Air Meter	1	1,080	1,080		B	A	
46	Cylinder Mold for Compression Test	18	155	2,790		A	A	
47	Capotte Plate	1	23	23		A	A	
48	Specimen Grip	2	91	182		A	A	
49	Vermer Caliper	1	200	200		A	A	
50	Lumping Rod	3	17	51		A	A	
51	Beam Frame	1	500	500		A	A	

Provision of Machinery and Equipment

Note:
Frequency of Use (A: Always - B: Often - C: Sometimes)
Condition: (A: Good - B: Fair - C: Bad)

No	Items	Qty	Unit Price (LSS)	Price (LSS)	Place of Storage	Frequency of Use	Condition	Remarks
52	Mechanical Analysis Siever	1	635	635		B	A	
53	Liquid Limited Test Set	2	354	710		B	A	
54	Glass Plate for Plastic Limit Test	3	33	96		B	A	
55	Sieves	2	10	20		B	A	
56	Soil Sampling Box	2	60	120		B	A	
57	Shrinkage Limit Test Set	2	530	1,060		B	A	
58	pH Meter	1	617	617		C	A	
59	Soil Acid Tester	1	68	68		C	A	
60	Standard Compaction Test Set	1	847	847		C	A	
61	Consensus-Head Permeameter	1	1,000	1,000		B	A	
62	CBR Soil Compactor	1	1,186	1,186		C	A	
63	Falling Head Permeameter	1	1,022	1,022		B	A	
64	Direct Shear Testing Apparatus	1	5,434	5,434		C	A	
65	Compression Apparatus	1	2,936	2,936		C	A	
66	Unit Determination Test Set	1	617	617		C	A	
67	Rod Puller	2	1,437	2,874		C	A	
68	Vane Testing Shear Apparatus	1	6,807	6,807		C	A	
69	Field Permeability Apparatus	1	3,404	3,404	Lab	C	A	
70	Phase Balance Set	4	1,860	7,440		C	A	
71	Soil Permeability Apparatus	1	485	485		C	A	
72	Water Plus	3	2,805	8,415		C	A	
73	Reducing Water Level Recorder	2	1,148	2,292		C	A	
(II) Agricultural Machinery & Materials								
1	Washing Machine for Nursery Box	1	1,650	1,650	Warehouse	B	A	
2	Leaves Machine for Paddy Field	1	2,407	2,407		B	A	
3	Power tiller MFC-6DS	1	2,872	2,872		B	A	
4	Power tiller LA-6SK	1	2,950	2,950		B	A	
(III) Transporting Material								
1	Auto Visual Screen 6x30DX	1	4,760	4,760	Office	A	A	
2	Audio Visual Screen WR-13	4	380	1,520		A	A	
3	V-scan Presenter	1	2,230	2,230		A	A	
4	Reversible plow 3 line	1	2,960	2,960		A	A	
5	Grass cutter (Range 100)	3	2,130	6,390		A	A	
6	Computer	6	1,000	6,000		A	A	
7	OHV	1	1,120	1,120		A	A	
8	Slake processor	1	950	950		A	A	
9	Printer Max 5.5 size	6	460	2,760		A	A	
10	Blue printer machine (Aminonia 1085 Max A0 size)	1	3,900	3,900		C	A	
11	White board	5	74	370		A	A	
12	Drawing board	2	60	120		C	A	
13	Drafter with fluorescent light	1	1,980	1,980		C	A	
14	Survey instrument (Pole)	5	230	1,150		C	A	
15	Aluminum leveler	2	55	110	warehouse	C	A	
16	Portable compass	2	260	520		C	A	
17	Metamorphological device (Set)	1	1,000	1,000		B	A	
18	Hammer/hammer compactor	1	1,100	1,100		C	A	
19	Vibrant compactor	1	1,300	1,300		C	A	
20	Concrete internal compactor	1	340	340		C	A	
21	Signifier for drawing (Set)	2	68	136		C	A	
22	Amplitude device for conference (Set)	1	1,648	1,648		A	A	
(IV) ETC.								
1	Air Conditioner for Micro Room	1	21,000	21,000	Office	B	B	
2	Photocopy Machine (Color)	1	14,000	14,000	HC-A	A	A	
TOTAL								
								182,751.55

1A

Provision of Machinery and Equipment

Note:
 Frequency of Use (A: Always - B: Often - C: Sometimes)
 Condition (A: Good - B: Fair - C: Bad)

Year 2003

No	Items	Qty	Unit Price (US\$)	Price (US\$)	Place of Storage	Frequency of Use	Condition	Remarks
I. Laboratory Equipment (Rice Cultivation)								
1	Moisture Meter (for rice)	5	280	1400	Lab	B	A	
2	Scale (100gr - 5000gr)	9	55	500	--	B	A	
3	PH Meter (0.00 - 14.00)	2	15	300	--	C	C	
4	Microscope 40 X (1000/20/40)	4	275	900	--	C	B	
5	Stereo Microscope NSW-40L	4	575	2300	--	B	A	
6	Disinfectors	1	300	300	--	C	A	
II. Spare parts for Agricultural Machinery (Detail is refer to the attached list)								
1	Rotary tiller LX-200/NA	62	1,100	68,200	Warehouse	B	A	
2	Drive harrow HL-2808B	87	700	60,900	--	B	A	
3	Transplanter RR-640	402	3,700	1,491,400	--	B	B	
4	Transplanter S1-600R & S1-600R	309	4,400	1,360,600	--	B	B	
5	Combine AX 85-L	769	32,200	24,771,800	--	B	C	
6	Head Threshing Combine PR 0481	423	18,200	7,692,600	--	B	B	
7	Tractor M 6800	61	1,600	97,600	--	A	B	
8	Seeder SR-400	11	1,200	13,200	--	B	A	
9	Power tiller K-120	26	700	18,200	--	A	A	
III. Equipment and training materials								
1	Copy machine SHARP-2540 (Max A3 Size -including sorter, scan feeder, duplex, and table)	1	3,000	3,000	Office	A	A	
2	Color inkjet printer 41P-6127	3	300	900	--	A	A	
3	Drawing table	4	150	600	--	A	A	
TOTAL								79,000 US\$

No	Items	Qty	Unit Price (US\$)	Price (US\$)	Place of Storage	Frequency of Use	Condition	Remarks
49	Bone Shear Apparatus	1	7,520	7,520	--	*C	A	
50	Field Permeability Apparatus	2	3,750	7,500	--	*C	A	
51	Plac Bearing Test Set	2	2,000	4,000	--	*C	A	
52	Density Meter	2	500	1,000	--	A	A	
53	Reducing Water Level Recorder	3	1,100	3,300	--	A	A	
54	Rod Puller	1	1,200	1,200	--	A	A	
II. Material & Spare parts								
1	Compressor 40L 1 Ps	3	1,700	5,100	Lab	B	A	
2	Lab equipment racks	30	440	13,200	Lab	A	A	
3	Copy machines drums Model: SHARP SF 2040 Model: LANIER 6514 Model: SHARP SF 7800	1	120	120	Office	A	B	
III. Agricultural Machinery and Training Material								
1	Power Tiller K130	1	9,000	9,000	Warehouse	A	A	
2	Seeder TS-5502EH	1	1,800	1,800	--	B	A	
3	Combine PRO 481	1	37,800	37,800	--	B	B	
4	Cult Model HSI System	1	29,750	29,750	Warehouse	B	A	
5	Awning Machine SA-85	1	2,100	2,100	--	B	A	
TOTAL								253,249 US\$

Annex 3: Implementation of training courses up to 2006

Training activities (2000~30.oct,2006)

Activities	Date	Organization	Days	Participants			Number of Participants
				Engineer	Technician	Farmers	
Mechanized Rice Cultivation Training for Engineer (1)	April 23~May 5/2000	Mazanderan A. J. O	12	5	0	0	5
Mechanized Rice Cultivation Training for Technician (1)	May 7 ~ May 20/2000	Mazanderan A. J. O	12	0	4	0	4
Mechanized Rice Cultivation Training for Farmers (1)	Jun. 25 ~ Jun.30/2000	Mazanderan A. J. O	6	0	0	12	12
Mechanized Rice Cultivation Training for Farmers (2)	July.9 ~ July.14/2000	Mazanderan A. J. O	6	0	0	12	12
Mechanized Rice Cultivation Training for <u>E & T</u> (2)	Aug.27~Sep.1/2000	Mazanderan A. J. O	6	11	4	0	15
Winter Vegetable Cultivation curriculum for <u>E & T</u> (1)	Des.11~ Des15/2000	Mazanderan A. J. O	4	12	1	0	13
Winter Vegetable Cultivation curriculum For Farmers (1)	Des.20 ~Des23/2000	Mazanderan A. J. O	3	0	0	11	11
Mechanized Rice Cultivation Training for <u>E & T</u> (3)	Des.31~Jan.5/2001	Mazanderan A. J. O	6	10	2	0	12
Mechanized Rice Cultivation Training for Farmers (2)	Jan.7 ~Jan.12/2001	Mazanderan A. J. O	6	0	0	11	11
Mechanized Rice Cultivation Training for <u>E & T</u> (4)	Jan.22 ~Jan.26/2001	Mazanderan A. J. O	5	10	2	0	12
Mechanized Rice Cultivation Training for Farmers (3)	Jan.28 ~Feb.2/2001	Mazanderan A. J. O	6	0	0	11	11
Mechanized Rice Cultivation Training for Engineer (1)	April 23~May 5/2001	Mazanderan A. J. O	12	13	0	0	13
Mechanized Rice Cultivation Training for Technician (1)	May 7 ~ May 20/2001	Mazanderan A. J. O	12	0	12	0	12
Mechanized Rice Cultivation Training for Farmers (1)	Jun. 25 ~ Jun.30/2001	Mazanderan A. J. O	6	0	0	14	14
Winter Vegetable Cultivation curriculum for <u>E & T</u> (1)	Des.11~ Des15/2001	Mazanderan A. J. O	4	10	5	0	15
Winter Vegetable Cultivation curriculum For Farmers (1)	Des.20 ~Des23/2001	Mazanderan A. J. O	3	0	0	14	14
Mechanized Rice Cultivation Training for <u>E & T</u> (3)	Des.31~Jan.5/2002	Mazanderan A. J. O	6	10	4	0	14
Mechanized Rice Cultivation Training for Farmers (2)	Jan.7 ~Jan.12/2002	Mazanderan A. J. O	6	0	0	15	15
Mechanized Rice Cultivation Training for <u>E&T</u> (1)	June 8 ~ 15/2002	Mazanderan A. J. O	7	7	5	0	12
Mechanized Rice Cultivation Training for Farmers (1)	June 15 ~ 20/2002	Mazanderan A. J. O	6	0	0	11	11
Mechanized Rice Cultivation Training for <u>E&T</u> (2)	July 6 ~ 11/2002	Mazanderan A. J. O	6	6	7	0	13
Mechanized Rice Cultivation Training for Farmers (2)	July 13 ~ 17/2002	Mazanderan A. J. O	5	0	0	2	2
Mechanized Rice Cultivation Training for <u>E&T</u> (3)	Aug. 4 ~ 8/2002	Mazanderan A. J. O	5	5	10	0	15
Mechanized Rice Cultivation Training for Farmers (3)	Aug. 17 ~ 21/2002	Mazanderan A. J. O	5	0	0	12	12
Land consolidation Training for Technician (1)	Aug. 3 ~ 17/2002	Mazanderan A. J. O	12	5	7	0	12

Winter Vegetable Cultivation curriculum for <u>E & T</u> (1)	Sep. 28 ~30/2002	Mazanderan A. J. O	3	11	8	0	19
Winter Vegetable Cultivation curriculum For Farmers (1)	Oct.1 ~ 3/2002	Mazanderan A. J. O	3	0	0	7	7
Winter Vegetable Cultivation curriculum for <u>E & T</u> (2)	Oct. 19 ~21/2002	Mazanderan A. J. O	3	6	5	0	11
Winter Vegetable Cultivation curriculum For Farmers (2)	Oct. 26 ~ 28/2002	Mazanderan A. J. O	3	0	0	8	8
Land consolidation Training for <u>E & T</u> (2)	Oct.26 ~Nov.7/2002	Mazanderan A. J. O	12	7	5	0	12
Winter Vegetable Cultivation curriculum for <u>E & T</u> (3)	Nov.16 ~17/2002	Mazanderan A. J. O	2	4	4	0	8
Post Harvest in New Technology	Nov.16 ~18/2002	Esfahan A. J. O	3	0	0	17	17
Winter Vegetable Cultivation curriculum For Farmers (3)	Nov.18 ~19/2002	Mazanderan A. J. O	2	0	0	6	6
Survey	Nov.23~Des.2/2002	Mazanderan A. J. O	6	7	9	0	16
Winter Vegetable Cultivation curriculum for <u>E & T</u> (4)	Des. 28 ~ 29/2002	Mazanderan A. J. O	2	3	2	0	5
Land consolidation Training for Technician (3)	Jan.13 ~26/2003	Mazanderan & Gilan & Karaj A. J. O	12	10	0	0	10
Mechanized Rice Cultivation Training for Farmers -82	Feb.15~26/2003	Mazanderan A. J. O	10	0	0	14	14
Mechanized Rice Cultivation Training for <u>E&T</u> - 82	March.1~11/2003	Mazanderan A. J. O	10	11	3	0	14
Mechanized Rice Cultivation Training Practice for <u>F&E&T</u>	3~4 May-2003	Mazanderan A. J. O	2	9	4	5	18
Land consolidation Training for Engineer -82-1(4)	7~19 /June/2003	Mazanderan A. J. O	12	8	2	0	10
Mechanized Rice Cultivation Training Practice for <u>F&E&T</u>	19~20Jul.2003	Mazanderan A. J. O	2	6	1	1	8
Land consolidation Training for Engineer -82-2(5)	13~18Dec./2003	Mazanderan&Gilan &Golestan& Esfahan&Karaj A. J. O	6	12	2	0	14
Winter Vegetable Cultivation curriculum for <u>E & T</u> (1)	22~23Dec.2003	Mazanderan A. J. O	2	7	2	0	9
Winter Vegetable Cultivation curriculum For Farmers (1)	24~25Dec.2003	Mazanderan A. J. O	2	0	0	10	10
Winter Vegetable Cultivation curriculum for <u>E & T</u> (2)	3~5Jan.2004	Mazanderan A. J. O	3	7	1	0	8
Winter Vegetable Cultivation curriculum For Farmers (2)	6~8Jan.2004	Mazanderan A. J. O	3	0	0	7	7
Machinery (Tractor) Training course	10~15Jan.2004	Mazanderan A. J. O	6	0	0	28	28
Winter Vegetable Cultivation curriculum for <u>E & T</u> (3)	17~18Jan.2004	Mazanderan A. J. O	2	12	3	0	15
Winter Vegetable Cultivation curriculum For Farmers (3)	19~20Jan.2004	Mazanderan A. J. O	2	0	0	17	17
Machinery (Tractor) Training course	22~25Feb.2004	Mazanderan A. J. O	5	0	0	13	13
Mechanized Rice Cultivation Training for Farmers100 -82	6~9Mar.2004	Mazanderan A. J. O	4	0	0	17	17
Mechanized Rice Cultivation Training for <u>E&T</u> 101- 82	13~16Mar.2004	Mazanderan A. J. O	4	13	2	0	15
The training course of Soil Mechanic & Concrete tests	7~18Aug.2004	For Experts of Afghanistan	12	6	0	0	6
Mechanized Rice Cultivation Training for Farmers100 -82	6~11Aug.2005	Mazanderan & Gilan A. J. O	6	17	0	0	17
Land consolidation Training for Water and Soil Managements	22~24Nov.2005	A. J. O	3	50	0	0	50
Mechanized Rice Cultivation Training for <u>E&T</u>	19~22Feb.2006	A. J. O	4	60	0	0	60
Mechanized Rice Cultivation Training for <u>E&T</u>	4~9Marv.2006	A. J. O	6	24	0	0	24

Mechanized Rice Cultivation Training for <u>E</u>	Mar. 22 ~23/2006	Mazanderan A. J. O	324	394	116	275	785
Mechanized Rice Cultivation Training for <u>E</u>	May 6 ~ 9 /2006	A. J. M	4	20	0	0	66
Winter Vegetable Cultivation curriculum For Farmers	May29/2006	Mazanderan A. J. O	1	0	0	20	20
Mechanized Rice Cultivation Training for <u>E</u>	Jun.17 ~18/2006	Mazanderan A. J. O	2	110	0	0	110
Winter Vegetable Cultivation curriculum For Farmers	June.18/2006	Mazanderan A. J. O	1	0	0	22	22
Winter Vegetable Cultivation curriculum For Farmers	June.28/2006	Mazanderan A. J. O	1	0	0	10	10
Mechanized Rice Cultivation Training for <u>E</u>	May14/2006	Mazanderan A. J. O	1	110	0	0	110
Mechanized Rice Cultivation Training for <u>E</u>	Jun.17 ~18/2006	Mazanderan A. J. O	2	110	0	0	110
Mechanized Rice Cultivation Training for <u>E</u>	Jun.17 ~19/2006	A. J. M	3	32	0	0	32
Mechanized Rice Cultivation Training for <u>E</u>	Jun.26 ~28/2006	Fars. A. J. O	3	28	0	0	28
Mechanized Rice Cultivation Training for <u>E</u>	July.6/2006	Mazanderan A. J. O	1	101	0	0	101
Mechanized Rice Cultivation Training for Farmers	July.26/2006	Mazanderan A. J. O	1	0	0	22	22
Mechanized Rice Cultivation Training for <u>E</u>	July.24~26/2006	Khozestan. A. J. O	3	15	0	0	15
Total			349	986	116	349	1451

E&T: Engineer & Technician

Annex 4: Training, visiting and workshop in 2005 and 2006

**Training Activities & Visiting & workshop in the 2005-2006
(Until 31 Oct., 2006)**

No.	Subject of Activities	Visit (Man/day)			probation (Man/day)			Workshop (Man/day)			Training Course (Man/day)			Total (Man/day)
		Staff	Farmers	Student	Staff	Farmers	Student	Staff	Farmers	Student	Staff	Farmers	Student	
1	Mechanized Rice Cultivation	43	27	231	0	0	200	639	18	13	802	22	710	2705
2	Winter Vegetable Cultivation	32	0	74	0	0	0	4	0	0	0	0	0	110
3	Land consolidation	27	14	139	0	0	384	120	0	21	129	0	0	834
4	Agricultural Machinery & Post Harvest	40	15	132	0	0	450	204	0	0	0	0	0	841
	Total	142	56	576	0	0	1034	967	18	34	931	22	710	4490

Annex 5: Form of questionnaire survey of staff of HAH RDC

November 2006

**JICA Ex-Post Evaluation Study for the Project of
The Haraz Agricultural Human Resources Development Center (HAHRDC)
Questionnaire for individual staff**

This is a questionnaire for the Ex-post evaluation of “the Project of the Haraz Agricultural Human Resources Development Center (HAHRDC), 2002-2004”, (hereinafter the Project).

In this questionnaire we will ask you various questions for the purpose of evaluating the impacts and sustainability of the Project after the termination of it .

This questionnaire is designed to be responded by HAHRDC staff as individual, so please answer the questions based on your own view or opinion. Fill in the questionnaire by ticking boxes and specifying answers as instructed. You may skip some questions if they require information which is difficult to disclose for secrecy reason, or they are irrelevant to your activities.

JICA Evaluation Team

<i>Name</i>	
<i>Section</i>	
<i>Your Field of Specialty</i>	

Q1. How are you related to the Project?

- I was one of counterpart personnel (C/P)
- I was not C/P, but somehow related to the Project

Elaborate:

> Go to Q4

- I was not C/P, and not related to the Project

> Go to Q4

Q2. Do you have any problems with applying knowledge/techniques/skills you acquired through the Project, to your present work?

- No
- Yes

If yes, specify problems:

Q3. Do you have any problems with transferring your knowledge/techniques/skills you acquired through the Project, to your colleagues?

- No
- Yes

If yes, specify problems:

Q4. Do you need any further training to improve your present work?

- No Yes
If yes, specify fields of training:

Q5. Do you think that all the machinery and equipment provided through the Project, are now properly utilized?

- Yes, more or less No Don't know

If no, elaborate:

Q6. Do you think that current activities of the HAHRDC are contributing to the development of rice production in Iran?

- Yes, very much Yes, to some extent No Don't know

Please provide reasons:

Q7. Give any suggestions or comments on function and activities of the HAHRDC.

Q8. Give any suggestions or comments on agriculture policy.

Thank you very much for your kind cooperation.

Annex 6: Results of questionnaire survey of /interviews with staff of HAHRDC

The Study Team had interviews with 21 staff members of the Center, based on answers to questionnaire which was given to the Team beforehand.

Questions in questionnaire are:

1. How are you related to the project?
2. Do you have any problem with applying knowledge/techniques/skills you acquired through the project, to your present colleagues?
3. Do you have any problems with transferring your knowledge/techniques/skills you acquired through the project, to your present colleagues?
4. Do you need any further training to improve your present work?
5. Do you think that all the machinery and equipment provided through the project, are now properly utilized?
6. Do you think that current activities of the HAHRDC are contributing to the development of rice production in Iran?
7. Give any suggestions or comments on function and activities of the HAHRDC.
8. Give any suggestions or comments on agriculture policy.

Interviews were conducted for each section/group of the Center and results are presented here accordingly.

I. Basic Technology

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
1	Mr. Valiollah	Karimi	MS of Irrigation and Drainage	Basic Technology	In charge of group
2	Mr. Hamid	Yousefian	BS of Rural Geographic		Member of group & cement, aggregate and concrete Lab. responsible
3	Mr. Mohamad Ghasem	Salmani	Technician of Mathematics		Member of group & Soil mechanic Lab. responsible

- All members of this group were C/P. They answer no to question No. 2-3. However, in fact they have some problems including, lack of new knowledge.
- They answer yes to 4th question. They need to have new aspects of knowledge and technology about irrigation, drainage, water resources, land consolidation and soil mechanic.
- They answer to no 5th question, as equipment and machinery are in good condition.

They need to have 5 soil mechanism test manuals for proper use of soil mechanic laboratory. They believe that although JICA must have sent an expert to give training for remaining tests and to complete manuals, but it has not happened to date.

- Answer to 6th question is yes. They list some features that cause an increase of rice production, including: training of farmers and experts, land consolidation and trainers' research.

- They write that the Haraz Center can be a core training center in the Middle East as an answer to 7th question because the Center has good facilities and laboratories and the staffs know English very well. JICA can send trainees of the other countries near to Iran to the Center.

- Their answers to 8th question are:

- Prevention of land use change from agriculture to the others.
- Decrease of the number of farmers to increase the average area of land ownership.
- Organization the farmer's community and reinforcing farmer's associations, minimizing the government roles in agriculture section.
- Constructing the infrastructure facilities.

II. Survey, Plan and Design

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
4	Mr. Eisa	Kia	BS of Irrigation and Drainage	Survey, Plan and Design	In charge of group

- He was a C/P. His answers to 2-3 question are no, but he tells his training in Japan was not only insufficient but also irrelevant. He needed to know land consolidation but the training was for irrigation. The Center now wants him to teach land consolidation lessons to experts and he does not know how to train experts.

- The answer to 4th question is yes. He needs trainings on land consolidation, land survey, plan and design.

- His answer to 5th question is just yes.

- He writes the answer yes to 6th question. He tells that it is possible from training of farmers, visiting of academic people, research papers and giving technical consulting to cooperatives.

The Answer to 7th question is similar to previous group's answers.

III. Estimation, Estimation Cost and Construction Management

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
5	Mr. Babak	Namaei	BS of Soil science	Estimation, Estimation Cost and Construction Management	In charge of group
6	Mr. Ali Akbar	Zareei	BS of Irrigation and Drainage		Member of group

- They were all C/P. Their answer to 2-3 questions are no. however, because methods and fascicles were not fully suitable to the Iranian condition and one Japanese expert did not have enough time for translation of books from Japanese to English, they still have some problems in this regard as they sometimes cannot answer to questions from trainees properly.
- They answer yes to 4th question. They need new aspects of training of land consolidation cost estimation system, construction management on land consolidation projects, land consolidation software, application of GIS and GPS technology to land consolidation projects.
- Just yes is their answer to the 5th question.
- They answer yes (to some extent) to the 6th question.
- Their answer to the 7th question is similar to the first group's answers.
- The MOJA policy is good as far as land consolidation is concerned.

IV. Principle of Land Consolidation

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
7	Mr. Hossein	Tonkaboni	Technician of Land Consolidation	Principle of Land Consolidation	In charge of group

- He was a C/P. His answer to questions 2-3 is no. He says, however, transfer of knowledge from the Japanese expert to him was not complete, causing him some problems. He hopes that a technical expert on land consolidation will again come from Japan to here.
- He answers yes to the 4th question and writes that he needs to update training of irrigation and drainage, water management, and rural development.
- His answer to the 5th question is just yes.
- He answers yes (to some extent) to 6th question. His answer to the 6th question is similar to the first group's .
- His answer to the 7th question is similar to the first group's.

V. Mechanization and Post Harvest

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
8	Mr. Seid Mousa	Hosseini	BS of Agriculture Mechanization	Mechanization and Post Harvest	In charge of group
9	Mr. Hamid	Aghagolzadeh	MS of Agriculture Mechanization		Member of group
10	Mr. Mohamad Taghi	Sadeghi	Technician of Machinery		Member of group & operator
11	Mr. Hojatollah	Khoshdel	Technician of Machinery		Member of group & operator

- They were all C/P. Their answer to questions 2-3 are just no. They say because their technology and knowledge before the Project were not sufficient, they practically had some problems when applying machinery.

- They answer yes to 4th question. They need to new aspects of training of machineries, technical skills and information. They need knowledge of how to improve and modify these machineries for Iranian field and crop conditions.

- Two people just answer yes without any explanation to 5th question. And two people write no with below descriptions:

Some of machineries provided through project are damaged and their durability has expired. Some others need parts to be able to work. But most of the machineries are working longer than their durability as set by manufacturing factories.

Many of paddy field machineries are now not suitable for training and demonstration as they are getting old.

- They answer yes (to some extent) to the 6th question. Some of them says that it is clear that impact of this centre activities can be seen in all the Iranian rice fields and organizations and it could affect rice productivity in Iran very much.

- Their answer to the 7th question is similar to the first group. Also they need to update their technology and knowledge.

- Their answers to the 8th question are:

with rapidly increasing labor cost for rice cultivations, it is important for farmers to do mechanize rice cultivations to reduce production cost. So MOJA should help the farmers by giving low interest loan or subsidizing agricultural machines.

This Center can act as a pilot for all the country, not as a supporter for training expert only.

VI. Agronomy and Rice cultivation

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
12	Mr. Bahman	Amiri Iarjani	MS of Agronomy	Agronomy and Rice cultivation	In charge of group
13	Mr. Mohamad	Kargaran	BS of Agronomy		Member of group
14	Mr. Yazdan	Ramzanpour	BS of Agronomy		Member of group & Farm manager
15	Mr. Ali Reza	Shokri	Technician of Agronomy		Member of group & Agronomy Lab. responsible

- They were C/P. Two people answer no to question 2-3 without any explanation. And the others answer yes. They tell that the main problem is adaptation of some techniques for Iranian situation such as different climate and socio-economic condition.

- They answer yes to the 4th. They also need daily knowledge and technology for training and research.

- One of the group members answers no to 5th question, and the others yes. They write because some machineries and equipments are out of order they need replacement with new ones.

- They answer yes (very much) to the 6th question. They write as below:

Epecially training to farmers about mechanizing rice cultivation and using of fertilizer in paddy field.

Present research activities in seminars.

Cooperation with universities.

- They answer to the 7th question as bellow:

Improvement of training to farmers and technicians in rice mechanize production.

Implementation of some trial for rice cultivation, applying new knowledge.

- They answer to 8th question based on bellow sentence:

Preparing national map for paddy field in Iran.

Training of farmers

The government to buy farmer's rice.

VII. Second Crop and Organic Farming

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
16	Mr. Hatam	Hatami	MS of Agronomy	Second Crop and Organic Farming	In charge of Second crop
17	Mr. Majid	Niknezhad	BS of Agronomy		In charge of Organic farming
18	Mr. Jalal	Afzali	Technician of Agronomy		Member of group

- They were all C/P. All of them just answer no to questions 2-3.

- They answer yes to the 4th question. They also need to practical knowledge and technology about organic farming, seed production, hydroponics, advanced green house

culture, and vegetable cultivation technology.

- Just yes is their answer to the 5th question.
- They answer to the 6th question, yes (very much). They know the importance of some activities to increase of rice production such as; transfer of technology and data to farmers, visiting fields, and training to the people.
- They answer to 7th question that they need to continue their activities with JICA to learn new technology.
- Their answers to 8th question are:
 To pay attention to agriculture more seriously because of its importance in Iran.
 MOJA must pay attention to sustainability of agricultural production and food.

VIII. Computer and Internet Site

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
19	Mr. Farhad	Gholami	BS of Statistics	Computer and Internet Site	In charge of group

- He was a C/P. His answer is no to questions 2-3.
- He answers yes to the 4th question and writes that he needs training to update his skills of computer and networks technology.
- His answers to 5 and 6th question are just yes.
- His answer to the 7th question is similar to the first group.

IX. Training

No.	Name		Field of Specialty	Working group	Occupation
	First name	Last name			
20	Mr. Soheil	Mirzadeh	Technician of Training	Training	In charge of group
21	Mr. Seid Jalil	Jalili	Technician of Multimedia		Member of group

- They were C/P. All of them just answer no to questions 2-3.
- They answer to 4th question, yes. They need to upgrade their skills, knowledge and technology.
- Their answers to the 5th and 6th questions are just yes.
- In question 7, one of them writes:
 Training needs assessment
 Category of training for 3 levels: mega, macro and micro are needed.
 Performance should be appraised.

Annex 7: Results of interviews with ex-trainees

The Study Team interviewed with two experts from East and West Azarbayjan provinces. Their answers to all questions about the training are positive. While they went to other training centers, though not for rice cultivation, and found that their training courses were not satisfactory, they found this center is well organized in comparison. The experts' overall impression about the Haraz Cnter is that trainers train trainees quite properly.

The Study Team also interviewed with two ex-trainee farmers. One of them (Mr. Shakeri), evaluated the training on mechanized cultivation as very good. He told that cost of rice production decreased to about the half with mechanization. He has tried second crops like clover after he learned about them at the Haraz centre. He told that training concepts was very good to farmers. Meanwhile, Mr. Ahmadi told that he took part in training at the Center twice and staffs of the Center had good relationships with trainees after the training. The trainees can make inquiries from them even after the training. According to him there are not any other service organizations where farmers get to know which kind of machines are practical here. He, too, told that mechanization of rice planting was so good and it decreased cost of rice planting.

Annex 8: Assessment of training courses by trainees

Tab.1: Training course to experts of MOJA, May 2005

No.	Item for assessment	Good	Average	Bad
1	General assessment of training course	*	-	-
2	Concepts of training course	*	-	-
3	Quality of training course	*	-	-
4	Using of lessons	*	-	-
5	Time of training	*	-	-
6	Length of training course	*	-	-

This course was for providing of seedlings, and seedling cultivation.

According to experts of MOJA, training was very good. It shows that the centre has much potential for teaching such as: specialist's staffs, suitable facilities, concepts of training courses and good behavior from staffs.

Tab.2: Training course to experts of Mazandaran & Gilan A.J.O¹, July 2004

No.	Item for assessment	Good	Average	Bad
1	Effects of training period	*	-	-
2	Understanding of fascicles concept	*	-	-
3	Quantity of fascicles	-	*	-

¹Agriculture-Jihad Organization

This course was for principle of best-cultivation of rice.

This assessment of the course did not have enough data. It may have been first time of training section of the Centre from trainees. According to this simple report, people who were trainees have adequate satisfaction from the training course. They answer that they want to have a share in future.

Tab.3: Training course to experts of MOJA (All Iran), Feb.2005

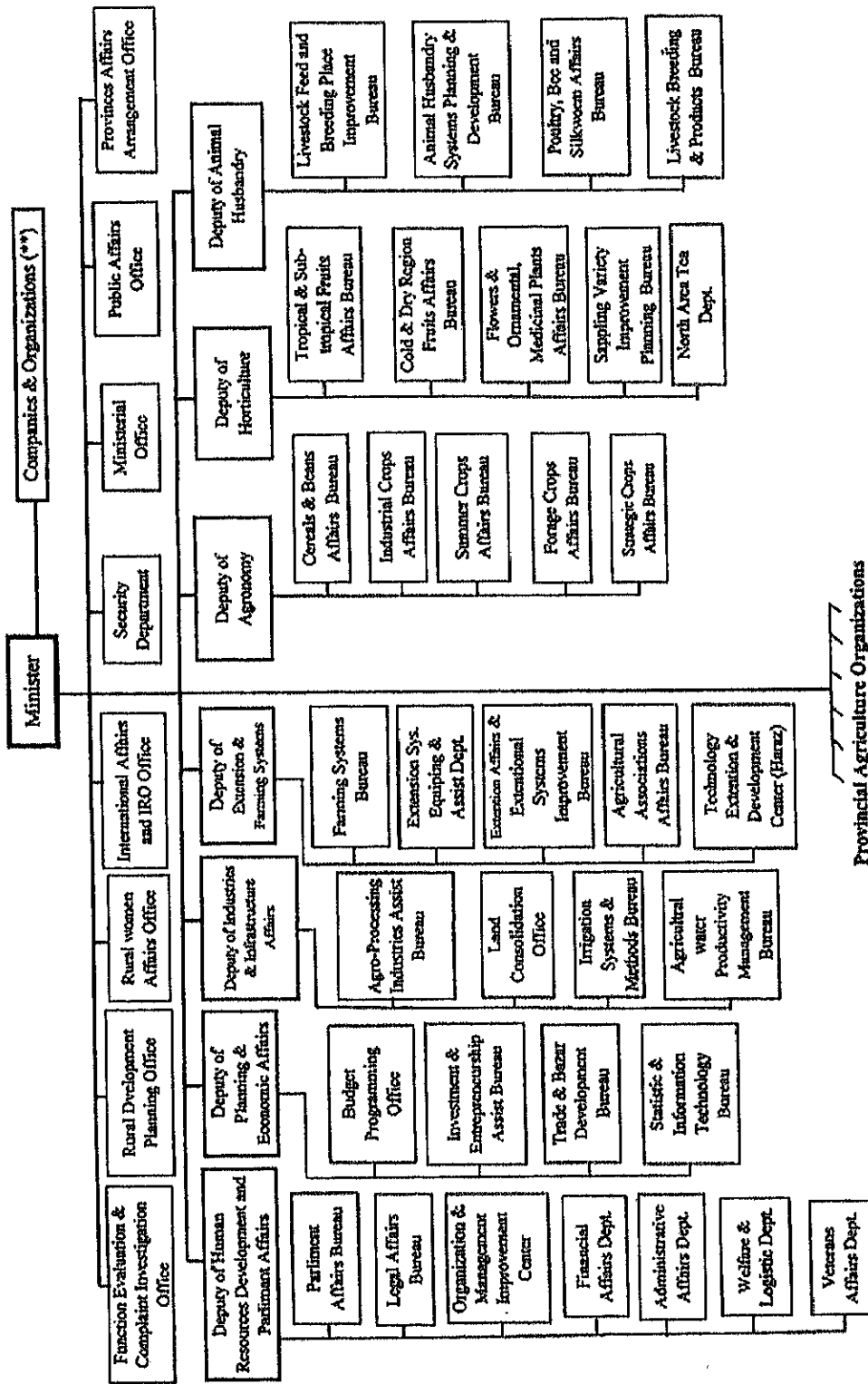
No.	Item for assessment	Good	Average	Bad
1	General assessment of training course	*	-	-
2	Analysis of concept of training course	*	-	-
3	Evaluation of teaching methods	*	-	-
4	Understanding of fascicles concept	*	-	-
5	Quantity of fascicles	*	-	-
6	Time of training course	*	-	-
7	Length of training course	*	-	-
8	Quality of training	*	-	-

This course was for production of seedling, and working of cultivation machineries

According to trainees' views, the courses is very good. They learned many things that they did not know before.

As a whole, because the Centre has facilities that are rare in Iran, people come there to learn new methods and things. Beside, the Centre has specialists and facility for training, it has become a good place for training and transferring of new knowledge and technology.

Annex 9: Organization chart of Ministry of Jihad-e-Agriculture



(** - refer the enclosure)

Annex 10: Evaluation grid for ex-post evaluation

Evaluation Grid: Ex-Post Evaluation Study on Project of HAHRDC

Evaluation Items	Required Information and Data	Sources	Means of Verification	Remarks
1. Impacts				
1-1. Achievements of Overall Goal	<ul style="list-style-type: none"> Cost of rice production, Iran Unit production yield of rice, Iran Area for rice planting, Iran Conditions to achieve Overall Goal 	<ul style="list-style-type: none"> MJA HAHRDC 	<ul style="list-style-type: none"> Statistics, Interview Questionnaire 	
1-2. Achievements of Intermediate Goal	<ul style="list-style-type: none"> Unit production yield of rice, farmers benefited from HAHRDC Consolidated land area in Mazandaran and Gilan provinces Conditions to achieve Intermediate Goal 	<ul style="list-style-type: none"> MJA HAHRDC 	<ul style="list-style-type: none"> Statistics Interview Questionnaire 	
1-3. Economic and financial impacts	<ul style="list-style-type: none"> Rice production/productivity of farmers trained at HAHRDC Income level of farmers trained at HAHRDC Other related policies economic and financial impacts caused by the Project 	<ul style="list-style-type: none"> HAHRDC Target group (beneficiaries) MJA 	<ul style="list-style-type: none"> Review of reference materials Interview Questionnaire 	
1-4. Social and cultural impacts	<ul style="list-style-type: none"> Social and cultural impacts on beneficiaries and/or anyone in surrounding area 	<ul style="list-style-type: none"> HAHRDC Target group (beneficiaries) 	<ul style="list-style-type: none"> Interview Questionnaire 	
1-5. Other impacts	<ul style="list-style-type: none"> Positive or negative impacts arising from HAHRDC activities, such as environmental, technological, and institutional impacts. 	<ul style="list-style-type: none"> HAHRDC Target group (beneficiaries) 	<ul style="list-style-type: none"> Interview Questionnaire 	
2. Sustainability				
2-1 Policy and Institutional Aspects				
2-1-1. Relevance of Overall Goal/ Intermediate Goal to the present government policies	<ul style="list-style-type: none"> National Development Plan Agricultural plans/policies 	<ul style="list-style-type: none"> MJA Other relevant agencies 	<ul style="list-style-type: none"> Review of reference materials Interview Questionnaire 	
2-1-2 Other policy factors to affect activities of HAHRDC	<ul style="list-style-type: none"> National Development Plan Agricultural plans/policies Other related policies 	<ul style="list-style-type: none"> MJA Other relevant agencies 	<ul style="list-style-type: none"> Review of reference materials Interview Questionnaire 	
2-2 Organizational and Financial Aspects				
2-2-1. Operation and management system of the	<ul style="list-style-type: none"> Organization profile Organizational chart of HAHRDC 	<ul style="list-style-type: none"> HAHRDC MJA 	<ul style="list-style-type: none"> Review of reference materials, including activity reports of HAHRDC 	

HAHRDC	<ul style="list-style-type: none"> • Current activities in detail, including the numbers of training courses and trainees, feedback from trainees • Future plan of HAHRDC • Securing of staff, including recruiting, training, promotion plan and job-hopping situation 		<ul style="list-style-type: none"> • Interview • Questionnaire 	
2-2-2. Financial condition of HAHRDC	<ul style="list-style-type: none"> • Budget allocation to HAHRDC by the Government • Foreign assistance • Future plan 	<ul style="list-style-type: none"> • HAHRDC • MJA 	<ul style="list-style-type: none"> • Review of materials Interview • Interview • Questionnaire 	
2-2-3. HAHRDC's own income generation	<ul style="list-style-type: none"> • Conditions of current own revenue • Future plan 	<ul style="list-style-type: none"> • HAHRDC 	<ul style="list-style-type: none"> • Review of materials • Interview • Questionnaire 	
2-3. Technical Aspects				
2-3-1. sustainability/progress of technology	<ul style="list-style-type: none"> • Technical level of staff • R/D activities of HAHRDC • Capacity of planning, implementing and evaluating activities of HAHRDC • Technical assistance by foreign donors, if any 	<ul style="list-style-type: none"> • HAHRDC 	<ul style="list-style-type: none"> • Review of reference materials • Interview • Questionnaire 	
2-3-2. Maintenance and renewal of the machinery and equipment	<ul style="list-style-type: none"> • Current status of the machinery and equipment • Maintenance plans including budget • C/P's capacity for maintenance 	<ul style="list-style-type: none"> • HAHRDC 	<ul style="list-style-type: none"> • Review of reference materials • Interview • Questionnaire • Observation/inspection 	
2-3-3. Any technical factors to possibly affect activities of HAHRDC	<ul style="list-style-type: none"> • Any information on technical issues 	<ul style="list-style-type: none"> • HAHRDC 	<ul style="list-style-type: none"> • Review of reference materials • Interview • Questionnaire 	

Comment
to the Ex-Post Evaluation Study for the Project
of
The Haraz Agricultural Resource Development

Comments to the Ex-Post Evaluation Study
for the Project of
The Haraz Agricultural Human Resources Development

Concerning to the significance of the project, it is clear that the project responded to the demand of the I.R. Iran.

The formulation of the report, its size and its arrangement are well organized.

The method of the study has been explained as well as possible and it is an important advantage of the report.

As an ex-post evaluation study the background of the project, the goals, the purpose and the aspects of policy, organization of finance of project have been described very well.

The factors that have promoted project have been analyzed very suitable.

The conclusion seems exactly perfect and I think the recommendations are completely useful.

In compare with formerly report (September 2004) the present report is really more perfect.

As it mentioned under the recommendations, I think so that there is a need for more technical cooperation between the two sides: but the report is quite silent about these important issues.

The "Lessons Learned" part could be more complete.

As sit mentioned in the report the delay in construction of main buildings of the center has many factors and in addition I think the report's judgment about the impacts of this delay on project is exaggerated.

Concerning to the evaluation process, it is unquestionable that the evaluation process was conducted logically and objectively, therefore, the result, conclusion and recommendation were reasonable.

In spite of my expectation, there is no information about future program or future cooperation policy in the project.

Dr. Mohamad Javad Azahedi

6 Mars 2007

Member of editorial board, Research Scientific Magazine Iran Sociology Association
Member of editorial board, Roshed Magazine, Ministry of Education and Training
Member of editorial board, Seasonal Social Welfare magazine, Well-being and Empowering
University, Tehran

事後評価調査結果要約表

評価実施部署：イラン事務所

1. 案件の概要	
国名：イラン・イスラム共和国	案件名：ハラズ農業技術者養成センター計画
分野：農林水産業	協力形態：プロジェクト方式技術協力（現：技術協力プロジェクト）
所轄部署：農業開発協力部 農業技術協力課	協力金額：8.8 億円
協力期間	1999年7月1日～2004年6月30日
	先方関係機関：農業開発推進省
	日本側協力機関：農林水産省
他の関連協力：	
<p>1-1 協力の背景と概要</p> <p>イランにおける農業は、GDPの20%、就業人口の25%を占め、石油に匹敵する主要産業となっているが、農地面積は国土の10%程度にとどまり、土地生産性向上の観点から灌漑開発や栽培技術の向上、耕作の安定化による生産意欲の向上等の対策や流通改善等の施策が必要とされている。このうち米は主要穀物のひとつであるが、近年収穫面積の頭打ちから生産が停滞し、米生産拡大のための施策が望まれるところである。また、水田の高度利用による土地利用率の向上もあわせて検討すべき課題となっている。</p> <p>これまでわが国は、カスピ海沿岸地域における稲作を中心とする開発調査およびプロジェクト方式技術協力を実施してきたところであるが、今般前記の成果をイラン全土の耕作地帯の稲作地帯へ浸透・普及するための専門技術者等の養成を図ることを目的としたプロジェクト方式技術協力を要請してきた。</p>	
<p>1-2 協力内容</p> <p>以前の技術協力プロジェクトで実証した稲作技術を普及させるため、ハラズ農業技術者養成センターの技術者、技能者、農家向け研修の機能強化・充実を図る。</p> <p>(1) 上位目標 米の生産性の向上とともに米の生産が増加する。</p> <p>(2) 中間目標 圃場整備の進展と共に稲作技術が向上する。</p> <p>(3) プロジェクト目標 圃場整備および整備後の圃場における米生産に係る人材開発のための技術的な機関としてハラズ農業技術養成センターの技術者養成機能が強化・充実する。</p> <p>(4) 成果 成果1：研修実施体制が確立する。 成果2：教材が作成される。 成果3：研修講師が確保される。 成果4：研修計画に従って技術者、技能者、農家に研修が実施される。 成果5：ハラズ川流域における適正な機械化栽培技術を展示するためのモデル圃場が実証普及拠点として整備されるモデル地区の問題点が把握され、実証圃場において水管理、施設維持管理、栽培に関する技術改善案が展示される。</p> <p>(5) 投入（プロジェクト終了時）</p> <p>日本側：</p> <ul style="list-style-type: none"> ● 長期専門家派遣 8名 ● 短期専門家派遣 48名 ● 研修員受入 22名 ● 機材供与 1.154 million USD ● ローカルコスト負担 0.27 million USD <p>相手国側：</p> <ul style="list-style-type: none"> ● カウンターパート配置 38名、及び補助スタッフ ● 土地・施設提供 専門家のためのプロジェクト事務室、新研修センター ● ローカルコスト負担 5.0 million USD（新研修センターの建設費を含む） 	
2. 評価調査団の概要	
調査者	JICA イラン事務所 委託先：昌谷 泉 株式会社グローバル・グループ 21 ジャパン Dr. Mohammad Hassan Jouri イスラム・アザード大学教授

調査期間	2006年10月2日～2006年12月15日	評価種類：事後評価
3. 評価結果の概要		
3-1 評価結果の要約		
(1) インパクト		
<p>本プロジェクトは現ハラズ技術普及開発センター（ハラズ農業技術者養成センターより名称変更）の活動に大きな正のインパクトをもたらした。新研修センターの完成以降、センターはプロジェクトで得た知識と技能を活用して本格的に稼働しており、農民や技術者等の研修受講者に恩恵をもたらしている。一方、本プロジェクトが上位目標、中間目標の達成に向けどの程度影響を及ぼしているかを推計するのは困難である。</p>		
1) 上位目標		
<p>上位目標達成指標である3つの指標のうち、コストについては近年大幅上昇し、他2指標は小幅の改善が見られる。しかしながらこれらの指標は様々な要因により影響され、また、プロジェクト終了後2年半しか経過していないことから、センターの活動との因果関係を厳密に調査することは困難である。</p>		
2) 中間目標		
<p>中間目標達成指標は近年順調であり、センターの活動が一定の貢献をしたとみることができる。マザンダラン県およびギラン県における稲作面積の増加がこれを裏付けている。さらに、センターの研修を受講した農家の米単収量は研修前に比べて増加しており、少なくとも研修を受けたマザンダラン県の農家の稲作技術が向上したことは明らかである。</p>		
3) その他のインパクト		
<p>その他のインパクトとしては、ア) センター技術者、研修受講者及びその関係者への直接、間接の技術移転、イ) 農民の所得向上及び労働時間減少、ウ) 圃場整備による正の環境影響、エ) 圃場整備に伴う負の社会的影響の抑制、オ) 日本のODAの広報効果等がある。とりわけ、センターは研修において、圃場整備時の利害調整に伴い発生しやすい紛争解決について特に取り上げており、その防止に貢献をしている。</p>		
(2) 自立発展性		
<p>センターはプロジェクト終了後もその活動を拡大し、また組織・財政面でも安定しており、自立発展性は高い。機器の維持管理・運用は概して良好であるが、一部施設についてはその有効活用のための努力がさらに求められる。</p>		
1) 政策・制度面		
<ul style="list-style-type: none"> センターの活動は、国家開発計画及び農業政策に完全に一致している。 		
2) 組織・財政面		
<ul style="list-style-type: none"> センターは農業開発推進省内での位置づけを強固にしており、その機能を拡大強化しつつある。 プロジェクトのカウンターパートであった専門スタッフのほとんどが現在もセンターに勤務しており、プロジェクトで技術移転を受けた職員はすべてその技術を活用していることから、人的資源の自立発展性は高い。 センターの予算は、プロジェクト開始以来、安定的に推移している。 		
3) 技術面		
<ul style="list-style-type: none"> 新研修センターのオープン以降、活動は本格化しており、過去2年間の研修参加者数はプロジェクト期間中の研修参加者数を大幅に上回る。新研修センターは宿泊施設を備えていることから遠方からの参加者も増えており、センターの影響範囲は広がっている。 研修生の多くはセンターの研修内容・方法、及び講師に満足しており、概して研修を高く評価している。 研究活動については、プロジェクト終了後もセンターのスタッフは多数の出版物を著しており、その研究開発能力と意欲の高さを示している。 スタッフが、各自の専門分野における最新の知識・技術を得るために研修を受ける機会は少なく、負の側面となっている。 機器類は概ね活用されており、良く整備されている。維持管理システムは確立され、適切に機器を運用するための維持管理予算も毎年確保されている。 いくつかの日本製機器は部品が調達できないため故障中である。センターによると、日本製部品はイラン製や他国製の部品で代替することが出来ない一方、高価かつその輸入手続きは複雑である。 		
3-2 プロジェクトの促進要因		
<ul style="list-style-type: none"> 最大の促進要因として、新研修センターの完成オープンが活動を大いに加速させた。 センターのトップマネジメント及び専門スタッフの能力は高く、研修生からも高く評価されている。 センターは農業開発推進省内、及び管理計画機構（公的部門の機能を管理評価する政府機関）からの評価が高く、活動促進の要因となっている。 		

<p>3-3 プロジェクトの阻害要因</p> <ul style="list-style-type: none"> 新研修センター建設の遅延（当初 2001 年の完成が予定されていたが、実際の公式なオープンは 2005 年 3 月まで遅れた）は、プロジェクトに悪影響を及ぼした。プロジェクト目標の達成指標の一つとして 1400 人の研修参加をターゲットとしていたが、新センターの建設遅延により、その半分以下でプロジェクトは終了した。 一部の機器は部品調達が困難なため使用不可能となっているが、プロジェクトの計画段階でより慎重な機器選定をしなかったことが現状につながっている可能性がある。 イラン側によると、プロジェクト期間中の技術移転の実施が一部不十分であったため、土壌試験等の現在の活動を阻害している。 スタッフが最新の専門知識・技能を身につける機会が少ない状態が続けば、今後の活動の阻害要因となろう。
<p>3-4 結論</p> <ul style="list-style-type: none"> プロジェクトは現在のイラン政府農業政策と合致し、その役割、機能は増している。 プロジェクトでセンターのスタッフに移転された知識・技術は、マザンダラン県及び周辺地域の技術者、技能者、農家に普及しており、地域の農業発展に役立っている。 中間目標や上位目標の達成が判断されるまでにはさらに時間を要するが、センターの活動は、政策・制度面、組織・財政面、技術面のいずれにも高い自立発展性を保持し、イランの圃場整備と稲作の促進に貢献を続けていくものと思われる。
<p>3-5 提言（当該プロジェクトに関する具体的な措置、提案、助言）</p> <p>(1) 相手国側</p> <ul style="list-style-type: none"> センターは、その人的資源と施設を有効活用することによって研修・研究機関としての役割を果たし、周辺諸国へも知識、技能、技術を波及させていくことが期待される。 研修コースをさらに改善・強化するため、センターは研修モニタリング制度を確立し、定期的に研修修了者と連絡を取りその研修効果を確認すべきである。 最新の知識、技術習得のため、専門スタッフが研修を受ける機会を増やすことが望ましい。 センターは、機器類や実験器具の操作・改修などについては海外の関連機関やメーカーに連絡する等、極力自助努力を行なっていくことが期待される。 <p>(2) 日本側</p> <ul style="list-style-type: none"> JICA は周辺諸国を対象とした第三国研修や三角協力の可能性を検討し、センターの人的資源、施設の活用を図っていくべきである。 イラン側はセンターの活動に対する日本の技術協力の継続を強く希望している。終了時評価報告書に述べられた通り、JICA は真摯にイラン側の要望を精査すべきである。
<p>3-6 教訓（当該プロジェクトから導き出された他の類似プロジェクトの発掘・形成、実施、運営管理に参考となる事柄）</p> <ul style="list-style-type: none"> 新研修センターの建設が大きく遅延したことはプロジェクト最大の障害であり、活動にマイナスの影響を及ぼした。複数の原因があるものの、遅延は予期できた可能性はある。主要施設の建設計画にあたっては、相手国の事情をよく調査したうえで慎重かつ現実的な建設スケジュールを想定する必要があるだろう。 導入機材の選定にあたっては、プロジェクト終了後の部品調達など、維持管理が容易な機材の選定を心がける等の配慮が必要である。

The logo for JICA (Japan International Cooperation Agency) is centered on the page. It features the letters 'JICA' in a bold, sans-serif font. Above the letter 'I' are two overlapping circles, the larger one on the right and the smaller one on the left, which are part of the agency's branding.