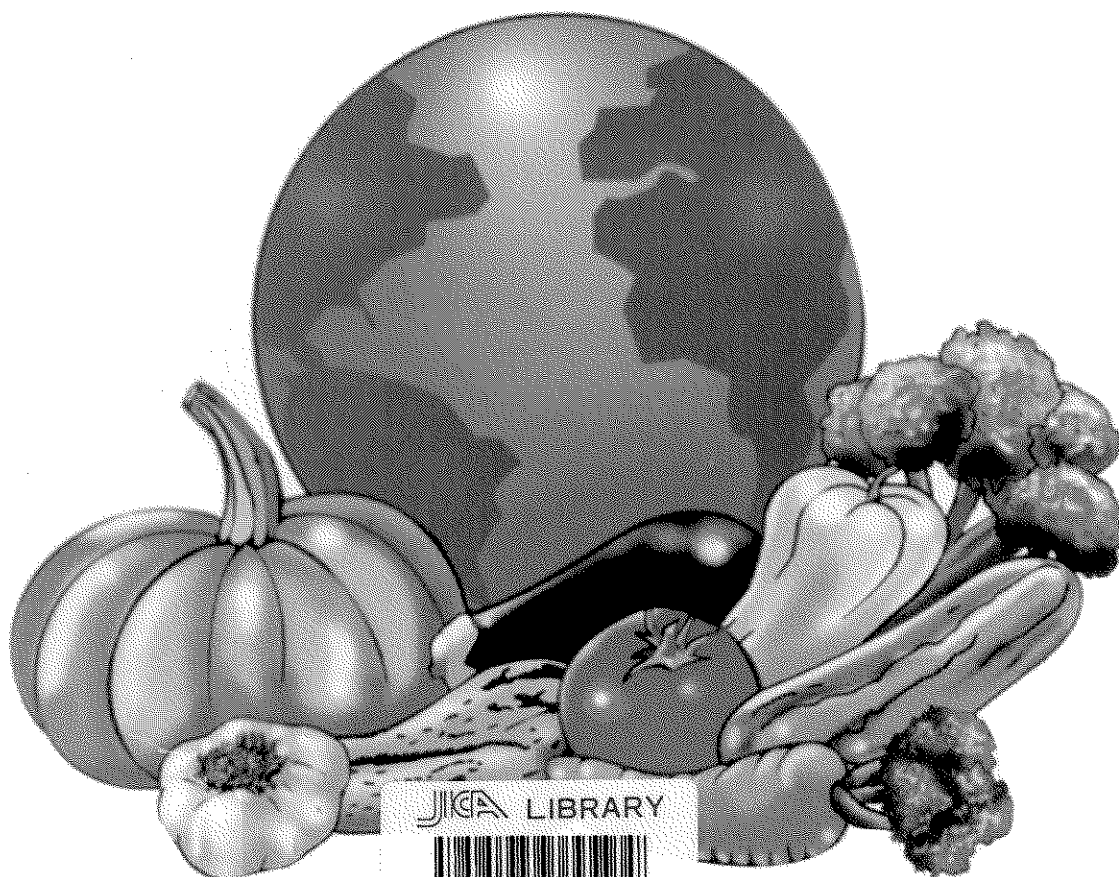


TERMINAL EVALUATION REPORT
ON
INTERNATIONAL TRAINING COURSE ON
VEGETABLE CROPS PRODUCTION
in the Federative Republic of Brazil



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January, 2004

JICA Brazil Office

Consultant: Antonio Carlos Guedes PhD

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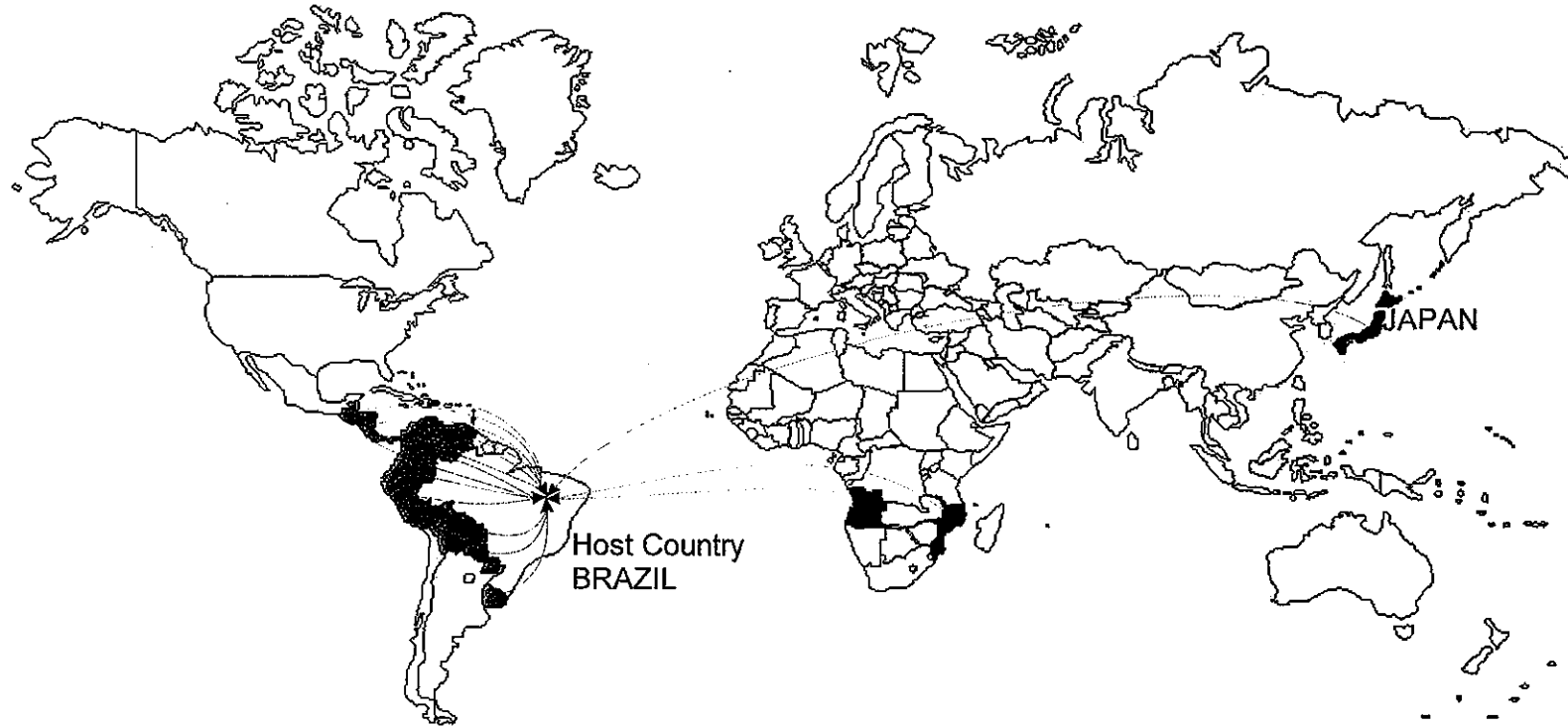


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INTERNATIONAL TRAINING COURSES ON VEGETABLE CROPS PRODUCTION



| Invited Countries | | | |
|-------------------|-------------|--------------------|------------|
| Colombia | Bolivia | Peru | Guatemala |
| Nicaragua | Mozambique | Paraguay | Costa Rica |
| Angola | El Salvador | Dominican Republic | Venezuela |
| Uruguay | Ecuador | Honduras | Panama |

SUMMARY

I. OUTLINE OF THE PROJECT

| | | |
|--|---|---|
| Country: BRAZIL | | Project Title: International Training Course on Vegetable Crops Production |
| Issue/Sector: | | Cooperation scheme: TCTP - Third Country Training Program |
| Division in charge: Regional Dept III South America Division | | Total cost: US\$ 445,917.00 Cost per participant: US\$ 7,431.95 Share of Japan's contribution: US\$ 305,292.76 (68%) |
| Period of Cooperation 2000 to 2004 | (R/D): August 2nd 2000 | Partner Country's Implementing Organization: Brazilian Agriculture Research Corporation EMBRAPA |
| | (Extension): | Supporting Organization in Japan: Japan International Cooperation Agency - JICA |
| Related Cooperation: | | |

1. Background of Project

The 2000, 2001, 2002 and 2003 courses were held in Brazil as a result of the technical cooperation between the Japanese and the Brazilian governments. The basic aspects and the agreement terms for the execution of these courses are those established on the "Record of Discussions" between the Coordinator in Brazil for Technical Cooperation of The Japan International Cooperation Agency (hereinafter referred to as "JICA"), the Representative of Brazilian Cooperation Agency (hereinafter referred to as "ABC") as the legal intervenient Agency on behalf of the Government of The Federative Republic of Brazil and the Representative of The implementing Institution, Brazilian Agriculture Research Corporation (hereinafter referred to as EMBRAPA).

In accordance to the above discussions and to the signed technical cooperation agreement both governments would cooperate on the organization of "training courses" in the field of Vegetable Crops Production to be held at EMBRAPA's research unit specialized on vegetable crops (hereinafter referred to as "EMBRAPA VEGETABLES"). The course would happen once a year, subjected to annual consultations between both Governments.

2. Project Overview

The purpose of the Training Program was to provide the participants from Latin American and Portuguese speaking African Countries with an opportunity to improve their knowledge and techniques in the field of vegetable crops production. At the end of each course, the participants were expected to have: a) good skills in vegetable crops production, and b) ability to transfer the information obtained to the extension service of their respective countries.

(1) Outputs of the Training program

- 1) OUTPUT 1 – The improvement of the participant's level of understanding in the area of vegetable crops production.
CRITERIA - Level of understanding in the area of vegetable crops production.
- 2) OUTPUT 2 – The improvement of the participant's ability in knowledge and technology transfer and the use of that knowledge in their work.
CRITERIA – Works of Ex-participants.
- 3) OUTPUT 3 – The strengthening of the interchange between participants and training institution
CRITERIA – Results of interchange between participants and training institution.

(2) Inputs

Japanese Side

Short-term experts: **02 experts** (JICA's Budget)

Invitation expenses and training expenses: **US\$ 305,292.76**

Brazilian Side

Training expenses: **US\$ 140,624.24**

Total Cost: US\$ 445,917.00

II. EVALUATION TEAM

- Members of Evaluation Team: **ANTONIO CARLOS GUEDES PhD.**
- Period of Evaluation: **October 20th 2003 to January 19th 2004.**
- Type of Evaluation: **Terminal**

III. RESULTS OF EVALUATION

III.1 Achievement of the Training Program

Four training courses were offered during the period under evaluation. These courses benefited 60 participants from 17 Latin American and Portuguese speaking African Countries as listed below. The courses contribution was on the improvement of the participants' knowledge and skills for technology transfer on the field of vegetable crops production.

According to the Implementing Institution, participants largely praised both quality and amount of books, handouts and other material provided to the participants by the Program. They also praised the field trips and study tours where they had the opportunity to get acquainted with new technologies on vegetable production, trading and industrialization. The contribution brought by the Japanese experts was always very important mainly due to their large experience on the subject."

Countries of origin of the 60 participants of the International Training Courses on Vegetable Crops [Production in Brazil.

| COUNTRY | Number of Participants | | | | |
|--------------------|------------------------|-----------|-----------|-----------|-----------|
| | 2000 | 2001 | 2002 | 2003 | TOTAL |
| Brazil | 3 | 3 | 3 | 3 | 12 |
| Nicaragua | 2 | 1 | 1 | 1 | 5 |
| Colombia | 1 | 1 | 1 | 1 | 4 |
| El Salvador | 1 | 1 | 1 | 1 | 4 |
| Honduras | 2 | 1 | 1 | 0 | 4 |
| Paraguay | 1 | 1 | 1 | 1 | 4 |
| Peru | 1 | 1 | 1 | 1 | 4 |
| Uruguay | 1 | 1 | 1 | 1 | 4 |
| Guatemala | 1 | 1 | 0 | 1 | 3 |
| Mozambique | 0 | 1 | 1 | 1 | 3 |
| Angola | 0 | 1 | 1 | 0 | 2 |
| Bolivia | 0 | 0 | 1 | 1 | 2 |
| Costa Rica | 1 | 0 | 1 | 0 | 2 |
| Dominican Republic | 0 | 1 | 0 | 1 | 2 |
| Ecuador | 0 | 1 | 1 | 0 | 2 |
| Panama | 1 | 0 | 0 | 1 | 2 |
| Venezuela | 0 | 0 | 0 | 1 | 1 |
| TOTAL: | 15 | 15 | 15 | 15 | 60 |

III.2 Evaluation Results

1 - Analysis on the Achievement in terms of Outputs

Based on the results of participants' evaluation regarding course contents acquired knowledge applicability and instructor's performance, it can be realized that the training program had an overall good performance and reached its objectives. Course organization and general support provided by Embrapa Vegetables, were also approved by participants and instructors. The final project that all participants were required to prepare and present by the end of the course, in general, showed good objectivity and could contribute to the improvement of the technological level in the different regions or countries. In general, every course presented an overall better performance than all the previous courses. This performance somehow reflects the improvements implemented year after year.

2 - Relevance

According to statements collected from the institutions, ex-participants and instructors' through questionnaires and interviews, the training courses were regarded as of high quality and importance since each course provided them excellent opportunities for getting in touch with:

- a - Highly specialized Embrapa Unity: (ex-participants' institution)
- b - Institution with high expertise in vegetable crops and technology transfer: (ex-participants)

- c - Competent researchers and technical personnel; (ex-participants)
- d - A large variety of production systems; (ex-participants)
- e - Production systems that can be readily used or adapted to the participants institution and countries own situation; (ex-participants)
- f - Information on the production systems and problems in vegetable crops production of the invited countries; (instructors)

2.1 Factors promoting sustainability and impact of the Training Program

(1) Factors concerning to Planning

Among a number of factors that contributed to the sustainability and impact reported in this study, the following may be considered as the most prominent:

- a - The quality of knowledge on vegetable crops production and technology transfer made available by Embrapa Vegetables and course instructors to the participants,
- b - The training facilities provided by Embrapa Vegetables to fit the substance of the course and participant needs during the training period;
- c - The important contributions of The Brazilian Cooperation Agency (ABC), JICA's Offices and Brazilian Embassies in the invited Countries;
- d - The financial support of the Government of Japan through JICA's Third Country Training Program and the Federative Republic of Brazil through The Brazilian Cooperation Agency (ABC) and the Brazilian Agriculture Research Corporation (EMBRAPA).

(2) Factors concerning to the Implementation Process

Course implementation was smooth and in accordance to the initial implementation plan. There were no reports on traveling problems, illness or accidents during the four courses period.

3. Factors inhibiting sustainability and impact of the Training Program

(1) Factors concerning to Planning

The reduction in the duration of the 2003 course, according to a few Ex-participants, may have a negative impact in the training program results since the out of state study tour was considered very important for their practical training.

(2) Factors concerning to the Implementation Process

According to the Course Coordinator the dispatch of Japanese short term experts by JICA is very important to give advice to researchers of EMBRAPA Vegetables and deliver some of the lectures and must be continued in the future.

4. Conclusion

In regard to the above considerations it is highly recommendable that new course editions be offered in the future in order to benefit other Countries,

Institutions, Professionals and specially the African and Latin American developing Countries vegetable crop growers.

5. Recommendations

Ex-participants and instructors made the following suggestions on changes aiming at further improvements to the substance of the program that may be of interest to take into consideration:

- a) To increase the proportion between practical and theoretical classes;
- b) To get back to the 6 weeks course duration in order to include the field trip to São Paulo State Vegetable Crops production fields and also vegetable seed companies.
- c) To extend the financial support for travel, accommodation, and book expenses to Brazilian participants not resident in Brasilia;
- d) To maintain a follow up program for ex-participants by news exchange and the supplying of updated materials after the course conclusion;
- e) To maintain a financial support program for Ex-participants projects aiming at technology transfer in their countries (JICA).

6. Lessons Learned

Based on the opinions of the parties concerned, the training program implemented in Brazil showed that the Government of Japan and the Government of Brazil are effectively contributing for the development of vegetable crops production in the invited Latin American and African Countries. Conducting this course in Brazil was also considered a good initiative due to

- the possibility of covering a large course curriculum in a shorter time and lower costs;
- opportunity for the improvement of the network and cooperation among Latin American and African Countries.

7. Follow-up Situation

There will be one more year of cooperation (2004) in the present cooperation agreement and a proposal for the continuity of this program in years to come is on the Implementing Institution plans. Negotiations on this matter among both governments will point out to the future direction of this cooperation scheme.

CHAPTER 1 - OUTLINE OF THE EVALUATION STUDY

1.1 - OBJECTIVES OF THE EVALUATION STUDY

The objective of this study was to evaluate four training courses in the field of vegetable crops production held under JICA's Third Country Training Program (TCTP). The study should be performed in accordance to terms of reference set forth in Annex I.

1.2 - MEMBERS OF THE EVALUATION STUDY TEAM

Antonio Carlos Guedes, PhD, Agronomist and Horticulturist

1.3 - PERIOD OF THE EVALUATION STUDY

October 20th 2003 to January 19th 2004.

1.4 - METHODOLOGY OF THE EVALUATION STUDY

The evaluation was made taking into account the opinions, suggestions, statements and other data collected from:

The implementing institution (Embrapa Vegetables) final reports on the four courses under evaluation (2000, 2001, 2002 and 2003) and related documents;

Interviews with EMBRAPA Vegetables Director and Course Coordinator;

The questionnaire sent to 60 ex-participants (from 17 Countries), their institution supervisors and also to all the 46 course instructors;

EVALUATION AGENDA

a) Preliminary Preparation and Necessary Actions for data Collection

b) Recovering of data about the courses and contact establishment with:

IMPLEMENTING INSTITUTION – Three visits were made to Embrapa Vegetables where interviews with coordinators and some instructors took place. A questionnaire was sent to 46 course instructors.

EX-PARTICIPANTS – On the first weeks of consultancy a big effort to localize the Ex-participants and their Institutions in their countries was made. This work was supposed to be done in only one week but, due to the not updated addresses contained on the Embrapa Vegetables Ex-participants directory it took five weeks. To succeed in this task, it was necessary to use the Internet, the telephone (national and international calls), fax and mail in order to get in touch with the participants and their institutions. This effort resulted in 90% of Ex-participants contact recovered (see ANNEX II to ANNEX V). A questionnaire was sent via e-mail or mail to 60 Ex-participants.

EX-PARTICIPANTS INSTITUTIONS – Once contacted most Ex-participants provided us with the addresses of their Institution and supervisors. A questionnaire was also sent to 27 of these supervisors.

c) Preparation of Questionnaires for Ex-participants and organizations

- Questionnaire for Ex-participants (see ANNEX VI);
 - Questionnaire for course Instructors (see ANNEX VII);
 - Questionnaire for Ex-participant Institutions (see ANNEX VIII);
- d) Distribution and Collection of Questionnaires for Ex-participants and organizations
- e) Interview of Ex-participants and organizations etc.
- Personal Interview with Embrapa Vegetables Director and Course Coordinator;
 - Personal interview conducted with Ex-participants from Nicaragua (4), El Salvador (4) and Panama and also with their institution managers.
- f) Analysis of the Course Reports presented by Embrapa Vegetables
- g) Analysis on the achievement of the Outputs
- h) *Analysis of reasons for the effectiveness of the course*
- i) Analysis of recommendations and lessons learned from the evaluation
- j) Reporting
- Preparation of the report in English
 - Preparation of the summary document of this survey in English

NOTE: Despite the fact that their present addresses were recovered, some Ex-participants, Instructors and Institutions didn't return the questionnaire, generating the following situation:

- From the 27 questionnaires sent to institutions, 11 (41%) returned;
- From the 46 questionnaires sent to instructors, 27 (60%) returned;
- From the 60 questionnaires sent to ex-participants, 44 (73%) returned.

This fact may be linked to the period of the year that the questionnaires were sent, which included vacations and end of the year holidays.

CHAPTER 2 - OUTLINE OF THE EVALUATED PROJECT

2.1. BACKGROUND OF THE TRAINING COURSE

The 2000, 2001, 2002 and 2003 courses were held in Brazil as a result of the technical cooperation between the Japanese and the Brazilian governments. The basic aspects and the agreement terms for the execution of these courses are those established on the "Record of Discussions" between the Coordinator in Brazil for Technical Cooperation of The Japan International Cooperation Agency (hereinafter referred to as "JICA"), the Representative of Brazilian Cooperation Agency (hereinafter referred to as "ABC") as the legal intervenient Agency on behalf of the Government of The Federative Republic of Brazil and the Representative of The implementing Institution, Brazilian Agriculture Research Corporation (hereinafter referred to as EMBRAPA).

In accordance to the above discussions and to the signed technical cooperation agreement both governments would cooperate on the organization of "training courses" in the field of Vegetable Crops Production to be held at Embrapa's research unity specialized on vegetable crops (hereinafter referred to as "EMBRAPA VEGETABLES").

The course would happen once a year, subjected to annual consultations between both Governments

2.2. SUMMARY OF THE INITIAL PLAN OF THE TRAINING COURSE

| | |
|-------------------------------------|---|
| (1) Course Title | International Training Course on Vegetable Crops Production |
| (2) Number of Participants per year | The total number of participants in each course should not exceed fifteen (15), being twelve (12) from the invited Countries and three (3) from Brazil. |
| (3) Duration | The duration of the Course should be approximately six (6) weeks. |
| (4) Years of Cooperation | JFY 2000 to JFY 2004 |

2.2.1 Requirements for Application

| | |
|---|--|
| (1) Level of knowledge and/or technique which participants are expected to have | To be University graduates or posses the equivalent academic background. |
| (2) Desirable Current Position/Duties | To be presently engaged, or expected to be engaged in the future in extension activities. |
| (3) Years of Experience in the sector/issue in question | To have practical experience of more than one year in Horticulture. |
| (4) Age limit | To be under forty (40) years of age. |
| (5) Target countries | The Governments of the following Latin American Countries, the Caribbean and Portuguese speaking Nations of Africa were invited to apply by nominating applicants for the courses: Bolivia, Colombia, Mozambique, Angola, Costa Rica, El Salvador, Ecuador, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, Dominican Republic, Uruguay and Venezuela. |

2.2.2 Outputs of the Training Program

| OUTPUT | | Criteria | Means of Verification | Description of Criteria |
|--------|---|--|--|---|
| 1 | Was the level of understanding of participants in the area of Vegetable Crops Production improved? | Level of understanding in the area of Vegetable Crops Production | Results of the achievement test | 1) Achieved – more than 75% of participants had scores above 7,5 on the achievements tests I and II. 2) Partially achieved – more than 75% of participants had scores between 5,0 and 10 on the achievement tests I and II. 3) Not achieved – more than 50% of participants had scores below 5,0 on the achievement tests I and II. |
| 2 | Did participants use the knowledge and technologies obtained in the training course in their works? | Works of ex-participants | Questionnaire for ex-participants | 1) Achieved – scores higher than 75%. 2) Partially achieved – scores between 5,0 and 7,5. 3) Not achieved – scores under 5,0. |
| 3 | Was the interchange between participants and training institution strengthened? | Results of interchange between participants and training institution | Questionnaire for ex-participants and training institution | 1) Achieved – scores higher than 75%. 2) Partially achieved – scores between 5,0 and 7,5. 3) Not achieved – scores under 5,0. |

2.2.3 Curriculum

| Topic of Training | Method of Training | Contents | Time Allocation (%) | | | | | |
|-------------------|---|---------------------------------|---|------|------|------|------|------|
| | | | 2000 | 2001 | 2002 | 2003 | Avg. | |
| 1 | Lectures on specific crops, specific subjects and vegetable crops production technologies | Regular classes | CROPS: cauliflower, broccoli, cabbage, cassava, sweet potato, potato, tomato, pepper, carrots, cucumber watermelon, melons, onion, etc. | 59 | 36 | 40 | 50 | 46,3 |
| 2 | Laboratory and field practices | Regular lab and field practices | Participants were oriented on lab soil and seed analysis and also on field production practices from sowing to harvesting | 03 | 27 | 10 | 10 | 12,5 |

| | | | | | | | | |
|--------------|-------------|---|--|------------|------------|------------|------------|------------|
| 3 | Study tours | Guided tours to production areas | The visits were made to Brasília region and to São Paulo state large production areas, market places and seeds companies | 31 | 17 | 30 | 30 | 27,0 |
| 4 | Others | Participants were oriented to develop their own skills on technology transfer | Seminars, tests, project elaboration and presentation, contact with Embrapa Researchers, etc. | 07 | 20 | 20 | 10 | 14,2 |
| TOTAL | | | | 100 | 100 | 100 | 100 | 100 |

2.2.4 Training Institution

| | |
|-------------------------|--|
| (1) Name | Brazilian Agriculture Research Corporation - EMBRAPA |
| (2) Type of Institution | Governmental Agricultural Research Agency |

Information on other JICA cooperation activities with EMBRAPA:

There are no other cooperation activities with EMBRAPA VEGETABLES (The Unity of the Implementing Institution where the courses took place).

2.3 REVISION FROM THE INITIAL PLAN

The only major change from the initial plan was on the course duration.

The 2000, 2001 and 2003 courses had the duration of 40 days and the 2003 course duration was shortened to 33 days (one week less). A few Ex-participants from the 2003 courses regretted this decision saying that this change made impossible the inclusion of the **out of state study tour** which they considered very important for their training.

CHAPTER 3 - ACHIEVEMENT OF THE TRAINING PROGRAM

3.1 IMPLEMENTATION FRAMEWORK OF THE PROJECT

In organizing and implementing the Course, the Governments of Japan and the Government of Brazil took measures in accordance with the relevant laws and regulations in force in each Country. The general information brochures, the application procedures, the selection of candidates, the application of selected candidates, etc were all made through Brazilian diplomatic Embassies and the Governments of invited Countries. Brazilian Government assigned the facilities and a very well trained staff of its important Agriculture Research Institution (EMBRAPA) and also contributed with approximately 30% of the training program budget. The government of Japan contributed with approximately 70 % of the training costs and dispatched Japanese short term experts to give advice to researchers of EMBRAPA Vegetables and deliver some of the lectures.

3.2 ACHIEVEMENT IN TERMS OF ACTIVITIES

| Activities | JFY-2000 | JFY-2001 | JFY-2002 | JFY-2003 | TOTAL |
|------------------------|----------|----------|----------|----------|--------|
| Number of Applicants | 46 | 54 | 64 | 58 | 222 |
| Number of Participants | 15 | 15 | 15 | 15 | 60 |
| Countries participated | 14 | 15 | 14 | 15 | 17 (*) |
| Duration | 40 days | 40 days | 40 days | 33 days | |

* considering the four courses

3.3 ACHIEVEMENT IN TERMS OF OUTPUTS OF THE TRAINING PROGRAM

| OUTPUT | Achievements | | | |
|-----------------------------|--------------|---------|---------|---------|
| | JFY2000 | JFY2001 | JFY2002 | JFY2003 |
| 1 Level of understanding | 2 | 2 | 2 | 2 |
| 2 Use of acquired knowledge | 3 | 3 | 3 | 3 |
| 3 Interchange strengthening | 2 | 2 | 2 | 2 |

* 3=Achieved, 2=Partly Achieved, 1=Not Achieved.

3.4 ACHIEVEMENT IN TERMS OF INPUT

Total cost: **US\$ 445,917.00**

Cost per participant: **US\$ 7,431.95**

Share of Japanese Contribution: **US\$ 305,292.76 (68%)**

Cost Breakdown:

| Year | Japanese Side JICA (US\$) | Brazilian Side EMBRAPA (US\$) | TOTAL (US\$) | Cost per Participant (US\$) |
|----------------|---------------------------------|-------------------------------------|-------------------|-----------------------------------|
| 2000 | 86,534.00 | 37,365.00 | 123,899.00 | 8,259.93 |
| 2001 | 77,875.39 | 29,395.61 | 107,271.00 | 7,151.40 |
| 2002 | 73,633.17 | 39,629.83 | 113,263.00 | 7,550.87 |
| 2003 | 67,250.20 | 34,233.80 | 101,484.00 | 6,765.60 |
| Total | 305,292.76 | 140,624.24 | 445,917.00 | 29,727.80 |
| Average | 76,323.19 | 35,156.06 | 111,479.25 | 7,431.95 |

CHAPTER 4 – RESULTS OF EVALUATION

4.1 EVALUATION RESULTS

4.1.1 Analysis on the Achievement in Terms of Outputs

OUTPUT 1.

Was the level of understanding of participants in the area of Vegetable Crops Production improved?

a) 3. Achieved [] b) 2. Partly Achieved [X] c) 1. Not Achieved []

What were the promoting (if you chose a. or b.) or impeding (if you chose b. or c.) factors?

- [X] setting of outputs [X] requirement for application [X] willingness of participants
- [X] curriculum [] targeted countries [] duration [X] text/materials [X] lecturers [X] equipment [] others (_____)

Description of these factors in detail:

In all courses three evaluation tests for participants were made. In each course, the first evaluation occurred as soon as the participants arrived at Embrapa Vegetables in order to evaluate the initial level of general knowledge of the group about Vegetable Crops Production. It was observed that in all courses average grades fell between 5.0 and 7.0 (Table-1)

Table-1 – First test average grades obtained by the four courses participants:

| Results of first Evaluation (Grading scale 1 to 10) | Year | | | | Avg. |
|--|------|------|------|------|------|
| | 2000 | 2001 | 2002 | 2003 | |
| Grades | 5,47 | 6,30 | 5,50 | 6,50 | 5,94 |

At the end of the 3rd and the 6th week of the course, two tests were applied (Test I and Test II) to evaluate the rate of technical knowledge acquisition about Vegetable Crops Production and technology transfer thought during the course. The grades obtained by participants are shown on Fig 1 and Fig.2.

Fig.1 – Grades obtained by participants of the four courses on the 1st achievement test performed at the end of the 3rd week of the course program:

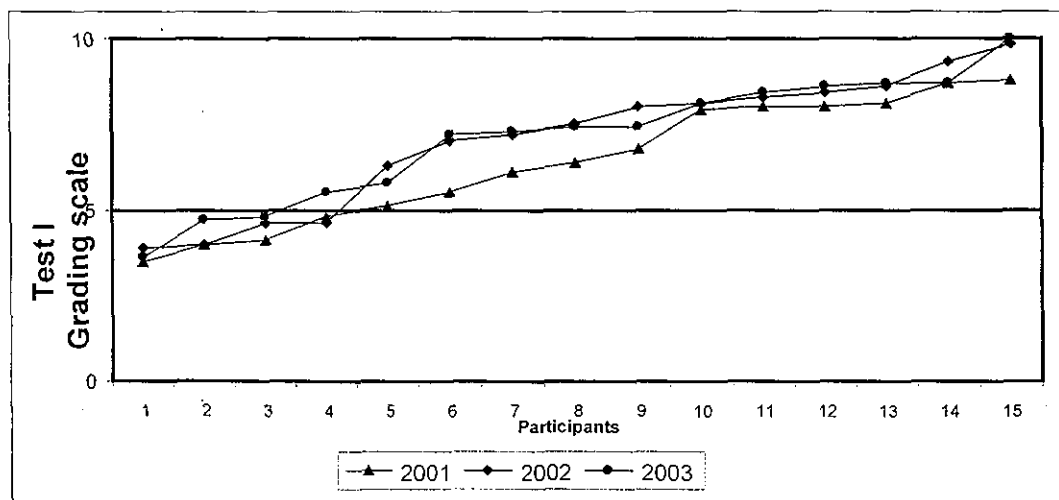
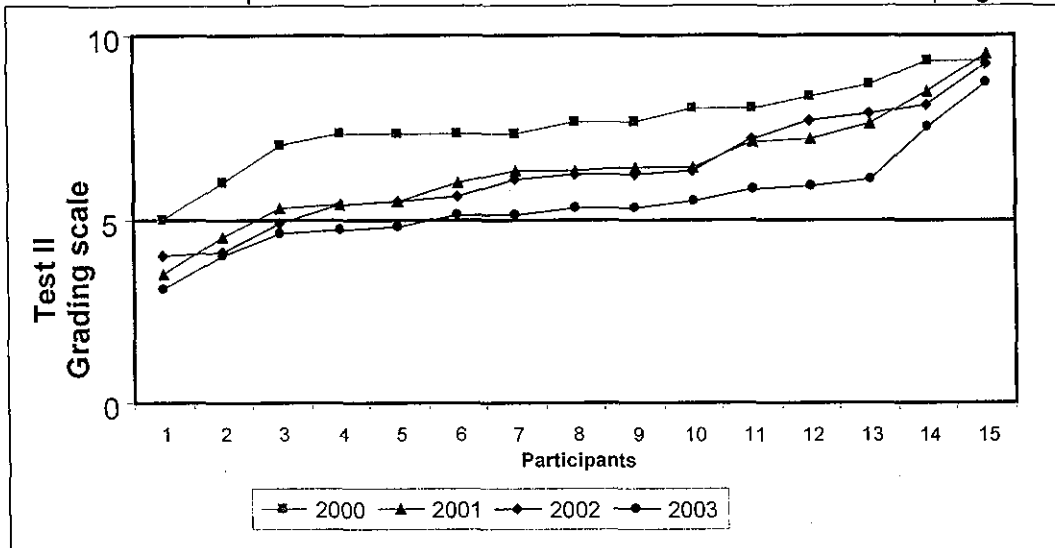


Fig.2 – Grades obtained by participants of the four courses on the 2nd achievement test performed at the end of the 6th week of the course program:



The evaluation of the level of understanding done on Tests I and II showed that the majority of the grades obtained by participants (Table 2) fell between 5.0 and 7,0 . Grades under 5.0 obtained by some participants might be due to:

- a - the great amount of technical information passed to participants by approximately 40 instructors during a short period of time (6 weeks);
- b - the fact that about 2/3 of the participants do not use Portuguese as their native language and have almost no contact with it, thus being natural that some difficulty for understanding or answer some questions in Portuguese occurred;
- c - some participants' difficulty in turning back to academic tests due to their long time in fieldwork.

Considering the already discussed factors, the academic tests performed and the average grades achievements (6.62) of the four courses, it can be said that the OUTPUT 1 was partially achieved.

Table 2 Average grades obtained by the four courses participants on Test I and Test II:

| Results of Achievements Tests (Grading scale 1 to 10) | Grades | | | | Avg. |
|--|-------------|-------------|-------------|-------------|-------------|
| | 2000 | 2001 | 2002 | 2003 | |
| Test I | - | 6,38 | 7,00 | 7,08 | 6,82 |
| Test II | 7,62 | 6,36 | 6,30 | 5,40 | 6,42 |
| Average | 7,62 | 6,37 | 6,65 | 6,24 | 6,62 |

OUTPUT 2.

Are the participants using the knowledge and skills obtained in the training course in their work?

a) 3. Achieved b) 2. Partly Achieved c) 1. Not Achieved

What were the promoting (if you chose a. or b.) or impeding (if you chose b. or c.) factors?

setting of outputs requirement for application willingness of participants
 curriculum targeted countries duration text/materials
 Lecturers equipment others (Study tours)

Description of these factors in detail:

To answer the above item, questions were made, as in Tables 3, 4, 5 and 6, to Ex-participants and their Institutions in order to find out about the utility of acquired knowledge to their Works

Table-3 – Major contribution of the course to the Ex-participants professional performance:

| Question to Ex-participants (44) | | | Answers | | | | Total | % |
|--|---|---|---------|------|------|------|-------|----|
| | | | 2000 | 2001 | 2002 | 2003 | | |
| What would you point out as the best contribution of the course for your professional performance? | A | Contact with new Technologies | 6 | 3 | 6 | 11 | 26 | 59 |
| | B | Contact with other Countries' professionals | 8 | 9 | 9 | 12 | 38 | 86 |
| | C | Contact with Embrapa Vegetables | 6 | 4 | 5 | 13 | 28 | 64 |
| | D | Improvement of your qualifications to work with vegetable crops | 9 | 8 | 9 | 13 | 39 | 89 |
| | E | Improvement of your technical knowledge in general | 7 | 5 | 10 | 13 | 35 | 80 |

According to data in Table-3, 89% of Ex-participants considered that the course had high influence on the improvement of their qualification to work with Vegetable Crops Production and also 80% considered that the course contributed for the improvement of their professional performance in general, what may include the events of technology transfer that 84% of the Ex-participants informed they are using in their work (Table-4).

Table-4 – Initiatives of Ex-participants for technology transfer in their region:

| Question to Ex-participants | | | Answers | | | | Total | % |
|---|---|-----|---------|------|------|------|-------|----|
| | | | 2000 | 2001 | 2002 | 2003 | | |
| Have you prepared or offered technology transfer events to the vegetable crops growers in your regions? | A | YES | 7 | 8 | 10 | 12 | 37 | 84 |
| | B | NO | 2 | 1 | 2 | 2 | 7 | 16 |

The Ex-participant's Institutions were also consulted (Table-5) in order to find out the level of importance they attributed to the contribution of the courses in training their employees. All of the interviewed institutions expressed that the courses brought good results to their staff, institution, region and Country.

Table-5 – Contribution of the courses to the Institution and countries of origin of Ex-participants:

| Question to Institutions | | | Answers | |
|---|---|------------------|---------|----|
| | | | # | % |
| Do you think that the participation of the professionals of your institution on the International Training Vegetable Crops course brought results to: | A | Your Institution | 10 | 91 |
| | B | Your region | 9 | 82 |
| | C | Your country | 10 | 91 |
| | D | Your staff | 9 | 82 |

The mission visit to Nicaragua, El Salvador and Panama was also very important for the evaluation of this item. Local observations were made on the work done by Ex-participants in their Institutions. In the three Countries visited it was observed that a good percentage of Ex-participants are using their knowledge in projects to increase the vegetable crops production and consumption. Unfortunately, all Ex-participants referred to a lack of financial support as their main constrain for developing good projects.

A question about applicability of acquired knowledge was made to Ex-participants and the high positive score (4.44 in a 1 to 5 scale) given to the applicability of that knowledge (Table-6) may also be a major factor that contributed to the credits given to the course in Table-4 and Table-5.

Table-6 – Applicability of acquired knowledge according to Ex-participants (grading scale 1 to 5):

| Courses Evaluation by Ex-participants | Answers | | | | Avg. |
|---------------------------------------|---------|------|------|------|------|
| | 2000 | 2001 | 2002 | 2003 | |
| Applicability of Acquired Knowledge | 4,31 | 4,40 | 4,30 | 4,75 | 4,44 |

OUTPUT 3.

Was the exchange among participants, lecturers and training institution strengthened?

a) 3. Achieved [] b) 2. Partly Achieved [X] c) 1. Not Achieved []

What were the promoting (if you chose a. or b.) or impeding (if you chose b. or c.) factors?

[X]setting of outputs [] requirement for application [X] willingness of participants [] curriculum [] targeted countries [] duration [] text/materials [] lecturers [] equipment [X] others (Implementing Institution)

Description of these factors in detail:

To answer the question above, two aspects were considered:

- a - EMBRAPA VEGETABLES INTERCHANGE INITIATIVES - Considering the participants answers on Table-7, the effort of Embrapa Vegetables to contact Ex-participants after the courses was very low, since 82% of Ex-

participants informed that they had never received any publication or contact from Embrapa Vegetables and most of the positive answers (12%) came from Brazilian Ex-participants that are used to receive publications from Embrapa. This situation, according to the course coordinator, was due to lack of financial resources to cover overseas mail expenditures and also to the fact that this item implementation was not discussed.

Table-7 – Post course contact initiatives from Embrapa Vegetables with Ex-participants:

| Question to Ex-participants | | | Answers | | | | Total | % |
|---|---|-----|---------|------|------|------|-------|----|
| | | | 2000 | 2001 | 2002 | 2003 | | |
| After the end of the course did you receive any technical publication material from Embrapa Vegetables? | A | YES | 0 | 2 | 3 | 3 | 8 | 18 |
| | B | NO | 9 | 7 | 9 | 11 | 36 | 82 |
| Total: | | | 9 | 9 | 12 | 14 | 44 | - |

b - EX-PARTICIPANTS' INTERCHANGE INITIATIVES - When consulted, 77% of Ex-participants said that they visited Embrapa Vegetables' site and 75% said they used other means of communication with that institution (Table-8). This information was confirmed by the instructor's answers to the questionnaire (Table-9) where 41% of them informed being sporadically or regularly contacted by Ex-participants.

Table-8 – Post course contact initiatives from ex-participants with Embrapa Vegetables:

| Questions to Ex-participants | | | Answers | | | | Total | % |
|--|---|-------------------|---------|------|------|------|-------|----|
| | | | 2000 | 2001 | 2002 | 2003 | | |
| After the end of the course did you access the Embrapa Vegetable site to get information about that institution work? | A | Yes, regularly | 2 | 0 | 4 | 6 | 12 | 27 |
| | B | Yes, sporadically | 5 | 5 | 4 | 8 | 22 | 50 |
| | C | Never accessed | 2 | 4 | 4 | 0 | 10 | 23 |
| Total: | | | 9 | 9 | 12 | 14 | 44 | - |
| After the end of the course did you use other means (phone, e-mail, mail) to get in touch with the course instructors? | A | Yes, regularly | 1 | 1 | 3 | 4 | 9 | 20 |
| | B | Yes, sporadically | 3 | 7 | 6 | 8 | 24 | 55 |
| | C | Never used | 5 | 1 | 3 | 2 | 11 | 25 |
| Total: | | | 9 | 9 | 12 | 14 | 44 | - |

Table-9 – Post course contact initiatives from Ex-participants with course instructors:

| Question to Instructors | | | Answers | |
|---|---|-------------------|---------|----|
| | | | # | % |
| Have you been contacted by Ex-participants? | A | Yes, regularly | 1 | 4 |
| | B | Yes, sporadically | 10 | 37 |
| | C | Never | 16 | 59 |

It is also interesting to observe data on Table-5 where 64% of Ex-participants informed that the contact with Embrapa Vegetables was very important for the improvement of their professional performance.

Overall Judgment on the Achievement of Outputs

It is important to notice that criteria for selection of candidates for this training program were set in order to bring back to a regular course those professionals working in the field with developing countries vegetable growers. At the classroom those professionals received a continuous stream of knowledge and technology transfer thought by more than 40 researchers and extension people in a short period of time (40 days). Thus, the acquisition of knowledge must not be measured only by the test grades but it must consider all the information gathered in this evaluation. study. The friendship and interchange among participants themselves and with their instructors, during the training program and after their return to their countries can be regarded as very important and positive factor for their work. The 2002 course participants, for example, established an internet discussion list which most of them use for technical information exchange.

4.2 Relevance

(1) Relevance of the Training Program in Terms of the Needs and Policies of the Targeted Countries

| | |
|---|--|
| Has the training program been necessary ? | |
| Indicator: | Development needs and policies of the targeted Countries |
| Means of indicator: | Questionnaire for ex-participants. |

The first evidence of the need for this program was shown by the number of candidates (Table-10) indicated by the countries to compete to the 15 openings offered each year. Some Countries like Colombia, Bolivia, Peru and Nicaragua indicated a considerable number of candidates and other Countries indicated only one or none in certain years.

Table-10 – Invited countries and number of candidates.

| COUNTRY | 2000 | 2001 | 2002 | 2003 | TOTAL |
|--------------------|------|------|------|------|-------|
| Colombia | 12 | 14 | 9 | 10 | 45 |
| Brazil | 7 | 8 | 5 | 7 | 27 |
| Bolivia | 0 | 4 | 10 | 5 | 19 |
| Peru | 2 | 4 | 7 | 5 | 18 |
| Nicaragua | 3 | 3 | 5 | 4 | 15 |
| Mozambique | 7 | 2 | 2 | 2 | 13 |
| Paraguay | 4 | 1 | 4 | 3 | 12 |
| Angola | 1 | 2 | 8 | 0 | 11 |
| El Salvador | 1 | 1 | 5 | 4 | 11 |
| Dominican Republic | 1 | 5 | 1 | 1 | 8 |
| Uruguay | 1 | 4 | 1 | 2 | 8 |
| Ecuador | 0 | 1 | 4 | 2 | 7 |
| Honduras | 2 | 2 | 2 | 0 | 6 |
| Panama | 1 | 1 | 0 | 4 | 6 |
| Venezuela | 0 | 0 | 0 | 6 | 6 |
| Costa Rica | 2 | 0 | 1 | 2 | 5 |
| Guatemala | 2 | 2 | 0 | 1 | 5 |

| | | | | | |
|--------------|-----------|-----------|-----------|-----------|------------|
| TOTAL | 46 | 54 | 64 | 58 | 222 |
|--------------|-----------|-----------|-----------|-----------|------------|

During the 2000 to 2003 period, 17 invited countries indicated 222 candidates to the Program (Table-11) but less than 30% of them were accepted.

Table-11 - Number of candidates indicated by Invited Countries X Number of Participants Accepted

| | 2000 | 2001 | 2002 | 2003 | TOTAL |
|-------------------------------|-------------|-------------|-------------|-------------|--------------|
| Number of Indications | 46 | 54 | 64 | 58 | 222 |
| Number of Candidates accepted | 15 | 15 | 15 | 15 | 60 |
| Ratio application/acceptance | 32,6 | 27,8 | 23,4 | 25,9 | 27,0 |

The second evidence was the difficulty faced by the countries for developing vegetable crops production. Among these difficulties the most important ones, pointed out by Ex-participants were: "Lack of modern technologies" and "The gap between growers and research institutions" (Table 12).

Table12 – Main problems to be circumvented for the vegetable crop production in the participants' countries.

| Question to Ex-participants | | | Answers | | | | Total | % |
|--|---|---|---------|------|------|------|-------|----|
| | | | 2000 | 2001 | 2002 | 2003 | | |
| What are the main problems that make difficult to produce vegetable crops in your country? | A | Lack of technologies | 6 | 6 | 4 | 10 | 26 | 59 |
| | B | Lack of modern technologies | 7 | 9 | 9 | 11 | 36 | 82 |
| | C | Resistance against new Technologies | 4 | 4 | 4 | 5 | 17 | 38 |
| | D | Shortage of technical assistance | 3 | 5 | 3 | 8 | 19 | 43 |
| | E | Low efficiency of free technical assistance | 2 | 2 | 4 | 5 | 13 | 30 |
| | F | Gap between growers and research institutions | 8 | 10 | 8 | 12 | 38 | 86 |

The 3rd evidence was the candidates expectation in relation to the training program. Seventy-five percent of the candidates stated that expected to increase the amount and quality of vegetable crops produced in their respective countries (Table-13). They also expressed confidence on the implementing institution (Embrapa Vegetables) and on the course sponsors, since 54% of the participants stated that their decision to participate of the course was due to the following reasons: "The course would take place at Embrapa Vegetables" and that "the courses were sponsored by Embrapa and JICA and held in Brazil" (Table-14).

Table-13 – Participants' expectation in relation to the training program:

| Question to Ex-participants | | | Answers | | | | Total | % |
|--|---|---|----------|----------|-----------|-----------|-----------|------------|
| | | | 2000 | 2001 | 2002 | 2003 | | |
| What were your goals when you took the decision to participate of the Vegetable Crop Production International Training Course? | A | To improve your knowledge for technology transfer | 4 | 2 | 2 | 0 | 8 | 18 |
| | B | To improve your technical knowledge in general | 2 | 1 | 0 | 0 | 3 | 7 |
| | C | To increase the production volume on quality of vegetable crops in your country | 3 | 6 | 10 | 14 | 33 | 75 |
| Total: | | | 9 | 9 | 12 | 14 | 44 | 100 |

Table-14 – Factors influencing the participants' decision to attend the training program

| Question to Ex-participants | | | Answers | | | | Total | % |
|--|---|---|----------|----------|-----------|-----------|-----------|------------|
| | | | 2000 | 2001 | 2002 | 2003 | | |
| Your main reasons to participate of the training program were: | A | The course was sponsored by JICA | 1 | 1 | 2 | 2 | 6 | 14 |
| | B | The course was held in Brazil | 2 | 1 | 1 | 2 | 6 | 14 |
| | C | The course was sponsored by JICA and held in Brazil | 2 | 3 | 3 | 0 | 8 | 18 |
| | D | The course was held in Embrapa Vegetables | 4 | 4 | 6 | 10 | 24 | 54 |
| Total: | | | 9 | 9 | 12 | 14 | 44 | 100 |

(2) Appropriateness of the Training Program as a Way to Transfer Appropriate Technology

| | |
|---|---|
| Was the training program the best way to transfer appropriate technology? | |
| Indicator: | The way to transfer appropriate technology (training program). |
| Means of indicator: | Final report Questionnaire for ex-participants and training institutions. |

The analysis of this question was conducted taking into account the instructors and Ex-participants opinion. According to the instructors (Table-15) the technical level of the training program was completely compatible with the level of the candidates selected.

Table 15 – Compatibility of the training program with the candidates level:

| Question to Instructors | Answers | # | % |
|---|---------|----|----|
| Do you think the level of the training program offered to participants has been compatible with the needs of the selected participants? | Yes | 26 | 96 |
| | No | 1 | 4 |

According to Ex-participants all four courses presented the best approach for technology transfer and also appropriate technologies (Table-16). The average grades given by participants to the different organizational aspect topics related to “support to participants”, “contents/curriculum”, “performance of instructors” and “applicability of acquired knowledge” (Table-06) varied from a minimum of 4.38 to a maximum of 4.72 in a scale 1 to 5. This indicated that the overall organization of the course and training program developed efficiently.

Table-16 – Course evaluation by Ex-participants (grading scale 1 to 5)

| Questions to Ex-participants | | | Answers | | | | Avg. |
|--|---|--------------------|---------|------|------|------|------|
| | | | 2000 | 2001 | 2002 | 2003 | |
| How would you rate the following organizational aspects of the course? | A | Duration | 4,50 | 4,30 | 4,80 | 3,92 | 4,38 |
| | B | Intensity | 4,50 | 4,90 | 4,90 | 4,30 | 4,65 |
| | C | Coordination | 4,25 | 4,80 | 5,00 | 4,84 | 4,72 |
| | D | Materials Supplied | 4,37 | 4,60 | 4,60 | 4,76 | 4,58 |
| Course Contents and Curriculum | | | 4,57 | 4,70 | 4,60 | 4,80 | 4,67 |
| Performance of Instructors | | | 4,42 | 4,60 | 4,50 | 4,68 | 4,55 |

The Ex-participants suggestions (Table-17) for future course program showed that 98% of them are satisfied with the present training program and that only 2% suggested a completely new approach.

Table-17 – Ex-participants’ suggestions for future Vegetable Crops Production International Training Courses program.

| Question to Ex-participants | | | Answers | | | | Total | % |
|--|---|--|---------|------|------|------|-------|----|
| | | | 2000 | 2001 | 2002 | 2003 | | |
| If Embrapa Vegetables and JICA intend to promote new Vegetable Crop Production International Training Courses would you recommend: | A | To keep the previous courses program | 3 | 2 | 3 | 3 | 11 | 25 |
| | B | To keep previous courses program including small changes | 6 | 6 | 9 | 11 | 32 | 73 |
| | C | Present a completely new curriculum proposal | 0 | 1 | 0 | 0 | 1 | 2 |

(3) **Appropriateness of Conducting the Training Course in Brazil rather than in Japan and in their own Countries**

| | |
|---|--|
| Was the condition for conducting training better in the host Country than in Japan? | |
| Indicator: | The conditions for conducting training in Brazil (not in Japan). |
| Means of Indicator: | Questionnaire for ex-participants and training institution. |

To answer this question a consult was made to the Ex-participants' institutions, instructors and Ex-participants. Instructors and Ex-participants' institutions massively stated that the Federal Republic of Brazil is an adequate country to host this type of training courses for professionals of Latin American and African Portuguese speaking countries (Table-18 and Table-19)

Table-18 – Opinion of course instructors' on the suitability of Brazil as a host Country for Vegetable Crop Production International Training Courses.

| Question to Instructors | Answers | # | % |
|---|---------|----|----|
| Do you think Brazil is a suitable country for training professionals of Latin American and Portuguese speak countries in Vegetable Crop Production? | Yes | 26 | 96 |
| | No | 1 | 4 |

Table-19 - Ex-participants Institutions' Opinion on the suitability of Brazil for hosting The Vegetable Crop Production International Training Courses.

| Question to Institutions | Answers | # | % |
|---|---------|----|-----|
| Do you think Brazil is a suitable country for training professionals of Latin American and Portuguese speak countries in Vegetable Crop Production? | Yes | 11 | 100 |
| | No | 0 | 0 |

Among the reasons for the suitability of Brazil as a host country for Vegetable Crop Production International Training Courses, both Ex-participants' Institutions (Table-20) and instructors (Table-21) pointed out the "crops", "language" and "climatic conditions" similarities as the main factors leading to the decision for conducting these trainings in Brazil.

Table-20 – Reasons for conducting the training courses in Brazil rather than in Japan (Institutions opinion)

| Question to Institutions | | | Answers | |
|---|---|---------------------|---------|-----|
| | | | # | % |
| The suitability of Brazil for the training courses is due to: | A | Climatic similarity | 10 | 91 |
| | B | Cultural similarity | 1 | 9 |
| | C | Language similarity | 8 | 73 |
| | D | Crops similarity | 11 | 100 |
| | E | Lower costs | 6 | 55 |

Table-21- Reasons for conducting the training course in Brazil rather than in Japan. (Instructors opinion)

| Question to Instructors | | Answers | | |
|---|---|---------------------|----|----|
| | | # | % | |
| The suitability of Brazil for the training courses is due to: | A | Climatic similarity | 24 | 89 |
| | B | Cultural similarity | 16 | 59 |
| | C | Language similarity | 22 | 81 |
| | D | Crops similarity | 20 | 74 |
| | E | Lower costs | 15 | 56 |

According to Ex-participants, they received a good treatment in the host Country. Answering the question related to the support given by Embrapa Vegetables to participants they attributed scores higher than 4.21 (in a scale 1 to 5) to all items (Table-22) in all courses. They also attributed high importance to the materials prepared and distributed by Embrapa Vegetables to participants (Table- 23).

Table-22 – Support given by Embrapa Vegetables to courses participants:

| Courses Evaluation by Participants | | | Answers | | | | Avg. |
|------------------------------------|---|-----------------|---------|------|------|------|------|
| | | | 2000 | 2001 | 2002 | 2003 | |
| Support to participants | A | General Support | 4,50 | 4,70 | 5,00 | 4,40 | 4,65 |
| | B | Accommodation | 4,12 | 3,80 | 4,10 | 4,80 | 4,21 |
| | C | Transportation | 3,75 | 4,40 | 5,00 | 4,54 | 4,42 |
| | D | Food | 3,81 | 4,80 | 4,50 | 4,15 | 4,32 |
| | E | Secretary | 4,43 | 4,60 | 4,90 | 4,92 | 4,71 |

Table-23 – Scores given by participants to the importance of the educative materials prepared and distributed by Instructors and Embrapa Vegetables during the courses, to their work.

| Question to Ex-participants | | | Answers | | | | Total |
|---|---|------------------|----------|----------|-----------|-----------|-----------|
| | | | 2000 | 2001 | 2002 | 2003 | |
| How do you grade, in terms of interest for your work the set of didactical materials (books, videos etc.) bought by Embrapa Vegetables and handed to participants? | A | Highly important | 9 | 7 | 11 | 14 | 41 |
| | B | Important | 0 | 2 | 1 | 0 | 3 |
| | C | Low importance | 0 | 0 | 0 | 0 | 0 |
| Total: | | | 9 | 9 | 12 | 14 | 44 |
| How do you grade, in terms of interest for your work the set of didactical materials (hand outs) prepared by Embrapa Vegetables instructors and handed to participants? | A | Highly important | 9 | 7 | 9 | 13 | 38 |
| | B | Important | 0 | 2 | 3 | 1 | 6 |
| | C | Low importance | 0 | 0 | 0 | 0 | 0 |
| Total: | | | 9 | 9 | 12 | 14 | 44 |

(4) Improvement of Capacity and Ownership of the Training Institution (EMBRAPA VEGETABLES) through the Entrustment of the Training Program

| | |
|---|--|
| Was the entrustment of the training program reasonable in terms of improving capacity and ownership of the training institution (Embrapa Vegetables). | |
| Indicator: | Improving capacity and ownership of the training institution |
| Means of indicator: | Final report |
| | Questionnaire for training institutions |

The improving capacity and ownership of the Implementing Institution was taken from the Embrapa Vegetables' final report on each course.

1 – Evaluation of training effects judged by the persons in charge of the training courses for each year.

1.1 - Embrapa Vegetables 2000 Final Report's Summary:

"Overall we are very satisfied with the outcome of this year's course and we will do everything possible to make it even better for coming years. This group of participants turned out to be one of the most homogeneous and efficient as compared with previous groups. They also showed excellent integration as a group and presented interesting suggestions for program improvements. Most of the presented suggestions have been incorporated to next year's program. Participants largely praised both quality and amount of books, handouts and other material provided to the participants this year. They also praised the field trips and study tours where they had the opportunity to get acquainted with new technologies on vegetable production, trading and industrialization. The contribution brought by the Japanese expert was very important mainly due to his large experience on the subject."

1.2 - Embrapa Vegetables 2001 Final Report's Summary:

"This VII International Course on Vegetable Production can be considered as one of the best courses of the series. The interest and performance of the participants can be regarded as very satisfactory as much as their achievements are concerned. It can be further added that the program designed for this year satisfied in full all the expectations."

1.3 - Embrapa Vegetables 2002 Final Report's Summary:

"Based on the evaluations made by both participants and Implementing Institution the program designed for the VIII International Training Course on Vegetable Production, fulfilled all the expectations and presented an overall better performance than all the previous courses. This performance somehow reflects the improvements, which we have implemented year after year and anticipates that further courses can perform even better. Everyone at Embrapa Vegetables, from support personnel to highest ranked scientist, regards this annual course as one of the most important events that are held at this Research Center."

1.4 - Embrapa Vegetables 2003 Final Report's Summary:

"Based on the results of participants' evaluation regarding course contents acquired knowledge applicability and instructor's performance, it can be realized that the course had an overall good performance and reached its objectives. Course organization and general support provided by Embrapa Vegetables, were also approved by participants and instructors. The final project that all participants were required to prepare and present by the end of the course, in general, showed good objectivity and could contribute to the improvement of the technological level in the different regions or countries. Furthermore, the friendship and the brotherhood developed among the participants can be regarded as a very important and positive factor for the good development of course activities."

The course instructors were also consulted in relation to the importance of the training program for the improvement of Embrapa Vegetables' Unit. With no exception, the Instructors stated that the training courses were important for improving the Embrapa Vegetables capacity and ownership (Table-25). Ninety-three percent of the instructors also stated that the training program had from medium to high importance to their research work (Table-24).

Table-24 – The training program importance for instructors research work.

| Question to Instructors | | Answers | | |
|---|---|------------------|----|----|
| | | # | % | |
| How do you grade the importance of the Vegetable Crop Production International Training Courses for your research work? | A | Highly important | 15 | 56 |
| | B | Important | 10 | 37 |
| | C | Low importance | 2 | 7 |
| | D | No importance | 0 | 0 |

Table-25 – The training program importance for Embrapa Vegetables improving capacity and ownership.

| Question to Instructors | Answers | # | % |
|--|---------|----|-----|
| Do you think that the Vegetable Crop Production International Training Courses is important for Embrapa Vegetables improving capacity and ownership? | Yes | 27 | 100 |
| | No | 0 | 0 |

(5) Relevance of the Training Program in Terms of the Promotion of Networking and Cooperation among Developing Countries

| | |
|--|--|
| Was the training program meaningful in terms of promoting networking and cooperation among developing countries? | |
| Indicator: | Promoting network and cooperation among developing countries |
| Means of indicator: | Final report |
| | Questionnaire for ex-participants and training institutions. |

Seventy-three percent of Ex-participants considered the training program as a good tool for the improvement of cooperation among the Countries (Table-26) and 100% of the Institutions consulted attributed high importance to the opportunity of having their professionals trained in the program offered by JICA in Brazil (Table-27).

Table-26 – Ex-participants opinion about the achievements of the training courses

| Question to Ex-participants | | | Answers | |
|--|---|---|---------|----|
| | | | # | % |
| Do you think the training offered by JICA and Brazil, with its proposals were good to: | A | Increase the cooperation among Countries | 8 | 73 |
| | B | Increase interaction among institutions | 4 | 36 |
| | C | Improve the capacity of your institution for transferring technology to growers | 9 | 82 |
| | D | Impossible to rate | 2 | 18 |

Table-27 – Institution's opinion about the importance of the opportunity to send their professionals attending the training courses:

| Question to Institutions | | | Answers | |
|---|---|------------------|---------|-----|
| | | | # | % |
| How do you grade the importance of the opportunity to send your institution professionals to attend the training courses: | A | Highly important | 11 | 100 |
| | B | Important | 0 | 0 |
| | C | Low importance | 0 | 0 |
| | D | No importance | 0 | 0 |

Furthermore, the high concepts attributed to the quality of technology transfer (Table-28 and Table-29) and also to the didactical materials prepared and handed out to participants (Table-23) showed that Embrapa Vegetables is transferring to other institutions and participating Countries, the best of its research results which may strengthen the cooperation among institutions and countries.

(6) Appropriateness of the Setting of Outputs and Training Components (Curriculum)

| | |
|---|---|
| Was the setting of outputs and training components appropriate? | |
| Indicator: | Appropriateness of outputs settings and curriculum design |
| Means of Indicator: | Questionnaire for ex-participants and training institutions |

The analysis of this question, may be inferred taking into account the considerations presented by Embrapa Vegetables in its final reports and also the participants' opinions about the good quality of the knowledge received from the course instructors (Table-28) and their high level of satisfaction with the training didactical material (Table-23) and the general knowledge received during the course (Table-29).

Table-28 – Ex-participants’ opinion on the quality of the technical knowledge received from the course instructors.

| Question to Ex-participants | | | Answers | | | | Total |
|---|---|----------------|---------|------|------|------|-------|
| | | | 2000 | 2001 | 2002 | 2003 | |
| How do you grade the technical knowledge passed to you by the course instructors? | A | Excellent | 8 | 6 | 9 | 10 | 33 |
| | B | Good | 1 | 3 | 3 | 4 | 11 |
| | C | Regular | 0 | 0 | 0 | 0 | 0 |
| | D | Unsatisfactory | 0 | 0 | 0 | 0 | 0 |
| Total: | | | 9 | 9 | 12 | 14 | 44 |

Table-29 – Ex-participants’ level of satisfaction with the general knowledge received during the course:

| Question to Ex-participants | | | Answers | | | | Total |
|---|---|----------------|---------|------|------|------|-------|
| | | | 2000 | 2001 | 2002 | 2003 | |
| What is your level of satisfaction with the general knowledge received during the course? | A | Very Satisfied | 9 | 8 | 11 | 11 | 39 |
| | B | Satisfied | 0 | 1 | 1 | 3 | 5 |
| | C | Not Satisfied | 0 | 0 | 0 | 0 | 0 |
| Total: | | | 9 | 9 | 12 | 14 | 44 |

(7) Appropriateness of the Requirement for the Applicants and Selection Process

| Was the requirement for the applicants and selection appropriate? | |
|---|--|
| Indicator | Appropriate of requirement for the applicants and selection. |
| Means of indicator | Questionnaire for training institution. |

Every year Embrapa Vegetables consistently made available the general information (GI) brochure about the training program for the next year's course. After publishing the program and sending it away to the different countries and institutions, a number of candidates were indicated by their respective countries through the proper channels. A Technical Committee at Embrapa Vegetables specially designated to accomplish the analysis of the candidates' background and their commitments to vegetable crops production activities, selected these candidates to fill the previously accorded number of 15 openings. Considering that the program is now on its 10th edition and no selection problems were reported so far, it is evident that Embrapa Vegetables is using appropriate selection procedures. The same is valid for the already established requirements for application. Nevertheless, an analysis of each year's candidates number by invited country shows that some countries indicated more than 10 candidates/year whereas other Countries indicated only one or none candidate/year. This may let the selection committee to a difficult situation when having to discard the only candidate of a certain Country and still maintain a good country diversity participation in the program.

The low number of candidates of certain Countries may be due, among other reasons, to the way the information about the courses were channeled to different Countries and institutions. When Ex-participants were asked about the way they have received the information about the training program (Table-30), 27 of them (61%) answered that it was through the

invitation sent by Embrapa Vegetables to their institutions and only 7% answered that it was through other Ex-participants. It is our opinion that other channels should be more used to spread information about the courses, like Ex-participants returning home, Internet, JICA's office in each Country, Brazilian Embassies, etc. This strategy could result in larger number of candidates per Country making easier to the technical committee to do a fair selection of good candidates and also keep the diversity of Countries participating in the training program.

Table-30 – Ex-participants ways of receiving information about the courses:

| Question to Ex-participants | | Answers | | | | Total | |
|--|---|---|------|------|------|-------|----|
| | | 2000 | 2001 | 2002 | 2003 | | |
| Through which of these channels have you heard about the Vegetable Crop Production International Training Courses? | A | Media | 0 | 0 | 0 | 0 | 0 |
| | B | Invitation by Embrapa Vegetable to your institution | 7 | 7 | 5 | 8 | 27 |
| | C | Ex-participants. | 0 | 0 | 3 | 0 | 3 |
| | D | JICA's Office. | 1 | 0 | 2 | 1 | 4 |
| | E | Internet | 0 | 0 | 1 | 2 | 3 |
| | F | Other source | 1 | 2 | 1 | 3 | 7 |
| Total: | | | 9 | 9 | 12 | 14 | 44 |

(8) Presentation of new and up to date Technologies by the Training Program.

Not applicable. See Curriculum

4.3 CONCLUSION

4.3.1 Factors Promoting Effects of the Training Program

According to statements collected from the institutions, ex-participants and instructors' through questionnaires and interviews, in general, the training program was regarded as of high quality and importance since each course provided excellent opportunity for getting in touch with:

- a) Highly specialized Embrapa Unit: (ex-participants' institution)
- b) Institution with high expertise in vegetable crops and technology transfer: (ex-participants)
- c) Competent researchers and technical personnel; (ex-participants)
- d) A large variety of production systems; (ex-participants)
- e) Production systems that can be readily used or adapted to the participants institution and countries own situation; (ex-participants)
- f) Information on the production systems and problems in vegetable crops production of the invited countries; (instructors)

Among a number of factors that contributed to the effectiveness of the program, the following may be considered as the most prominent:

- a) The quality of knowledge on vegetable crops production and technology transfer made available by Embrapa Vegetables and course instructors to the participants,
- b) The training facilities provided by Embrapa Vegetables to fit the substance of the course and participant needs during the training period;
- c) The important contributions of The Brazilian Cooperation Agency (ABC), JICA's Offices and Brazilian Embassies in the invited Countries;
- d) The financial support of the Government of Japan through JICA's Third Country Training Program and the Federative Republic of Brazil through The Brazilian Cooperation Agency (ABC) and the Brazilian Agriculture Research Corporation (EMBRAPA).

4.3.2 Factors Inhibiting Effects of the Training Program

Nevertheless ex-participants and instructors made some suggestions on changes aiming at further improvements to the substance of the program, as follows:

- a) To increase the proportion between practical and theoretical classes;
- b) To get back to the 6 weeks-course duration in order to include the study tour field trip to São Paulo State Vegetable Crops production fields and also vegetable seed companies.
- c) To extend the financial support for travel, accommodation, and book expenses to Brazilian participants not resident in Brasilia;
- d) To keep sending updated materials to ex-participants after the course conclusion;
- e) To maintain a follow up program for ex-participants;

4.3.3 Conclusion

Taking into account all information from the parties concerned as described in the above paragraph, our conclusion was that the training program as set for those courses fulfilled all the expectation of the participants, and concerned institutions.

CHAPTER 5 - LESSONS LEARNED AND RECOMMENDATIONS

5.1 LESSONS LEARNED

5.1.1 Lessons Learned regarding Situations in Evaluated Country and Sectors

Based on the opinions of the parties concerned, the training program implemented in Brazil showed that the Government of Japan and the Government of Brazil are contributing to the development of vegetable crops production in the invited Latin American and African Countries.

Conducting this course in Brazil was also considered a good initiative due to

- The possibility of covering a large course curriculum in a shorter time and lower costs;
- Opportunity for the improvement of the network and cooperation among Latin American and African Countries.

5.1.2 Lessons Learned regarding Project Management

Ex-participants and instructors made the following suggestions on changes aiming at further improvements to the substance of the program that may be of interest to take into consideration:

- a) To increase the proportion between practical and theoretical classes;
- b) To get back to the 6 weeks course duration in order to include the field trip to São Paulo State Vegetable Crops production fields and also vegetable seed companies.
- c) To extend the financial support for travel, accommodation, and book expenses to Brazilian participants not resident in Brasilia;
- d) To keep sending updated materials to ex-participants after the course conclusion;
- e) To maintain a follow up program for ex-participants.

5.2 RECOMMENDATIONS

5.2.1 Recommendations for the Partner Country Side

- 1) Reference to genetic resources was not made by any of the concerned parties but it is this consultant opinion that at least one period of each course should be dedicated to native vegetable crops species collection and genetic resources conservation. This would be an interesting contribution of the program since there is a tendency of abandoning old native varieties and landraces when new technologies are adopted aiming at the market requirement needs.
- 2) To maintain a follow up program, with an emphasis in the exchange of updated materials to ex-participants after the course conclusion.

5.2.2 Recommendations for JICA

- a) To get back to the 6 weeks course duration in order to include the study tour (field trip) to São Paulo State Vegetable Crops production fields and also vegetable seed companies.
- b) To extend the financial support for travel, accommodation, and book expenses to Brazilian participants not resident in Brasilia;
- c) To keep sending updated materials to ex-participants after the course conclusion;
- d) To maintain a follow up and a financial support program for Ex-participants projects aiming at technology transfer in their countries (JICA).

Considering the results and considerations reported in this study, it is highly recommendable that new course editions be offered in the future in order to benefit other Countries, Institutions, Professionals and specially the African and Latin American developing Countries vegetable crop growers.

ANNEX I
TERMS OF REFERENCE

1. Analysis on Outputs

| Item | Indicator | Means of Indicator |
|---|--|---|
| Was the level of understanding of participants in the area of Vegetable Crops Production improved? | Level of understanding in the area of Vegetable Crops Production | Results of the achievement test |
| Did participants use the knowledge and technologies obtained in the training course in their works? | Works of ex-participants | Questionnaire for ex-participants |
| Was the interchange between participants and training institution strengthened? | Results of interchange between participants and training institution | Questionnaire for ex-participants and training institutions |

2. Relevance

| Item | Indicator | Means of Indicator |
|--|---|---|
| Has the training program been necessary? | Development needs and policies of the targeted Countries | Questionnaire for ex-participants |
| Was the training program the best way to transfer appropriate technology? | The way to transfer appropriate technology(training program) | 1) Final Report 2) Questionnaire for ex-participants and training institutions |
| Was the condition for conducting training better in the host country than in Japan? | The condition for conducting training in Brazil (not in Japan) | Questionnaire for ex-participants and training institutions |
| Was the entrustment of the training program reasonable in terms of improving capacity and ownership of the training institution? | Improving capacity and ownership of the training institution | 1) Final Report 2) Questionnaire for training institutions |
| Was the training program meaningful in terms of promoting networking and cooperation among developing countries | Promoting networking and cooperation among developing countries | 1) Final Report 2) Questionnaire for ex-participants and training institutions |
| Was the setting of outputs and training components appropriate? | Appropriateness of outputs setting and curricula design | Questionnaire for ex-participants and training institutions |
| Was the requirement for the applicants and selection appropriate? | Appropriate of requirement for the applicants and selection | Questionnaire for training institutions |

ANNEX II

Questionnaire for Ex-participants



[VOLTAR](#)

Questionário para Ex-Participantes

Identificação da Participante

Ano em que realizou o curso:

2000 2001 2002 2003

Nome

Endereço do Participante:

Rua:

Número:

País:

Selecione

Cidade

CEP:

Fone: (código do país) (código da cidade) (fone)

Fax: (código do país) (código da cidade) (fone)

E-mail do trabalho:

E-mail particular:

Empresa ou instituição onde trabalha:

Departamento:

Cargo / Atividade atual:

ORGANIZAÇÃO E LOGÍSTICA DO CURSO DO QUAL PARTICIPOU

1 - Como você soube da existência deste curso?

Selecione

2 - Dentre as alternativas abaixo escolha aquela que te levou a decidir por participar do curso

Selecione

3 - O seu objetivo quando decidiu fazer o curso era

- Melhorar os seus conhecimentos sobre transfe tecnologia
- Ampliar os seus conhecimentos técnicos
- Aumentar o volume e a qualidade dos produtos
- Todas as razões acima
- Outro

4 - Você teve dificuldade para se ausentar de sua instituição no período programado para a realização o curso Sim Não

5 - Como você avalia a transferência de conhecimentos realizada pelos profissionais da Embrapa Hortaliças (CNPH) aos participantes?

6 - Como você classifica, em termos de importância para o seu trabalho, o conjunto de materiais didáticos (livros e vídeos) adquiridos pela Embrapa Hortaliças e distribuídos aos participantes durante o curso?

7 - Como você classifica, em termos de importância para o seu trabalho, o conjunto de materiais didáticos (apostilas e hand outs) preparados pelos instrutores e distribuídos aos participantes durante o curso?

8 - Após a conclusão do curso você passou a receber materiais de divulgação técnica da Embrapa Hortaliças (CNPH)? Sim Não

9 - Após realizar o Curso você passou a acessar o site da Embrapa Hortaliças (CNPH) que contém informações sobre o trabalho daquela Unidade de pesquisa

10 - Você tem buscado outros meios para manter-se em contato com a Embrapa Hortaliças (CNPH) para obter informações técnicas mais atualizadas?

11 - Qual o seu nível de satisfação com o treinamento recebido no curso?

RESULTADOS DO CURSO

12 - O que você destacaria como as melhores contribuições do curso para sua atuação profissional (Marque quantas opções achar necessário):

- contato com novas tecnologias
- contato com novos profissionais (participantes)
- contato com a Embrapa Hortaliças (CNPH)
- melhoria das suas qualificações para o trabalho
- melhoria de seus conhecimentos técnicos

13 - Você tem realizado eventos para a difusão de tecnologias para os produtores da sua região/País? Sim Não

14 - Você sabia que a JICA mantém um programa de apoio financeiro a ex-participantes para a realização de atividades de transferência de tecnologia? Sim Não

15 - Você tem interesse neste programa? Sim Não

16 - Você já fez alguma visita ao Escritório da JICA do seu País? Sim Não

17 - Dos conhecimentos e tecnologias repassados aos participantes pela Embrapa Hortaliças (CNPH), quais os que você mais tem aplicado em seu trabalho (classifique as opções abaixo em ordem crescente, colocando no topo os conhecimentos que você mais tem utilizado até embaixo para os que você menos tem utilizado):

- A - Clima para Hortaliças
- B - Manejo da água
- C - Manejo do solo
- D - Manejo de pragas
- E - Nutrição
- F - Colheita e pós-colheita
- G - Sistemas de produção para ca
- H - Horticultura orgânica
- I - Cultivo protegido
- J - Hidroponia

18 - Resuma abaixo em uma frase (duas linhas) o que você realçaria como sendo a sua maior contribuição para a produção de hortaliças da sua região, em consequência dos conhecimentos adquiridos no curso.

Ex: "Menor utilização de agrotóxicos pelos produtor e consequente maior valorização do produto"; "Aumento do interesse dos produtores por novas tecnologias", etc.

SUGESTÕES PARA OS PRÓXIMOS CURSOS

19 - Considerando os avanços da tecnologia na produção de hortaliças, em sua opinião quais os principais problemas que ainda persistem neste setor em sua região ou País (marque até 03 opções):

- Desconhecimento das tecnologias
- Tecnologias pouco desenvolvidas
- Resistência à adoção de novas tecnologias
- Pouca disponibilidade de assistência técnica
- Ineficiência da assistência técnica gratuita
- Distanciamento do setor de pesquisa do setor

20 - Caso a Embrapa Hortaliças pretenda propor a realização de novo ciclo de cursos de produção de hortaliças, você recomenda:

- manter a programação dos cursos exatamente
- manter a programação dos cursos anteriores: algumas modificações
- apresentar uma proposta de temas totalmente

21 - Espaço livre para sugestões:

Enviar

Brasília - DF segunda-feira, 9 de fevereiro de 2004

ANNEX III

Questionnaire for Instructors

[VOLTAR](#)

Questionário para Instrutores

Identificação do Instrutor

Nome _____

Ano em que atuou como instrutor do curso:

 2000 2001 2002 2003

A fim de atender os Termos de Referência para a Avaliação do Programa e, considerando sua experiência com os cursos já realizados, por favor, responda os itens a seguir:

ORGANIZAÇÃO DOS CURSOS TCTP NA EMBRAPA HORTALIÇAS

1 - Você acha que o Brasil é o país mais adequado para o treinamento de técnicos da América Latina e países lusófonos?

 Sim Não

2 - Você acha que o nível de treinamento oferecido nos cursos tem sido compatível com o nível e necessidade dos alunos selecionados

 Sim Não

3 - Você acha que estes cursos, com os objetivos a que se propõe é importante para a Embrapa Hortaliças?

 Sim Não

4 - Como você classifica, em termos de importância para o seu trabalho, a oportunidade de interação com os participantes dos cursos TCTP?

Selecione 

RESULTADOS DO CURSO

5 - Após a conclusão do(s) curso(s) você foi contatado por ex-participantes a procura de mais informações técnicas?

 Sim Não

6 - Você já foi convidado por algum ex-participante para colaborar em algum evento porventura realizado por eles?

 Sim Não

7 - SUGESTÕES PARA PRÓXIMOS CURSOS

Brasília - DF segunda-feira, 9 de fevereiro de 2004

ANNEX IV

Questionnaire for Institutions

[VOLTAR](#)

Questionário para Instituições

Identificação da Instituição

Nome/Sigla

Preenchido por:

Cargo:

Ano em que os técnicos da sua Instituição participaram do curso:

2000 2001 20

A fim de atender os Termos de Referência para a Avaliação do Programa, por favor, responda os itens a seguir

1 - Você acha que o Brasil é um país adequado para o treinamento de técnicos da América Latina e países lusófonos, em produção de hortaliças?

Sim Não

2 - Você acha que a participação dos técnicos da sua instituição no treinamento oferecido trouxe resultados positivos para:

- Sua instituição
 Sua região
 Seu País
 Sua equipe
 Não foi possível medir os resultados

3 - Você acha que estes cursos, com os objetivos a que se propõe, serviu para:

- Aumentar a cooperação entre instituições
 Aumentar a interação entre instituições
 Melhorar a capacitação da instituição para transferência de tecnologia
 Não foi possível medir estes resultados

4 - Como você classifica, em termos de importância para a sua Instituição, a oportunidade de treinamento do(s) técnico(s) da sua Instituição no Programa TCTP?

- Alta importância
 Média importância
 Baixa importância
 Nenhuma importância

Brasília - DF segunda-feira, 9 de fevereiro de 2004

