

Terminal Evaluation

Africa

1. Outline of the Project

Country:

Kenya

Project title:

Design, Production and Maintenance of Fluid Flow Machinery

Issue/Sector:

Agricultural Engineering

Cooperation scheme:

Third-country Training

Division in charge:

Africa Division, Regional Department IV(Africa,Middle East and Europe)

Total cost:**Period of Cooperation**

Fiscal Year 1999 - 2003

Partner Country's Implementing Organization:

Jomo Kenyatta University of Agriculture and Technology (JKUAT)

Supporting Organization in Japan:**Related Cooperation:**

Project-type Technical Cooperation; "Jomo Kenyatta University of Agriculture and Technology (Under Graduate Program) Phase 2"

1-1 Background of the Project

The shortage of water for agricultural production and clean domestic water in Sub-Sahara African countries was a serious problem. Hence it was a major subject for those countries to realize the transition from agricultural dependence on rainwater to stable irrigation agriculture. Major sources of water in this area are located in wells or rivers with lower water levels, and so learning techniques for pumps was very important to disseminate the irrigation agriculture.

JICA has promoted South-South cooperation as one of its major policies and has cooperated with Jomo Kenyatta University of Agriculture and Technology (JKUAT) to foster engineers for a long time. Under these circumstances, upon the request from the government of Kenya, the government of Japan implemented Third-country training to disseminate the experiences of Kenya to its neighboring countries with similar regional characteristics and to exchange opinions.

1-2 Project Overview

The project transferred techniques on design, production and maintenance of pumps necessary for irrigation agriculture to participants from Sub-Sahara African countries.

(1) Overall Goal

To build capacity for mechanical engineering in the East, Central and Southern African (ECSA) region.

(2) Project Purpose

To enhance the skills of participants from ECSA countries for design, production and maintenance of centrifugal pumps.

(3) Outputs

- 1) Participants' techniques and knowledge in design, production and maintenance of centrifugal pumps improved.
- 2) Participants obtain knowledge applicable to local manufacture of pumps, pump parts, servicing and repair of pumps
- 3) Sufficient Kenyan lecturers are upgraded.
- 4) Guidelines, curriculums and schedule for training courses are developed.

- 5) A library of teaching materials and textbooks is established.
- 6) The participants obtain appropriate technology applicable to their respective local conditions.

(4) Inputs

Japanese side:

Equipment

Short-term Experts	1
Local Cost	2.9 million yen
Trainees received	27

Kenyan Side:

Counterparts	11
Land and Facilities	
Local Cost	1.83 million yen

(5) Participant Countries

Zambia, Tanzania, Uganda, Malawi, Ethiopia and Kenya

2. Evaluation Team

Members of Evaluation Team JICA Kenya Office
(Commissioned to: GIBB (Eastern Africa) Ltd.)

Period of Evaluation 10 January 2003 - 31 March 2003
Type of Evaluation: Terminal Evaluation by Overseas Office

3. Results of Evaluation

3-1 Summary of Evaluation Results

(1) Relevance

The training course focused on technical transfer on centrifugal pump equipment that is mostly disseminated in the area, to solve the problem of the shortage of water for agricultural production and clean domestic water in Sub-Sahara areas. The training was consistent with the promotion policy of the South-South cooperation confirmed at the Second Tokyo International Conference on African Development (TICAD II) held in Tokyo in 1998.

(2) Effectiveness

The number of participants admitted to the training course was 27 (90% of full capacity) in three years, and the number of applicants was 41. The project aimed to have 30 participants in three years. According to the questionnaire survey of the participants over three years, more than 70 % of the participants were satisfied with the course level, depth and duration. The reputation of the course depth, theme, contents and the management of the project has become higher and higher since the commencement of the project in 2000. In 2002, all the participants (100%) were satisfied with all the subjects except for the depth (90%). 80% of the participants mentioned "the course was useful" and they "utilized the attained knowledge and techniques in the training" at their workplaces.

(3) Efficiency

As the training was implemented during the vacation period of JKUAT, the participants could efficiently utilize the facilities and equipment. Because the lecturers of JKUAT participated in the training in Japan prior to the commencement of the project, the presentations made in the training course were efficiently implemented. However, there were some participants who mentioned that the 40-day training period was too short to acquire high-level techniques.

(4) Impact

According to the answers to the questionnaire survey from employers and nominating government agencies, 80% of the respondents have "found the skills participants acquired from the course useful." In Uganda and Tanzania, participants have been able to introduce the knowledge and skills learnt in the teaching programs of their respective universities. JKUAT was invited by the Rwandan government to help start similar technical courses in Rwanda. In the meantime, it is necessary to purchase necessary equipment to disseminate the knowledge acquired in the training course, however, there were some differences in terms of the financial status of the participant countries, and it was difficult for some of them to share the burden of expenditure.

(5) Sustainability

Many of the participants have worked at the same department since participating of the project and have disseminated acquired knowledge in the training course at universities and laboratories. JKUAT has capable lecturers and has well equipped facilities to implement similar programs, and so sustainability is high. However, the Japanese government paid 93.72% of the training expenditure, and so the sustainability of the program is dependent on financial support from Japan. The training program may still be continued if the participants were made to pay, but many of them would hesitate to pay the fee. Therefore, to implement the program including surrounding countries, financial support is essential.

3-2 Factors that promoted realization of effects

(1) Factors Concerning the Planning

N/A.

(2) Factors concerning the Implementation Process

- 1) Because the lecturers of JKUAT participated in the training in Japan prior to the project, the presentations made in the training course were more efficiently implemented.
- 2) As the curriculum, manual and guidance of the training course were prepared as scheduled; the training was implemented as planned.
- 3) As the training was implemented during the vacation period of JKUAT, the participants could efficiently utilize the facilities and equipment.

3-3 Factors that impeded realization of effects

(1) Factors Concerning the Planning

N/A.

(2) Factors concerning the Implementation Process

- 1) The training periods were insufficient, depending on the theme, to learn exhaustively including Field Study.
- 2) As there was no follow-up after the termination of the project, the establishment of the acquired techniques and the enhancement of their impacts were not sufficient.

3-4 Conclusion

Some participants pointed out that the training period was too short, however, participants were mostly satisfied with the contents of the training, and so the training was successful. However, most of the training cost was supported by the Japanese side, and so the sustainability of the project was not high.

3-5 Recommendations

- (1) The course duration for future courses should be revised from the current six weeks to at least eight weeks to cover other subjects like foundry and computer aided design in detail, and JICA should continue the support to implement the Third-country Training Program for at least four more years.

(2) The JKUAT personnel are currently taking the training on voluntary basis, yet the course is specialized and demands extra workload and time in order to adequately cover the topics. JICA and JKUAT should include compassionate honoraria in the training program budget.

(3) It is necessary to evaluate impacts of the training at participant countries. Therefore, JICA should financially support JKUAT to conduct the evaluation.

(4) Most of the participants were lecturers of universities or laboratories or those who were related to governmental organizations. To enhance the impacts of the training, it is necessary to promote the recruitment of the participants from private organizations for the training.

(5) It is necessary to promote communication among participants by transmitting newsletters via e-mail to exchange opinions among the participants for future programs.

3-6 Lessons Learned

(1) Follow-up activities should be promoted with third-country training .

(2) Curriculum, manuals and general information should be delivered to the participants with appropriate timing.

3-7 Follow-up Situation

N/A.