

Terminal Evaluation

Europe

1. Outline of the Project

Country:

Bulgaria

Project title:

The Fermented Dairy Products Development Project in the Republic of Bulgaria

Issue/Sector:

Agricultural Processing

Cooperation scheme:

Project-type Technical Cooperation

Division in charge:

Agricultural Development Cooperation
Department

Total cost:

7.41 Million Yen

**Period of
Cooperation**

1 July 1997 - 30 June
2002

Partner Country's Implementing Organization:

Ministry of Agriculture and Forestry, LB Bulgaricum PLC, Capital Inspection for Veterinary and Sanitary Control (CIVSC)

Supporting Organization in Japan:

Agricultural Production Bureau of Ministry of Agriculture, Forestry and Fisheries, Meiji Dairies Corporation

Related Cooperation:**1-1 Background of the Project**

Dairy products such as pasteurized milk, yoghurt, butter and cheese are traditional and staple parts for the daily diet in Bulgaria. Hence, development of Bulgaria's dairy processing industry is recognized to have importance in the health of its people. The state-owned LB Bulgaricum PLC utilizes a rich collection of lactic acid bacteria but due to (1) limited technology, (2) obsolete facilities and (3) a lack of research on the market economy, the company has been unable to make full use of the collection as starters of dairy products. Since the introduction of the market economy, livestock were divided among individual farmers, which resulted in a diminished farming scale across the country. This also caused a marked decrease in the output and quality of raw milk and fermented dairy products. Under these circumstances, the Bulgarian Government made requested the Japanese Government to implement Project-type Technical Cooperation in order to (1) fully utilize its lactic acid bacteria know-how and (2) to improve the quality of dairy products.

1-2 Project Overview

The Project transferred to LB Bulgaricum (the main site), the techniques of analyzing the characteristics of lactic acid bacteria, developing dairy products, and producing starters. The Project also developed techniques on the production of dairy products and a manual. In Capital Inspection for Veterinary and Sanitary Control (the sub-site), measuring and analyzing techniques were transferred to staff in order to improve the management of the quality of raw milk.

(1) Overall Goal

Development of fermented dairy products with internationally competitive quality in Bulgaria.

(2) Project Purpose

Improvement/Development of technologies for fermented dairy products and raw milk quality control at project sites.

(3) Outputs

1) The present situation of raw milk quality control and inspection are identified.

- 2) Improved methods for raw milk quality control and inspection are disseminated.
- 3) Characterization analysis on collected lactic acid bacteria are made.
- 4) New/improved starters are utilized.
- 5) Technologies for yoghurt production are upgraded.

(4) Inputs

Japanese side:

Long-term Experts	9	Equipments	2.32 Million Yen
Short-term Experts	17	Local Cost	0.30 Million Yen
Trainees received	14		

Bulgarian side:

Counterparts	26		
Equipment (including reagents)		0.11 Million Yen	
Renovation of Facilities		0.16 Million Yen	

2. Evaluation Team

Members of Evaluation Team

Team Leader: Kozo INADA/Deputy Director General, Agricultural Development Cooperation Department, JICA

Cooperation Evaluation: Minoru SUZUKI /Deputy Director of General Affairs Division, livestock Industry Department, Ministry of Agriculture, Forestry and Fisheries of Japan

Dairy Products/Raw Milk Quality Control: Bunji KANZAKI, Japan Dairy Technical Association

Planning Evaluation: Makoto SHINKAWA /staff of Livestock and Horticulture Division, Agricultural Development Cooperation Department

Project Cycle Management Evaluation: Isao DOJUN, Chuo Kaihatsu Cooperation

Period of Evaluation 20 January 2002 - 1 February 2002

Type of Evaluation:
Terminal Evaluation

3. Results of Evaluation

3-1 Summary of Evaluation Results

(1) Relevance

Promotion of health industry and the promotion of high technology are both prior subjects of Bulgarian industrial development. The dairy sector plays an important role in agriculture and the Bulgarian government has set a strategy for its promotion and improvement in its development policy. The tasks of improving raw milk quality, developing new useful starters and upgrading yoghurt production technology, the Project targets, are all important in giving the policy substance. Therefore, the project is highly relevant.

On the other hand, LB Bulgaricum is a state owned company with a mission and the necessary apparatus resources to provide technical support to the other domestic dairy companies. Therefore, the company is appropriate as an implementing institution of the Project.

(2) Effectiveness

In the area of fermented dairy products, a database of lactic acid bacteria was developed and 52 kinds of potential starters were identified, of which two were undergoing practical application. In addition, four types (a total 10 kinds) of prototype fermented dairy products were developed and nine process control manuals were completed.

In the area of raw milk quality control, Capital Inspection for Veterinary and Sanitary Control became capable to analyze raw milk by International Dairy Federation standards. This evaluation revealed that all of its staff had obtained the skills on raw milk quality control at a high level as well as the capacity to instruct the staff of the Regional Centers. Capital Inspection for Veterinary and Sanitary Control acquired accreditation as a Laboratory for Testing and Diagnostics by the Bulgarian Accreditation Service. The Project established a model of a raw milk quality analysis system with the assistance of the National Dairy Association, and developed a manual for its extension as well.

As a whole, it can be concluded that the project purpose of "improving/developing technologies for fermented dairy products and raw milk quality control" was achieved.

(3) Efficiency

The timing of dispatch and the fields of the dispatched experts have been appropriate in general. The equipment installed at the main site contributed to the achievement of the results. The counterparts' training in Japan was conducted effectively with consideration of the receiving country. The distribution of counterparts and disbursement of local costs by the Bulgarian side was free of problems. However, the completion of the building for the sub-site was delayed one year.

(4) Impact

1) Area of fermented dairy products (the main site)

a) After the introduction of the equipment during the Project, LB Bulgaricum researchers in the production and research sections had to collaborate, which improved their teamwork.

b) A new Laboratory for research on probiotic effects was established to address market needs for products having health benefits.

c) Calcium-enriched dairy products developed by the project are to be launched.

2) Area of controlling raw milk quality (the sub site)

a) Motivation to improve the quality of raw milk among farmers seems to be increasing, since there are many requests for analysis of milk quality using the raw milk analysis model developed by the Project.

b) One of the counterparts was promoted into an administrative position and is now enhancing the raw milk quality analysis model to incorporate it into governmental programs.

(5) Sustainability

Although LB Bulgaricum is a public corporation, it has had a self-supporting accounting system without government subsidization since its founding. LB Bulgaricum bore 90 percent of the local Project cost expenditures the last year, and the company will be able cover operation costs even after Project termination. The company is to expand its LBB collection database and develop new starters and new fermented dairy products that meet consumer needs. Taking these points into account, this evaluation proved that there is no problem on sustainability in areas of using lactic acid bacteria and yogurt production.

On the other hand, in the area of controlling the quality of raw milk products, it is necessary to improve analytical technology, the use of the results of the analysis, and to promote the analytical system. Japan has been supporting personnel, transportation, purchase of reagents and consumables, management and fixing costs in order to maintain the raw milk analytical system, but the Bulgarian government should cover the these expenses after Project termination.

3-2 Factors that promoted realization of effects

(1) Factors concerning Planning

Although LB Bulgaricum is a national corporation, it manages the revenues earned from its dairy products and has a rich collection of lactic acid bacteria, which made it an ideal target institution for this project.

(2) Factors concerning the Implementation Process

The participation of Japanese fermented dairy product makers and their cooperation in recruiting experts and supporting counterpart training in Japan contributed to effective and efficient transfer of techniques.

3-3 Factors that impeded realization of effects

(1) Factors concerning Planning

The original plan of the Project set as the Overall Goal "development of fermented dairy production and processing of dairy products", and as the Project Purpose "Improvement of technologies for fermented dairy products and raw milk quality control at project sites". However, these were overly optimistic expressions when compared with the subject and contents of this project.

Thus, those goals had to be reviewed and made more in line with the project components at the mid-term evaluation and fixed to cover the appropriate area, as stated above.

(2) Factors concerning the Implementation Process

At the start of the project, the maintenance of sub-site building was delayed a year and this caused a delay in Project activities.

3-4 Conclusion

As the Project purpose is considered to be mostly achieved, the Project can be finalized as planned.

3-5 Recommendations

(1) To develop fermented dairy products which are internationally competitive, LB Bulgaricum should actively utilize the results of the project as well as assign personnel appropriately for effective management.

(2) JICA's technical cooperation to LB Bulgaricum is not intended to support a particular public enterprise, but rather to have a technical impact on the dairy products sector in Bulgaria. LB Bulgaricum should understand the significance of this cooperation and provide technical guidance to domestic dairy industry makers.

(3) The sub-site (Capital Inspection for Veterinary and Sanitary Control) should disseminate the acquired analytical technologies on raw milk quality analysis to other institutions controlling raw milk quality, as a reference laboratory.

(4) The model system should be developed and introduced to the Bulgarian strategy for the dairy sector, which is under preparation, and concrete measures for institutionalizing the system for raw milk quality analysis countrywide should be described in the strategy.

(5) JICA should dispatch an adviser on government policy to the Agricultural Production Bureau in the Ministry of Agriculture, Forestry and Fisheries or in the Veterinary Bureau.

3-6 Lessons Learned

In order to implement the project smoothly, a person who can oversee the overall management should be assigned in the relevant ministries.

3-7 Follow-up Situation

A follow-up expert in the area of rehabilitating dairy farming was dispatched to serve from July 2002 to December 2004.