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DP/ID/SER.B/583
16 October 1987
ENGLISH

PRODUCTION OF BAKERS' YEAST IN HANOI

DP/VIE/80/040

THE SOCIALIST REPUBLIC OF VIET NAM

Terminal report *

Prepared for the Government of the Socialist Republic of Viet Nam
by the United Nations Industrial Development Organization,
acting as executing agency for the United Nations Development Programme

Based on the work of Georg Anderle, chief, technical adviser

Backstopping officer: K. Sepic, Agro-based Industries Branch

United Nations Industrial Development Organization
Vienna

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CONTENT

I. INTRODUCTION

This report refers to the technical assistance project entitled "Production of Bakers' Yeast in Hanoi", executed by the United Nations Industrial Development Organization (UNIDO) on behalf of the United Nations Development Programme (UNDP). The project document was signed by the representative of the the Government of Viet Nam and of UNDP on 18 September and 29 September 1982 in Hanoi.

The full project document was drafted following a preparatory assistance in November 1981.

The project activities were expected to be carried out during a period of two years after the first mission of the Chief Technical Adviser (CTA) in February 1983.

Due to several delays, most project activities could only be terminated in May 1987.

The project funds were utilized for consultancy services, for fellowships and study tours to advanced yeast and bread producing countries, for the provision of essential equipment for the pilot plant and for the installation of the laboratory.

In Chapter III, the project implementation will be reviewed. During the project life several difficulties and technical problems had to be overcome. This was only possible due to the good co-operation between the Viet Nam authorities, the counterpart staff, the subcontracted local companies, UNDP, the Executing Agency, and the international project staff.

III. OBJECTIVES OF THE PROJECT

According to the country's programme, the main orientations given by the Government of the Socialist Republic of Viet Nam were, among others, the following:

- to develop the agro-industrial production in order to guarantee the food supply;
- to develop the production of essential consumer goods;
- to improve management in general and industrial management in particular.

Following these orientations and based on a study prepared by the Hanoi People's Committee to increase bread and consequently yeast production, the project's objectives were to assist in increasing bakers' yeast production through training of staff and provision of specialized equipment and machinery.

In particular, the immediate objectives of the project have been the following:

(a) to train personnel in

- selection and propagation of bakers' yeast;
- bakers' yeast production technology;
- laboratory testing methodology;
- quality control;
- installation, operation and maintenance of bakers' yeast production equipment.

(b) to establish a small unit for the production of bakers' yeast to supply local bakeries and to serve as a model for further development of the bakers' yeast industry in the country. The plant is also to be used for the in-plant training in yeast manufacturing technology, selection of yeast strains, laboratory testing and operation of equipment, etc.

III. MAJOR ACTIVITIES CARRIED OUT

A. General remarks

The project activities which have been required to reach the project's objectives were:

1. The preparatory assistance with the purpose of making an assessment of the existing facilities located at the project site and within the University of Hanoi, to prepare a draft project document and review it after discussions with local authorities and the UNDP Resident Representative.

2. The preparation of the technological design and assistance in the engineering design with the purpose of elaborating all the details required for the technological process and for determination of equipment facilities and other requirements.

3. The plant rehabilitation including building and site preparation, provision of infrastructure and the supply of new equipment and its installation.

4. The training programme with the purpose of upgrading the technical capabilities of the plant personnel.

B. Provision of Expert Services

1. Between 1982 and 1987, expert services were provided by a UNIDO staff member and three international recruited consultants.

The first mission to the project site was the Preparatory Assistance in May 1981.

A detailed assessment of the existing equipment and machinery and the project requirements of the bakers' yeast plant condition in Hanoi was made. Based on this assessment and subsequent discussions held with the local authorities, the project document was drafted indicating the workplan as well as the detailed inputs to be provided by the local authorities and by UNDP/UNIDO.

2. Chief Technical Adviser (11-01)

According to the project design, a CTA on "split mission" was assigned for 6 months covering the total project period. His first mission to the field took place in March 1983 to make a detailed assessment of the existing bakers' yeast facilities in respect to the building conditions, existing equipment, electricity supply, water and steam supply as well as the qualification of the technical personnel. Likewise, the expert was required to assist in the preparation of a flow sheet and a layout for the process.

He reported that the plant had not been operational for more than two months due to mechanical breakdowns. He stated further that the last yeast production was only about 650 kgs of wet-yeast in two weeks from almost 5,500 kgs of molasses (yield: 8.5 kgs molasses for 1 kg wet-yeast produced).

The building was in needy condition as the plaster covering walls and ceilings had fallen off. Most of the floor tiles were damaged, window frames and glass broken. Some walls and platforms were found unsuitable for the support of heavy-duty industrial machinery and equipment. Most of the existing equipment was inoperational. Only a few tanks seemed fit for reconstruction, such as five 700 lt stainless steel tanks, four small compressors, some pumps, tanks and vessels made from cast iron.

Regarding the utility supply, process water had been guaranteed by the City of Hanoi and also electricity while two diesel generators (total capacity 73 KVA) for emergency already existed.

As building and equipment were in inadequate condition, some essential parts were even missing, it was concluded that the project aims could only be reached when the counterparts make all efforts to repair the existing equipment and put it into operational condition.

No fermentation equipment such as centrifuges, fermenters, yeast filters, etc. were operational.

It was recommended to contract an international engineering company to prepare the necessary engineering design. This proposal was not well received by the counterparts in the light of the limited project funds and possible availability of skilled local engineers.

There were some doubts if the counterparts would be able to accomplish the given commitments thus it was suggested to reduce the project's scope to only wet-yeast production and to use the remaining funds for the additionally necessary rehabilitation. This concept was not supported by the counterparts but they assured that all the missing equipment would be provided locally, and on time.

At several meetings, it was agreed that a completely new design for the facilities would be necessary because of the poor condition of the available equipment and building. The new design was prepared during the following months by the local staff and the CTA.

Subsequently, the design had to be changed because of several uncertainties such as non-availability of construction supplies, engineering and installation material, steel and welding equipment.

From 1983 to 1985, the CTA spent in the field a total of 6 man/months, assisting in finalizing and improving the design of civil works and equipment. Likewise, he assisted in the selection and procurement of local and foreign-made equipment and the preparation of the training programme

The CTA too provided in-plant training on design and engineering and conducted lectures in yeast manufacturing technology.

From 1985 to 1986, the CTA spent an additional 4 man/months in the field assisting in the installation and testing of the plant equipment and in the selection of installation and laboratory material. Also, he assisted in upgrading the managerial capabilities. In 1985, he guided the counterparts on a mission trip to Ho Chi Minh City to study and subsequently select a suitable water treatment system. The feasiblity of obtaining high-quality molasses for future large-scale production was equally considered during this trip. He too advised on advanced project management and the suitable yeast production administration system. Four TPR meetings were held in which the CTA participated. Several revisions of the project budget had been prepared.

In April and May 1987, a test run was carried out under the guidance of a consultant in yeast technology and the overall supervision of the CTA.

TPR meetings were held on:

1 April 1984
2 February 1985
21 October 1986
27 June 1986, and
19 May 1987.

For each TPR meeting, a progres report and a workplan was submitted. Besides the TPR records, the CTA prepared the following:

(i) UNDP Progress Reports (1983, 1984, 1985 and 1986);
(ii) UNIDO Evaluation Reports (1984, 1985 and 1986);
(iii) Technical Report 1983;
(iv) Internal Reports and notes describing the project status;
(v) Budget Revisions and
(vi) Draft Project Terminal Report.

3. Consultant for Equipment Installation (11-51)

In July 1985, Mr. Heel started his assignment for a period of 4 months in order to assist in the installation of the locally made and purchased equipment.

Initially, he assisted solely in the repair of the locally manufactured equipment and in the installation of outfittings.

As the counterpart was short of many essential tools, e.g. welding equipment, important work such as stainless steel piping could only commence with delay. Some of the locally-made equipment was not suitable and had to be first repaired and modified which resulted again in delays. His assignment was extended until July 1986 (12 months) in order to provide the installation company with the necessary assistance for the entire period of equipment installation.

However, some final adjustments and installation of instruments could only be completed in December 1986.

He prepared a report on his activities, which has been commented on separatly.

4. Consultant in yeast production (11-52)

In April 1987, the consultant in yeast technology, Mr. Nizamov arrived together with the CTA. A two months mission had been scheduled for April/May 1987 after postponement of several times due to deferments in the installation and preparation works. Unfortunately, not all prerequisites for the starting-up of the plant had been fulfilled: the molasses which had been purchased was partly fermented in the storage tanks; the cooling machines were leaking, some equipment had not been installed and the operators had not been fully familiarized with the machinery. There was no process (sterile) water available and the nutrients were of very low quality.

Under his guidance, several laboratory tests were carried out in order to try to utilize the raw materials for the first test run. The results had shown, that the raw material was not suitable for yeast production, but it was agreed to a test-run in order to examine the equipment and train the operators on-the-job. Due to the low quality of molasses and problems with the air supply, the yeast quality was very low and due to failures in the cooling system, the yeast autolized and most of the production had to be drained away.

A second test-run was carried out under his guidance with better, but not completely satisfactory results because of the poor quality of the molasses, utility supply and failures in equipment handling. The yeast could be used for bread production, but was not suitable for drying.

The consultant prepared together with the CTA a set of technological data sheets for normal grade molasses and for the preparation of various chemicals. He gave advice on laboratory testing, yeast-strain cultivation, process control, wet yeast and active dry-yeast technology

In his report he pointed out that the installation is adequate as pilot plant for training of yeast technologists, to carry out trials in yeast production and to supply local bakeries with yeast. He mentioned that after some problems (raw materials, water treatment, cooling machines, untrained personnel) will be solved, production will improve and ADY manufacturing on a small scale industrial level could be carried out.

In his recommendations, he advised that the knowledge gained during the fellowship programme should be provided to the operators and the personnel who did not have the opportunity to participate in the programme. Maintenance and operation of the equipment should be improved. With regard to the raw material and utility situation, the factory management should purchase normal grade molasses as well as technical quality chemicals and improve the water treatment system.

With regard to the laboratory, it was recommended to purchase some additional materials and to increase the staff in order to improve the microbiological and chemical control of raw materials and yeast production.

He offered also his assistance in providing additional training in active yeast production.

C. Training

The training programme consisted of in- and out-plant training.

1. In-plant training

In-plant training already started during the first visit of the CTA with lessons in industrial yeast production and in design and engineering. The lessons were continued during each of the CTA's missions. Also advices were given by the consultants for installation and yeast technology in their respective fields, specially on equipment maintenance and operation and in production control and laboratory testing methods. Some 30 key counterpart staff and workers from subcontracted companies participated in the training.

By solving day-to-day problems and overcoming difficulties, the project management gained substantial experience in the project execution and implementation which qualifies at least five engineers, who were, since the beginning, continuously working in the project to execute

similar projects in the future.

2. Out-plant training

The out-plant training consisted of a study tours and a fellowship programme.

2.1 Study tour

In September 1983, a study tour of four weeks consisting of 6 members was realized. During the tour, visits to the following institutions and companies took place:

In Austria:
- Institute for Food Technology, University of Vienna;
- Institute for Technical Microbiology, University of Vienna;
- Yeast factory, Mautner Markhof, Vienna;
- Yeast factory Harmer, Vienna;
- Bread factory Anker, Vienna.

In Switzerland:
- Aeromatic AG, Bubendorf (ADY equipment);
- Glatt AG, Basel (ADY equipment)
- Sandoz AG, Basel (Laminar flow, pharmaceutical production and drying equipment).

In the Federal Republic of Germany:
- Glatt AG (ADY equipment)

In France:
- Speichim SA, Paris - Engineering Company
- Lesaffre Yeast Factory, Paris.

A visit to the Podravka Yeast Factory to see ADY production did not take place. The duration of the study tour was sufficient to give the participants an impression of modern yeast production technologies and equipment, research factilities and to perceive different bread-making technologies. Unfortunately not all participants have continued to work in the project, therefore some of the experience and knowledge gained could not be exploited.

2.2. Fellowships

The fellowship programme for 8 participants was carried out from October to December 1984 in several yeast factories in the German Democratic Republic.

The eight participants have received theoretical lessons in yeast production, yeast strain cultivation, laboratory control, operation and maintenance of equipment. They also participated directly in yeast production and quality control in various factories. The theoretical lessons were very intensive, while the practical programme was limited to the basic topics of wet yeast production. Training in active dry yeast

production was not provided due to technical problems at that time. However, the participants have acquired technical knowledge and gained useful experience for their future work.

An additional training on maintenance and operation of yeast centrifuges at Wesphalia Comp. in the Federal Republic of Germany which was organized by the CTA for 4 fellowship participants could not take place.

D. Provision of Equipment

Various equipment, machinery, installation material, laboratory and instrumentation material was supplied. These included mainly:

(1) Laboratory equipment:

glassware
chemicals
microscope
pH meter
colorimeter
centrifuge

(2) Pilot plant equipment:

yeast propagator 500 lt
prefermenter 5000 lt
main-fermenter 25000 lt
several pumps and vessels made from stainless steel
heat exchanger (cooler)
filter press for yeast cream
air compressor for main fermenter
air compressor for instrument air
granulator
fluid bed dryer for yeast, complete with air conditioning device
can seamer
instrumentation for pilot plant
piping and installation material

(3) Diverse:

transport vehicle

The equipment was ordered in accordance to the specifications identified by the counterparts and the CTA and ordered from well reputed manufacturers of which the equipment had already proven its suitability in similar projects. Due to the changes and delays in the engineering work and the fact that the counterpart could not provide all the machinery as originally expected, several changes were necessary in the purchase (volume, quality and quantity specification) which resulted in additional delays and an increase in the project budget.

E. Government contribution

The Government provided the necessary personnel to carry out the project activities, certain equipment and machinery for yeast production, the utility supply system and the civil works.

The following personnel was working in the project:

- The National Project Director (half-time);
- The Deputy National Project Director;
- Several engineers specialized in mechanical engineering, utility supply systems, electrical engineering, civil works, microbiology and yeast technology; and
- Several skilled workers for the equipment installation, utility supply and building reconstruction.

Aside from the above-mentioned technicians administrative support was also provided by the counterparts. All personnel involved in the project had reasonably good knowledge in the field of specialization and contributed actively to achieve the project's objectives. Good co-operation with the international experts as well as a friendly atmosphere was evident during discussions. The civil works have been completed in accordance with local standards and are suitable for yeast production, except some details in the finishing works, such as floor tiles, steps.

The counterparts' contribution consisted of:

(i) the reconstruction of the old building and the construction of new parts, including a new roof, new platforms, floors, cold storage and water treatment as well as an access road. The drainage system and the water supply were reconstructed and the laboratory facilities built.

(ii) the provision of equipment for yeast production and the utility supply consisting of several tanks for the molasses storage and preparation, vessels for the yeast cream, steam boiler, cooling machine, airconditioning equipment and some electrical equipment.

Various problems were encountered with the quality of certain equipment and also with the building reconstruction. Some additional repairs and adjustments had to be made. There were parts, like pumps for molasses and ice water, that could not be modified in order to meet the requirements of the processing and therefore these had to be purchased from project funds. This was also the case with certain installation and finishing materials, and instrumentation, which had to be installed into locally made equipment.

IV. PROJECT RESULTS AND ACHIEVEMENTS

The project results are a notable contribution to the achievement of the development objective.

In executing the project, the personnel involved improved their management skills in general, and industrial management in particular and had an immediate opportunity to utilize their gained knowledge in the activities.

The personnel had been successfully trained in the design and installation of bakers' yeast facilities. Yeast technology was transferred as well as proficiency of correct operation and control of the process. The technical cadre who was constantly involved in the project activities will gain even more experience and confidence during the future envisaged full-scale production. They wil become competent and fully conversant in the implementation of similar projects adjusting to a possibly increased demand for yeast. They are technically abie to contribute and actively participate in comparable biotechnological projects and they are fit to train their colleagues in this specialty.

The 30 workers who were engaged in this project do possess the basic experience necessary to operate and maintain the plant equipment. They can be recruited to assist the chief engineers in the development of future project.

14 Vietnamese cadres had successfully participated in study tours and fellowships. Unfortunately, only seven of the fellows remained in the project. Some of the study tour members have left the project since. Some had left the project scene immediately upon return, hence could not contribute in the initially extremely difficult phase of the project.

The installed unit is capable to produce 450 tonnes of bakers' yeast per year from which 350 tonnes can be transformed into active dry yeast.

This is more than the actual demand of yeast in the region, so that bread production will not have to be reduced due to a shortage of yeast. However, proper planning is required for the provision of necessary raw materials and chemicals for the yeast production and also for the sufficient amount of flour to produce the required quantity of bread.

As yeast is a highly valuable source of protein, the project results will also contribute to the efforts made by the Government to increase the supply of protein, vitamins and minerals in the local food market. The increase in the availability of yeast will probably stimulate the consumption and the production of leavened bakery products and probably also other yeast containing products.

The plant has laboratory facilities for the production control, and to carry out some development works. The facilities are adequate for training of students and workers in technology and operation. It is not yet fully equipped to carry out all required microbiological and chemical analyses and specific research work, which may be done in co-operation with the Hanoi University.

During the test operation period effected from April to May 1987, there were several fermentation batches carried out. The results have not fully reached the expectations. Active dry yeast could not be produced because

- molasses was contaminated, partially fermented and contained toxic substances inhibiting yeast growth
- water was polluted
- preparation of molasses and nutrients was mishandled
- dosification of raw materials, air and chemicals was not carried out according to the instructions provided
- cooling system was not operational because of leaks in the compressor assemblage
- electricity supply was interrupted a number of times.

However, most of the wet-yeast produced was used for bread production in the Tuong Mai Factory with satisfactory result.

V. CONCLUSIONS AND RECOMMENDATIONS

1. Conclusions and findings

The project can be considered to be completed in terms of the objectives achieved. However, the completion of the project has been delayed for almost 18 months due to several unforeseen circumstances, while the active dry-yeast section is still not fully operational. The scope of the project and certain problems have been underestimated. This meant a loss of production and also a reasonable increase in the project budget from US$ 499,451 to US$ 628,936 (see Annex 1 and 2) in order to overcome shortcomings and to solve the problems.

The volume of work for the reconstruction of the building and civil works in general as well as for the repair of the existing equipment and the rehabilitation of the utility system was underestimated.

In the original project design it was expected that more local equipment and machinery would be available for the project. Unfortunately, these had either been transferred to other places or had broken down. Most of it could not be utilized in the project and others could only be repaired with certain difficulties. The procedures to place orders for repairs were very time-consuming and in many cases, tools and installation materials were missing and had to be purchased from project funds.

The design for the rehabilitation of the yeast factory, which was prepared locally before the project started, had to be modified

The counterparts were not prepared for all these activities and could only complete them with additional assistance of UNIDO consultants.

The basic idea in the project design was that the administration and execution will be carried out mostly by the local counterparts and that a "CTA on split mission" will mainly assist in solving technical problems and specific administrative matters. The intention was to reduce project costs but not the specifically demanded allocations for training (study tours, fellowships) and equipment. Unfortunately, there were shortcomings which caused delays in the implementation of the project (specifically during the installation period) and required more funds for additional expert services. Additionally, a project management committee which met periodically and monitored the project activities, assisted in solving current problems.

Other reasons for the delay were that subcontracted local companies did not fulfil their contracts on time and the changes in the design were made during the installation period and after some machinery had been ordered, because the original design did not meet the requirements of the local authorities, which were not involved in the project since it commenced.

It is to be noted that:

- Only a strong administration and management can solve problems and avoid delays;

- the team which had been nominated for the execution and completion of the project should not have been unnecessarily changed.

During the test-run, it has been learned:

- the supply of raw materials and utilities must be guaranteed throughout the operation period to achieve success in production

- the importance of a continuous laboratory control of the process, the raw material, the intermediate and final products

the significance of proper handling and maintenance of equipment.

Recommendations

Based on the conclusions of the project, it is recommended:

1. To learn from the problems that the project encountered and solved and avoid similar problems in future activities;

2. To use the plant and the experience gained to improve the yeast production and to train students and workers in this field of biotechnology;

3. To improve the supply of raw materials and utilities in order to meet the demand for yeast in the region in the future;

4. As long as no normal grade molasses is available, production should be carried out with the partially fermented one in order to train the operators and to provide the Tuong Mai Factory with the necessary amount of yeast for the daily bread production;

5. To improve the infrastructure, to repair some damaged machinery, to complete the laboratory installation and the stock of spares and accessories;

6. To request assistance of an expert in active-dry-yeast production after normal grade molasses has been received and analyzed and the recommended activities completed.

With regard to the future activities, it should be borne in mind that yeast is a very valuable source of protein and can be utilized as supplement to low protein food or as raw material for yeast extracts and soups.

As one of the project's objectives had been the improvement of bread production and it had been learned that sometimes there are certain problems within the flour supply and storage, installation of a grain (wheat) mill should be considered. It is assumed that supply handling and storage of whole grain will decrease the actual losses and improve the supply of bread and leavened products.

A closer co-operation with local research institutes should be established.

It is desired that the plant and project's outputs contribute to the efforts made by the Government to improve the life and well-being of the population of Hanoi and its neighbouring regions.

Annex I

UNITED NATIONS DEVELOPMENT PROGRAMME

PROJECT REVISION

COUNTRY: VIET NAM

TITLE: Production of Bakers' Yeast in Hanoi

PROJECT NO: DP/VIE/80/040/D/01/37

Project revision reflects the amounts available for the period 1982-1986 as requested. Expenses already charged to the 1981 budget are also included, thus increasing the total of US$ 496,000 to US$ 499,549. Mr. Englund's letter to Mr. Butaev of 30 November 1982 refers.

The change to the project budget - UNDP input is as follows:

Previous UNDP input - Project budget code "C"	US$ 500,000.-
Revised UNDP input - Project budget code "D"	US$ 499,549.-
UNDP input - decrease	US$ 451.-

(for) D.G.A. Butaev, Director, DIO — 23 December 1982

Agreed on behalf of the Executing Agency — Date

31/1/83

Approved on behalf of the UNDP — Date

K. H. Englund

HANOI REVISION/OBLIGATOIRE DE PROJET - 1987

PAYS	NUMERO DU PROJET/AMENDMENT	P.P.C.S.A.	IMPRIME LE DATE
VIET NAM	DP/VIE/80/040/Q/01/37	J13103	87/04/08

TITRE DU PROJET

PRODUCTION OF BAKERS' YEAST IN HANOI

PERSONNEL DU PROJET EXPERTS/DESIGNATION DU POSTE	TOTAL H/M	TOTAL $	72-76 H/M	72-76 $	77-81 H/M	77-81 $	82-84 H/M	82-84 $	1985 H/M	1985 $
11-01 CHIEF TECHNICAL ADVISE	13.4	91,100					5.0	22,275	4.0	21,206
11-50 CONSULTANTS COURT TERM	13.4	118,155							4.7	40,717
11-XX	26.8	209,255					5.0	22,275	8.7	61,922
15-00 VOYAGES EXPERTS PROJEC		1,657						1,001		
16-00 AUTRES DEPENSES D.PERS		11,219				3,549		3,710		
19-00 SURRENDER PY OBLIGS		8,542-								235-
1X-XX	26.8	213,589				3,549	5.0	26,986	8.7	61,687
31-00 BOURSES INDIVIDUELLES		32,240						32,240		
32-00 VOYAGES COLLECTIVE PNU		28,564						28,564		
39-00 SURRENDER PY OBLIGS		6,168-								6,168-
3X-XX		54,636						60,804		6,168-
41-00 MATERIEL CONSOMPTIBLE		2,000								
42-00 MATERIEL NON CONSOMPTI		361,409						252,861		79,342
49-00 SURRENDER PY OBLIGS		10,976-								9,341-
4X-XX		352,433						252,861		69,001
51-00 DEPENSES DIVERSES		8,278						2,652		1,226
TOTAL	26.8	628,936				3,549	5.0	343,323	8.7	125,746

OBSERVATIONS

PAYS	NUMERO DU PROJET/AMENDEMENT	P.P.C.S.A.	IMPRIME LE DATE
VIET NAM	DP/VIE/80/040/O/01/37	J13103	87/04/08

ERSONNEL DU PROJET ERTS/DESIGNATION DU POSTE	1986 H/M	1986 $	1987 H/M	1987 $	1988 H/M	1988 $	SUBSEQ H/M	SUBSEQ $	H/M	$
11-01	1.4	18,351	3.0	29,269						
11-50	6.7	58,556	2.0	18,882						
11-XX	8.1	76,907	5.0	48,151						
15 0		156		500						
15 00				3,980						
15-00		8,307-								
1X-XX	8.1	68,756	5.0	52,611						
31-00										
32-00										
35-00										
3X-XX										
41-00				2,000						
42-00		15,462		14,724						
45-00		1,635-								
4X-XX		13,827		16,724						
51-00		779		3,621						
TOTAL	8.1	83,362	5.0	72,956						

Annex II

PROGRAMME DES NATIONS UNIES POUR LE DEVELOPPEMENT

REVISION OBLIGATOIRE DE PROJET 1987

PAYS: VIET NAM

TITRE: PRODUCTION OF BAKERS' YEAST IN HANOI

NO. DU PROJET: DP/VIE/88/048/O/01/37

Le budget ci-joint établi pour le projet susmentionné est réécheloné par la présente, compte tenu des dépenses effectives pendant l'année 1986 et de leurs incidences sur le budget des années ultérieures.

INCREASE ON BUDGET LINES 15, 42 AND 51 IS COMPENSATED BY DECREASE ON LINE 41 AND 1986 REFUNDS ON LINES 18 AND 48.

Le budget du projet - apport du PNUD - est modifié comme suit:

Apport précédent du PNUD - code budgétaire	"P"	$628.936. (total, ligne 99)
Apport révisé du PNUD - code budgétaire	"O"	$628.936. (total, ligne 99)
Augmentation de l'apport du PNUD		ZÉRO

p.p. A.A. Vassiliev, Deputy Director-General
Accepté au nom de l'ONUDI — 18 APR. 1987 — Date

Approuvé du nom du PNUD — 2 JUIN 1987 — Date

PROJECT BUDGET COVERING UNDP CONTRIBUTION

(in US Dollars)

Country: VIET NAM

Project No: DP/VIE/80/040 /D

Title: Production of Bakers' Yeast in Hanoi

		TOTAL		1981		1982		1983		1984		1985	
10.	Project Personnel												
11.	Experts/Post title	m/m	$	m/m	$	m/m	$	m/m	$	m/m	$	m/m	$
11.01	Chief Technical Adviser	8	55,500					2	13,800	3	20,700	3	21,000
11.50	Consultants	5	34,500					2	13,800	3	20,700		
11.99	Sub-total	13	90,000					4	27,600	6	41,400	3	21,000
16.00	Other Personnel Costs including P.A.		6,900		3,549						3,351		
19.	Component total	13	96,900		3,549			4	27,600	6	44,751	3	21,000
30.	Training												
31.00	Fellowships	24	72,000								72,000		
32.00	Study Trous, UNDP G. Training/Meetings	6	25,800						25,800				
		30	97,800						25,800		72,000		
49.	Equipment		299,849						246,600		53,249		
59.	Miscellaneous		5,000										5,000
99.	Project Total		499,549		3,549				300,000		170,000		26,000
999.	UNDP Total		499,549		3,549				300.000		170,000		26,000

Annex III

Minutes on the

Terminal Tripartite Meeting

Project VIE/80/040 - Bakers' Yeast

Date: 19 May 1987

Location: Tuong Mai Factory, Hanoi

Agenda: see Annex 1

Participants: see Annex 2

1. The meeting was opened by Mr. Huong. He introduced Mr. Le as chairman of the meeting and asked Mrs. Nhien the National Project Director to present her report.

2. Mrs. Nhien began her presentation by giving some background information which had been originally considered for the implementation of the project. She reviewed the inputs, contributions and activities of the counterpart to the project and the problems encountered.

3. Mr. Roejkjaer reminded the chairman that the purpose of the meeting should be to discuss policies and not technical matters which was agreed by the chairman.

4. Mr. Anderle gave a summary of the Draft Terminal Report emphasizing the project objectives, activities, results and recommendations. He reminded the problems which have caused delays in the implementation and which required additional funds:

- the design was changed several times
- the delivery of locally made equipment was delayed due to non-availability of funds and materials
- shortcomings in the management required additional expert services (CTA and Installation Expert)
- adjustments on local made and imported equipment were necessary in order to assemble them

He concluded the following:

- a modern pilot plant has been set up for yeast production with adequate laboratory facilities,

- the national technical cadre have been trained and is capable to handle the installation, train the operators and improve the performance of the facility. Although, some experience gained could not be utilized as not all participants of study tour and followship had been reassigned to the project,

- the results of the test run did not fully meet the expectations due to shortcomings in the raw material and utility supply and in the infrastructure of the factory.

He expressed his hope that the current problems will be solved soon and that production will improve. In order to ensure continuity of the plant and success in yeast production in the future he put forward the recommendations made in the Draft Terminal Report:

- to improve raw material and utility supply, infrastructure and maintenance

- to use the experience from this project in other similar and to use the facility for upgrading knowledge of students and operators in biotechnology

- to consider possible follow-up assistance from UNDP/UNIDO on ADY production after all current problems have been solved

- to improve cooperation with local research institutes

- to consider yeast also as a high valuable protein source and use it as additive to other food-products and

- that a better handling and supply of flour should be considered in order to meet the ultimate target on improvement in bread supply to the population.

He concluded his statement by expressing his thanks to all parties which supported the project and actively contributed to its termination and asked for acceptance of his report.

5. Mr. Sepic announced his acknowledgement to the personnel which executed and terminated the project, specifically to UNDP for increasing the project funds. He reminded that the equipment is valuable and complicated and should be handled carefully but without any fear. The factory should use it carefully and maintain it properly so that it will still be operational in 3 years. To ensure production of yeast, the Government authorities should help the factory to fulfil this task.

6. On behalf of UNDP Mr. Coeur-Bizot explained that this project should be considered as a case-study because for the first time of this type in Viet Nam:

- there has been a combination of a part- time CTA and a local project management responsible for carrying out a project and

- there has been a combination of local made and imported equipment in order to construct a pilot plant unit.

As already mentioned in the TPR-meeting in June 1985, the results should be very carefully examined and lessons should be drawn so as to know if conditions in Viet Nam are suitable to receive technical assistance related to the establishment of such pilot production units.

Then he made specific remarks on the following issues :

- regarding the results of the test run he asked when and how the shortcomings in the raw material and utility supply will be solved

- with reference to trained personnel he wondered why not all the participants had been reassigned to the project.

He agreed with Mr. Sepic about the concern for the delivered equipment and raised the question if conditions are existing for continous operation. Finally he requested the assistance of Government authorities to the yeast production and to the distribution of yeast to the bakeries in order to meet the final objective namely the improvement of bread supply.

7. Mr.Roejkjaer reminded that yeast-production is a biological process which requires more skills and attention then others. In order to see how the plant will perform in the future he recommended the fielding of a post-project evaluation in about 6-10 months.

8. Mrs.Nhien appreciated the concern of the UNIDO and UNDP representatives.

She agreed with the recommendations of the Terminal Report and the indications for the improvements of the production.

In order to follow the recommendations she requested:

- more assistance from Government authorities for the supply of good molasses

- more funds (from Government authorities and UNDP) for the improvement of the utility supply system, spare parts and additional assistance.

She acknowledged the good quality of the pilot plant equipment and appreciated the lectures given by Mr. Anderle and Mr. Nizamov. However, they should give some more lectures during their remaining time in VietNam.

Mrs. Nhien appreciated the concern of UNIDO and UNDP representatives. She agreed with the recommendations indicated in the Terminal Report and this given by the CTA for the improvement of the production performance.

9. Mr. Boi in his introduction expressed his fully agreement to Mr. Sepic's concern and his gratitude to the efforts made by Mr. Anderle in the execution of the project.

To answer the question raised by the UNDP representatives, Mr. Boi mentioned that the project objectives as outlined by the CTA were fully in line with the target identified by the Government:

- to improve food production through biotechnology and

- to upgrade the knowledge in biotechnology.

He agreed that the process requires high quality raw materials and utilities. Further he commented some issues of the project implementation:

- delays caused by the Hanoi People's Committee as not enough attention had been paid to the project;

- several difficulties had been encountered by adapting local made and international equipment;

- a local full time project manager would have assured a more smoothly implementation.

However the experience gained should be used to improve the situation and the project's performance in its future activities.

In order to meet this target:

- the city should give priority to water supply and water quality control,

- contacts to local research institutes (e.g. FIRI) should be more intensive,

- the trained people (participants of study tours and fellowships) must be reassigned to the project (which is a rule).

He confirmed the full support for the project in the future from government authorities and PCH and requested Mrs. Nhien and Mr. Anderle to prepare a detailed list on the requirements (spare parts, accessories, etc.) which are necessary for a successful continuation of the project.

He agreed on the termination of the project and mentioned that the achievements will be used for further development of the city.

9. Mr. Le replied that:

- those participants of the study tour and followship which are still in the city will be reassigned to the project
- provisions will be made for the supply. of good quality molasses
- the water treatment wil be improved
- priority will be given to the electricity supply of the factory.

He agreed on the evaluation of the project after a 10 month period and reminded the NPD and the CTA to prepare a list of the necessary accessories. Finally he thanked the Representatives of the Government, UNDP and UNIDO for their participation and asked them for further comments.

10. Mr. Sepic on behalf of UNIDO expressed the wish to see the plant continue working. For this probably spare parts and more assistance in ADY production will be necessary. However the project should be terminated now and the remaining funds be used for spare parts and for eventually necessary expert services. Upon request (or upon recommendation of the evaluation mission) additional assistance could be provided.

He recommended also the possibility of assistance to this project through other projects in the fermentation industry and to avoid isolation of different projects in the same field. He said that a continuation of the project would raise the question of the project's appropriateness to local conditions.

11. Mr. Boi agreed with Mr. Sepic's recommendations and proposed

- that the balance of the project budget should be used for the purchase of spare parts,

- the trained people (participants of study tours and fellowships) must be reassigned to the project (which is a rule).

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11. Mr. Boi agreed with Mr. Sepic's recommendations and proposed

- that the balance of the project budget should be used for the purchase of spare parts,

- that the project should be terminated and the facilities be transferred to the government and

- that in case of need a post project evaluation mission will be requested.

He supported the recommendations of the Terminal Report, specifically the improvement of cooperatives with local research institutes as emphasised by Mr. Sepic.

12. Mr. Coeur-Bizot summarised the results of the meeting as follows:

- the project can be terminated,

- Hanoi People Comittee will provide the raw material base for a better operation in the future,

- in about 10 months time a post project evaluation mission will be scheduled upon request,

- the Draft Terminal Report has been accepted and will be finalised and submitted officially by UNIDO.

13. The chairman closed the meeting by thanking all the participants.

Morning 19/5/1987 : TPR-VIE/80/040 (at Tuong Mai)

Vietnamese participants

CERPC : - Mr. Vu Tat Boi, Director Department at CERPC
- Mr. Nguyen Huy Chuong, Section Chief at CERPC

SCF : - Mr. Le Huu Cat Dien and Mrs. Thanh (experts)

SCST : - Mr. Nguyen Xuan Thuan and Hoang Tuyet Minh (experts)

AIDRECEP: - Mr. Nguyen Van Le, expert

Hanoi People Committee

- Mr. Nguyen Ngoc Le, Vice Chairman of Hanoi PC
- Mr. Ta Hoang Khai, Deputy Director of Hanoi Planning Service
- Mr. Thanh, Director, and Mr. Ngo Hong, Deputy Director of Hanoi Food Service
- Mr. Nguyen Thanh Long, Expert from Hanoi , External Relations Service
- Mr. Đang and Mr. Thiem, experts from HPC office
- Mr. Minh, Mrs. Tam and Mrs Cam, experts from Hanoi Food Service .

Tuong Mai Bakers Yeast Factory

- Mrs. Pham Thi Nhiên, Director of Factory ; National Director of Project VIE/80/040 .
- Mrs. Đo Thi Tinh, Deputy Director of Factory and Deputy NPD of project
- Ms. Vu Tuong Van, Engineer, expert
- Mr. Toan, Interpretor

Observors

- Mr. Nguyen Quoc Dat, expert from Agricultural and Food Industry Ministry .
- Mr. Tran Que and Mrs. Nguyen Thi Tuc, experts from Hanoi Refrigerant Equipments factory.

B) On behalf of UNDP

Mr. A. Roejkjaer, Resident Representative

Mr. P. Coeur-Bizot, Deputive Resident Representative

Mr. L.X.Kien, Programme Assistant.

C) On behalf of UNIDO

Mr. K. Sepic, Head Agroindustry Branch

Mr. G. Anderle, CTA

Mr. A. Nizamov, Consultant.