

PN-430-430
ISN 94673

SUSTAIN

ASSESSMENT: DAIRY

JANUARY 16 - FEBRUARY 9, 1995

NEPAL

Sharing
United
States
Technology to
Aid in the
Improvement of
Nutrition

A U.S. Private Food Industry initiative
in collaboration with the U.S. Agency for International Development
through a Cooperative Agreement with the National Cooperative Business Association

Upgrading the Food Processing Industries in Developing Countries.

Why SUSTAIN?

SUSTAIN represents a successful collaborative effort between the U.S. food industry and the Agency for International Development (A.I.D.) to upgrade food processing in developing countries. It provides an excellent model for similar private-public sector joint ventures in health, agriculture and other areas of concern to developing countries.

Food processing is a major contributor to development. It serves multiple roles. Food processing can increase the available food supply by extending the life of perishable food products. It can improve the nutritional quality of the diet by making nutritious foods available the year round. It can lead to the growth of related enterprises in transportation, storage, distribution and marketing. And, it can produce much needed foreign exchange by creating value added products both for export and for internal substitution of imported processed foods.

The U.S. food industry has embraced the concept that freely sharing its expertise and knowledge is of mutual benefit to recipient and donor - to the recipient by improving current operations - to the donor by contributing to a healthier global future.

How SUSTAIN Works

A.I.D. missions and trade associations in developing countries publicize SUSTAIN's goals and activities. Executives of U.S. food companies with technical expertise and overall knowledge of the food industry serve as the SUSTAIN Steering Committee, providing guidance and overseeing activities.

Food related companies in developing countries submit their requests to SUSTAIN through the A.I.D. mission or a designated organization in their country. SUSTAIN screens all incoming requests and if necessary asks for additional information. Appropriate U.S. companies are then invited to respond.

Some problems can be readily resolved by providing information. Others require that consultants be sent. When a consultant is sent, the usual assignment is for one to three weeks. Upon completion of the assignment, the consultant prepares a report describing findings and making recommendations. Depending on need, some consultants may return for follow-up visits to ensure that recommendations have been appropriately implemented.

SUSTAIN Helps

Requests are diverse. Help may be needed to solve processing problems, to identify equipment needs and sources of new and used equipment, to train personnel in the use of new equipment and new technologies, to find new uses for indigenous commodities, to establish or improve quality assurance procedures, to control insects and rodents in food processing plants and to improve plant layouts and materials handling.

In the past, U.S. food companies, large and small, have provided technical assistance in the form of information, consultants and training to food processors in Africa, Asia, Latin American and the Caribbean.

ASSESSMENT: Dairy Products

Nepal

January 16 - February 9, 1995

by

SUSTAIN Volunteer

Raymond Binkley

in collaboration with

the Regional Agribusiness Project (RAP)

for Asia, USAID

This publication was made possible through support provided by the Office of Health/Nutrition; Bureau for Global Programs, Field Support and Research; U.S. Agency for International Development, under Cooperative Agreement No. DAN-5120-A-00-1066-00 and by the U.S. Department of Agriculture/Foreign Agricultural Service/International Cooperation & Development/Development Resources Division under Agreement 589-319R-4-0407.

TABLE OF CONTENTS

Report

- I. Introduction**
- II. Report**

Appendices

- I. SUSTAIN Description**
- II. Request from USAID/Kathmandu**
- III. Two Letters from Development Alternatives, Inc.**
- IV. Terms of Reference**
- V. Biography of SUSTAIN Volunteer**
- VI. Itinerary**
- VII. List of Persons Involved**
- VIII. Workshop Participants**
- IX. Participants in Rupandehi Milk Union Meeting in Butwal**
- X. "Workshop on Sanitary Milk Handling and Prospects of Product Diversification in the Private Sector Dairy Processing in Nepal" by Raymond Binkley**
- XI. "First Progress Review" by the National Dairy Development Board**
- XII. "A Few Thoughts on the Need of a Dairy Training School in Nepal" by Tek Bahadur Thapa**
- XIII. The Dairy Development Corporation's National Milk Grid**
- XIV. Newsletter of the Nepal Dairy Science Association**

I. INTRODUCTION

A. REQUEST FOR ASSESSMENT AND TECHNICAL ASSISTANCE

USAID/Kathmandu requested a SUSTAIN volunteer to give short-term technical assistance in dairy plant operations and product development to Nepal's private dairy sector. This assistance is part of USAID/Kathmandu's work with Nepal's dairy sector to achieve three goals: the expansion of the dairy sector, the growth of the dairy sector's processing capacity, and the privatization of the Dairy Development Corporation.

This assignment was implemented by SUSTAIN in collaboration with USAID's Asia Regional Agribusiness Project (RAP). Following a May 1994 and a November 1994 visit of consultants from USAID's Asia Regional Agribusiness Project (RAP) to Nepal, RAP secured the agreement of SUSTAIN to provide a consultant for initial short term technical assistance and developed the terms of reference in conjunction with USAID/Kathmandu. The Terms of Reference for the short-term consultant are attached in Appendix IV. Under the auspices of RAP, USDA/FAS/ICD also collaborated in the Nepal assignment by covering the in-country hotel and meal costs for SUSTAIN volunteer Raymond Binkley.

B. IMPLEMENTING AGENCIES

SUSTAIN (*Sharing U.S. Technology to Aid in the Improvement of Nutrition*) provides access to U.S. expertise in food processing to help improve the nutritional quality, safety, and availability of food in developing countries. Technical assistance, training, and needs assessments are conducted by executives and technical specialists from U.S. food companies, universities, and professional associations who donate their time and expertise. SUSTAIN is supported by grants from USAID/G/PHN/HN and USDA/FAS/ICD.

RAP is a five-year program funded by USAID to assist USAID projects and missions throughout Asia with market information, environmental services, trade and investment facilitation, and analysis of regional food and agribusiness issues. For further information on RAP, write to 7200 Woodmont Avenue, Suite 200, Bethesda, MD 20814 USA or fax to 301 907-2655.

C. SUMMARY

From January 17 to February 8, 1995, SUSTAIN volunteer Raymond Binkley undertook the short-term technical assistance assignment in Nepal to assess options to expand the range of dairy products that can be manufactured in Nepal. His principal observation is that Nepal's dairy sector is not sufficiently aware of proper sanitation, hygiene, GMP, and HACCP practices and techniques. This adversely affects the quality of milk and thus the integrity of products manufactured from the milk. He recommends simple procedures and techniques to improve milk quality and handling and to reduce spoilage. He emphasizes the need for training facilities to give dairy farmers and dairy plant employees practical hands-on training. He makes specific recommendations for improvement in the shelf life of the milk and how to diversify the range of dairy products that could be manufactured in Nepal. He feels that the Nepalese dairy farmers and processors have the desire and the will to improve and diversify their products, but they need tools and training. With these inputs, he believes, Nepal will have a successful dairy industry.

II. REPORT

**REPORT ON THE OVERVIEW OF THE NEPAL DAIRY SECTOR,
ESPECIALLY WITH REGARD TO MILK PRODUCTION ON THE FARM,
GOVERNMENT, AND PRIVATE MILK PROCESSING PLANTS;
MILK ASSEMBLY; AND DAIRY PRODUCT DISTRIBUTION**

FEBRUARY 07, 1995

**Prepared by: Raymond Binkley, Dairy Technologist
Vice President and Treasurer
Binkley International, Inc.**

**Prepared for: Elizabeth Turner
Executive Director
SUSTAIN**

NEPAL MISSION

DAIRY FOOD SAFETY FOR THE CONSUMER AS RELATED TO PRESENT PRACTICES AT THE DAIRY FARM AND AT THE DAIRY PROCESSING PLANTS

A. PURPOSE:

To present an overview of the Nepal Dairy Sector and to evaluate it from the food safety aspect for the consumer. Some of the considerations are the producers and processors present practices, milk cooling, hygiene, sanitation, food handling, GMP'S, and HACCP(hazard analysis critical control point) as related to food handling.

Other considerations are privatization of the DDC, milk holidays, the Butwal farmers dairy union interest in processing dairy products, a pilot plant at Kathmandu University to include facilities for raising grains and roughages, facilities for improving the breeding of Buffalo, and improving the breeding of Jersey cows, the need for silo's, training for processing dairy products. All people within the dairy sector can then be trained to produce a safe food for the consumer.

B. BACKGROUND.

The Nepal Mission has a threefold interest in working with Nepal's dairy sector:

1. To promote the continued expansion of the small farmer dairy sector, allowing for increased farmer income. (The farmer makes up 90% of all income in Nepal.). The average income is presently, annually, 180. US dollars.
2. To assist the dairy industry in overcoming the current milk holiday situation, the present deficit processing capacity situation, the deplorable sanitation and hygiene situation, and the no training no education situation.
3. To privatize the dairy development corporation(DDC). This would make it easier for outside interests to come in and help develop the Nepal dairy industry.

C. TASKS FOR THE NEPAL DAIRY SHORT TERM TECHNICAL ASSISTANCE (STTC) PROGRAM

1. Provide participating plant managers the opportunity to discuss solutions to easily remedied problems, identify larger problems and their possible solutions, and technical issues regarding new products of interest.
2. Provide Butwal producers an opportunity to discuss their processing interests.
3. Provide USAID an opportunity to strengthen the Nepal Dairy Science Association.
4. Discover ideas for collaboration between Nepal and U.S. dairy sector, including increased use of U.S. technology.
5. Provide a Pilot Dairy Plant for all Nepal dairy farmers and dairy processors to get training on technical, practical, and health related issues.
6. Provide educational opportunities for Nepal students in the field of Dairy

Science, and to update the education and practical aspects of those previously educated in Dairy Science with a three month short course in the U.S.

7. Work with the private dairy processors to help them change their facilities and equipment in such a way as to enable them to produce a safe food for the consumer.

Note: Mr. Regmi and Mr. Thapa accompanied me on all visitations and to all meetings, which is why we were able to accomplish so much in a short period of time.

I. INTRODUCTION

The first things to be noticed during the January-February mission in Nepal, were the peoples lack of any knowledge of sanitation, hygiene, GMP's, or HACCP principles as related to food supplies, water supplies, product integrity, handling of dairy livestock, and in the operation of any dairy equipment. Other areas of deep concern were the peoples lack of knowledge of feed grains and roughages for feeding livestock, no knowledge of the use of silage in the feeding of livestock, lack of knowledge for breeding improved dairy livestock including water buffalo and dairy cows. I saw little evidence of good operational practices in processing plants or on the farms. Cooling of dairy food products seem of little concern, even to trained Nepal Technologists, with one exception being, Tek Thapa, who is very knowledgeable of it.

One has to ask one-self, where to start? My best judgment would be first, to try to correct the cooling of milk, however, this just is not possible. The lack of sufficient road systems for the collection of milk is an unsurmountable obstacle at this point in time. There is no cooling of milk on the farm, presently. The reason for this is the lack of cooling water, and very limited availability of electricity to the farm. Even if electricity were available, the large majority of farmers could not afford it. Many of the farmers have five to six hour treks to collecting or cooling stations, carrying a can of milk on their back, and then the same amount of time for the return trip. During these trips the farmer must add soda to neutralize the acidity in the milk caused by growth of spoilage bacteria. Milk quality is therefore very poor. Secondly, is to train the farmer to follow procedures that will give them clean milk. By doing this, spoilage will take place at a slower rate. Thirdly, handling procedures at the collecting and cooling stations and at the processing plants must be taught in order, to again, slow down spoilage caused bacterial growth.

Even should the clean milk be possible, the milks will still vary a lot in flavor and

pasteurized milk will still have a shelf life of only one to three days, at best. This is because warm milk alone will encourage rapid growth of bacteria. (but not as many bacteria will grow as when you have both dirty milk and warm clean milk) Another thing can be done in the meantime. The milk can be sterilized. This will give a shelf life of one to two months under unrefrigerated conditions. (This is because all bacteria are killed during the sterilizing process.) More will be said about this at a later time. It must be remembered, that very few people in Nepal have refrigeration in their home, therefore sterilized milk fills a real need to the large segment of the population.

There is no one answer to these complex problems. However, education, training facilities, and trading of technologies with our U.S. Dairy Industry, can help solve these problems at a faster rate, and allow it to be accomplished over a period of one to fifteen years. Much more can be accomplished in the fifteen projected years, than has been accomplished since the beginning of the dairy industry in Nepal in 1952, some forty three years ago.

Finally, Nepal must speed up the process of creating dairy standards and having an enforcement group that is capable of protecting the consumer from unsafe dairy foods.

II. VISITATIONS - SUMMARY OF FINDINGS

Met with Ram Chandra Acharya, General Manager of DDC. He reports directly to the Minister of Agriculture. We had a very good conversation on his responsibilities and his needs. He is responsible for DDC plants, their equipment, the personnel, their finances, and the product they produce. Also, he is responsible for the farmers milk, including quality and volume. He indicated that he could use help in all areas of milk processing, including pasteurization, cooling, delivery of product, and sanitation and hygiene. For the farmer he could use help on feeding and breeding and in their sanitation and hygiene practices.

Visited two private dairy owners in Kathmandu. They have trouble with the milk they receive because of its poor quality. Much of the milk has been treated with soda before they receive it. They also have sanitation and hygiene problems because they lack knowledge on these subjects. Their facilities are in bad shape, mainly due to lack of money and lack of knowledge of what is needed to maintain a sanitary plant. One of these plants was Indra Dairy.

Tek Thapa and I met with Dr. Krishna R. Tiwari, Executive Director of NDDB. He indicated concerns of problems in cooling of milk from the farm and through the

processing plants. Sour milk is a real problem, and the use of soda to help correct it creates more problems. Other concerns we talked about in detail were, cow feeding, breeding, and care, milk holidays, and his own needs for management training. He would like to be able to come to the U.S. and train under someone in a similar capacity in our government. I feel we should somehow try to accommodate him since this would definitely be helpful to Nepal's dairy dilemma.

Our next visitation took us to the DDC plant of Kathmandu Milk Supply Scheme, Balaju. This plant was a better built plant than the private plant that we had just visited. The government has put a lot of money into this plant. However, the floors were of a porous concrete which is hard to clean. The windows were open to the outside, allowing insects, birds, and wind blown dirt to enter. The outside perimeter of the building was in a very dirty condition. Back inside, the milk cooler was large, and capable of being kept at 4 degrees C. However, it was, in reality, at 15 degrees C. When asked why the cooler was warm, they said the people wouldn't work in it when it was cold, so they turn off the refrigeration all day while the people are working in there. You can imagine what happens to the milk stored in this cooler. Any quality you had in the milk before getting it to the cooler is now destroyed. The milk is packaged in plastic pouches. The pouch filler has covers to keep from exposing the plastic pouch to the room atmosphere when filling with milk. These covers were open. This creates another quality problem. The equipment in the plant is very nice. Most of it is Danish. However, because of lack of funds for spare parts, much of the equipment is not kept in good mechanical shape. Sometimes production is shut down because of this lack of parts. They use Freon 714 in their refrigeration units and it is doing a good job for them. The maintenance supervisor is highly knowledgeable of his equipment and seems to keep up with new technologies. The floor drains had extremely bad odors coming from them. I sort of doubt that they were constructed with the needed traps. They have what could be a nice laboratory, but it is not kept clean and orderly. The tests being run are gerber fat tests, acidity, and some bacteria tests. However, the conditions under which these tests are performed are very poor, and I doubt that the results are meaningful. The cleaning chemicals they use are brought in from India. The only one they had to show me was a caustic soda which has its limitations. They need other dairy soaps in order to do a good job of cleaning throughout the plant. Sanitation and hygiene are not practiced here.

As we traveled from Kathmandu To Pokhara, we stopped at a milk collection center that collected 2200 liters per day. The milk came here from 19 MPA's and 1 MPC. Milk is cooled to 3 degrees C. and then daily transported to KMSS milk plant. The receiving procedures were poor, allowing the milk to be contaminated. Filter cloths were torn, allowing foreign material to get into the milk. Hygienic and sanitation practices were not used

In the Baradi chilling center only 400 liters per day of milk is collected. The milk they receive here usually has high acidities such as .18-to .20. (Normal acidity for milk is .14 to .18.) The acidity of milk is a measure of the lactic acid in the milk. The facilities, some of the equipment, and the personnel were not sanitary or hygienic.

The Damauli chilling center is currently collecting 1600 liters of milk per day from 12 MPA's. In total, 600 milk producers are delivering milk to this chilling center. Sanitary procedures were poor, milk easily gets contaminated, all receiving equipment is easily contaminated by road dust and dirt.

We visited Panthi dairy, a small private milk processor. He produces milk, and ice cream. He is interested in a joint venture to help expand his business. There is a lot of potential here for growth because Pokhara, where he is located, is a large tourist location because of the famous mountains of Annapurna, and Fishtail, and the many lakes close by. His facility is dirty, dark, and in general the equipment is in poor shape. The product he produces can not be food safe.

Nangdanda MPA is collecting 550 liters of milk per day from 440 farmer producers. These producers have mostly Buffalo for milk production. Their milk fat average is 6.8 to 7 per cent. The solids not fat is 9.0 per cent. These per cents are higher than the average cow milk. MPA has in employment, three people plus one secretary. They have saved 80,000 RS in a reserve account. The equipment for receiving is not good nor is it clean.

The DDC milk plant in Pokhara receives around 15000 liters per day of milk. About 10000 liters are sold in the Pokhara market. They produce cheese and ghee as well as milk and ice cream in this plant. This plant has good equipment, but lacks spare parts. They need to be educated in sanitation and Hygiene. They are contaminating product due to unsanitary practices. They just lack the knowledge of what is right and what is wrong in production practices. However, this plant has a lot of potential. The manager would be capable of doing a good job with some additional training.

We visited a dairy farmer in lower Hyangja who maintains a herd of Holstein crossbreeds. He has one cow producing 32 liters per day. The other cows in the herd produce much less milk per day. The butterfat runs between 3.4 and 4.0 per cent. This farmer just needs more training in sanitary and hygienic practices.

Moti dairy Entrepreneur is in business for the last ten years. He supplies milk to various markets like Syangja, Waling, and Palpa. Currently, the dairy is collecting 500 liters per day of milk, of which 300 liter is sold to Galvang chilling center. The

processor expressed interest in milk processing, cheese and ice cream production training. This training is badly needed.

Rupandehi milk union member cooperatives are capable of generating Rs 3 million funding if they are supported. They wish to establish a dairy processing center in Butwal to protect their milk supply.

The proprietor of Mahalaxmi dairy Chitwan, is interested in setting up a milk drying plant and cheese making at his new dairy processing facility. The building he has built is top notch.

On 02/07/95, we returned to Buffalo cheese plant in Nagarkot to watch them make cheese. Mr. Madan k. Shrestha, the plant manager-owner does understand sanitation and hygiene and practices it in his manufacture of cheese. Cheese from this plant is a safe food for the consumer. He hot water sterilizes all of the equipment before beginning the process, and he has all personnel wash their hands and arms before processing. He would be very valuable for helping to teach others on the value of sanitation and hygiene. I took videos of his complete cheese processing procedures.

III. CONCLUSIONS

The lack of knowledge of sanitation and hygiene, unsafe water, poverty, lack of government backing in regulations and enforcement, lack of money available for loan from the government, shortage of technologists, lack of educational facilities for dairy technology, lack of training facilities for the dairy sector, all contribute to the poor state of affairs of the Nepal dairy industry. The one thing they don't lack is the heart. If given the tools to do the job right, they will have a successful dairy industry. However, as the Nepal dairy industry stands today, many of the dairy products produced are not fit for human consumption. It is a dangerous situation for the consumer. We must find a way to help them out.

IV. MEETINGS ATTENDED AND MY PARTICIPATION IN THEM

MEETING- RUPANDEHI MILK UNION IN BUTWAL

There were 15 farmers and three of us taking part in the meeting. We talked on subjects that concerned them. They have great concerns on milk holidays and are looking for the best way to eliminate them. They voiced their desire to build their own dairy processing plant. They particularly want to produce milk, cheese, ghee, chhirrupa, and milk powder. They have gone so far as to lease the land for this plant, and have all the utilities to the property. They have even saved some money. I

understand that they also tried for a government loan, but was refused. They want help on this project, with an assurance that we can get them technical people to run this facility. They have over 4000 members in their union with possibilities for more that would like to join. They feel they have a market for a minimum of 30000 liters of milk per day. They indicated that they would like to export to India as well. They also would like help on sanitation and hygiene, feeding, and breeding of buffalo and cows.

MEETING OF THE NEPAL DAIRY SCIENCE ASSOCIATION

We met on February 03, 1995 at the DDC plant. There were about 18 of us in attendance. I gave a talk on the history of the dairy industry and its future. I then related it to the Nepal dairy industry. I spoke of their needs for trained technologists, the need for help from technologists from other countries, and the need for the government to have dairy product standards and a means of enforcement. The dairy industry must give the consumer a safe food. There was then a question answer session which included all segments of the dairy sector. Participation was very good.

WORKSHOP ON SANITARY MILK HANDLING AND PROSPECTS OF PRODUCT DIVERSIFICATION IN THE PRIVATE SECTOR DAIRY PROCESSING IN NEPAL

My presentation included excerpts from three books which included subjects on DAIRY PROCESSING AND PRODUCT SANITATION, PERSONAL HYGIENE AND FOOD HANDLING, GMP'S/FOOD PLANT SANITATION, and THE HAZARD ANALYSIS CRITICAL CONTROL POINT SYSTEM AND ITS IMPLEMENTATION. Then we talked about new products such as yogurt drinks, ice cream and ice cream novelties, and natural cheeses and process cheeses. Attached at the end of this report is a summary of Tek Thapa's on the workshop and comments of those who attended.

V. RECOMMENDATIONS

1. We need a dairy cow technologist (hands on) with a degree in animal husbandry to go to Nepal for 2 years to work with the many dairy farmers in the area from Kathmandu to the most western border of Nepal. The main concern will be with milking procedures from the standpoint of sanitation and personal hygiene. The next concern will be with feeding practices, keeping in mind to improve on volumes of milk output by each individual cow. Finally, the concern will be with improvement in breeding practices, for both the buffalo and the cow. In this last area, topography and temperatures are of primary concern. Also, it must be remembered that the buffalo can produce milk as well as be butchered for meat, whereas the cow is sacred, and cannot be killed. The speediest way to accomplish this project is to work with the milk union and the dairy cooperatives. These people will welcome the help from this

"hands on" technologist. This will help clean up the milk that is taken to the milk collecting stations and to the chilling centers.

2. One dairy technologist, with a degree in dairy science or food science, to go to Nepal for 2 years duration. Understanding GMPS, HACCP, Sanitation, Hygienic food handling, experience in dairy milk receiving procedures, and experience in laboratory procedures is important. The job will be to train milk receivers, concentrating on sanitation, personal hygiene and laboratory techniques. These milk receivers will be at milk collecting stations, milk chilling centers, and at the milk processing plants. The area to be included is all of Nepal. This will help clean up the milk received at the processing plants.

3. Two dairy technologists, with a degree in dairy science or food science, to go to Nepal for one year. Understanding GMP'S, HACCP, Sanitation, Hygienic food handling, and production experience in Milk, Ice Cream, and Cheese processing is necessary. The processing plants will be split between the two technologists. These two persons will supervise the upgrading of the private dairy processors, train processing personnel on new techniques, and teach GMP'S, HACCP, Sanitation, and Hygienic food handling. (Note: These first three recommendations, when completed in two years, should allow Nepal to have Food Safe Milk and Milk Products through out the nation for the first time.). Shelf life of dairy products will not be lengthened by more than three days by these improvements. Only an improvement in cooling of milk can give up to ten days shelf life to there milk products. Since lack of refrigeration is prevelent throughout Nepal, including the consumers, I recommend that these technologists find ways of producing sterilized milk and packaging it so that the average consumer can afford to buy it.(For example, in plastic pouches). Shelf life of one month, unrefrigerated, should be possible.

4. For the private dairy processor, I want financial help in the form of grants and low interest loans(of 3% interest or less) made available to them. This will enable them to upgrade their present equipment to cleanable equipment such as aluminum or stainless steel using their present methods of heating and cooling, or going to the next step up to more modern vats and tanks and cooling methods. What ever they feel they can afford. A person like Tek Thapa should be paid to monitor this program. Money should be made available to improve the floors, walls, ceilings, and to screen all openings to the production area. Incubators for controlling temperature to set yogurt are needed in these dairies.

5. Refresher training for Nepal Technologists who have previously gotten degrees in dairy or animal science. This training should be for 3 months, at a University with dairy plant facilities, preferably in the United States where real good programs of

sanitation and hygiene are already in place. The practical training is as important as the educational training at these refresher courses. There should be 6 trainees in this program within the years 1995 and 1996. These people will then be qualified to take over for the technologists in the above recommendations (1,2,3) This will allow Nepal to start a smooth transition to being self supporting in the dairy industry.

6. Starting the fall(September) of 1995, USAID should support 5 four year dairy students in four year Food Science BS degree programs at U.S. Universities that have the best Food Science programs. Penn State University is one of these. Each year of 1996, 1997, and 1998 should have 5 four year dairy students. This means that by the year 2002, twenty students will have been trained to infiltrate the Nepal dairy industry. Stipulations should be made that these students must return to Nepal for at least 10 years after completing the university courses. They will be needed as the dairy industry grows in Nepal. They will owe it to their country to bring around this dairy food revolution and to insure its success.

7. Maintenance of a good dairy industry in Nepal is necessary after we have accomplished the above six items. This can be accomplished by having a dairy training plant in conjunction with a university such as Kathmandu University. Tek Thapa and I took the first step when we met with Vice Chancellor and Professor Suresh Raj Sharma, PhD. In our meeting he said that the University would give us as much land as needed to build a dairy plant at their new Kathmandu University site that is set on three hills at an attractive location between Dhulikhel and Banepa, about 26 kilometers from Kathmandu. This plant would provide employment for 6 university students and 15 full time employees. The plant would also provide:

A. Practical orientated training to people interested in starting their own dairy processing business.

B. Various need oriented training programs for special needs, such as, producers in dairy coops, private owned farmer producers, milk collecting station employees, chilling center employees, private sector dairy product processors, DDC employees, quality control personnel, and Government inspection employees.

C. Provide an in plant training course for technical school graduates to help them gain practical dairy experience. Includes animal science in feeding and breeding.

D. Research center to find new products, new packaging techniques, ingredient studies, feed and feed grains, new equipment development, etc.

E. This Dairy Training center would consist of a Dairy Plant, an animal farm, facilities for breeding studies, and feed and grain development facility. The dairy training center will be self supporting through the sale of dairy products, and donations from interested groups such as Coops, through interested individuals, and through World Foundations.

F. The Dairy Plant will be a dairy processing facility on a mini-scale including

modern pasteurizing equipment such as milk sterilization, modern packaging equipment, to allow the production of items such as Khoa, Chhanna, Paneer, various natural cheeses, process cheese, milk powder, pasteurized milk, ice cream, yogurt, yogurt drinks, butter, ghee, and other dairy related foods.

G. It will be governed by a Board of directors consisting of private sector dairy processors, farm coops, Kathmandu University representative, and representatives of donating organizations.

H. Estimated cost of this facility is 250,000 U.S. dollars. This includes land, building, and equipment to manufacture the above mentioned items. Cash Flow estimates would be 4000 U.S. dollars per month.

8. A processing plant is needed by the Rupandehi Milk Union. They are located west of Kathmandu, about 100 miles, and near Butwal. This milk union is made up of a group of dairy coops. These coops have a total of 4000 members. The milk union is financially solid. They have already leased a piece of land that a processing plant can be constructed on. The utilities are already to the property. They have done all of this pre planning, because it is real necessary that they can control some of their own destiny. Presently, milk holidays are really hurting them. There just aren't enough processors in the area that can use all of their milk. They now have to ship milk all the way to Kathmandu, several times a week. This is costly to them, plus the road is bad. They presently have some money, and are able to support a 60,000 to 90,000 dollar low interest loan. With the change in government recently, in Nepal, the loan has not been made available to them. They feel that if they can have their own processing plant, that they can also increase their membership substantially. I recommend that we help them get a low interest loan and possibly some grant money so that this bad situation can be eliminated. I feel that with this plant, all milk Holiday's in Nepal can be eliminated and some exporting to India can begin. The plant needs to be able to handle 30,000 liters of milk per day, and will produce milk powder, sterilized milk, yogurt, various cheeses, butter, ghee, and other dairy related foods. The estimated cost to build this plant is 250,000 U.S. dollars. They will need the help of experienced dairy technicians to operate this plant. It will employ a minimum of 30 employees. The estimated cash flow would require 4000 U.S. dollars.

APPENDIX I

SUSTAIN Description

SUSTAIN provides access to U.S. business and scientific expertise to improve the quality, safety, and availability of food in developing countries. Technical assistance, training, and needs assessments are provided by executives and technical specialists from U.S. food companies, universities, and professional associations who donate their time and expertise.

Many benefits can accrue to developing countries through improvements in food processing and preservation. These technologies can help meet food and nutritional requirements and reduce post-harvest losses. Improved processing can reduce food-borne illness, malnutrition, and micronutrient deficiencies that are devastating to children and other vulnerable populations. Strengthening food businesses helps reduce poverty by providing a means for enhancing job and economic growth in poor urban and rural communities. And the transfer of efficient technologies and management practices in waste handling, utilization, and reduction promotes environmental protection.

By sharing expertise and elevating technological capacity, SUSTAIN volunteers help overcome the causes of malnutrition and poverty. Areas of assistance include: food processing, preservation, and product development; food safety and quality assurance; fortification; post-harvest storage and packaging; business management and marketing; and waste handling.

How SUSTAIN Works

SUSTAIN conducts its activities in collaboration with host-country organizations, the U.S. Agency for International Development (USAID), and other international agencies. SUSTAIN receives financial support from USAID's Office of Health & Nutrition and the U.S. Department of Agriculture and cash and in-kind contributions from corporations and individuals. SUSTAIN receives advice from a Steering Committee made up of private sector representatives and is managed under a cooperative agreement with the National Cooperative Business Association (NCBA, known overseas as CLUSA).

SUSTAIN receives requests for assistance from individual food companies, research institutions, and business organizations in developing countries. Depending upon the nature of the request, SUSTAIN volunteers may be sent to conduct needs assessments, one-on-one technical assistance, or workshops. Overseas projects are typically one to three weeks in duration. Through repeat visits of volunteers on particular projects, SUSTAIN is able to provide continuity and on-going problem-solving expertise. SUSTAIN is also able to address many problems through correspondence by providing information that exists either in technical literature or in the "memory" of a company.

SUSTAIN typically funds international travel costs and USAID missions or host organizations provide in-country costs. As travel funds are limited, SUSTAIN reviews requests on a first-come, first-served basis. SUSTAIN also has "add-on" authority to accept mission support for additional project activities. SUSTAIN does not fund product or equipment acquisitions.

SUSTAIN publishes a quarterly newsletter (*SUSTAIN Notes*) on food technology issues. It is provided gratis to over 1800 recipients in more than 50 countries. For more information, contact:

SUSTAIN

1401 New York Avenue, NW; Suite 1100

Washington, DC 20005-2160

Phone: (202) 638-6222 • Fax: (202) 628-6726 • E-mail: 7198045@mcimail.com

APPENDIX III

Two Letters from Development Alternatives, Inc.

November 26, 1994

Ms. Liz Turner
SUSTAIN Program
National Cooperative Business Program
1401 New York Avenue, N.W.
Suite 110
Fax No: (202) 620-6740

Dear Liz,

The Terms of Reference for the Nepal dairy short term technical assistance program is attached. I developed this TOR with the Mission staff during my visit here this week.

You will note the Mission requests the services of Raymond Binkley. His background is more suited to the task at hand, and he is available for the desired three week STTA period.

I am sending under separate cover a copy of this document, along with a National Dairy Development Board report on its September, 1991-July, 1993 activities. Please give these to Mr. Binkley. I have asked Dan Miller to locate some additional materials that might assist Mr. Binkley in preparing for his visit. Dan is the Mission's livestock specialist and is directly responsible for its dairy sector activities.

I am on the road for another 2.5 weeks. If you need to contact me I can be reached through the following:

November 28-Dec 3: Kevin Mullally, USAID/Dhaka. Sorry, I do not have a fax number.

December 5-9: Richard Nishihara, USAID/Colombo. Fax number (94-1) 574-264.

I suggest you coordinate dates for Mr. Binkley's visit directly with Dan Miller, USAID/Kathmandu, fax number (977-1) 272-357.

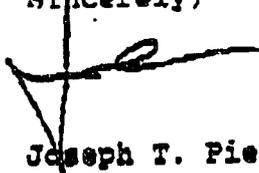
I will be back in my office approximately December 14. I'd be happy to meet with you regarding the STTA and to provide Mr. Binkley any background information I can.

BEST AVAILABLE COPY

Ms. Liz Turner
November 25, 1994
Page 2

Thanks for putting the STTA visit together. I'm really pleased that SUSTAIN and RAP are able to provide the Mission this important support. There is an opportunity for continued involvement with Nepal's dairy sector and I hope this is but the first of several activities we can pursue in Nepal.

Sincerely,



Joseph T. Pietrus

cc: Dan Miller
John Bowman

DAN MULLER - 45430

November 26; 1994

Dear Dan,

I have enclosed the final terms of reference for the dairy STTA and a copy of my fax letter to Liz Turner.

I made a few changes to the draft STTA in addition to those you provided. I revised the language in some places to be more "TOR-ish." I reduced the number of days by one: I believe this is possible because visits to dairies the size of, say, Nepal Dairy, will not take a full half-day, and two such dairies and resulting mini-audit reports can be covered in one day (subject to Mr. Binkley's thoughts after he and I have been able to talk.) I suggested that the operations/technical portion of the workshop be handled as a Nepal Dairy Science Association activity as this will strengthen the Association. I made specific (and I think you intended) inclusion of workshop participants other than those from the plants which Mr. Binkley will visit. This broadens the STTA's reach and will also help you determine the demand for another STTA. You might even want to survey the participants regarding activities/subjects of interest to them for possible future Mission STTA projects.

I reviewed the material you gave me, i.e. NDDB's First Progress Review and the information sheet on the Butwal workshop. I will appreciate it if you send me the following:

1. NDDB Progress Reviews subsequent to its first review which covered the period September, 1991-July, 1993;
2. The results of the Butwal workshop, i.e. decisions made and actions taken regarding interest in a processing plant;
3. The DANIDA feasibility study for the establishment of a dairy processing factory at Butwal and Kohalpur/Nepalgunj referred in NDDB's First Progress Review, page 13; and,
4. The DANIDA feasibility study for animal feed, also referred to in NDDB's First Progress Report, page 15.

Number 1- 3 will be helpful to Mr. Binkley; I want to use number 4 to explore with AEC the potential for Nepali-U.S. collaboration in livestock feed manufacture.

My thanks to you and Regmi for your assistance during my visit. I look forward to hearing the results of the STTA and to working with you on other activities supporting your dairy initiative.

Best regards,

BEST AVAILABLE COPY

APPENDIX IV

Terms of Reference

NEPAL DAIRY SHORT TERM TECHNICAL ASSISTANCE PROGRAM 26 November 1994

BACKGROUND

The Nepali Mission has a threefold interest in working with Nepal's dairy sector:

1. To promote the continued expansion of the small farmer dairy sector, thereby increasing small farmer incomes.
2. To assist the industry overcome the current deficit processing capacity situation;
3. To privatize the Dairy Development Corporation (DDC).

It is believed that DDC privatization will make a significant contribution to the other two objectives. However, it also appears that DDC privatization is on hold indefinitely. The Nepali Congress Party Minister of Agriculture opposed DDC privatization, hence did not move on it. The position of the newly elected CPN-UML Party is unknown but not expected to result in privatization in the near future.

Therefore, the Mission has decided to provide assistance to the fledgling private dairy sector, initially through the provision of short term technical assistance (STTA) in dairy plant operations and product development. Following the May, 1994 visit to Nepal of Asia Regional Agribusiness Project (RAP) consultant John Bowman, RAP secured the agreement of the SUSTAIN Program to provide the necessary consultant for the STTA.

During a November 20-25 visit to Nepal RAP consultant Joseph Pietrus visited with USAID's Livestock Specialist Daniel Miller and Program Specialist Niranjan Man Singh Regmi, the National Dairy Development Board (NDDB), USAID Dairy Enterprise Support Program Advisor Tek Thapa, and four dairy processing plants. This STTA terms of reference (TOR) was developed on the basis of these visits, reviewed with USAID, and accepted as the basis for the STTA.

OBSERVATIONS ON THE DAIRY INDUSTRY

The following observations are made on the basis of RAP consultant Joseph Pietrus' visits with representatives of Nepal's dairy sector.

1. There is a serious deficit of processing capacity for the Kathmandu market. This deficit has two impacts. First, existing milk supplies cannot be processed thus leading to the declaration of "milk holidays" by DDC when they do not purchase milk. Second, apparent demand for fluid milk

cannot be met.

BEST AVAILABLE DOCUMENT

2. A nearly completed non-fat dry milk (NFDM) plant in eastern Nepal will alleviate but probably not resolve the excess supply situation in that area for at least a short period of time. This NFDM will be reconstituted by DDC plants during the lean milk production season. However, effective demand still will not be served due to the shortage of fluid processing capacity. And there is reason to believe that milk produced and offered for sale to DDC will continue to increase in volume.

3. The DDC does not have the financial resources to expand its capacity. Further, probable forced use of DDC produced NFDM will probably reduce its profitability, and resultant ability to fund plant improvements, because locally produced NFDM is likely to be more costly than imported NFDM. There was no indication that the Government of Nepal will take out loans to further increase fluid milk processing capacity. There is approximately \$1 million in USAID Commodity Import Fund proceeds earmarked for dairy development, but the Mission prefers not use these funds for DDC capital expenditures until DDC is restructured. The Mission and RAP will explore the potential to use some of these monies to create a venture capital fund to finance selected private dairy processing projects. As a first step the Mission will discuss the idea with the NDDB, whose co-approval is needed for expenditure of the funds.

4. Private dairy plants could alleviate the deficit situation if they purchased milk assembled at the DDC chilling assembly points. The potential impact of such action was not determined, nor the reason why private plants do not purchase milk from DDC. It could be a question of price, difficulty in purchasing from DDC, inadequate distribution capability for higher volumes of their products, or other reasons. The Mission will try to determine the answer to this latter question.

5. Activation of two closed processing plants would add 10,000 liter/day processing capacity to the national system, but would not improve the situation in the Kathmandu Milk Supply System (KMSS). These plants are Narayani (at Birganj) and Mahalaxin (at Chitwan). The reason for the closure of these plants was not determined. It may be a question of poor location relative to milk supply and/or limited financial resources of the owners. In any case, the existence of the facilities may offer an opportunity for USAID to increase national milk processing capacity through a program of limited assistance (possibly through the venture capital fund).

6. The central issue in the KMSS is deficit fluid milk processing capacity. Development of new products will be effective in increasing demand over the long term but will not alleviate the current situation.

7. All of the plants visited have quality problems. The major cause of these problems is raw milk quality, however the plants themselves probably can improve their sanitation practices.

8. The industry has a shortage of adequately trained technologists. While there are some highly trained people, they are few in number and their training was completed some time ago. Further, there is a shortage of adequately trained people below this senior dairy technologist level. Recent formation of the Nepal Dairy Science Association offers USAID an opportunity to raise the country's level of dairy processing knowledge.

9. The proposed STTA should contribute to one or more of the following: improved processing yield, improved sanitation, lower processing costs, higher quality products in terms of food safety, higher quality products in terms of consumer appeal, new products, and an increase in dairy technology knowledge.

10. Participation in the STTA program will be open to DDC plant staff as well as the private sector. While USAID's primary thrust is in the private sector, DDC staff participation in this program will have several benefits, both immediate and long term. It will increase the level of its dairy technology; trained DDC staff will not only benefit from participation in the program, they will also impart some of their knowledge to the participants; a gathering of private and DDC dairy technologists will strengthen the Nepal Dairy Science Association; some DDC technical staff may eventually find their way to the private sector; the STTA consultant visit to a DDC plant and/or operating/technical problems workshop discussion may provide an opportunity to bring pressure to resolve the sachet film quality problem. (Note: 15% of all filled sachets break due to the poor film quality. DDC headquarters purchasing staff have refused to purchase higher quality, slightly more expensive imported film).

11. While an attempt was made to form a dairy industry association, no such organization yet exists. Involving the USAID sponsored Agro-Enterprise Center of the Federation of Nepali Chambers of Commerce & Industry (AEC/FNCCI) in organizing and implementing the STTA program and including a specific agenda item of industry interest offers an

opportunity to initiate action to start an industry organization.

12. Participation in the STTA program should be limited to owners/staff from plants of a minimum size. A capacity of 1,000 litres/day is suggested as a cut-off point.

STTA TERMS OF REFERENCE

Objectives:

1. Provide participating plant managers a mini-operations audit and the opportunity to discuss solutions to easily remedied problems, identify larger problems and the implications for their solution, and technical issues regarding new products of interest.
2. Provide Butwal producers an opportunity to discuss their further processing interests.
3. Provide USAID an opportunity to strengthen the Nepal Dairy Science Association.
4. Provide AEC/FNCCI an opportunity to initiate action to form a dairy industry association. This organization, with AEC/FNCCI assistance, can formulate positions which advocate government policy changes benefitting the dairy industry. (Note: Participation in this organization may have to be limited to private sector participants.)
5. Discover ideas for collaboration between the Nepali and U.S. dairy sectors, including increased use of U.S. technology.

Field Trip Program

USAID envisions one SUSTAIN Program consultant visiting Nepal for three weeks. The following activities are planned, starting on a Monday (Day 1) and following a five day working week.

- Day 1 Visit to USAID: Discuss visit background, objectives, schedule.
 Visit the National Dairy Development Board: Discuss Board objectives, production sector overview.
 Visit with Tek Thapa of USAID's Agroenterprises & Technology Systems Project (ATSP): Discuss processing industry overview including milk assembly, transportation, processing plant locations and capacities, processed products

produced, distribution. Visit to several distribution outlets.

- Days 2-6 Visits to plants. Each plant visit includes a walk through sufficient for a mini-audit and an opportunity for plant managers to raise questions for discussion. For larger plants it is expected that the morning will be spent at the plant, the afternoon spent preparing a mini-audit report and recommendations. It will be possible to cover two small plants/day, provided they are not located too distant from one another.
- Day 7 Preparation of new product workshop; continuation of mini-audit reports.
- Day 8 Travel to Butwal. Review chilling operation, area milk supply, local consumption of dairy products, local processing, import of products from outside the area (e.g. yak cheese).
- Day 9 Visit Butwal area producers, processors (including home processors).
- Day 10 Discuss further processing opportunities with Butwal group; return to Kathmandu.
- Day 11 Completion of mini-audit reports.
- Day 12 Workshop:

STTA consultant discusses basic technology of new products in which plant managers expressed interest during visits. Mini-audit reports are given to each plant's representative(s) at the workshop.

Tek Thapa moderates a discussion on current industry processing problems with contributions coming from the participants. The objective is to get the Nepali technologists talking to one another about their operating and technical problems and how they might be addressed. The consultant should be prepared to present observations from his plant visits (on an anonymous basis) for discussion in case the participants are reluctant to raise issues.

AEC/FNCCI meets with the private sector participants to discuss their problems regarding the dairy processing business climate. The objective is for this discussion to lead to formation of an advocacy working group (with AEC/FNCCI as research staff) as the forerunner to an industry association.

Note: Participation in the workshop will not be limited to participants from the plant's visited. Wider participation will be encouraged to secure maximum possible industry involvement and determine the demand for a second field visit.

Day 13-15 Individual plant visits to answer questions re mini-audit report, new product ideas. Two and one-half days are scheduled for this activity - up to one-half day for larger plants, and a couple of hours for smaller plants.

Day 15 Two hours should be allocated for a de-briefing with USAID staff.

Expected Outputs:

1. Mini-audit reports to each of the participating plants.
2. Presentation of a new product workshop and limited participation in operating/technical/business climate workshop discussion (i.e. the consultant should contribute, but the discussion is envisioned to be coming primarily from the participants themselves).
3. Final report which includes:
 - Brief background on the STTA objectives, schedule.
 - A summary overview of the Nepali dairy sector, especially with regard to milk assembly, processing and product distribution.
 - Observations on Nepal's dairy processing sector with ideas for possible USAID program activities.
 - Ideas for collaboration between the Nepali and U.S. dairy industries, including technology transfer, sale of equipment/supplies, professional society affiliations, etc.
 - Blind (to preserve company confidentiality) mini-audit reports.
 - Summary report on new product workshop.
 - If USAID can provide, summary of discussion led by Tek Thapa.
 - If USAID can provide, summary of AEC/FNCCI led discussion on business climate issues.

PROGRAM CONTRIBUTIONS:

SUSTAIN Program

1. One STTA consultant (Mr. Raymond M. Binkley).
2. International transportation, per diem, and out-of-pocket expenses.
3. Printing of STTA final report in collaboration with RAP

USAID/Nepal

1. Local transportation and related expenses.
 2. Interpreter.
 3. An office at USAID and staff assistance with printing mini-audit reports.
 4. Arrange participation of Tak Thapa, AEC/FNCC, and Butwal milk producers' group.
 5. Publicize program, secure participants, and select plants to be included in mini-audit program.
- Note: The workshop operating/technical issues discussion could be a Nepal Dairy Science Association function, thereby strengthening the Association as an industry service organization.

AEC/FNCCI

1. Provide workshop facility and organize provision of materials, refreshments, lunch.
2. Follow-up in Nepal on any Nepali-U.S. dairy industry collaboration ideas.
3. Moderate business climate discussion section of workshop and follow-up as appropriate.

RAP

1. Preparation of STTA TOR.
2. Coordination with the SUSTAIN Program.
3. Answer pre-trip questions of STTA consultant.
4. Follow-up coordination in the U.S. on Nepali-U.S. dairy industry collaboration ideas.

APPENDIX V

Biography of SUSTAIN Volunteer

Raymond M. Binkley, B.S. (Dairy Science, Pennsylvania State University) retired in 1993 as Ice Cream and Milk Division Manager of Coble Dairy Products. He was in charge of all plant functions, corporate engineering, and quality control in a multi-product plant supplying 35 branches in 3 states. Mr. Binkley is experienced with many dairy products, including fluid milk, ice cream, cheeses, cultured products, and dairy beverages. Previously, he worked with various dairy companies such as Friendly Ice Cream Corp, H.P Hood & Sons, and Breyer's where he was responsible for product development, quality assurance programs, planning and supervision of the construction of new dairy processing plants, packaging, and production. Currently, he consults with dairy companies in the U.S. and overseas. Mr. Binkley recently spent over 50 days in China where he provided technical assistance to small dairy plants. He assisted in the installation of ice cream manufacturing equipment and training personnel in the art of ice cream making, product formulation, sanitation, and Good Manufacturing Practices. He also assisted them in the development of various products including chocolate drinks and yogurt. Mr. Binkley has also worked with dairy processors in Saudi Arabia and Bermuda.

APPENDIX VI

Itinerary

01/16/95	MONDAY	Leave State College, Pa. for Kathmandu, Nepal.
01/17/95	TUESDAY	Arrive in Frankfurt, Germany, in route.
01/18/95	WEDNESDAY	Arrive in Kathmandu, Nepal. Meet with Daniel Miller and staff.
01/19/95	THURSDAY	Breakfast meeting with Daniel Miller. Later meeting with Tek Thapa of USAID's Agroenterprises and Technology Systems Project. Then Tek and I met with the General Manager of DDC, Ram Chandra Acharya.
01/20/95	Friday	Visit DDC plant in Balaju.
01/21/95	Saturday	Holiday.
01/22/95	Sunday	Visit Bhaktapur Dairy Plant. Visit milk collection point. Visit Nagarkot Cheese Plant.
01/23/95	Monday	Visit Private Dairies in Kathmandu Valley.
01/24/95	Tuesday	Visit Private Dairies in Kathmandu Valley.
01/25/95	Wednesday	Visit Private Dairies in Kathmandu Valley.
01/26/95	Thursday	Prepare for Workshop.
01/27/95	Friday	Travel to Pokhara. Visit filling centers on the way. Visit DDC dairy plants in Pokhara.
01/28/95	Saturday	Visit DDC plant and private sector plants in Pokhara.
01/29/95	Sunday	Travel to Butwal, visiting chilling centers and MPA's on the way.
01/30/95	Monday	In Butwal, visit DDC plant.
01/31/95	Tuesday	In Butwal, visit private sector producers, District Milk Producers, MPA's.
02/01/95	Wednesday	Butwal to Kathmandu, prepare for Workshop.
02/02/95	Thursday	Work on recommendations for private sector dairies.
02/03/95	Friday	Meet with Vice Chancellor of Kathmandu University.
02/04/95	Saturday	Revisit Nagarkot cheese plant. Observe cheese making.
02/05/95	Sunday	Prepare for Workshop.
02/06/95	Monday	Workshop.
02/07/95	Tuesday	Final Meetings. Thapa and Regmi.
02/08/95	Wednesday	Depart Kathmandu for State College, Pa. U.S.A.

APPENDIX VII

List of Persons Involved

SUSTAIN STTA

Raymond M. Binkley, Binkley International Inc.

USAID STAFF

John Mitchell USAID/ARD

Daniel Miller USAID/AR

N.M.S. Regmi USAID/ARD

Tek Thapa of USAID's AG ENTERPRISE

PERSONS MEETING AND PLACES VISITED

Mr. Balarm Khadka, Charaudi Chilling Center, Charaudi, Dhading.

Mr. Surya Nath Adhikari, Damauli Chilling Center, Damauli, Tanahu.

Chilling Center-incharge, Baradi, Tanahu.

Mr. Resham Raj Panthi, Panthi Dairy, Pokhara.

Mr. Dhruba Kalpit Subedi, Project MGR., Pokhara Milk Supply Scheme, PID.

Mr. Hem Chandra Poudyal, Processing in charge, PMSS, PID., Pokhara.

Mr. Prem Raj Adhikari, Tester, Nangdanda Milk Producers Asso. Nangdanda, Kiski.

Mr. Kuldip Poudyal, Proprieter, Holstein Farmer, Near Tibetan Camp, Kaski.

Mr. Jayakishor Pandey, Shitalnagar Milk Producers Coop., Shitalnagar, Rupandehi.

Mr. Gunakhar Bhurtel, Radhakrishna Milk Producers Coop., Khaireni, Rupandehi.

Mr. Narayan Gautam, Rupandehi District Milk Union Ltd., Butwal.

MR. Laxman Gautam, Private Dairy Entrepreneur, Butwal.

Mr. Tikaram Basyal, Galyang Chilling Center, Syangja.

Mr. Madan Mohan Das, Lumbini Milk Supply Scheme, Butwal.

Mr. Moti Bhattarai, Moti Dairy Udyog, Malunga, Syangja.

Mr. Indra B. Basnyat, Indra Dairy.

Mr. Krishna Ram Munankarmi, Baneswar Milk Bar, New Baneswar.

Mr. Ram Krishna Bajgain/Ramesh Shrestha, Kavre Dairy, Baneswar.

Mr. Balaram/Puspa Ram Sainju, Bhaktapur Dairy.

Mr. Madan K. Shrestha, Buffalo Cheese Plant, Nagarkot.

Dr. Suresh Raj Sharma, Vice Chancellor, Kathmandu University.

APPENDIX VIII

Workshop Participants

Dr. K. R. Tiwari, Executive Director, NDDB.
Mr. Peder Lund, Chief Advisor, NDDB/DANIDA.
Mr. Raymond M. Binkley, STTA, USAID.
Mr. R. C. Acharya, General Manager, DDC.
Mr. John Mitchell, Project Officer, ARD/USAID.
Mr. Niranjan Regmi, ARD/USAID.
Mr. D.R. Pradhan, Dairy Extension Section DOAD.
Mr. Tek Thapa, DESC/ATSP.
Mr. Jitendra Thikey, Nepal Bureau of Standards.
Mr. Dhruva K. Subedi, Pokhara Milk Supply Scheme.
Mr. Daya Ram Sharma, Pragati Ice Cream, Baglung.
Mr. Ram K. Bajgain, Kavre Dairy.
Mr. K.B. Bajgain, Kavre Dairy.
Mr. Raj G. Rajkarnikar, Nepal Dairy Science Association.
Mr. Arun Shrestha, DDC, Lainchaur.
Mr. Giridhar Bajracharya, Nepal Dairy Science Association.
Mr. B.K. Shrestha, Thankot Dairy, Thankot.
Mr. Ram Milan Upadhyay, Nepal Dairy Science Association.
Mr. Madan Kumar Shrestha, Nagarkot Buffalo Cheese Plant.
Mr. Ram Krishna Bajgain/Ramesh Shrestha, Kavre Dairy Baneswar.
Mr. Indra Basnet, Indra Dairy, Sorakhutte, Kathmandu.

NEPAL DAIRY SCIENCE ASSOCIATION MEETING

I don't have the names of the those that attended, but I will attach pictures of the group.

APPENDIX IX

Participants in Meeting in Butwal

RUPANDEHI MILK UNION-BUTWAL-MEETING

- Mr. Narayan Gautam, Chairman, Rupandehi Milk Union, Butwal.
Mr. Gyan P. Khald, member RMU.
Mr. Basyal, member RMU
Mr. Jayakishor Pandey, vice chairman RMU.
Mr. Bamlal Ghimile, Gokul MPCs.
Mr. Sapkota, Convenor.
Mr. Som P. Neupane, member RMU.
Mr. Balarand Bhandeli, member RMU.
Mr. Rajendra Khard, member RMU.
Mr. Homrath Dhakal, member RMU.
Mr. Tikaram Pandey, member RMU.
Mr. Gunakhar Bhurtel, member RMU.
Mr. Badaram Khald, member RMU.
Mr. Gunakar Aryal, member RMU.
Mr. Chhabilal Neupane, member RMU.

APPENDIX X

"Workshop on Sanitary Milk Handling and Prospects of Product Diversification

in the Private Sector Dairy Processing in Nepal"

Venue: Department of Agriculture Development (DOAD), Livestock Services Conference Hall.

Date: February 6, 1995

The workshop started with the brief introduction on STTA dairy technology mission and objective of the workshop by Mr Niranjana Man Singh Regmi, ARD/USAID. Mr John Mitchell, ARD/USAID attended the workshop. Similarly NDDB Executive Director, DDC General Manager and Chief Advisor DANIDA also attended the workshop program. Mr Ray Binkley, STTA/USAID dairy expert presented his findings and observations. Mr Ray's presentation was interpreted by Mr Tek B. Thapa, DESC/ATSP for the benefit of private dairy entrepreneurs. Mr Tek B. Thapa also conducted the program and moderated the discussion session. After, the floor was open for comments, discussion and question-answer session. The discussion was very lively, and comments are presented here below. The list of participants are presented in annex-1.

COMMENTS FROM THE FLOOR

- 0 Dayaram Sharma, Private dairy entrepreneur/ice-cream maker from Baglung in the western Nepal commented by saying that the objective of the workshop is very good and pertinent to the need of private sector people. He expressed the training need on milk processing and product making to produce value added products. There is no proper policy to promote private dairy processing in the country and requested the floor for lobbying their problems. It is difficult to get water supply or electricity connected to his enterprise.

The processor strongly recommended for training program to create awareness on sanitary and hygienic practices of milk production and handling to safeguard the milk quality at the farm gate. It should be the primary step in improving the raw milk and product quality at the processing plant.

He is also a ice-cream maker, and has batch ice-cream freezer. He is making ice-cream without any proper knowledge, thus needs training in good quality and variety ice-cream making.

- 0 Indra B. Basnyat from Indra dairy also expressed interest in ice-cream making training, and other dairies also expressed similar interest.
- 0 Mr Peder Lund/DANIDA Advisor indicated the need of forming dairy entrepreneurs association to represent their problem and lobby with the government and related agencies. If association represents the problem of entrepreneurs, it could be attended and even the need oriented training could be arranged. He also referred the dairy processing training organized by DESC/ATSP/USAID.
- 0 Mr Resham Raj Panthi/Panthi dairy of Pokhara felt there is big diversities among private dairies in volume of milk handling(100-15,000 LPD). Private dairies are in competition and do not want to meet each other, and discuss and share the views among themselves thinking that other may catch the business clue.

The private processors have met number of times and discussed and felt the need of forming an association. He believed within a month period the adhoc committee is expected to be in place, and this adhoc committee will be responsible for framing suitable by-laws and legal registration with the government.

Mr Panthi believed that 80-90% liquid milk market demand is met by DDC and 10-20% by private dairies. After the association is legally formed, it will identify the various support needs of private dairies(eg problem in milk collection, procurement and marketing pricing policy, plant layout and equipment procurement, source of financing etc).

- 0 Panthi dairy/Pokhara felt the need of dairy training school/institution in the country to develop various level manpower to cater the trained manpower need of Nepalese dairy industry. More than twenty years before DDC was founded and if dairy school was set up by then, this problem of sanitary milk production and handling would have been overcome by now.
- 0 If there are possibilities of joint venture, Panthi dairy is interested to set up 5000 LPD milk processing plant producing liquid milk, yoghurt, butter, ghee, cheese etc including indigenous milk products.

- 0 Mr Panthi also wanted to know the technology of yoghurt drink making eliminating the problem of whey separation after few hours of preparation. Mr Panthi wanted the technology.
- 0 Mr Panthi informed the floor that they are in touch with only 23 private dairies, however wanted to know if at all other dairies also exist.
- 0 The discussion also continued on whether any other new private dairies can sell more milk and dairy products in Pokhara. Some felt there could be market problem and more competition for DDC plant. However, the floor believed it will be to the benefit of consumers having opportunity to select the product of choice with better quality. The floor also believed new private dairy if at all established under joint venture participation, can diversify the production including making milk based sweets. Mr Panthi who is interested to set up dairy plant under joint venture participation, wanted also to market some of its product to Kathmandu valley.
- 0 Mr Jitendra Thike/Nepal Bureau of Standard also reaffirmed the fact that competition in production/new product will result a better quality product from the consumer's point of view. This will increase the consumer satisfaction.
- 0 Mr Madan Shrestha/Nagarkot buff cheese plant opined the hard fact of DDC's inability to clear the stock of cheese specially due to increased production by private sector yak cheese makers. However, DDC adopted rationing in marketing of yak cheese in the past when there was no competition.
- 0 Mr Jitendra Thike/Nepal Bureau of Standard briefed on Nepal standard(NS Mark) marking system, and current trend is system certification than product certification, popularly known by ISO-9000 system.
- 0 Arun Shrestha/DDC suggested Butwal area is better site for joint venture participation at this stage due to milk holiday suffering. DDC privatization is lying with His Majesty's Government of Nepal (HMG/N), and it is a government decision.
- 0 Indra Basnyat of Indra dairy expressed happiness on the commissioning of SMP plant in Biratnagar. This has created better opportunity for farmers to produce and sell more milk, and even private dairies are willing to buy it if the reasonable price is set.
- 0 Mr Jitendra Thike/Nepal Bureau of Standard was happy to hear status of dairy processing and hygiene, however these types of seminars alone are not enough to solve sanitation problem but needs closely working with one of the dairy and resolve related problem through demonstration. NDDB and or some NGO should start working on it. The successful results could be replicated.

0 Mr Ram Milan Upadhaya/chairman Nepal Dairy Science Association (NDSA) expressed satisfaction on the current wave of supporting private dairies, which was not true in the past. There are number of problems, and support is needed from donors. He encouraged the entrepreneurs to form their association saying that strength lies in unity. It will also provide interface for development assistance.

He also informed NDSA's willingness to serve them if at all they need any type of assistance, since it is the forum of dairy experts with qualification and experience under Nepalese condition.

He informed that he was attending the seminar as NDSA representative.

At last NDSA chairman suggested the need of recognizing local expertise available in the country. Local expertise is much more cost effective than the expatriate one's.

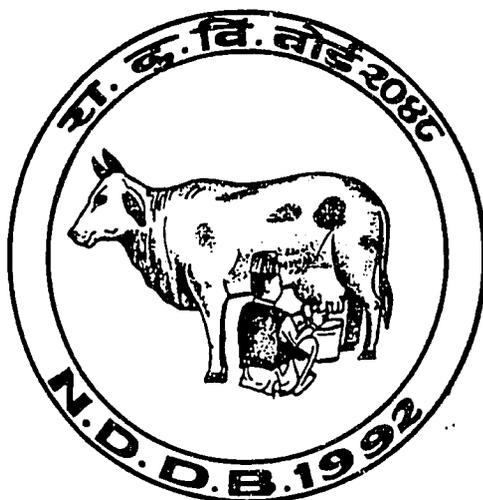

Annex-1: List of Participants in the workshop

- | | | |
|------|------------------------|---|
| X1 | Mr Ram Chandra Acharya | General Manager, Dairy Development Corporation. |
| X2. | John Mitchell | Project Officer, ARD/USAID |
| X3. | Raymond M. Binkley | STTA, USAID |
| X4. | Niranjan Regmi | ARD/USAID |
| X5. | Tek B. Thapa | DESC/ATSP |
| X6. | D.R. Pradhan | Dairy Extension Section DoAD |
| X7. | Jitendra Thikey | Nepal Bureau of Standards |
| X8. | Dhruba K. Subedi | Pokhara Milk Supply Scheme |
| X9. | Daya Ram Sharma | Pragati Ice-cream, Baglung |
| X10. | Madan K. Shrestha | Buff Cheese Plant, Nagarkot |
| X11. | Indra B. Basnet | Indra Dairy, Sorakhutte, Kathmandu |
| X12. | Dr.K.R. Tiwari | Executive Director, NDDB |
| X13. | Peder Lund | Chief Advisor, DANIDA |
| X14. | Ram K. Bajgain | Kavre Dairy |
| X15. | K.B. Bajgain | Kavre Dairy |
| X16. | Raj G. Rajkarnikar | Nepal Dairy Science Association |
| X17. | Arun Shrestha | DDC, Lainchaur |
| X18. | Resham Panthi | Panthi Dairy Pokhara, Pokhara |
| X19. | Giridhar Bajracharya | Nepal Dairy Science Association |
| X20. | B.K. Shrestha | Thankot Dairy, Thankot |
| X21. | Ram Milan Upadhyay | Nepal Dairy Science Association |

APPENDIX XI

FIRST PROGRESS REVIEW

(Sept. 1991 - July 1993)



National Dairy Development Board

Tripureshwor

Post Box No. 5901

Kathmandu, Nepal

Tel : 2-28594

Telefax : 977-1-228342

PREFACE

His Majesty's Government of Nepal has separately passed the National Dairy Development Board Act 1992 & implemented it for the establishment and management of the National Dairy Development Board. The function of the Board is to formulate policies and plans for dairy development at the national level and strengthen the dairy profession by bringing coordination between the private and public sector dairy. The Board is a body corporate having perpetual succession. The head office of the Board is now at Tripureshwor Kathmandu. In the near future it will have its own building constructed at Harihar Bhawan.

As per the objective, function, duties and rights of the Board the first progress review of the Board from the period of Sept 1991 to July 1993 has been prepared. While preparing this review different governmental and non governmental organizations rendered great help. In order to correct the mistakes and make it more effective the readers of this progress review are kindly requested to give their valuable suggestions.

The staff of the National Dairy Development Board Secretariat have worked very hard to prepare this progress review. For this work, I would like to thank all the Board members, secretariat employees and especially the Executive Director and Member secretary of the Board Dr. Durga Dutta Joshi. Likewise, I would like to give special thanks to the donor agencies e.g. DANIDA, USAID and FAO for the assistance provided by them to the Board.

Tripureshwor, Kathmandu,
September, 1993

Hon'ble Ram chandra Poudyal
Chairman
National Dairy Development Board
Minister
**Minister of Agriculture and
Local Development**

Executive Committee

National Dairy Development Board
(Upto July 1993)



Hon'ble Mr. Ram Chandra Poudyal
Minister for Agriculture and Local Development
Chairman



Mr. Bindsawari Prasad Sinha
Secretary
Ministry of Agriculture
Vice-Chairman



Hon'ble Mr. Bal Bahadur Kunwar
Representative
Private Dairy Entrepreneurs
Member



Mr. Deepak Prakash Banskota
Pro-Chairman
National Cooperative
Development Board
Member



Mr. Hari Bhakta Sitaula
Representative
Private Dairy Entrepreneurs
Member



Mr. Madhav Prasad Kolralla
Farmer Representative
Member



Mr. Ramesh Kant Sigdel
Farmer Representative
Member



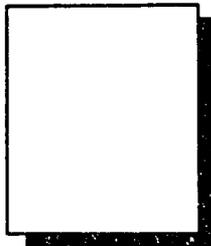
Dr. Satish Prabashi
Dairy Sector Specialist
Member



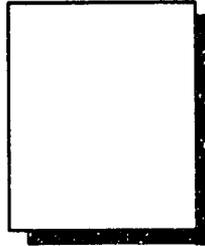
Mr. Bimal Prasad Koirala
Joint Secretary
Ministry of Industry
Member



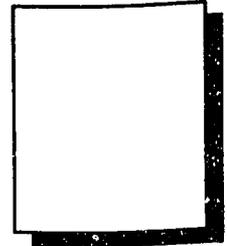
Mr. Ram Milan Upadhaya
General Manager
Dairy Development corporation
Member



Mr. Gopal Rai
Consumer Representative
Member



Mr. Lal Bahadur Nembang
Dairy Sector Specialist
Member



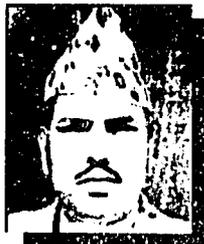
Mr. Murari Raj Sharma
Joint Secretary
Ministry of Finance
Member



Dr. Durga Dutta Joshi
Executive Director
National Dairy Development Board
Member-Secretary

Co-ordination Committee

National Dairy Development Board
(Upto July 1993)



Mr. Bineswori Prasad Sinha
Secretary
Ministry of Agriculture
Chairman



Dr. Durga Dutta Joshi
Executive Director and
Member Secretary
National Dairy Development Board
Member



Mr. R.B. Singh
Joint Secretary
Ministry of Agriculture
(Chairman From 17 Dec.
1991-22 oct. 1992)



Mr. Jagadish chandra Gautam
Director General
Department of Agriculture
Development
Member



Dr. Surendra Kumar Shrestha
Director
Livestock Services
Member



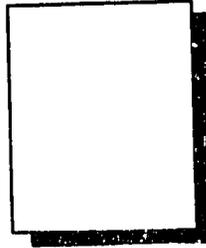
Mr. Ram Milan Upadhyaya
General Manager
Dairy Development corporation
Member



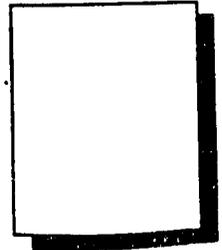
Mr. Krishna Prasad Sharma
Deputy General Manager
Dairy Development corporation
Member



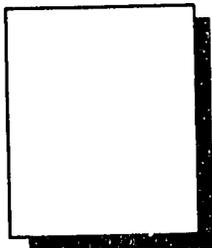
Mr. O.F. Larsen
Counsellor
Royal Danish Embassy
Member



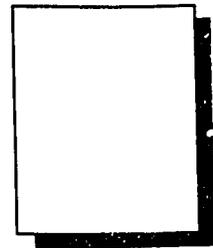
Mr. A.J.J. Vanden Hoven
Chief Adviser
NDDB



Mr. S.S. Mahdi
Resident Representative
Food and Agriculture Organisation
Member



Mr. James Gingerich
Chief Agriculture Division
United States Agency for
International Development
Member



Mr. D.W. Billing
Resident Representative
European Economic Community
Member



Mr. D.R. Pyakuryal
Senior Programme Officer
National Dairy Development Board
Member Secretary

CONTENTS

INTRODUCTION	1
1.1 Background	1
1.2 Constitution of the Board	4
1.2.1 Objective	5
1.2.2 Organization and Management	5
2. ANNUAL BUDGET AND DEVELOPMENT PROGRAMME FOR THE FISCAL YEAR 1992-93	6
2.1 Annual Development	7
2.2 Classification of Budget	7
2.3 Details of Man Power	9
2.4 Major activities performed by the Board	9
3. TEN YEAR DAIRY DEVELOPMENT PLAN (1991-2000 AD)	9
4. COORDINATION COMMITTEE	9
5. REGIONAL MEETING OF THE DAIRY FARMERS	9
5.1 Kathmandu Milk Supply Scheme	10
5.2 Pokhara Milk Supply Scheme	10
5.3 Biratnagar Milk Supply Scheme	10
5.4 Lumbini Milk Supply Scheme	11
5.5 Hetauda Milk Supply Scheme	11
6. CENTRAL WORKSHOP OF DAIRY FARMERS	11
7. WORKSHOP OF DDC EMPLOYEES	12
8. NDDB BRIDGING PROJECT	13
9. IMPLEMENTATION OF PROGRAMMES UNDER TEN YEAR DAIRY DEVELOPMENT PLAN	13
10. APPROVAL OF HMG FOR THE DAIRY DEVELOPMENT PROJECT OF THE NDDB	14
11. DANIDA MISSION REGARDING THE RESTRUCTURING OF THE DAIRY DEVELOPMENT CORPORATION	14
12. RECOMMENDATION OF THE NDDB REGARDING THE RESTRUCTURING OF THE DAIRY DEVELOPMENT CORPORATION	14
13. VISIT OF DANIDA AGREEMENT TEAM TO NEPAL	14
14. ASSISTANCE FROM THE UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT	14

15.	PROJECT PROPOSAL SENT TO EUROPEAN ECONOMIC COMMUNITY FOR THE ASSISTANCE TO TEN YEAR DAIRY DEVELOPMENT PLAN AND THE VISIT OF MR. PRICCHARD REGARDING THE PROJECT TO NEPAL	15
16.	ASSISTANCE RECEIVED FROM FOOD AND AGRICULTURE ORGANISATION	15
17.	VISIT OF EEC MISSION REGARDING DAIRY ANIMAL HEALTH DEVELOPMENT OT NEPAL	15
18.	FEASIBILITY STUDY FOR THE ESTABLISHMENT OF DAIRY PROCESSING PLANT FACTORY AT BUTWAL AND KOHALPUR/NEPALGUNJ	15
19.	FEASIBILITY STUDY FOR THE ESTABLISHMENT OF ANIMAL SLAUGHTER HOUSE WITH THE ASSISTANCE OF DANIDA	15
20.	FEASIBILITY STUDY FOR THE ESTABLISHMENT OF ANIMAL FEED INDUSTRY WITH THE ASSISTANCE OF DANIDA	15
21.	SUMMARY OF THE BOARD MEETINGS	15
22.	ANNEXTURES	22
1.	ACT FOR THE CONSTITUTION OF NDDB	22
2.	ORGANISATIONAL CHART	27
3.	WORKSHOP/TRAINING	28
4.	NEWS	29
5.	CONDOLENCE	30
6.	NAMES OF THE NDDB EMPLOYEES	31
7.	VISIT REPORT OF MR. MADHAV KOIRALA	32
8.	REPORT PUBLISHED BY NDDB	40
9.	MILK COLLECTION AND DISTRIBUTION BY DDC UNDER ITS FIVE MILK SUPPLY SCHEMES	41
10.	TOTAL NATIONAL MILK PRODUCTION	42
11.	DETAILS OF THE PRIVATE DAIRIES	43
23.	MAP	
1.	TEN YEAR DAIRY DEVELOPMENT PLAN IN THE MAP OF NEPAL	44
2.	DDC NATIONAL MILK GRID	45

1. INTRODUCTION :

1.1 BACKGROUND:

Livestock sector occupies a status of paramount importance in the overall national economy of Nepal. It is because the livestock sector has contributed 15.0% in the national GDP and 25.0% in the agriculture GDP. Livestock is an indispensable part of the agriculture production system in Nepal. Dairy farming is done for various purposes along with milk production.

Milk production is an important activity of the livestock sub sector. Nearly half of the income from livestock at the farm level is generated from milk and milk products. It has been estimated that in 1988-89 the total milk produced in the country was 834 thousand mton and out of this the contribution from buffaloes was 71% and 29% by cows. The milk production capacity of a cow is 400 litres while that of a buffalo is 750 litres per lactation. Per capita milk supply is estimated to be 42 litres per annum.



Fig 1

Milk transport by farmers

Low level of production has resulted in a shortage of milk in urban areas. Rapid growth of population in urban areas at the same time has pushed further the demand for fresh milk. Due to the lack of transportation net work and marketing difficulties, urban areas have short falls in the supply of milk while surpluses exist in some rural areas.

The average performance of cows and buffaloes is low mainly because of poor genetic make up, poor feeding and management. The deterioration of forest and pasture areas has further depleted the animal feed base.

Cattle and buffaloes are the primary milk producing animals in Nepal. At the national level, cattle population is estimated at 6.3 million while that of buffalo at 3.0 million. The number of lactating cows is estimated at 689 thousand (10.9%) and the total number of milking buffaloes at 745 thousand (24.8%).



Fig 2 Milk transport by farmers

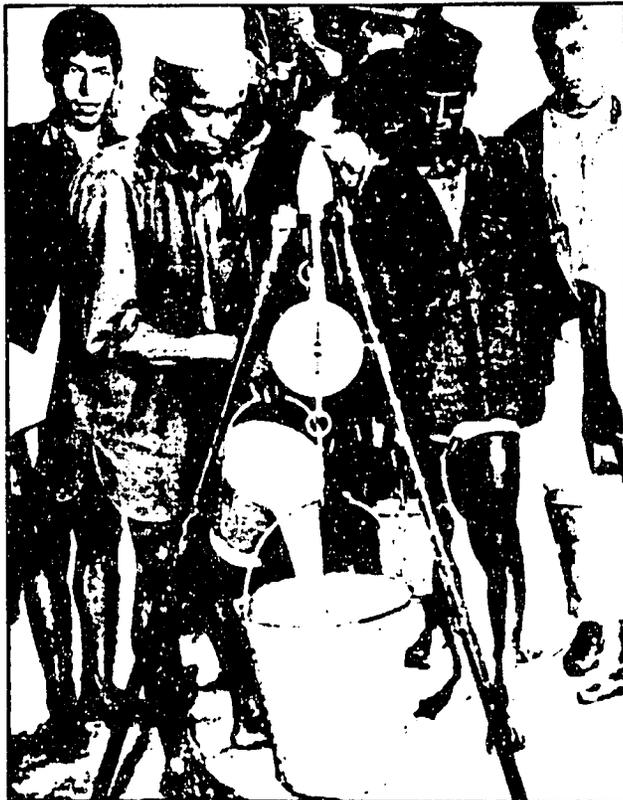


Fig 3 Milk from the farmers being weighed

Of the total cattle population in the country, 51% are concentrated in the Terai, 37% in the hills and 12% in the mountains. Cattle population in the country is showing a decreasing trend. It has decreased by 0.92% in 1988/89 as compared to the previous year.

Out of the total buffalo population, 55% are concentrated in the hills, 41% in the Terai and 4% in the mountains. Buffalo population in the country is in increasing trend. It has increased by about 1.7% in 1988/89 as compared to the previous year. Buffalo is preferred to the cow because of its higher fat content in the milk and greater milk production. Buffaloes are also slaughtered for meat purpose.

Thus livestock sector has a status of paramount importance in Nepal. His Majesty's Government has already approved the Ten year Dairy Development Plan at the context of its lead role in the income generation of farmers and in the national economy.

Whereas, in order to maintain the health and well being of the people, it is necessary to produce more milk within the country itself with people's participation by bringing coordination between the milk production programmes of the public and private sectors, it is expedient to make legal provision for the establishment and management of National Dairy Development Board. Now therefore, it has been endeavoured to review the progress from its inception till to date.

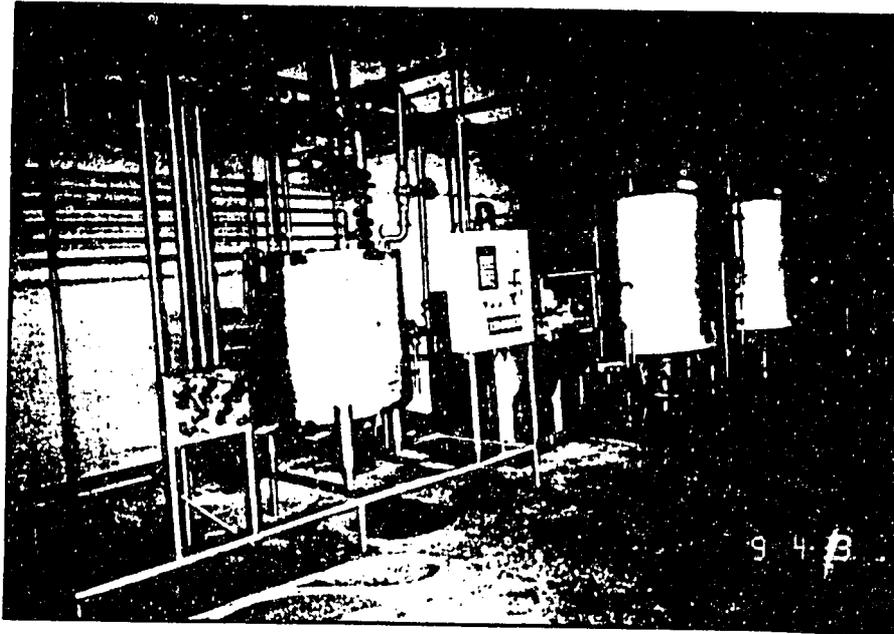


Fig 4

Milk Processing Factory



Fig 5

Inaugural Ceremony of the Workshop/Seminar on the extension of the milk processing capacity



Fig 6 Inspection of Milk processing factory by Hon'ble Minister of Agriculture Ms. Sallaja Acharya.



Fig 7 Hetauda Milk Supply Scheme

1.2 CONSTITUTION OF THE NATIONAL DAIRY DEVELOPMENT BOARD:

Whereas, in order to maintain the health and well being of the people, it is necessary to produce more milk within the country itself with people's participation by bringing coordination between the milk production programmes of the public and private sector, the parliament has made National Dairy Development Board Act 1992 and it was made to come into force at once. As per the Act, the Board has been constituted to formulate policies and plans for dairy development at the national level and strengthen the dairy profession by bringing coordination between the private and public sector dairies. The Board shall be a body corporate having perpetual succession. The details of the Board Act has been shown in Annex 1.

1.2.1 Objective:

The objective of the Board shall be as follows:

- To assist His Majesty's Government in formulating policies and plans of dairy development at the national level.
- To or cause to develop dairy industries
- To find remedies of problems in the field of livestock development and animal health sector for dairy development.
- To or cause to maintain coordination between all the private and public sector dairies within the country.
- To or cause to carry out high level studies and research works for dairy development.
- To or cause to make arrangement of fodder and pasture.

1.2.2 Organization and Management:

The executive committee of the Board provides policy guidelines to its Secretariat for the implementation of dairy development programmes. The Executive Director of the NDDB secretariat works as the member-secretary of the executive committee. Also the Executive Director implements the decisions of the executive committee and will be responsible for the daily management of the secretariat. At the operation level there is a coordination committee under the chairmanship of the Secretary of the Ministry of Agriculture. This committee provides necessary opinions and suggestions for the operation of the secretariat.

The staff of the secretariat shall have the following services:

- (a) Administrative service.
- (b) Research and Development service.

There will be three Departments under the Research and Development service:

- (a) Training and Extension Department.
- (b) Planning and Project Management Department.
- (c) Monitoring and Evaluation Department.

There shall be one Department under the Administrative service:

General Administration Department

The following shall be the function under this Department:

- i General Administration.
- ii Personnel Administration
- iii Accounts.
- iv Goods and Asset Security.
- v Services
- vi Registration of Dairy Industries.

Training and Extension Department

The following shall be the function under this Department:

- i Extension & Printing.
- ii Farmers' training.
- iii Programme for Dairy entrepreneurs.
- iv Personnel Training.
- v Man power identification and mobilization.

Project Planning and Management Department

The following shall be the function under this Department:

- i Feasibility study.
- ii Formulation of appropriate project proposal for the development of dairy industry.
- iii Dairy Management advice and consultancy.

Monitoring and Evaluation Department

The following shall be the function under this Department:

- i Price Policy formulation of the buying and selling price of milk.
- ii Formulation of import and export policy on milk and milk products.
- iii Evaluation of farmers' cooperatives and dairy profession.
- iv Profile of farmers' cooperative associations, farmers' group and dairy industries.

2. ANNUAL PROGRAMME AND BUDGET OF FY 1992/93

2.1 ANNUAL PROGRAMME OF FY 1992/93

1. To assess the need of manpower and training required for government, non government, private and cooperative dairy industries within the country.
2. To conduct workshop/seminar at the national level.
3. To or cause to make necessary arrangement for survey study on import of necessary goods for production and promotion of animals feeds as well as the export of produced animal feeds.
4. To or cause to make necessary arrangement for survey study of the market system of milk and milk products.
5. To or cause to study dairy development proposals received from different individuals and associations.
6. To or cause to study the cost of production of milk on the basis of seasonal, geographical region and cattle farming.
7. To or cause to conduct feasibility studies for the promotion of dairy industry in different regions of Nepal.
8. To or cause to convert milk producers associations into cooperatives with the joint coordination of National Cooperative Development Board and Dairy Development Corporation.

9. To prepare the list of dairy entrepreneurs.
10. To or cause to monitor, evaluate and review the government and non government dairy programmes. "

2.2 CLASSIFICATION OF BUDGET

(a) Administrative expenses	Expense Amount (In Rs)
Salary	2,10,000/-
Allowance	5,000/-
Other allowance	-
Water charge	2,000/-
Telephone charge	5,000/-
Electricity charge	10,000/-
Other charges	2,000/-
Repair and Maintenance	-
Guest entertainment	40,000/-
(b) Office operation expense	Expense amount (In Rs)
Daily and Travel allowance	95,000/-
Printing expense	5,000/-
Vehicle fuel	10,000/-
Other purpose fuel	1,000/-
Office goods	10,000/-
Other goods	5,000/-
Total	Rs. 4,00,000/-

2.3 MAN POWER DETAILS

S.NO.	Name of the post	Number
1.	Executive Director and Member Secretary	1
2.	Senior Project planning and Management officer	1
3.	Senior Office Assistant (Administration/Accounts)	1
4.	Driver	1
5.	Peon/Guard	1
	Total	5

2.4 MAJOR ACTIVITIES PERFORMED BY THE BOARD:

- (a) Study on animal feed industry has already been completed with DANIDA assistance in all the Five Development Regions and the study report is awaited from WIBA CONSULT.
- (b) The Board conducted the study on the cost of production of milk in all the Five Development Regions of Nepal. Accordingly the Board submitted the recommendation to His Majesty's

Government. Dairy Development Corporation has already fixed the price of milk on the basis of each chilling center as per the directives of His Majesty's Government and Keeping the recommendation in mind.



Fig 8

Milk Producer Farmers

- (c) Regarding the establishment of skimmed milk powder plant in Biratnagar, agreement has already been done with donor agency DANIDA and it has been targeted to be established by the middle of 1994.



Fig 9

Foundation stone for SMP plant laid down by Hon'ble Minister of Agriculture at Biratnagar.

- (d) Project Proposals for the renovation of existing cheese factories and the establishment of new cheese factories were prepared and submitted to HMG for approval.
- (e) Organized a national workshop/seminar for the restructuring of the Dairy Development Corporation.
- (f) Organized a workshop of the representatives of the Milk Producers Associations under five milk supply schemes of the Dairy Development Corporation with a purpose to know the views of the farmers regarding the restructuring of DDC.
- (g) Organised a workshop/seminar of the Dairy Development Corporation employees to know their views regarding the restructuring of DDC.
- (h) organised a workshop/seminar of the Banking Agencies, Private Dairy Entrepreneurs and other Entrepreneurs to know their views on the restructuring of DDC.

3. TEN YEAR DAIRY DEVELOPMENT PLAN (1991-200 AD)

His Majesty's Government approved the ten year dairy development plan in Dec 1991. The implementation process of the plan has already been started with the resources available and with the necessary assistance of the donor agencies. Under this plan the SMP plant at Biratnagar will be established within the next year and the feasibility study for the establishment of SMP Plant at Kohalpur is already completed.

In the hilly areas despite the production of milk, there is no consumption and it is necessary to produce ghee. So in these areas cheese factories will be established and the milk producer farmers will get more customers and employment. Also it will help to supply cheese for the urban consumers.

The ten year plan has also the programme to strengthen and expand the old cheese factories. The plan has also recommended that instead of putting the Dairy Development Board as the present public board, it should be developed as Private Dairy Development Board during the coming ten years. Also the extension activities of the corporation should go to development wing and the cooperative of the milk producer farmers' will be constituted. Similarly the import and export of milk products should be controlled. Also there is a programme to develop and expand live stock research, animal health services, animal breeding service and education as well as training in dairy development programmes.

The plan has mentioned about the policy to be taken for fodder grass and animal feed as well as the objective policy and strategy about the loan (to be made easily available to livestock farmers), livestock insurance, milk collection, processing and marketing.

4. COORDINATION COMMITTEE

During the FY 1992/93, the coordination committee under the Board had 24 meetings. The meetings had mainly made the following decision and it was implemented accordingly.

- (a) To take the assistance of Denmark regarding Animal Feed Industry in Nepal.
- (b) To send the recommendation of the workshop/seminar on Restructuring of Dairy Development Corporation to the Board for approval.
- (c) To make a detail discussion on the study report on cost of production of milk and send the report to the Board for approval.
- (d) After discussing the project proposal received from the Women Farmers Development Division of the Ministry of Agriculture regarding the role of women for milk production in Nepal, it was sent to Royal Danish Embassy for assistance.
- (e) The terms of reference for the Dairy quality Adviser for NDDB was prepared.

5. REGIONAL MEETING OF THE MILK PRODUCER FARMERS

A workshop/seminar of the Milk Producer Farmers Representatives' was organized in all the five schemes (Kathmandu Milk Supply Scheme, Hetauda Milk Supply Scheme, Lumbini Milk supply Scheme Pokhara Milk Supply Scheme, Biratnagar Milk Supply Scheme) of the corporation in order to know the views of farmers regarding the restructuring of the Dairy Development corporation.

5.1 KATHMANDU MILK SUPPLY SCHEME:

On 15 January 1993 a workshop/seminar of the farmers under this scheme was organized. The main recommendation of the workshop is as follows:

- (a) There should be a working committee in each chilling centre with one representative from every Milk Producers' Association.
- (b) In order to constitute a working committee at the scheme level from the primary level of milk producers, there should be an election of the committee members.
- (c) A central working committee of the elected members should be constituted from the chilling center level.
- (d) A committee comprising of 60 percent milk producers farmers' representative should be constituted for the operation of activities at the central level.
- (e) Only the farmers should have participation in the ownership of dairy industry. 8

5.2 POKHARA MILK SUPPLY SCHEME

5.2.1 The recommendations of the farmers' meeting at this scheme has mentioned that the Dairy Development Corporation should be restructured at the following levels:

- (a) committee of the Milk Producers' Association level
- (b) committee of the Chilling center level

5.2.2 The membership of the Milk Producers Association should be given only to the Milk Producer Farmers.

5.2.3 The full ownership of the corporation should come under the farmers.

5.2.4 The ownership should be transferred to the farmers within one year.

5.2.5 The leader farmer should be trained in animal health services in the corporation.

5.2.6 The national group of the leader farmers should be sent to foreign dairy industries for study visit.

5.3 BIRATNAGAR MILK SUPPLY SCHEME

The recommendation of the farmers' meeting at this scheme is mainly as follows:

5.3.1 A nine member executive committee should be constituted from among the members of the milk producers' cooperative society.

5.3.2 All the executive committee members of the Milk Producer cooperative Societies shall be the members of the chilling center level committee. This committee shall elect a five member executive committee. This committee will be responsible for the activities of the chilling center level.

5.3.3 An executive committee at the scheme level should be constituted from the executive committee members of the Milk Producers cooperative societies under each Milk Supply Scheme.

5.3.4 The executive committee of the Milk Producers Cooperative Societies of all the schemes shall elect a nine member central committee at the national level. It will be the apex body of the milk producer farmers.

5.3.5 The ownership of the corporation should be transferred to the milk producer farmers.

5.4 LUMBINI MILK SUPPLY SCHEME

The recommendations of the farmers meeting at this scheme is mainly as follows:

- 5.4.1 Butwal Milk Processing Factory should be established before transferring the Dairy Development Corporation to farmers.
- 5.4.2 The price of milk should be fixed on the basis of actual cost of production of milk by the farmers.
- 5.4.3 The farmers should be trained prior to privatization of DDC and the farmers should be made to visit the dairy farm of the neighbouring country.
- 5.4.4 There should be a new supply scheme at Kohalpur.
- 5.4.5 Hundred percent ownership of the corporation should be transferred to the farmers.

5.5 HETAUDA MILK SUPPLY SCHEME

The recommendation of the farmers' meeting held at this scheme is mainly as follows:

- 5.5.1 Hundred percent share of the Dairy Development Corporation should be transferred to the farmers.
- 5.5.2 During the current Fiscal Year the farmers should be involved in the ownership participation of dairy.
- 5.5.3 Farmers should be trained at least three months regarding animal health training.
- 5.5.4 Farmers should be trained to produce good quality milk.
- 5.5.5 HMG should bear the losses and loans of the corporation while transferring the ownership of the corporation to be farmers.

6. CENTRAL WORKSHOP/SEMINAR OF THE MILK PRODUCER FARMERS

On 15th January 1992, the Board had conducted a workshop/seminar of the dairy farmers at cooperative Training Center, Baneshwor with the representation of all the five schemes under the corporation.

The following are the main recommendations of the workshop/seminar:

- 6.1 There will be milk producers' cooperative society at the primary level.
- 6.2 At the second tier the society at the scheme level should be established where the chilling center and district level union will be the share holders.
- 6.3 A national federation should be constituted with the representation of each scheme.
- 6.4 HMG should bear the losses and loans of the corporation while transferring the corporation to the farmers.
- 6.5 The association at the scheme level, besides selling milk at the current market, should also identify the possibility of the new market.
- 6.6 Price of milk should be fixed as per the cost of production of milk.
- 6.7 As per the principle of cooperative the federation of the farmers should supervise the market system.
- 6.8 There should be three milk powder plants established at Eastern, Western and mid Western region.

- 6.9 Chairmen, members and secretaries of the Milk Producers' Associations should be provided training on animal health treatment, feed production, livestock farming of improved breeds and management of associations.
- 6.10 The current structure of the Dairy Development Corporation should be changed as per the cooperative dairy of other countries.
- 6.11 The farmers should have maximum representation in the restructured corporation.
- 6.12 The recommendation of the association should be given priority regarding the price of milk.
- 6.13 The participation of staff is not necessary in the ownership of the corporation.
- 6.14 The farmers should have representation in the ownership right from the chilling center level.
- 6.15 Before the scheme is completely privatized, there should be a system at the first stage to provide 51 percent share to farmers, 40 percent to the Government and 9 percent to the general public.

7. THE MAIN RECOMMENDATIONS PUT FORTH BY THE PARTICIPANTS OF THE WORKSHOP/SEMINAR ORGANISED FOR DAIRY DEVELOPMENT CORPORATION EMPLOYEES.

- 7.1 There should be the ownership of milk producers' cooperative upto chilling center level. The government should distribute the minimum shares to the Dairy employees at free of cost.
- 7.2 There should be equal participation and equal representation of the Milk Producers' Cooperative and consumers in the Dairy Cooperative Federation. There should be two representatives from the cooperative of the dairy employees. Also there should be two elected representatives from each of the Milk Producers' Cooperative and consumers too.
- 7.3 There should be an autonomous management committee in each scheme and four dairy employees and three representatives from Milk Producers' Cooperative should be there.
- 7.4 The Dairy cooperative Federation will be responsible for research and development activities as well as employees' training.
- 7.5 Milk Producers, Employees, and Consumers will be responsible in management for the effective operation of the dairy industry.
- 7.6 The dairy industry may be commercially viable by operating it with the employees of dairy cooperatives. The Board had organised a meeting of the Banking agencies as well as local and foreign investors to get the views on the restructuring of the Dairy Development Corporation. The following are the main points discussed at the meeting:
 - 7.6.1 What type of role do you feel on the role of dairy processing industry in the context of overall industrial development of Nepal and the restructuring of the Dairy Development corporation?
 - 7.6.2 What are the main points of concern to you regarding your participation in dairy industry?
 - 7.6.3 Regarding participation how do you observe the role of dairy farmers and employees of dairy industry?

As per the decision made by the Board on 12 July 1992 a working group was constituted under the chairmanship of Executive Director and Member Secretary Dr. Durga Dutta Josh to operate the study report made for Biratnagar Milk Supply Scheme, Hetauda Milk Dupply Scheme and Pokhara Milk Supply Scheme of the Dairy Development Corporation. The

operation expense of the working group was received from commodity sales proceeds money of the United States Agency for International Development (USAID).

On the same day an adhoc working committee was constituted under the convenorship of NDDDB member Mr. Madhav Koirala. It was expected that the committee would provide assistance to the working group on the following subject e.g converting Milk Producers' Association into cooperatives and their participation in the corporation. The committee had one farmer representative from each of the five milk supply schemes under the corporation.

Both these committees were supposed to provide assistance of DANIDA mission which was scheduled to arrive on September 1992 for the restructuring of the Dairy Development Corporation.

The working group had highlighted on the importance of privatization and the restructuring of the Dairy sector. The group had also mentioned about the monitoring and guideline for the privatization of Dairy. Likewise there was the same opinion of all the farmers to look at the study report of KMSS, BMSS and PMSS and the plan of restructuring DDC as one entity.

There were altogether four meetings of the adhoc committee. The adhoc committee had the function to collect the views of dairy farmers regarding the conversion of Milk Producers' Associations into cooperatives. The committee accomplished its function as per its objective.

8. BRIDGING PROJECT OF THE NATIONAL DAIRY DEVELOPMENT BOARD:

As per the letter of the Royal Danish Embassy dated 8 March 1992, the NDDDB secretariat was supported with US \$ 158,000.00 under the Bridging Project. The objective to provide the support was to give necessary logistic support to the Board prior to the preparation of NDDDB project documents.

Regarding the subject to provide the commodity assistance of 1000 mton milk powder and 300 mton butter oil from Denmark for the programme development of NDDDB, an agreement was done between HMG and the Royal Danish Embassy Kathmandu. Following this, the commodities are already being received at Kathmandu. The sales proceeds money will be utilized to formulate few programmes included in the Ten Year Dairy Development Plan.

9. IMPLEMENTATION OF THE PROGRAMMES UNDER TEN YEAR DAIRY DEVELOPMENT PLAN:

The Board has already started the following activities included in the Ten year Dairy Development Plan.

- 9.1 Programme development of NDDDB Secretariat.
- 9.2 Coordination of the restructuring of DDC.
- 9.3 Feasibility study of the Animal Feed Industry.
- 9.4 Feasibility study regarding the Establishment of Animal Slaughter House.
- 9.5 Establishment of SMP plant at Biratnagar.
- 9.6 Establishment of Dairy Mobile Training unit at Biratnagar.
- 9.7 Feasibility study for the establishment of SMP plant at Kohalpur.

10. APPROVAL OF HMG FOR THE DAIRY DEVELOPMENT PROJECT OF NDDB:

HMG has already approved the five year project (1993-1997 AD) of the Board. The project document is also already sent to the donor agency DANIDA for assistance. It has been proposed in the project that there would be an assistance of US \$ 5,491,050 for a five year period from DANIDA. The grant money of HMG would be Rs 25.00.000 during that period.

11. VISIT OF DANIDA MISSION REGARDING THE RESTRUCTURING OF DDC

On the convenorship of Mr. Ole S. Jepsen the mission had visited during 12 January to 20 February 1993.

12. RECOMMENDATION OF NDDB REGARDING THE RESTRUCTURING OF DDC

To submit to HMG for the principle approval to cooperatise DDC as per the declared principle of HMG.

12.1 Decision made by the cabinet Secretariat on 19th September 1992

To give principle approval to cooperatise DDC.

13. VISIT OF DANIDA AGREEMENT TEAM TO NEPAL

13.1 Decision made by the DANIDA agreement team visiting from 17-20 November 1991

The Nepali delegation requested DANIDA team for the implementation of projects under Ten Year Dairy Development Plan. The DANIDA team gave positive assurance to provide assistance. Also the team stated that the DANIDA would advertise immediately to make chief adviser available to NDDB.

13.2 Decision made by DANIDA Agreement Team visiting from 10-12 November 1992:

The team gave the following positive indications as per the request made by HMG for the assistance to NDDB Secretariat:

- SMP plant will be immediately established.
- The appointment of the Chief adviser to the Board will be done. Also the NDDB secretariat will be developed and the basic facilities provided to the Board Secretariat.
- Feasibility study for the dairy processing facility will be done immediately at Butwa and Nepalgunj.
- Priority will be given to provide managerial advice and technical assistance to DDC.
- To provide assistance to the DOL for dairy extension programme.
- To conduct study in new model for the establishment of cheese plant.
- To conduct study for the facilities of animal slaughter house.
- To conduct study on the sources of animal feed.

14. ASSISTANCE TO BE RECEIVED FROM USAID

In order to purchase the necessary equipments for the utilization in the coming flush season of milk (October-January 1994) it has been prepared to utilize the sales proceed money (US \$ 0.1 million) from the sales of milk powder/butter oil received from USAID.

15. PROJECT PROPOSAL FORWARDED TO EEC REQUESTING FOR ASSISTANCE IN TEN YEAR DAIRY DEVELOPMENT PLAN AND THE FOLLOWING VISIT OF MR. PRICCHARD TO NEPAL:

Unless the SMP Plant Biratnagar (scheduled to be established by January 1994) is operated in full capacity, there will be scarcity of the powder milk in Nepal. So in order to fulfill this scarcity HMG has already requested EEC in October 1992 for assistance. Following this Mr. Pricchard has already made site visit regarding dairy development in Nepal and the report is awaited.

16. ASSISTANCE RECEIVED FROM FAO:

A letter was received from the Food And Agriculture Organization on 22 February 1993 regarding an assistance of 1,69,000 US \$ for the Dairy Mobile Extension Training at the Eastern Region. The office of the Dairy Mobile Extension unit has already started its function at Biratnagar.

17. VISIT OF EEC MISSION REGARDING DAIRY ANIMAL HEALTH DEVELOPMENT:

In order to conduct a feasibility study regarding the Dairy Animal Health Development Project, an EEC mission was on a site visit to Nepal. The report is awaited.

18. FEASIBILITY STUDY FOR THE ESTABLISHMENT OF DAIRY PROCESSING FACTORY AT BUTWAL AND KOHALPUR/NEPALGUNJ.

A detailed project proposal has already been prepared with the assistance of DANIDA. Shakya Enterprises has done a detail feasibility study regarding the establishment of dairy processing factory at Butwal.

19. FEASIBILITY STUDY WITH DANIDA ASSISTANCE FOR THE ESTABLISHMENT OF ANIMAL SLAUGHTER HOUSE IN NEPAL:

As per the request of HMG, DANIDA provided assistance for this study and following this a detailed feasibility study was conducted in the selected districts of all the five development regions of Nepal. The final report will be presented to HMG.

20. FEASIBILITY STUDY WITH DANIDA ASSISTANCE FOR ANIMAL FEED STUDY:

As per the request of HMG, DANIDA provided assistance for this study and following this a feasibility study is already completed in few selected districts and the final report is awaited.

21. SUMMARY OF THE APPROVED POINTS AT NDDB MEETINGS:

21.1 FIRST MEETING

The first NDDB meeting held on 1st February 1991 under the chairmanship of Ms. Sailaja Acharya Hon'ble Minister for Agriculture and Chairperson of NDDB approved the annual programme and budget for FY 1992/93.

- The NDDB Secretariat shall prepare a list of private dairy entrepreneurs registered at present within the country.

60

21.2 SECOND MEETING

The second NDDDB meeting held on 11 July 1992 under the chairmanship of Ms. Sailaja Acharya Hon'ble Minister for Agriculture and Chairperson of NDDDB constituted the following working group and adhoc committee.

The working group was constituted under the convenorship of Dr. Durga Dutta Joshi Executive Director and Member Secretary of the National Dairy Development Board.

The working group was formed to make a detail study on the suggestions of the study report related to the participation of milk producers' associations in the dairy related activities of BMSS, HMSS and PMSS under the Dairy Development corporation. The group was also asked to give suggestions to HMG on the forthcoming policies, programmes and tables on sales work etc. and to implement it gradually.

MEMBERS OF THE WORKING GROUP

1.	Mr. Ram Milan Upadhaya	General Manager	DDC
2.	Dr. Pradip Tulachan	Representative	USAID
3.	Mr. O.F. Larsen	Counsellor	Royal Danish Embassy
4.	Dr. Udaya Gurung	Representative	APROSC
5.	Coordinator of Study Team	Representative	DEVTEC
6.	Dr. Satish Prabashi	Representative	CERES
7.	Mr. D.R. Pyakuryal	Senior Programme Officer (Member Secretary)	NDDDB

In order to assist the working group, it was decided to constitute an adhoc committee under the convenorship of Mr. Madhav Koriala to help in converting Milk Producers' Associations into cooperatives and for the participation of Milk Producers' associations in the operation of Dairy Development Corporation.

MEMBERS OF THE ADHOC COMMITTEE

1.	Farmer representative of KMSS	Member
2.	Farmer representative of HMSS	"
3.	Farmer representative of BMSS	"
4.	Farmer representative of PMSS	"
5.	Farmer representative of LMSS	"
6.	Mr. Dharma Nath Koirala Member Secretary National Cooperative Development Board	"
7.	Dr. Durga Dutta Joshi Executive Director and Member Secretary National Dairy Development Board	Member

8. Mr. Ram Milan Upadhaya Member
General Manager
Dairy Development Corporation
9. Mr. Devendra Raj Pyakuryal Member Secretary
Senior Programme Officer
National Dairy Development Board

The duration of the above working group and adhoc committee shall be one year from 16 July 1992.

The estimate of the total expense for the function of the above working group and adhoc committee will be prepared by Agricultural Projects Service center and submitted to Dairy Development Corporation. The approved mony will be spent from the sales proceeds fund of USAID.

21.3 THIRD MEETING:

As per the permission of Ms. Sailaja Acharya Hon'ble Minister for Agriculture and Chairperson of NDDB, there was third NDDB meeting on 13 July 1992 held under the chairmanship of Mr. Bindeswori Prasad Sinha Secretary Ministry of Agriculture and vicechairman of NDDB. The meeting passed the following resolution:

A few minor changes were made in the draft of National Dairy Development Board work procedure and staff Administration By-law 1992 and the bye-law was passed. It was decided to send the bye law to the Ministry of Agriculture HMG for approval.

21.4 FOURTH MEETING:

As per the permission of Ms. Sailaja Acharya Hon'ble Minister for Agriculture and Chairperson of NDDB, there was a fourth NDDB meeting on 14 July 1992 held under the chairmanship of Mr. Bindeswori Prasad Sinha Secretary Ministry of Agriculture and vice chairman of NDDB. The meeting passed the following resolution:

A few minor changes were made in the draft of National Dairy Development Board Financial Administration Bye-Law 1992 and the bye - law was passed. It was decided to send the bye-law to the Ministry of Agriculture HMG for approval.

21.5 FIFTH MEETING

There was a fifth NDDB meeting on 18 August 1992 held under the chairmanship of Mr. Ram Chandra Poudel Hon'ble Minister For Agriculture and Chairman of NDDB. The Executive Director and member secretary of NDDB Dr. D.D. Joshi informed the members that Dr. Satish Prabashi and Mr. Lal Bahadur Nembang were being nominated in the vacant posts of NDDB as Dairy specialist.

Member secretary of NDDB Dr. D.D. Joshi informed the members that the Secretariat has the programmes to conduct study on production cost of milk, market study of milk and study on animal feed industries in FY 1992/93. Dr. Joshi stated that the production cost of milk (regional, seasonality and animal species wise) would be found out as per the study. Dr. Joshi further pointed out that the study report would help HMG to fix the milk price policy.

There was a discussion in the meeting regarding the allotment of principle approval by the Board to privatize DDC with the medium of cooperatisation. It was decided at the meeting that a concept paper would be prepared now and the whole process of cooperatising the

corporation would be discussed at the concept paper and following this the paper would be submitted to the Board.

21.6 SIXTH MEETING

The sixth NDDB meeting was organized on 4th September 1992 under the chairmanship of Mr. Ram chandra Poudyal Hon'ble Minister for Agriculture and Chairman of NDDB. The member secretary of the Board introduced Mr. A.J.J. Van den Hoven Chief Advisor to NDDB. Mr. Hoven would work for two years in NDDB. The following decision was made regarding the assistance by USAID for the privatization of DDC. The letter was sent to the Ministry of Finance by USAID.

So far as the dairy industrial activities are concerned, the agreement should have been done with the Ministry of Finance only after the resolution by NDDB meeting. The present agreement has been accepted by NDDB. So far as the other dairy development activities after the present agreement are concerned, it will come first to the NDDB. Accordingly a letter will be sent of the Foreign Aid Division of the Ministry of Finance.

In order to privatize DDC as per the declared principle of HMG, a letter will be submitted to the Ministry of Agriculture for the principle approval of HMG.

21.7 SEVENTH MEETING

The seventh NDDB meeting was organised on 8th November 1992 under the Chairmanship of Mr. Ram Chandra Poudyal Hon'ble Minister for Agriculture and Chairman of NDDB. The member secretary informed the members that the coordinator of the DDC restructuring mission Mr. O. S. Jepson would visit Nepal to discuss with the related agencies and the full mission would visit Nepal in January 1993.

21.8 EIGHTH MEETING

The eighth NDDB meeting was organised on 9th November 1992 under Chairmanship of Mr. Ram Chandra Poudyal Hon'ble Minister for Agriculture and Chairman of NDDB. The members were briefed about the request letter sent to EEC for the assistance of 6442 mton milk powder and 1150 mton BO. So, the meeting gave the principle approval to spend the sales proceeds money in the programmes included in ten year dairy development plan. Also there was a detail discussion on programme budget of the NDDB secretariat and following the discussion the Board gave approval for implementation. It was also decided to request to DANIDA government for assistance to the programme through HMG.

21.9 NINTH MEETING

The ninth NDDB meeting was organized on 18th January 1992 under the chairmanship of Mr. Ram Chandra Poudyal Hon'ble Minister for Agriculture and chairman of NDDB. It was briefed in the meeting that there would be national workshop/seminar on 16th-17th February 1992 regarding the restructuring of Dairy Development corporation and that the workshop/seminar would give final touch to the plan regarding restructuring of Dairy Development corporation.

Chairman of the Board highlighted on the stress to be given to the role and very important concern to three important groups (producers, dairy workers and consumers).

21.10 TENTH MEETING

The tenth NDCB meeting was organised on 19th February 1992 under the chairmanship of Mr. Ram Chandra Poudyal Hon'ble Minister for Agriculture and Chairman of NDDB. The member secretary of the Board informed the members that the adhoc committee constituted on 11th July 1992 has completed its work and so the committee has been dissolved from 20th February 1992.

The Board decided to send the concept paper regarding the restructuring of Dairy Development corporation to the cabinet for approval. Chairman of NDDB expressed thanks to the members of the working group and the adhoc committee for preparing the concept paper.

21.11 ELEVENTH MEETING

The eleventh NDDB meeting held on 17th April 1992 under the chairmanship of Mr. Ram Chandra Poudyal Hon'ble Minister for Agriculture and Chairman of NDDB expressed deep sorrow over the untimely death of Mr. Lal Bahadur Nembang member of NDDB. with the permission of chairman the following committee was constituted to submit a report on the price policy of milk after a detail study regarding the production cost of milk prepared by NDDB:

1. Mr. Madhav Koirala
2. Mr. Gopal Rai
3. Dr. Satish Prabashi
4. Mr. Ram Milan Upadhaya
5. Dr. Durga Dutta Joshi

The member secretary of the Board Dr. Durga Dutta Joshi informed the members that the chief adviser of DANIDA/NDDB Mr. A.J.J. Van den Hoven had resigned from his post & that the Royal Danish Embassy approved the resignation.

The Board decided to request to the Ministry of Finance through the Ministry of Agriculture for an annual budget of Rs. 590,800/- for the annual development programme of FY 1992/93. The Board also decided to submit to the next Board meeting an annual development programme to spend the above budget.

21.12 TWELFTH MEETING

The twelfth NDDB meeting was organised on 15th May 1992 under the chairmanship of Mr. Ram chandra Poudyal Hon'ble Minister for Agriculture and Chairman of NDDB. During the meeting the committee constituted for milk price policy submitted its report and it was decided to send the report to the Ministry of Agriculture for necessary action.

21.13 THIRTEENTH MEETING

The thirteenth meeting was organised on 18th June 1993 under the chairmanship of Mr. Ram Chandra Poudyal Hon'ble Minister for Agriculture and Chairman of NDDB. The decisions of the meeting are as follows:

1. The annual programme and budget of NDDB was approved.
2. 1000 mton skim milk powder and 300 mton butter oil have been received as commodity assistance to NDDB from the Royal Danish Government through HMG. The following decision was made regarding the sales and distribution of the milk powder and butter oil:

- 2.1 In order to sell the above imported milk powder and butter oil and for that purpose to store and sell the above products to the Dairy Development Corporation an agreement will be prepared and it will be transferred to DDC through NDDDB for the purpose of selling and distributing at a price as per the joint agreement between HMG and Royal Danish Government.
- 2.2 The NDDDB meeting held today decided to materialize the above point 2.1 and the Ministry of Agriculture will do the necessary action as per the above point.
- 2.3 As decided in point 2.2 the Ministry of Agriculture of HMG will request to the Board of Directors of DDC for the decision and implementation.
- 2.4 The sales proceeds money from the Dairy Development corporation will be deposited daily in the interest bearing account of the National Dairy Development Board opened at the Nepal Arab Bank Ltd. This information will be given to the National Dairy Development Board.
- 2.5 The above skim milk powder and butter oil has been received as a grant from the Denmark Government to the National Dairy Development Board. SMP and BO will be used in the dry season of the current year keeping in view the well-being of the farmers and the demand of the consumers. While using the commodities the Dairy Development Corporation should sell and distribute in such a way that there will not be any hindrance to the collected milk within the country and only the insufficient amount of milk will be supplied from the SMP and BO.
- 2.6 Among the above quantity of SMP and BO (1000 mton SMP and 300mton BO), 200 mton SMP and 50 mton butter oil will be sold to the private dairies as per the decision of NDDDB.
- 2.7 The sales proceeds money will be utilized for the dairy development programme in future and for the implementation of NDDDB secretariat programme. For that purpose a separate project proposal will be prepared and implemented after getting approval from the NDDDB meeting.
- 3.0 Regarding the assistance to NDDDB secretariat from DANIDA, there was an approval in the letter sent from the Foreign Aid Division of the MOF to the Ministry of Foreign Affairs. This was informed to the NDDDB meeting.

The following decision was made regarding the work plan for the organizational reform of the Dairy Development Corporation. Regarding the concept paper prepared for the organizational reform of DDC, the NDDDB gave approval and after getting it approved by the Hon'ble Minister for Agriculture the paper was submitted to the cabinet secretariat for approval. Accordingly the cabinet meeting of 25th February 1992 decided that there will be organizational reform in the corporation by the end of 1993 and it will go under privatization work plan. Regarding the way for organizational reform in the process of privatization, it was decided that the adoption of the following methodology is very important.

- (a) The Milk Producers' Associations/ Milk Producers' Cooperative Societies have taken 100% ownership of milk collection work. In order to strengthen these Associations there is a need of technical and financial assistance. The NDDDB will make necessary arrangement to do that work through HMG with the assistance of donor agencies.
- (b) The 41 chilling centers running now under the ownership of DDC would be transferred 100% to milk producers' association/milk Producers' cooperative societies and would be operated/caused to operate quickly through the medium of cooperatives. For that work it would be of almost necessity to do the val

assessment of the chilling centers. Besides that work it would be of utmost necessity to have the provision of training on financial, technical, administrative skilled man power for the purpose to make milk producers/cooperative societies more active and income oriented. For that purpose request will be made immediately to the donor agencies DANIDA and USAID for assistance.

- (c) The ownership of all the cheese plant schemes which are now under the ownership of DDC should be transferred gradually to milk producer farmers to operate 100% with the medium of cooperative. For that purpose evaluation should be done immediately on the valuation of existing cheese factories. For the expenses of the above work donor agencies DANIDA, USAID, FAO, WFP etc should be immediately requested.
- (d) The share allocation of the processing and marketing facility of the existing Milk supply Schemes (which are under the full ownership of DDC) will be done openly as follows:
 - 1. 51% Private Sector
 - 2. 40% Milk Producer Farmers
 - 3. 9% Corporation Employees and Public

In order to perform the above programme, it would be of utmost necessity at first to do the following works in order:

- 1. Quick value assessment of all the Processing and Marketing Facility of the corporation and the central office of DDC.
- 2. to prepare the process for pre-qualification of private bidders.
- 3. Preparation of tender bid documents.
- 4. Preparation of tender documents and its publication.
- 5. Approval of tender

The above work should be completed by FY 1993/94. In order to accomplish the above work there will be the necessity of financial and technical adviser and so a request will be made to Danish Government for assistance.

Thus in the work plan of the organizational reform of DDC, the ownership of milk production, milk collection, milk chilling centers and cheese production centers will go to the hands of the milk producer farmers and the process will be done through the medium of the cooperative. Regarding milk processing and marketing facility too, 40% of the ownership will go to the hands of milk producer farmers again. In this way the milk producer farmers will have 60 to 70% ownership in the plan for the organizational reform of DDC.

In order to initiate the improved workplan gradually from the beginning of FY 1993.94 the NDDB again recommends to HMG to approve the work plan immediately.

- 4. The NDDB meeting was informed that the SMP plant Biratnagar would be established by the middle of 1994. The meeting was also informed that as per the previous terms and condition the plant was scheduled to be completed by October 1993, but because of some technical difficulties the work was delayed for one year. This information was received from the Danish Government.

ANNEXURES - 1

ACT NO. 6 OF 2049 (1992)
ACT MADE TO PROVIDE FOR MATTERS RELATING
TO THE
CONSTITUTION AND MANAGEMENT
OF THE
NATIONAL DAIRY DEVELOPMENT BOARD

PREAMBLE

Whereas, in order to maintain the health and well being of people, it is necessary to produce more milk within the country itself with people's participation by bringing coordination between the milk production programmes of the public and private sectors, it is expedient to make legal provision for the establishment and management of National Dairy Development Board. Now, therefore, the Parliament has made this Act, on the twenty first year of the reign of His Majesty King Birendra Bir Bikram Shah Dev.

1. SHORT TITLE AND COMMENCEMENT:

- (a) This act shall be called National Dairy Development Board Act, 2048 (1992),
- (b) It shall come into force at once.

2. DEFINITIONS:

In this act, unless the subject or context otherwise requires:

- (a) "Board" means the National Dairy Development Board constituted under section 3.
- (b) "Committee" means the Executive committee as mentioned in section 7.
- (c) "chairman" means the chairman of the Committee.
- (d) "Member" means the member of the committee and this also means the committee's chairman, vice chairman and the member secretary too.
- (e) "Executive Director" means the Executive Director appointed or selected pursuant to section 13.
- (f) "Selected" or "as selected" means selected or as selected in the Rules made under this Act.

3. CONSTITUTION OF THE BOARD:

- (a) The National Dairy Development Board has been constituted to formulate policies and plans for dairy development at the national level and strengthen the dairy profession by bringing coordination between the private and public sector dairies.
- (b) The office of the Board shall be at Kathmandu Valley.

4. BOARD TO BE A CORPORATE BODY:

- (a) The Board shall be a body corporate having perpetual succession.
- (b) The Board shall have its own separate seal for its functions.

- (c) The Board may, as an individual, acquire, use, sell or manage by any means any movaable and immovable property.
- (d) The Board may use or be used in its name as an individual.

OBJECTIVE OF THE BOARD:

The objective of the Board shall be as follows:

- (a) To assist His Majesty's government in formulating policies and plans of dairy development at the national level.
- (b) To or cause to develop dairy industries.
- (c) To find remedies of problems in the field of livestock development and animal health sector for dairy development.
- (d) To or cause to maintain coordination between all the private and public sector dairies within the country.
- (e) To or cause to carry out high level studies and research works for dairy development.
- (f) To or cause to make arrangement of fodder and pasture resources.

FUNCTIONS, DUTIES AND RIGHTS OF THE BOARD SHALL BE AS FOLLOWS:

- (a) To formulate and recommend policies on the import and export of goods necessary for production and promotion of milk and milk products as well as animal feeds, and to or cause to implement approved policies.
- (b) To formulate and recommend price fixing policies of milk to HMG.
- (c) To recommend to His Majesty's Government on the well being of dairy professionals and consumers.
- (d) To or cause to encourage development of dairies through the medium of the cooperative.
- (e) To or cause to register dairy industries.
- (f) To or cause to manage and mobilize necessary national and foreign grant and loan assistance necessary for dairy industries.
- (g) To or cause to provide technical assistance for setting, improving, promoting and safeguarding dairy industries.
- (h) To or cause to monitor, evaluate and review dairy development programmes.
- (i) To or cause to carry out other necessary activities for dairy industries.

7.

COMPOSITION OF THE EXECUTIVE COMMITTEE:

- (a) The management of the affairs and business of the Board shall vest in the following Executive committee.
 - i. Honourable Minister
Ministry of Agriculture - Chairpereson
 - ii Secretary
Ministry of Agriculture - Vice-Chairperson
 - iii Chairman
National Cooperative Development Board - Member

68

- iv Elected Farmer Representatives
(From the Central Milk Producers
Farmers' Cooperative Union) - 2 Members
- v Elected Private Dairy
Entrepreneurs (From the Private Dairy
Entrepreneurs' Union) 2 Members
- vi Elected Consumer Representatives
(From the Consumers' Union) - 2 Members
- vii Dairy Sector Specialist
nominated by the Chairperson - 2 Members
- viii Joint Secretary
Ministry of Industry - Member
- ix Joint Secretary
Ministry of Finance - Member
- x General Manager
Dairy Development Corporation - Member
- xi Executive Director
National Dairy Development Board - Member

- (b) If His Majesty's Government deems it necessary, then it can add, remove or change the members of the committee by publishing a notice in the "Nepal Gazette".
- (c) The members under subsections (iv), (v), (vi) of section 7a shall hold office for two years and shall be eligible for renomination or election.

8. MEETING OF THE COMMITTEE:

- (a) The meeting of the committee shall meet at such date, time and place as the chairman may direct.
- (b) If a minimum fifty percent of the committee members are present in the meeting, the it shall be deemed sufficient for the meeting of the committee.
- (c) The chairperson shall preside at the meeting of the committee and in the absence of the chairperson, the vice chairperson shall preside. In the absence of chairperson and vice chairperson, any member chosen by the members shall preside at the meeting.
- (d) The minutes of the committee shall be proved by the member secretary.
- (e) Other things concerning the meeting of the committee shall be as decided upon by the committee itself.

9. FUNCTIONS, DUTIES AND RIGHTS OF THE COMMITTEE:

- (a) Under the control of this Act and the Rules and Sub-Rules made under this Act, the duty of the committee shall be to perform the entire function to be done by the Board use power and discharge duties.
- (b) The committee may delegate to the chairperson, member, member-secretary or to any officer of the Board, its power as it may deem necessary.

10. COMPOSITION OF SUB COMMITTEE:

- (a) For the discharge of its functions, the committee can organize sub committees as it may deem necessary.
- (b) The sub committee's functions, duties, rights, scope of work and procedures shall be as prescribed by the committee.

11. FUND OF THE BOARD:

- (a) There shall be a separate fund of the Board.
- (b) The fund of the Board shall comprise the following amounts:
 - i Grant money provided by His Majesty's Government.
 - ii Grant money provided by any foreign government or international organizations.
 - iii Money received by conducting research work or consultancy services on dairy industries.
 - iv Money received from other sources.
- (c) When receiving grants from foreign governments or international organization previous approval has to be taken from His Majesty's Government.
- (d) All sums of money credited to Board shall be deposited in any Bank of the Kingdom of Nepal.
- (e) The said funds under sub section (a) of section 11 shall be applied towards meeting all the expenses of the Board.

12. ACCOUNTS AND AUDIT:

- (a) The balance sheet and accounts of the Board shall be prepared as prescribed by His Majesty's Government.
- (b) The accounts of the Board shall be audited by the Auditor General.

13. EXECUTIVE DIRECTOR:

- (a) The Executive Director shall be the Chief administrator of the Board.
- (b) His Majesty's Government shall appoint or nominate appropriate person as the Executive Director.
- (c) The Executive Director shall hold office for four years and shall be eligible for reappointment or renomination provided that it shall not exceed another four years.
- (d) The remuneration, terms and conditions of service and other facilities of the Executive Director shall be as prescribed.

14. EMPLOYEES OF THE BOARD:

- (a) The Board shall make provisions of necessary employees for the execution of the activities specified.
- (b) The remuneration, terms and conditions of service and other facilities of the employees appointed under sub section (a) of section 14 shall be as prescribed by the Board.

15. REPORT TO BE SUBMITTED TO HIS MAJESTY'S GOVERNMENT:

The Board shall submit annual report of its activities to His Majesty's Government within six months of the expiry of each fiscal year.

16. DIRECTIONS THAT CAN BE GIVEN BY HIS MAJESTY'S GOVERNMENT:

His Majesty's Government shall give the Board necessary directions and to carry out those directions shall be the duty of the Board.

17. CONTACT WITH HIS MAJESTY'S GOVERNMENT:

The Board shall have to contact His Majesty's Government through the Ministry of Agriculture.

18. LIQUIDATION OF THE BOARD:

(a) His Majesty's Government can liquidate the Board if there is any reasonable cause for doing so.

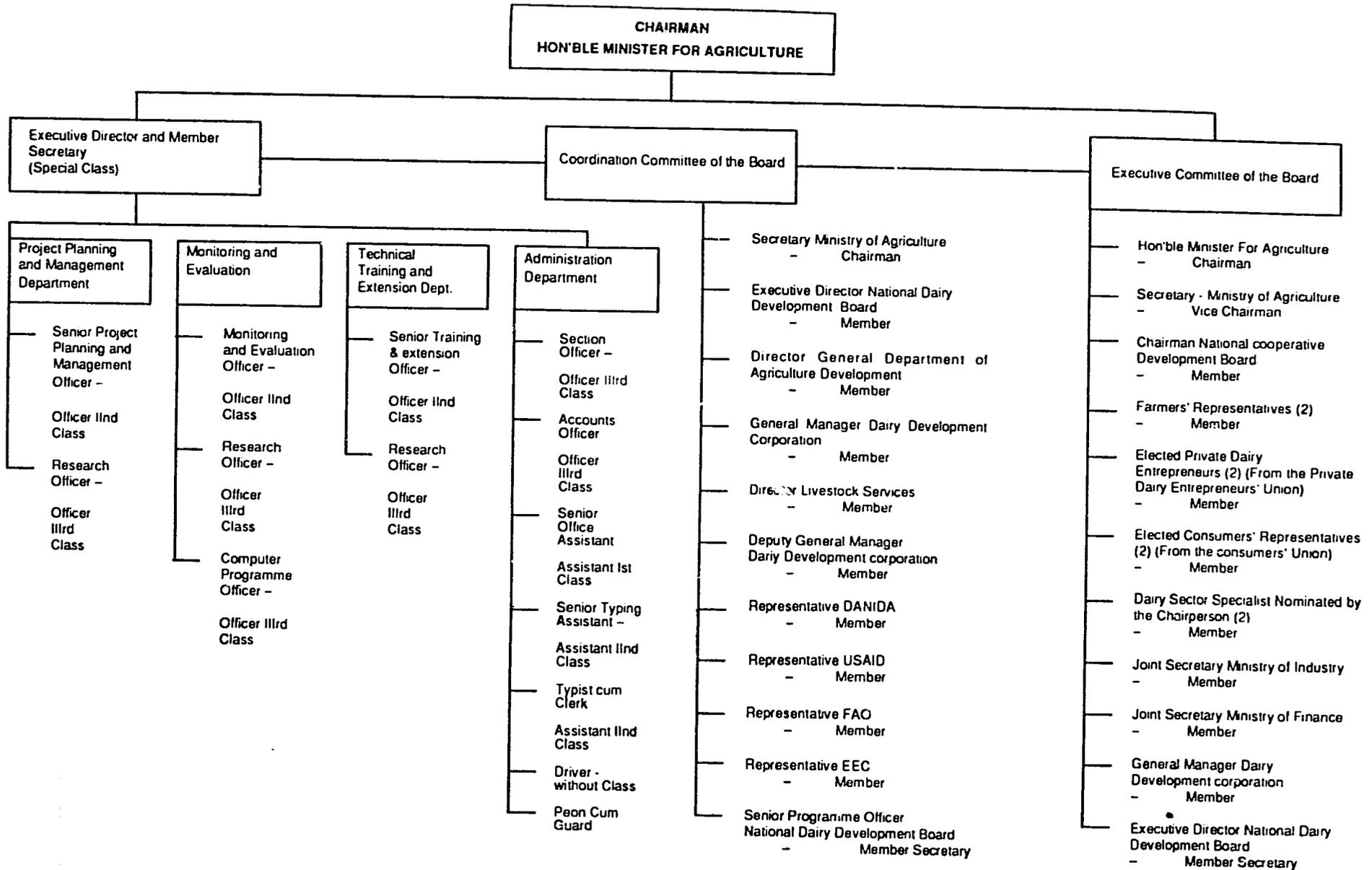
(b) if the Board is liquidated according to sub section (a) of section 18, then the rights and liabilities of the Board shall stand transferred to His Majesty's Government.

19. POWER TO MAKE REGULATIONS:

The Board may, by approval of His Majesty's Government, make necessary regulations for the purpose of giving effect to the provisions of the Act.

72

ANNEX - 2 ORGANIZATION CHART OF NATIONAL DAIRY DEVELOPMENT BOARD



ANNEX - 3

TRAINING AND SEMINAR

During FY 1991/92 and FY 1992/93 the officials of the Board had participated at training and workshop/seminar in the following subjects:

S.NO.	Designation	Name	Subject	Organizing Institute	Country	Duration
1.	Executive Director and Member Secretary	Dr. Durga Dutta Joshi	Dairy Development Policy formulation and implementation	FAO	Zimbabwe	12-16 July 1993
2.	Executive Director and Member Secretary	Dr. Durga Dutta Joshi	orientation programme on dairy cooperatives	FAO	Thailand	14-16 Sept 1993
3.	Senior Programme Officer	Mr. Devendra Raj Pyakurel	Study Visit at NDDDB Anand India	National Dairy Development Board Anand India	India	22 May—4 June 1992
4.	Senior Programme Officer	Mr. Devendra Raj Pyakurel	Overseas General Management Training Course	DANIDA	Denmark	23 March—18 June 1993

ANNEX - 4

NEWS

ARRIVAL OF FOREIGN ADVISER

The following is the list of advisers and technicians made available by Denmark Government under the project for programme development of the Board:

1. In the capacity of chief adviser for the programme development of NDDB, Mr. A.J.J. Van Den Hoven worked from August 1992 to March 1993.
2. DANIDA mission visiting Nepal from 12 January to 20 February 1993 and 26 May to 9 June 1993 under the coordination of Mr. Ole S. Jepsen completed its work regarding the restructuring of DDC.
3. Mr. B.T. Dugdill was in NDDB for 3 months from July 1993 to September 1993 to prepare Monitoring and Evaluation system for NDDB on behalf of DANIDA.

RESIGNATION

It was notified from the letter of Royal Danish Embassy dated 31 March 1993 that the chief adviser and project coordinator to NDDB Mr. A.J.J. Van Den Hoven had resigned from his post with effect from 30 March 1993.

ANNEX - 5

CONDOLENCE

Mr. Lal Bahadur Nembang

Born - July 1, 1937

Death - April 3, 1993

NDDB expresses its heart felt condolence to the bereaved family of late Mr. Lal Bahadur Nembang NDDB Member who had the untimely death on 3 April 1993. The Board also expresses eternal peace for the departed soul.

ANNEX - 6

NAMES OF THE PRESENT EMPLOYEES WORKING IN NDDB

S.No.	Name	Designation	Class
1.	Dr. Durga Dutta Joshi	Executive Director and Member Secretary	Special
2.	Mr. Devendra Raj Pyakurel	Senior Planning and Management Officer	Second
3.	Mr. Hem Raj Pant	Senior Office Assistant	First (Assistant)
4.	Mr. Babu kaji Basnet	Driver	No Class
5.	Mr. Bishnu Bahadur Pandey	Peon/Guard	No Class
6.	Mr. Mangale Lama	Peon/Guard	No Class

NAMES OF THE EMPLOYEES WORKING IN DANIDA

1.	Mrs. Marian Acharya	Office Manager
2.	Mr. Rajib Acharya	Asst. Administrative Officer
3.	Mr. Hari Krishna Maharjan	Driver
4.	Mr. Lal Bahadur Basnet	Peon/Guard
5.	Ms. Asha Tamang	Attendant

ANNEX - 7

STUDY REPORT OF MR. MADHAV KOIRALA IN THE CHILLING CENTERS UNDER DAIRY DEVELOPMENT CORPORATION

PLACE TO VISIT:

Fourty two milk chilling centers e.g. Fikkal, Biblyr, Pashupatinagar, Budhabare, Hile, chitre, Biratnagar, Inaruwa, Kanchanpur, Gausale, Nawalpur, Malangawa, Barahathwa, Chandranighapur, Garuda, Hetauda, Chaughada, Bharatpur, Nawalparasi, Butwal, chanauta, Lamahi, Kohalpur, Chhinchu, Bartung, Galyang, Pokhara, Begnas, khairenitar, Damauli, Baradi, Charaudi, Mahadevbesi, Balaju, Bhaktapur, Sankhu, Tikabhairab, Banepa, Panauti, Panchkhal, Sipaghat and Balephi.

OBJECTIVE OF THE VISIT:

- (a) To inform the milk producer farmers on the substance of workshop/seminar (with participation of all sector related to dairy) held at Kathmandu in two phases regarding the privatization of DDC.
- (b) To inform the farmers regarding the suggestions on the privatization of DDC as presented by DANIDA mission to HMG.

To discuss on the subject regarding the purchase of the portion of Dairy asset as separated by HMG for the ownership of farmers and to reach to the conclusion.

DETAILS OF THE REPORT:

In the words of farmers it was found that the privatization of Dairy Development corporation means the sales of the corporation to a single individual or to some capitalists. During the discussion the farmers were informed that the Dairy Development Corporation would not be sold to one or two Capitalist and that there was proposal to carry on the privatization process in a separate way. The farmers were informed during the discussion that the privatization at the context of the corporation would bring the ownership of farmers 100% upto chilling center level with the medium of cooperative. There was a proposal that the processing and marketing facilities will be handed over to private sector (51%), farmers (40%) and Dairy employees as well as public (9%) and the board of directors will be constituted accordingly.

The farmers were stricken with anxiety because they thought once the DDC is privatized it will go in the hands of capitalist businessmen and they will pay attention to their own welfare instead of the welfare of farmers thus leading to the negligence of the farmers producing milk in the remote areas.

Thus, the farmers were found against the privatization of DDC, while discussing in this regard. The farmers were informed about the proposal that any of the chilling center and processing factory in operation now can not be closed down. It was also informed about the proposal that the milk of farmers can not be purchased in less amount than the maximum production during the year 1993. In other words ther would be such conditions that the milk must be taken to the amount of maximum limit for that year.

Although the farmers werw assured to some extent, they are thinking that it would be best to take the ownership of the corporation if possible. The farmers are also aware of the possible risks in case they take the full ownership e.g.

1. While transferring the total ownership of the corporation to the farmers it would be difficult for the farmers to collect billions of rupees to be paid to HMG.
2. Although the farmers are capable in the production work of milk they lack the business knowhow regarding distribution and promotion of trade. Thus it may not be possible for the farmers to take the whole ownership to flourish this sensitive business.
3. On the one side if due measures are not taken there is the possibility that the corporation will flop. During that period the secured market of the farmers will cease resulting in the adverse effect in supply system too.

Due to above reason the farmers are not endeavouring to get the full ownership of the corporation. The farmers are realising in their own way the possible danger in future and are also opposing the privatization. The farmers are assured that unless there is a change in the structure of the Dairy Development Corporation there is no well being of the corporation as well as the farmers.

During the course of discussion the attention of the farmers was centered time and often on the same issue i.e. to change the present organizational structure of the Dairy Development corporation and operate it with the ownership of His Majesty's Government or to cooperatise the corporation and to distribute its shares to concerned farmers, dairy employees, HMG and other related agencies. If the corporation is to be privatized the board of directors should be constituted with the involvement of farmers in all the five milk supply schemes and the Dairy Development corporation. The farmers have the opinion that by doing so the farmers can gain expertise in the art of management and after getting the experience of 1-2 years the corporation should be taken towards cooperatisation.

There was also discussion regarding dairy profession and other related subjects. More attention of the farmers was centered towards not getting the appropriate price of their produce.

The main reason for this is the traditional livestock farming system, producing milk only as a secondary profession and paying attention only towards increase in price of production rather than increase in production. If it can be made to realise that milk production is a primary profession and it is the only means for the maintenance of life and only if such an environment can be created, a clear concept on the psychology of consumers rather than the care for only the price of produce, sincerity towards profession and care for market security may evolve.

It was found that a few concrete policies have to be adopted in order to maintain balance in milk production and distribution system, to create awareness of the farmers regarding distribution system and the capacity as well as the demand of the consumers and to relieve the farmers from being self centered. The following are the examples:

1. The farmers should be capable to produce more milk with the same labour and at the same duration. If an environment is created that more produce is obtained by providing improved breeds of animals there will be less grievances on the lower price of produce.
2. Necessary service for animal health should be provided in a perfect and coordinated way.
3. Soft loan should be made available for the purchase of animals without any harassment.
4. Livestock insurance programme should be implemented quickly.
5. Farmers should have the provision of timely training on quality milk production, animal care, balanced fodder and the production of feed. There should be visit programmes in external countries to some of the farmers for the exchange of experience and learning of new things.

**DETAILS OF CHILLING CENTERS, MILK PRODUCERS ASSOCIATION, MILK PRODUCERS
COOPERATIVE SOCIETIES**

Milk Supply Scheme	Chilling Center	MPCS	MPA	Total Associations
1. BIRATNAGAR	1. Chitre	3	12	15
	2. Inaruwa	3	4	7
	3. Fikkal	-	30	20
	4. Biblyate	-	16	16
	5. Hile	-	8	8
	6. Budhebare	-	6	6
	7. Kanchanpur	1	3	4
	8. Pashupatinagar	-	8	8
	Factory	4	12	16
	Total	11	99	100

Milk Supply Scheme	Chilling Center	MPCS	MPA	Total Associations
2. HETAUDA	1. Chaughada	7	4	11
	2. Bharatpur	30	10	40
	3. Chandranigapur	4	5	9
	4. Garuda	15	3	18
	5. Gaushala	-	13	13
	6. Barhathwa	15	9	24
	7. Malangwa	23	3	26
	Factory	7	9	16
	Total	101	56	157

Milk Supply Scheme	Chilling Center	MPCS	MPA	Total Associations
3. LUMBINI	1. Chinchu	1	7	8
	2. Kohalpur	-	7	7
	3. Lamahi	-	5	5
	4. Chanaute	1	18	19
	5. Butwal	3	16	19
	Total	5	53	58

Milk Supply Scheme	Chilling Center	MPCS	MPA	Total Associations
4. POKHARA	1. Galyang	-	21	21
	2. Bagnash	-	6	6
	3. Khairenitar	-	4	4
	4. Damauli	3	8	11
	5. Baradi	-	4	4
	6. Bartung	-	7	7
	Factory	3	71	74
	Total	3	71	74

Milk Supply Scheme	Chilling Center	MPCS	MPA	Total Associations	
5. KATHMANDU	1. Banepa	-	14	14	
	2. Panauti	2	23	25	
	3. Panchkhal	7	22	29	
	4. Sipaghat	15	3	18	
	5. Bhaktapur	-	7	7	
	6. Charandi	1	24	25	
	7. Mahadevbesi	-	10	10	
	8. Balephi	-	16	16	
	9. Tikabhairab	-	31	31	
	10. Sankhu	-	15	15	
	Factory	-	3	3	
	Total	25	168	203	
GRAND TOTALS		36	145	447	582

DISTRICT MILK COOPERATIVE UNIONS	CO-OPERATIVE SOCIETIES	
1. Sindhupalchowk	Sipaghat (C.C.)	15
	Panchkhal (C.C.)	7
2. Kabhre	Panauti (C.C.)	7
3. Chitwan	Bharaptur (C.C.)	30
	Chaughada (C.C.)	7
4. Makawanpur	Factory	7
	Chandranighapur (C.C.)	4
5. Rautahat	Garuda (C.C.)	15
	Malangwa (C.C.)	11
	Barhathwa (C.C.)	15
6. Sarlahi	Nawalpur (C.C.)	23

DETAILS OF VISIT OF MR. MADHAV KOIRALA

FROM 26 APRIL 1993 - 15 JULY 1993

28	April	1993	Arrival Illam
29	April	1993	Meeting at Fikkal with Pashupatinagar too
1	May	1993	Meeting at Biblyate
3	May	1993	Meeting at Budhabare
4	May	1993	Meeting at Itahari with Hile and Chitra too
5	May	1993	Meeting at Inaruwa with Kanchanpur too
7	May	1993	Meeting at Nabalpur with Gausala too
9	May	1993	Meeting at Malangwa
11	May	1993	Meeting at Barhathwa
13	May	1993	Meeting at chandranigapur
14	May	1993	Meeting at Garuda
19	May	1993	Meeting at Bharatpur
22	May	1993	Meeting at Kohalpur with Chhinchu & Lamahi
24	May	1993	Meeting at Chanauta
26	May	1993	Meeting of Butwal at Kotihawa
28	May	1993	Meeting at Bartung with Galyang too
30	May	1993	Meeting at Begnas
31	May	1993	Meeting at Damauli with Khairenitar too
2	June	1993	Meeting at Baradi
8	June	1993	Meeting at Charandi with Mahadevbesi too
10	June	1993	Meeting at Tikabhairav
13	June	1993	Meeting at Sipaghat
18	June	1993	Meeting at Sankhu with Bhaktapur too
24	June	1993	Meeting at Banepa
28	June	1993	Meeting at Panchkhal

From 29 June 1993 the so-called milk strike was started. So from 30 June to 15 July 1993 there was a discussion at Kathmandu with the representatives from different districts regarding privatization or cooperatisation of the corporation. One of the demands of the so-called strike was that the corporation should be cooperatised. Regarding this there was also dialogue of different representatives with the Hon'ble Minister for Agriculture too. During the dialogue the farmer representatives of Kathmandu, Biratnagar, Pokhara, Lumbini, Hetauda were also involved.

During the above meetings held in course of discussions regarding privatization or cooperatisation of Dairy Development Corporation, the farmers are ready to operate the chilling centers after taking its ownership.

In spite of the encouragement to operate, the farmers have realised two aspects making the process complicated.

1. PRACTICAL ASPECT

- (a) The decision has not yet been done on how to evaluate the chilling centers and what type of privileges will be available to the farmers (time duration, installment, payment process etc) because the farmers can not cash down the lump sum amount.
- (b) There is no information on the policy to be adopted regarding the employees working at the chilling centers.
- (c) Farmers are being involved only in the production work in a traditional manner. So they are unaware of the following necessary training assistance to be provided by the government once the farmers take the management of the chilling centers:
 - (d) Financial administration
 - (e) Personnel administration
 - (f) Technical knowledge
 - (g) Livestock development (breed improvement, health care, feed and fodder production)
 - (h) Quality status of milk
 - (i) Market management
 - (j) Cooperatives

LEGAL ASPECT

Although it is suitable to transfer the milk chilling centers to the farmers still some legal process has to be completed. It may not be appropriate to hand over the chilling center to the association not yet registered under cooperatives or to one or two milk producers cooperative society in the area of chilling center providing services to many milk producers association. While transferring chilling centers it should be given to milk producers cooperative union and there is the legal provision that there should be at least five cooperative societies in order to form union. While looking at the attached chilling centers, milk producers cooperative societies and milk producers associations there are at present altogether 37 chilling centers and six hundred nine associations delivering milk to four factories and only one hundred fifty six associations have been registered under cooperatives. Out of this, seven chilling centers can be formed into cooperative union and one factory union from the following cooperative societies (100) - seven from Panchkhal chilling center, fifteen from Sipaghat chilling center, seven from Chaughade chilling center, seven in Hetauda factory, fifteen from Garuda chilling center, fifteen from Barhathava chilling center, eleven from Malangwa chilling center, twenty three from Nawalpur chilling center. In the remaining chilling centers, the number of associations necessary to form into union are not yet registered under cooperatives.

According to the present cooperative Act and Regulations not more than one subject wise union can be registered in one district. In one district there is more than one chilling center e.g. three chilling centers panchkhal, Banepa and Balephi at Sindhupalchowk, two chilling centers Garuda and Chandrenigahapur at Rautahat, three chilling centers Nawalpur, Malangwa and Barhathwa at Sarlahi, three chilling centers Fikkal, Pashupatinagar and Biblyate at Illam and three chilling centers Khairenitar, Damauli and Baradi at Tanahu.

Many associations (registered or unregistered) deliver milk directly to the factory. They have no chilling centers e.g. altogether fifty six associations (sixteen associations at BMSS, twenty one

associations at PMSS, sixteen associations at HMSS and three associations at KMSS) can not benefit from the management of chilling centers. Some of the associations are established in one district and deliver milk to the factory or chilling center of other district e.g. associations of Tanahu and Syangja deliver to Galyang chilling center, some of the associations of Nawalparasi deliver milk to Butwal chilling center of Rupandehi, some associations of Bardiya deliver to the Kohalpur chilling center of Banke. The associations of Bara do not have coordination or concern with the chilling center of the district or district union.

SUGGESTIONS

Till now milk producers cooperative union have been constituted and registered in the following six districts e.g. Kabhre, Sindhupalchowk, Chitwan, Makwanpur, Rautahat and Sarlahi. It would be appropriate to transfer the ownership of chilling centers to district unions. As provisioned in the bye-law in case of district having more than one chilling center, the union may cause to operate by constituting a sub-committee under the chilling center and from among its member societies. Regarding the societies wanting to bear surplus or deficit of chilling centers, the union will nominate the appropriate persons and operate it accordingly.

Therefore the chilling centers should be handed over to the district unions. In case of district having more than one chilling center only the chilling center having at least five member societies should be handed over to district unions. In this way the union can constitute sub committee and operate it.

In Sarlahi three chilling centers can be handed over to district union. The three chilling centers have the necessary number of cooperative societies in order to constitute the sub committee. Likewise, the three chilling centers of Kabhre district can be handed over to district union. This is because there is no cooperative society at Banepa and at Panauti there are only two cooperative societies. Thus it would be appropriate to hand over only panchkhal chilling center to Kabhre district union. There are seven cooperative societies registered under this chilling center.

ANNEX - 8

REPORT PUBLISHED BY NATIONAL DAIRY DEVELOPMENT BOARD

1. Cost of Milk Production Analysis 1 and 2 volume (January 1993)
2. Marketing status of Milk and Milk Products in Kathmandu, Bhaktapur and Lalitpur (September 1993)
3. Ten Year Dairy Development Plan
 - Volume 1 Executive Summary
 - Volume 2 Main Report
 - Volume 3 Appendices to Main Report
 - Volume 4 Study on Dairy Farmers in Nepal
 - Volume 5 Part A Study on Milk consumption Habits and Demand
 - Part B Institutional consumption of Milk and Milk Products
 - Part C A Survey of Private Dairy Industries in Nepal

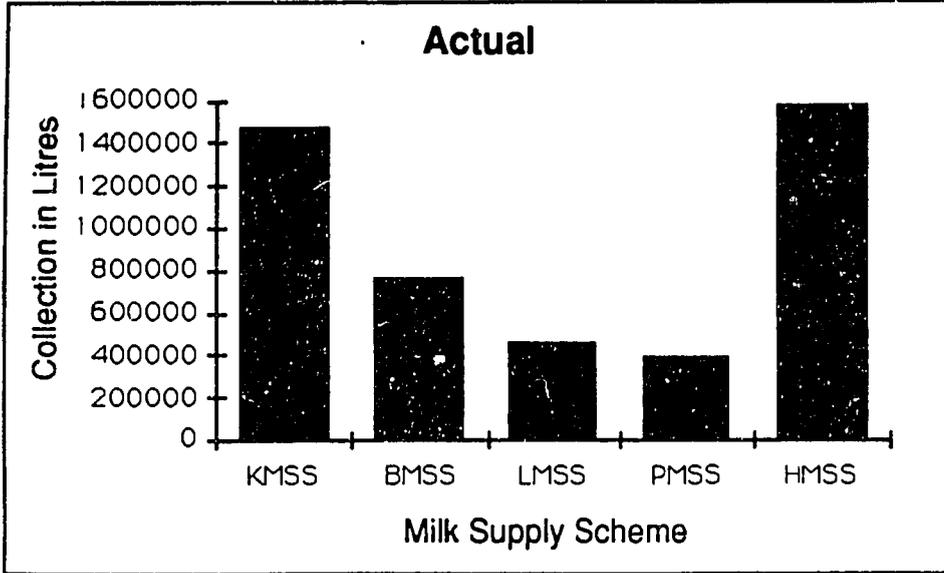
THE NATIONAL DAIRY DEVELOPMENT BOARD ACT 2048 (1992)

- National Dairy Development Board Working Procedure and Personnel Administration Bye Law 1993
- National Dairy Development Board Financial Administration Bye Law 1993
- Policy Guidelines on National Dairy Development Board Technical Administration.

ANNEX - 9

(1) DDC Total Milk Collection According to 5 Milk Supply Scheme per month (1993/94)

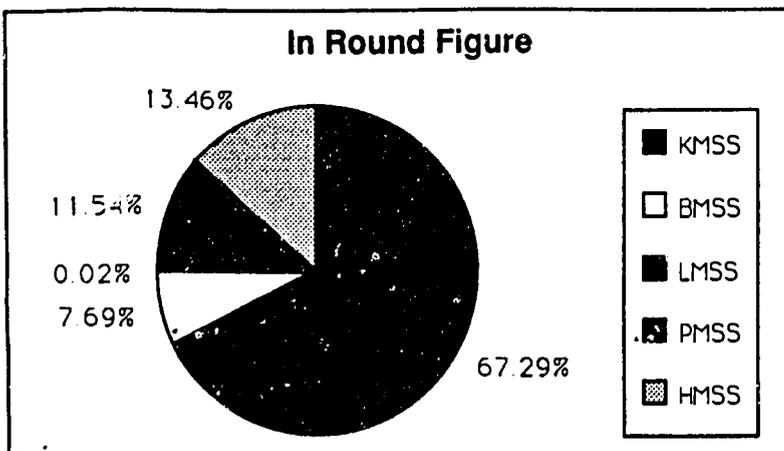
	Actual	Round Figure	
Kathmandu Milk Supply Scheme	1478056	1500000	Litres
Biratnagar Milk Supply Scheme	759600	750000	"
Lumbini Milk Supply Scheme	461220	500000	"
Pokhara Milk Supply Scheme	387333.5	400000	"
Hetauda Milk Supply Scheme	1574490	1600000	"
Total	4660699.5 Litres	4750000	Litres



(2) DDC Total Milk Distribution According to 5 Milk Supply Scheme per month (- 1993/94)

IN ROUND FIGURE

Kathmandu Milk Supply Scheme	2910000	Litres
Biratnagar Milk Supply Scheme	150000	"
Lumbinin Milk Supply Scheme	200	"
Pokhara Milk Supply Scheme	210000	"
Hetauda Milk Supply Scheme	240000	"
Total	3410200 Litres	

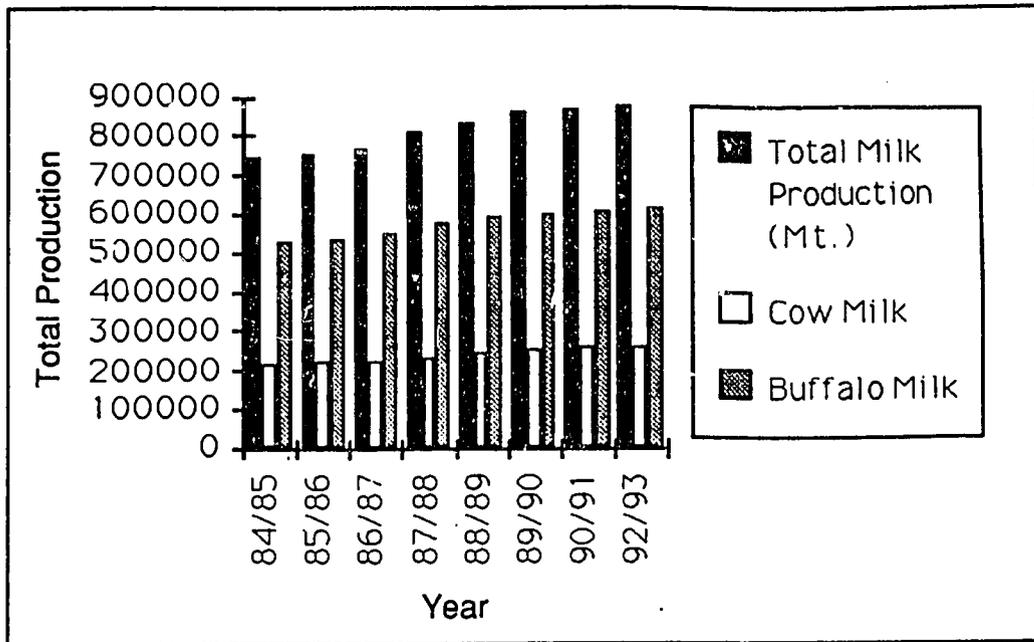


86

ANNEX - 10

TOTAL NATIONAL MILK PRODUCTION :

	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	1990/91	1992/93
Milk Production (Mt.)	745177	754856	767577	808081	833891	858768	864831	876594
Cow Milk	219192	219792	220568	232219	243879	255545	256398	260786
Buffalo Milk	525985	535064	547009	575862	590012	603223	608433	615808



ANNEX - 11
List of Dairy Enterprises Surveyed and Their Status
According to 1991

Name/District	Address	Registration/ establishment (whichever is 1st)	Principal Activity	Operating Status
1. <u>Biratnagar</u>				
*1. Milan Dairy Udyoug Sunsari.	Kalika Gupta Biratnagar, C/o. Milan Hotel Phone 2615	1985	Milk Pasteurisation	Non-starter
2. Koshi Dairy P. Ltd. Sunsari				Does not exist
*3. Kailash-Kamdhenu Dairy Industry, Sunsari.	Tika Prasas Ojha Tarahara	1980	Cream separation	Functioning normally
**4. Poknarel Livestock Agriculture Farm Sibagunj, Sunsari	Krishna K. Pokharel Kathmandu, Phone No. 220427	1986	Dealer of breeds	Low-eb
**5. Other Dairies in Sunsari	Hasta Bdr. Basnyat Panmara	-	"	Low-eb
**6. "	Anil Bdr. Basnyat Panmara	-	"	"
*7. Ganogudhan Farm Sunsari	Pasupati Subedi Taradhara	1987	"	"
8. Gangodhan Farm Morang	Krishna Lal Dugad Betauna, Phone No. 2758	-	Milk Production	Operating normally
9. Krishna Gaushala Morang	Near Old Airport Biratnagar	-	"	"
**10. Singh Mai Sundar Cream Udyog,	Dan Bdr. Karki Belbari-4	1988	Ice Cream Making	Just started
**11. Other Dairies in Morang	Tatwa Bdr. Khadka Kerabari	-	"	"
**12. Morang	Sad Raj Baral Pathri	-	"	"
13. Kanchan Dairy, Nursery, Fisheries P.Ltd., Jhapa	Kanchanwari Jhapa	-	-	could not be found
**14. Jhapa	Dilli Ram Ghimere	43	"	"

BEST AVAILABLE DOCUMENT

II. Towns in Central Terai

*15.	Kamadhenu Dairy Udyog P. Ltd. Dhanusha	Dhalkebar, Dhanusha C/o. Madhu Sudan Ghale Kathmandu Phone No- 415985	1988	Milk Pasteurisation	Operating it low capacity but temporarily closed due to tread-transit Stalemate
*16.	Shri-Ram Janaki Dairy Industry, Dhanusha	Kiran Kishor Prasad Pidarichowk, Janakpur	1988	Cream separation Milk botteling	Closed
*17.	Janakpur Dairy Udyog, Dhanusha	Bindeshwari Kapar Pidarichowk, Janakpur	1987	Cream separating	Running well
**18.	Krishna Dairy Farm Dhanusha	Yuba Raj Khati Janakpur, Dhamusha	1987	"	Closed
**19.	Ravi Cream Udhog Dhanusha	Sambhu Pd. Upadhaya Bengadar, Dhanusha	1983	Milk and cream production	-
**20.	Krishna-Pavitra Cream Udhog	Ram Dev Mahato Parshahi VP-3	1987	Dairy production	-
**21.	Pavitra Cream Udhog Dhanusha	Laxmi Pd. Singh Yadave Katarauta VP-1	1988	"	-
*22.	Kapil Dairy Parsa	Kapil Prasad Paudel Birgunj	1985	Raw milk production	Below Capacity
*23.	Usha Dairy Parsa	Samt Rani Usha Shah C/o. Hotel Samjhana Birgunj	1984	Raw milk and butter production	Running well
*24.	Hoda Dairy parsa	Shamshul Hoda Chhappakaiya, Birgunj	1984	"	Closed
**25.	Narayani Dairy P. Ltd. Bara	Jitpur, Bara	-	Dealer in Breed	Low.ebb
**26.	Raj Devi Ghee Udhog Rautahat	-	-	Ghee production	Closed
*27.	Trishe Dairy Chitwan	Chhattish Chandra Prabasi, Bharatpur	1976	Raw milk production	Facing closure
III. <u>Kathmandu Metro</u>					
*28.	Tripi Dairy	Krishna Bdr. Bista Baneshwor	1989	Butter and Curd making	Normal
*29.	Himalayan Dairy P. Ltd.	Sanu Khagi Lalitpur	1983	Milk pasturization	Normal
*30.	Mahendra Dairy	Kailash Joshi Kathmandu	1986	Ghee and Cheese making	Running well
*31.	Indra Dairy P. Ltd.	Purna Bdr. Thapa	1978	Milk and Butter production	"
*32.	Nepal Dairy P. Ltd.	Udhab Adhikari	1983	Milk and Curd making	"

*33.	Puspa Dairy	Sundar, Thamel,	1985	Curd and Butter making	
*34.	Sindhu Dairy	Chitra Bdr. Pandey Battish Putali	1986	Cream making	Running normally
*35.	Bhaktapur Dairy	Pushpa Ram Sainju Battish Industrial Estate.	1985	Milk pasturization and Butter making	"
*36.		Shyam Shrestha Kathmandu	1986	Curd making	Loe ebb
*37.	Shwet Kali Dairy	Purshottam Lal Singh Nardevi	1989	Curd and Butter making	-
38.	Everest Dairy	Kalimati	-	-	-
39.	Cottage Dairy	Dhobichaur	-	-	-
40.	Yogambar Dairy	Mhepi	-	-	-
41.	Milkmad Dairy	Kupondol	-	-	-
42.	Butter Processing Dairy	Thamel	-	-	Closed
*43.	Nilakantha Animal Husbandary	Thapa Budha Nilkantha	1987	-	Closed
*44.	Shree Chandeshwari Dugdha Dairy, Kavre	Gopal Bdr. Thapa Banepa	1987	Milk and Butter making	Running well
**45.	Dipendra Dairy Farm Kavre	Panuati	1988	"	Being Established
46.	Dahal Dairy Farm Dhading	Gajuri, Dhading	-	Raw milk production	"
47.	Rani Agriculture Farm, Dhading	-	-	-	-
IV . Pokhara to Palpa					
*48.	Indra Dairy Udyog Sisuwa Aadarsha Village-5	Siromani Sapkota Thumako Dada-8	1989	Raw milk	Nly established
*49.	Laxmi Dugdha Utpadak Sanstha, Pokhara	Sundar Bdr. Sigdel Pokhara	1986	Raw milk	Running well
**50.	Gautam Cream Cottage Udhyog, Kaski	Thakur Pd. Gautam Baidham, Pokhara	1988	Cream production	Closed
**51.	Sagarmatha Sterilised Milk and beverage P. Ltd. Industiral Estate Pokhara	Usha Lohani and mukunda Tripathi 7/54 Battish Putali Phone: 412671, 419257	1984	pasturization	Non-starter
*52.	Moti Dairy Syangja	Moti Raj Sharma	1980	Raw milk/Cream separation	Running well

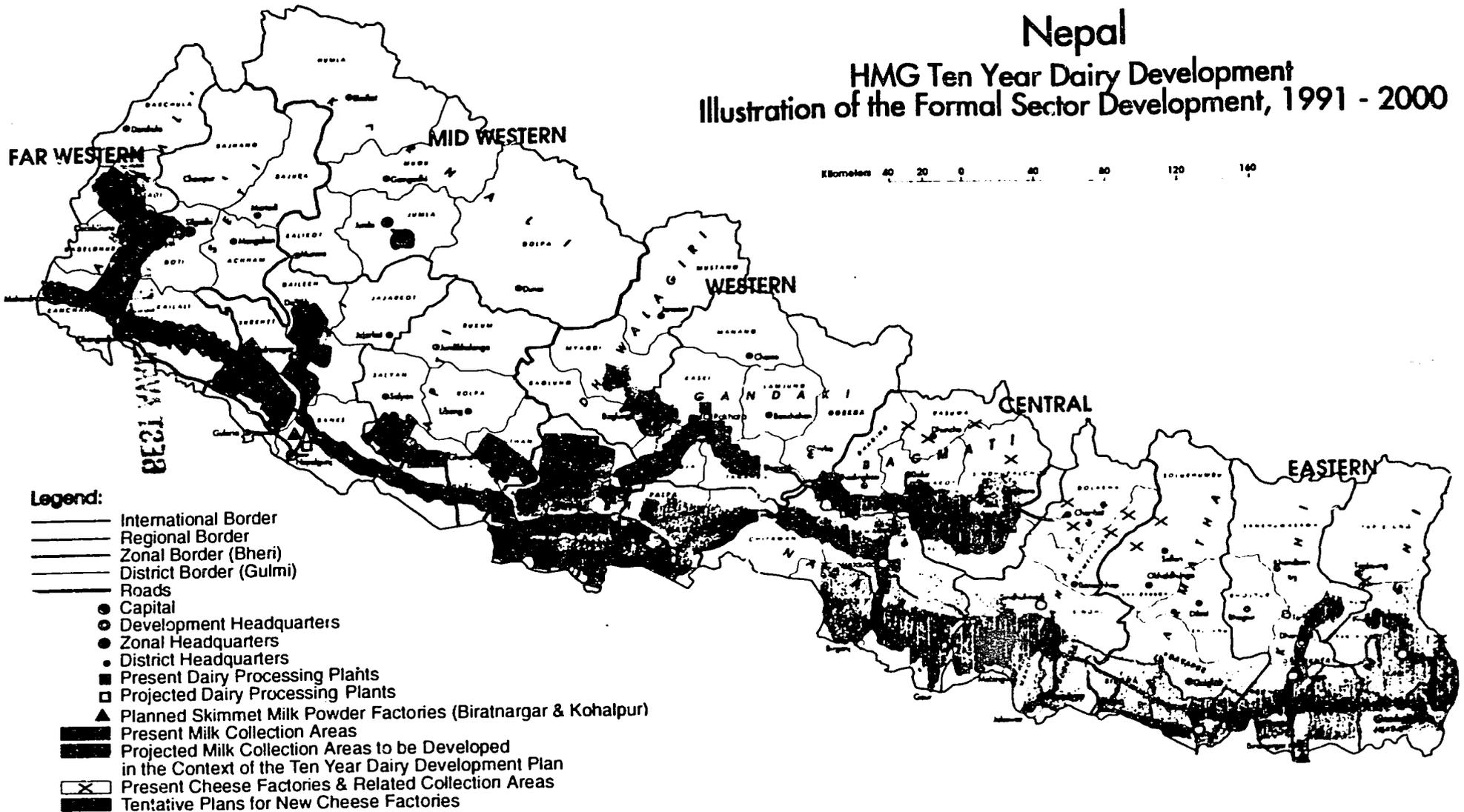
**53.	Tal Barahi Dairy Processing Industry, Kaski	Dina Nath Sharma Baidam-6, Kaski	1976	Butter and milk	Closed since 1978
54.	Ishwari Cream Udyog Palpa	Ishwari Shrestha Tansen	-	-	Closed since 1986
55.	Bhattarai Dairy Udyog,	Tansen	-	-	Closed
56.	Palpa Ghee Udyog Palpa	Pradip Udaya	1980	Dealer in Ghee	-
57.	Gautam Butter Industry	Thakur Pd. Gautam	1988	Butter production	-
V. Butwal					
*58.	Butwal Dairy Products P. Ltd. Alias Nepal Ghee Refinery P. Ltd. Rupandehi	Shita Ram Kavra Rajbiraj Khemchand Chauradia Lumbini Vidhya Udhog	1974	Ghee Refinery	Running below
*59.	Shankar Dairy Udyog Rupandehi	Khem Pd. Bhusal	1983	Raw milk/production/cream separation	Closed
*60.	Lumbini Dairy Processing Company Rupandehi	Naresh Pd. Ghimere Butwal	1984	Skimmed milk and Butter production	Nearly closed
*61.	Butwal Dairy Rupandehi	Arun Kumar Pradhan C/o, Modern Rice Mill Shanti Nagar, Bhairahawa	1984	Butter production	Closed
*62.	Satya Dev Dairy Burmeli Tole Bhairahawa, Rupandehi	Satya Dev Mishra Semri Village	1980	"	Running well
**62.	Indra Jyoti Dairy	Jyoti Lal, Bishwa Karma Butwal	-	Cream separation	Non-starter
64.	Dalmia Eastern Nepal Rupandehi	-	-	-	Only land has been purchase
VI. Nepalgunj					
*65.	Sharma Dairy Farm Banke	Suraj Man Sharma Prachanda Adhikari Surkhet Road Nepalgunj	1986	Raw milk production	Low ebb
*66.	West Himal Dairy Ltd., Industrial Estate Banke	Kedar Tandon Brigu Kedia Kiran Shrestha Thakur Pd. Upadhaya	1978	Ghee refining	Closed since 1980

- * Complete information collected.
- ** Only partial information available.

BEST AVAILABLE DOCUMENT

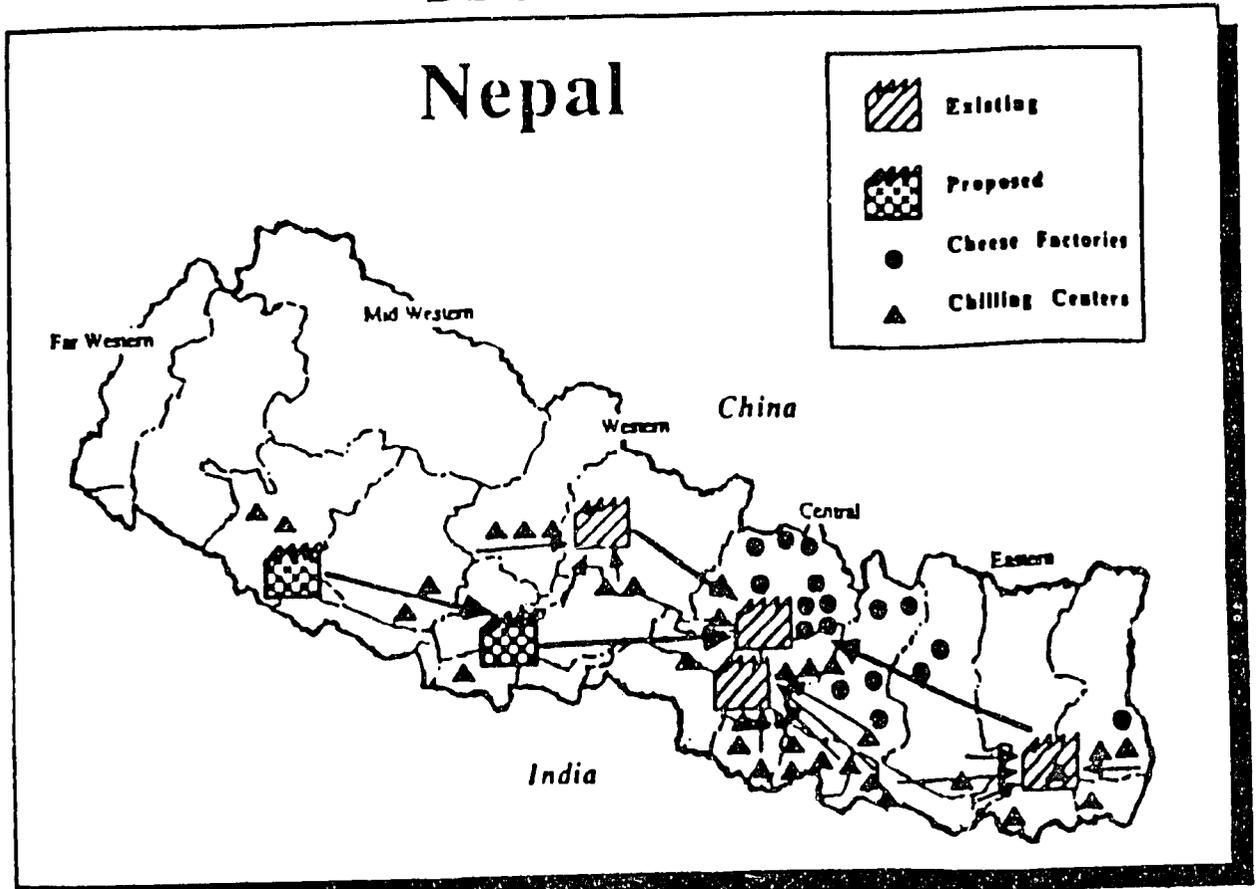
Nepal

HMG Ten Year Dairy Development Illustration of the Formal Sector Development, 1991 - 2000



26

DDC National Milk Grid



BEST AVAILABLE DOCUMENT

APPENDIX XII

**"A Few Thoughts on the Need of a Dairy Training School
in Nepal"**

By Tek Bahadur Thapa
Nepal Dairy Science Association,
GPO Box 7445, Kathmandu,
Nepal.

Contact Fax: 977-1-474 492
Contact Tel: 977-1-474 225

Background

Dairy development activities started with the establishment of Yak cheese factory in Langtang valley, north of Kathmandu in 1952 under FAO technical assistance. The industry steadily grew, more new yak cheese factories came up. The first 500 liters per hour (LPH) processing plant was started in Kathmandu introducing bottled pasteurized (fresh/reconstituted/recombined) milk. This was a landmark in dairy industry in Nepal. Later on milk plants were established in Biratnagar, Hetauda and Pokhara. A newly larger capacity dairy plant came up in Balaju, Kathmandu valley to meet the growing demand of pasteurized /standardized milk. All these dairy plants came up under government protection and donors support program. At the same time private dairies also entered in the business to market liquid milk. However, these milk plants were not capable of meeting the pasteurized milk demand in Kathmandu valley.

In the recent past the scenario has changed. Pasteurized milk demand is almost met. Side by side, dairy development corporation (DDC)-a corporate body has started observing milk holidays (stopping milk collection on a rotational basis) in its milkshed areas. With the governments' shift in the liberalized economy, DDC is in process of restructuring (privatization/co-operatization), however the final outcome is still awaited. Quite a bulk of high quality and high value dairy products are imported e.g. cheeses, processed cheeses, spreads, various kind of dried milk products (skimmed milk powder, whole milk powder, instant products, baby foods, dairy whiteners), butter, condensed milk and even ghee.

Quite a number of mini-private processors are in the business. A great potential exists in producing and marketing high value (good quality and packaging) dairy products in Nepal.

**WHAT ARE THE FUTURE PROSPECTS IN DIVERSIFYING
PROCESSING AND DAIRY PRODUCTS MANUFACTURE**

There is yoghurt in market place, but there is no good package of yoghurt, that could be easily carried when one is back from work. Yoghurt is available in earthen pots, a fragile packaging without proper cover on top of it. Conscious people would not want processed food marketed under open condition even if it may be safe. There are people with money, simply looking for a quality product. So far Nepalese dairy products are more targeted towards

the common man, not directed towards richer people who want to spend their money. There is a large chunk of expatriate community in Nepal, would only like to buy safer products. Tourists are other sizable group of consumers, also looking for quality dairy products. People want longlife milk, flavored milk, low fat milk, skim milk and what not. None of these products are available. No diversified cheeses and processed cheese products including cheese spreads are produced locally, however current demand is through imports.

Even the milk producers are interested to start milk processing through dairy co-operatives due to the agony of milk holidays, but they are needing proper support to enter into cooperative venture.

Contribution of milk to GDP

The livestock sub-sector (1991-94) has contributed 26.4 percent to total agricultural GDP (APP 1994). Milk alone has occupied 47 percent of share in livestock GDP. This indicates the importance of milk sector in the overall economy of the country. The dairy sector has provided cash income to the farmers, lots of employment to the rural and urban citizen, safe and hygienic dairy products to the consumers. Annual milk production is about 876,000 MT which at current market price corresponds to about five percent of GDP.

What is the status of dairy business ?

There are more than 600 milk producers co-operative societies/milk producers associations under DDC milkshed areas, numbers of private dairies also collect milk through large number of middlemen and vendors.

Dairy Development corporation (DDC) - a corporate body employs more than a thousand staff. The basic job at milk collection, quality testing, chilling, transportation and processing point is performed by lower and medium level manpower who really have gained the skill through learning by doing, rather than through actual formal training. We talk about quality, safety, hygiene and what not. What should we and can we expect out of untrained mass just based on instruction of trained person without having ability to demonstrate. Private sector dairies have learned through trial and error after making losses number of times. Milk being a perishable nature of product, how many people can afford to so ?

Let us examine the present scenario, where are we in terms of dairy processing industry ? In the past we struggled hard trying to supply liquid milk in Kathmandu city. With the increased participation of milk producers after they were organized in dairy cooperatives, there has been unexpected increase in milk production. Farmers are unable to sell all their produce during lean period and are forced to observe milk holidays (MH) causing extreme concern to them. Khoa is imported for milk based sweets manufacture from India. Similarly there are even rumors of Paneer

also being imported. Lots of natural and processed cheeses are imported. Why can not we make it in here ? We can but we do not have trained manpower to it. We have trained agricultural, food science, and other graduates but without practical knowhow of milk processing/technology.

We see a lots of nice and attractive dairy products in the market if we have proper manpower we can produce them here.

WHAT HAS BEEN THE CONSTRAINTS SO FAR ?

The major constraints are ;

- o Manpower development (Technology and dairy business management);
- o Capital intensive nature of dairy business;
- o Lack of proper information/technology/skill/knowhow; and
- o last but very vital- Poverty.

What should be done to overcome these difficulties ?

There is a real need of dairy training school in this country.

What kind ?

- o That provides practical oriented training(may be something similar to BTI program in dairy) and can start his/her own business after the training independently.
- o That can run various need oriented training programs. For example training for producers'dairy cooperatives, chilling centers, and all other people in the chain, processors from the private sector dairy enterprises, DDC employees, quality control people in the dairy sector and so on.
- o That can impart in-plant training to the technical school graduates like food technology, animal sciences, and vocational school students(JT/JTA types).
- o That could be a research center for study on typical indigenous dairy products and product development.
- o That can organize workshop/seminars on the subject of interest and concern from time and on in Nepalese dairying.

How should it operate ?

- o It should be an autonomous institution or a school under the universities like Kathamndu University.
- o It should have its own fullfledged dairy plant(mini-plant with all the facilities) and operated on sustainable basis.
- o It should introduce "Earn while you learn" scheme for both the

benefit of school and trainees for effective learning.

What facilities are needed ?

- o Need a complete system of dairy processing facility on a mini-scale including pasteurization, packaging, products manufacturing traditional(khoa, chhanna, paneer, milk based sweets) and western type of products namely butter, cheese, processed cheeses, cheese spread, condensed milk, milk powder, cereal foods etc.
- o Need well equipped proper chemical and bacteriological laboratory .
- o Well equipped library.
- o Excellent compulsory hostel facility.

If this training school is attached with Kathmandu University in Dhulikhel, it could be one of the best sites for the school. It can cater even the dairy products demand of Banepa, Dhulikhel, Panauti and its environs.

Further Actions Needed

- o If Kathmandu University expresses interest introducing/tieing up this type of program, detailed program needs to drawn up.
- o Explore the donors to establish training dairy plant, like others India could be one.

What are the facilities/infrastructure needed for a dairy plant ?

1.Land

2.Dairy Plant building

3.Water supply

4.Dairy equipments

- o Reception, separating, homogenizing, pasteurizing, packaging equipment for milk 500-1000 liter/hour(LPH)
- o Cheese, Paneer making equipment with packaging system
- o Khoa
- o Processed cheese/spread making and packaging syatem

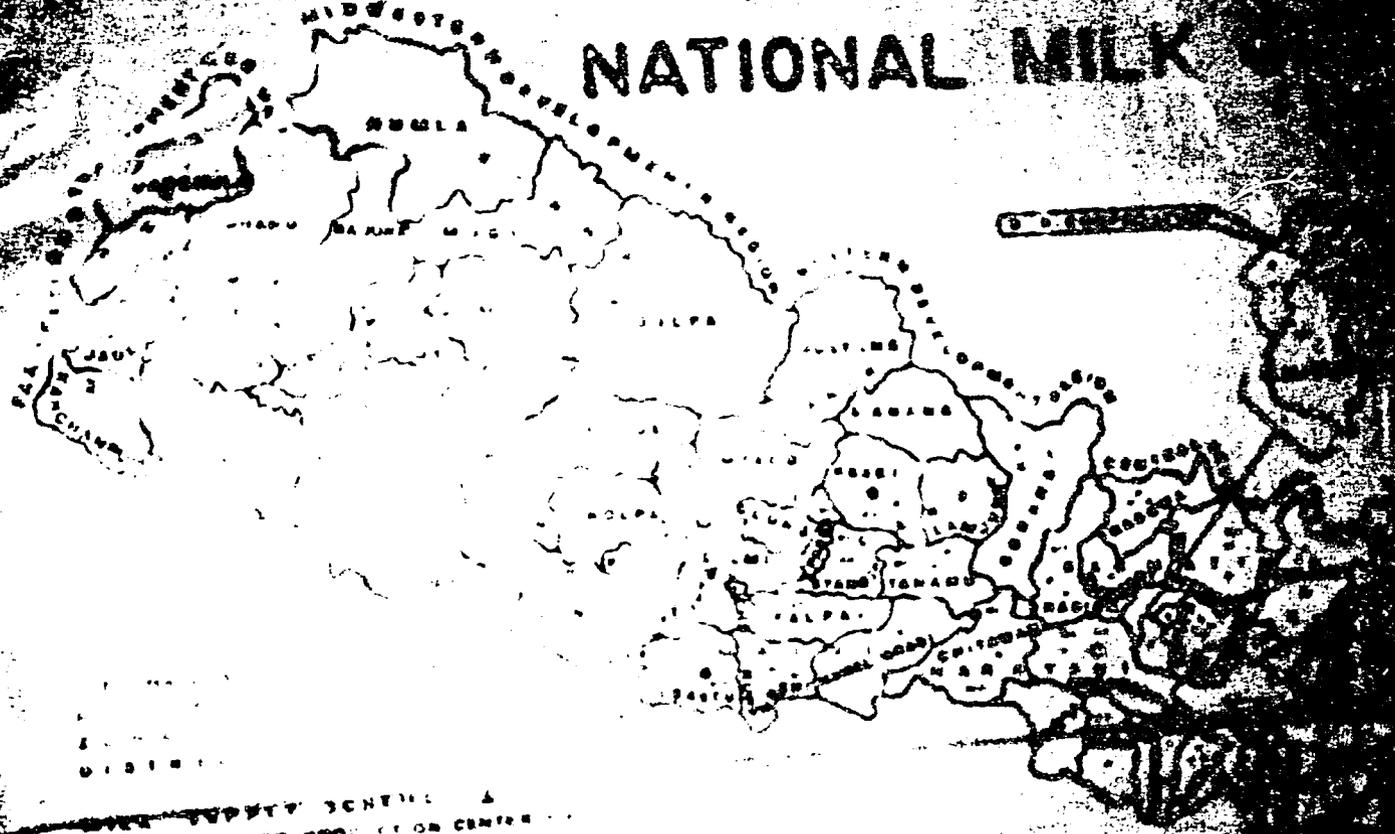
BEST AVAILABLE DOCUMENT

- o Ice-cream making system
- o Condensed and dried milk making system/pilot scale.
- o Refrigeration system/cold room/freezing room/ice-bank for chilled water
- o boiler
- o Waste water treatment and disposal

Donors are assisting in number of training programs, interested ones' can assist establishing a national infrastructure that will help the nation in the longer terms. Sales proceeds funds are also available, however needs to be negotiated and channeled through for the noble cause like a Alma matter. To remind here, Indian dairy industry gained momentum only after dairy training institutions substantially increased after the seventies. Probably this could be a lesson if we seriously want to strengthen our industry.

TBT 201194

DAIRY DEVELOPMENT CORP NATIONAL MILK



MILK SUPPLY SCHEME
SHELD, OUTER PRODUCTION CENTER
MILK PRODUCTION SOCIETY
MILK COLLECTION CAN 50-
MILK PRODUCTION SOCIETY

SCALE 1:50000
MILK PRODUCTION SOCIETY

APPENDIX XIII



Nepal

BEST AVAILABLE DOCUMENT

DAIRY SCIENCE

Association

NEWSLETTER

Vol. 1 No. 1

October 1994

Drink

Milk

For Health

And

Happiness

Editorial Committee

Chief Editor
Tek B. ThapaMembers
Giridhar Bajracharya
Naram Kaji Shrestha

Report of First General Body Meeting of NDSA

The first general body meeting of Nepal Dairy Science Association (NDSA), held on October 9, 1993 experienced an enthusiastic participation of its members. The meeting presided over by the chairman of the adhoc committee, Mr. Tek Bahadur Thapa, was attended by 18 members of the Association.

The meeting started with the welcome address by Mr. Jitendra Thike, member of adhoc committee proceeded with the address by the chairman, Mr. Tek Bahadur Thapa. Mr. Thapa, in his speech, elaborated the strategy and steps to be taken by the Association, he mentioned the problems faced during the tenure of the adhoc committee and also the ways that solved the problems.

This was followed by the progress report by the General Secretary of the adhoc committee, Ms. Ruby Vaidya, who presented

the activities of the Association, upto the time of the General Body Meeting Mr Sandeep Raj Pradhan, Treasurer of the adhoc committee presented the financial report.

The proposals brought by the adhoc committee, for amendment of certain articles of the constitution were passed and



Participant in 1st General Body Meeting

approved by the meeting unanimously. The General Body Meeting also passed the proposal of offering 'Honorary Fellow' to Mr. Gauri Prasad Sharma', the first Dairy Technologist of the country. The meeting also appointed the auditor for the fiscal year

E d i t o r i a l

Milk is nature's excellent food, and a gift from god for the continuity of living being on the earth. Dairy industry grows with the raw material base of milk, nature's perfect food. Dairying is a part and parcel of Nepalese way of life. Milk is processed at rural huts and houses using conventional techniques. Indigenous milk products like Dahi (fermented milk), Nauni ghiue (white butter), Ghiue (ghee- clarified butterfat), and Mahi (buttermilk) are produced at almost every household keeping milking cows or buffaloes. In the high alpine yak rearing regions, products like Chhurpi, Darukho, butter, ghee etc. are produced. Although similar products are produced in Terai and mid hills, the type of indigenous processing equipment used varies, like wood based equipment in the hills, and pottery based vessels in the Terai.

Dairy development in the organised sector dates back to 1952, when a yak cheese factory was established in Langtang valley. Dairy industry gradually developed, and milk supply schemes were established in Kathmandu, Biratnagar, Hetauda and Pokhara under Dairy Development Corporation (DDC). New cheese factories were also established subsequently. Milk collection was initiated through the organization of Milk producers association (MPA); wherein producer beneficiaries themselves took charge of their business.

Private sector has also entered into the milk processing business. So far, 66 private dairy enterprises have been recorded, however many more are unrecorded. Despite growing interest in the dairy business, only limited private enterprises are in operation now. Lack of technical expertise and knowhow is the major obstacle for the entrepreneurs.

Various donor organizations like FAO, DANIDA, USAID and WFP and donor countries like Switzerland, Newzealand, Denmark have played key roles in bringing up the Nepalese dairy industry to this stage.

National Dairy Development Board (NDDB) has come up as the apex body to promote and co-ordinate the total dairy development activities in the country. This is a milestone in the dairy development in the country.

Dairy Development Corporation is in the process of restructuring, however final outcome is still being awaited.

One of the major problems being faced by the dairy sector is manpower development. No adequate number of dairy experts are available in the country to match the accelerated growth of dairy enterprises. Very few private sector dairies have employed dairy specialists. Many of the industries are either sick or closed. The main reason is the lack of technical expertise and manpower.

We hope this will be an eye opener for the policy makers in the dairy sector of the country.

News

&

Views

Outreach of NDSA

1. Nepal Bureau of standard and Metrology (NBSM) has nominated Nepal Dairy Science Association (NDSA) as a member in two of its Technical Committees for standard formulation. The representatives of NDSA in the committees are Mr. Rajendra Gopal Shrestha and Mr. Sandeep Raj Pradhan.

2. NDSA was invited by Council For Technical Education and Vocational Training (CTEVT), Sanothimi to participate in the DACUM work-

shop intended to formulate the syllabus for training course in dairy technology for the mid level man power. NDSA was represented by its member Mr. Madan Lal Shrestha.

3. Members of NDSA, Mr. T.B.Thapa and Ms. Ruby Vaidya separately made goodwill visits to Indian Dairy Association (IDA) office, New Delhi. IDA has assured its support to strengthen NDSA. NDSA has also been placed in the mailing list of IDA publications

namely Indian Dairyman and Indian Journal of Dairy Science. The publications are available for reference to NDSA members.

Similarly a good will visit was also made to National Dairy Research Institute (NDRI), Karnal. NDRI has also placed NDSA in its mailing list. NDSA has started getting the publications. NDRI has also assured NDSA with its full support.

4. NDSA is pleased to announce that NDDB

has joined the Association as an institutional member and Himalaya Food and Beverages Pvt. Ltd. and Indra Dairy Pvt. Ltd. as affiliated members.

SMP Plant in Nepal

5. Askim milk powder (SMP) plant under erection in Biratnagar is expected to be commissioned within a month in Biratnagar. The operation of this plant will greatly ease the problem of milk holiday being faced by the milk producer farmers in the eastern region of Nepal.

(Continued on page 4)

NDSA Executive Committee

Election of the office bearers of the executive committee of NDSA was held and the following members were elected unanimously.

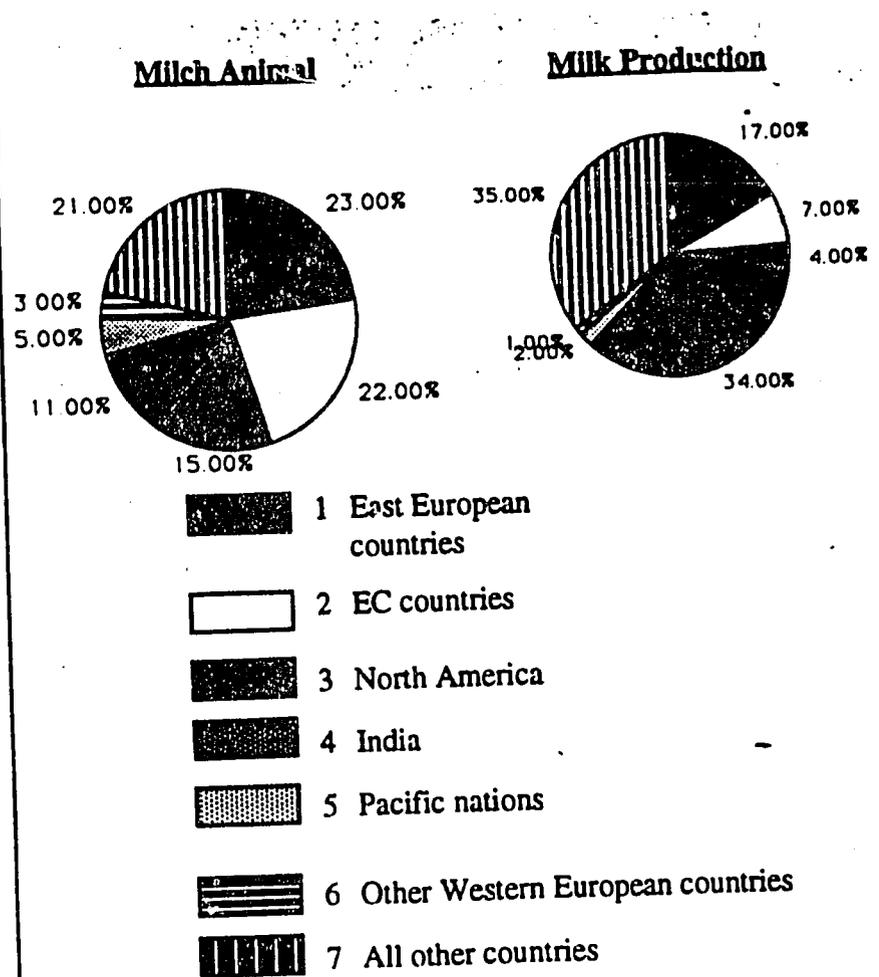
Post	Name
President	Mr. Ram Milan Upadhyaya
Vice-president	Mr. Madan Mohan Das
General Secretary	Miss Ruby Vaidya
Treasurer	Mr. Kiran K. Pant
Member	Mr. Madan Lal Shrestha
Member	Mr. Bhairab Prasad Manandhar
Member	Mr. Jitendra Thike
Member	Mr. Krishna Gopal Shrestha
Chief Editor	
Cum-Member	Mr. Tek Bahadur Thapa

NDSA Contribution to the Prime Minister's Disaster Relief Fund

NDSA arranged contributions from individual members and donated in the Prime Minister's Disaster Relief Fund in the process of sharing the national disaster relief activities.

★

BEST AVAILABLE DOCUMENT



Source : Indian Dairyman

★ Nepal's share in the world milk production:
876,954 MT (0.17%)

Congratulations

Dairy Development Corporation

on the successful completion of 25 years of service to the nation.

Private Sector Dairy Enterprises in Nepal

Despite the slogan of economic liberalization, the private sector growth is rather slow. Most of the private sector processors are concentrated in Kathmandu due to demand led factors. Many mini-dairy plants outside valley are closed down. Private yak cheese factories are also coming up, and are increasing. Poor techno-managerial capability has been felt as a biggest problem.

There are few dairies in the organised sector which have modern processing equipment. Himalaya Dairy has one of the most modern processing

plants and Bhaktapur Dairy is expanding its facilities. There are quite a few number of plants producing ice cream in Nepal. Some of them are Nirulas, Kwality, Sitaula etc.

In general organised dairy sector is concentrating only on standardized milk sale. Time is overripened for diversifying the processing of milk into value added dairy products. High value and longlife cheeses, processed cheese products, condensed and dried milk products can be marketed in the country. A good demand for khoa

and chhana- raw material for m based sweets exists. Sweets mak even import khoa from India. Agenc involved in dairy developm including National Da Development Board (NDDB) sho play vital role in assisting and guid the private sector entrepreneurs Dairy Training School is needec provide practical oriented train program to develop mediocre le manpower. Focus on manpo development would automatic help strengthen the private sector d enterprises in Nepal.

★

Appointments

Mr. Ram Milan Upadhyaya, a very senior dairyman and chairman of NDSA recently completed the assignment of National Consultant. FAO/TCP/ (Technical Cooperation Programme) Dairy Training Project in the eastern region of Nepal.

Mr. T. B. Thapa, chief editor and executive member of NDSA has taken up the assignment of Dairy Processing and Marketing advisor in Dairy Enterprise support component of Agroenterprises and Technology Systems Project (ATSP)/USAID. The dairy enterprise support program aims at strengthening private sector dairy enterprises in Nepal.

Dr. K. R. Tiwari has recently taken up the assignment of Executive Director Cum-Member-Secretary of National Dairy Development Board. He has replaced Dr. D.D. Joshi, the founder Executive Director of NDDDB and a member of NDSA. The Association wishes every success in his new assignment.

Dr. S. B. Singh has been appointed as member, National Dairy Development Board. The board is chaired by Honourable Minister of Agriculture.

(Continued from page 2)

Designed to handle 2000 liters of skim milk per hour, the plant will produce 176 kg SMP/hour and is expected to handle 27,000 litre of milk per day at full capacity.

6. USAID Assistance in Dairy Sector.

The USAID has launched a dairy enterprise support program under the Agroenterprises and Technology Systems Project (ATSP). The program has been operating since March 1994 with dairy production, processing and marketing activities.

7. DESC/ATSP organizing workshop in Butwal Dairy Enterprise Support Component of ATSP project/USAID is organizing a two day workshop on "Options for milk processing and marketing through MPA/MPCS in Butwal area" in collaboration with Rupandehi Milk Union and DDC Butwal. The workshop scheduled for 24-25th October, 1994 is expected to be attended by representatives of Rupandehi Milk Union, NDDDB, Dairy Development Corporation, donor agencies and decision makers. NDSA hopes the workshop will come out with fruitful outcomes.

24TH INTERNATIONAL DAIRY CONGRESS IN AUSTRALIA:

Australia has been the central focus for the world's dairy industry in 1994. International Dairy Congress is organised once in every four years, and the last congress was held in Montreal, Canada. People from all sectors of the dairy industry namely farming, manufacturing, R&D, economics and marketing, nutrition, education, government departments and regulatory organizations, as well as the allied service industries (packaging, equipment, analytical services, dairy herd health and nutrition etc). converged in Melbourne from September 18-22, 1994, for the 24th International Dairy Congress.

OBITUARY

NDSA expresses its heartfelt condolence on the sad demise of Mr. L.B. Nemang, a distinguished and dedicated dairyman. He has pioneering contribution in establishing yak cheese factories in the high hills. He served as Deputy General Manager, Dairy Development corporation for a long period, and also worked as local and international consultant in dairy industry.

May his soul rest in peace.

(Continued from page 1)

A condolence bill was passed and two minutes mourning was observed on sad demise of Mr. Lal Bahadur Nembang, one of the senior dairy technologists of the country.

Mr. Arun Shrestha, Returning Officer, conducted the election of the executive committee. The office bearers and the executive members were elected unanimously.

Newly elected chairman, Mr. Ram Milan Upadhyaya, thanked the outgoing body for their contribution in bringing up the Association, and all other members for their support. The General Body Meeting concluded with the vote of thanks by Vice Chairman, adhoc Committee Mr. Madan Lal Shrestha.

Milk Drinkers are better Lovers

Bi-annual publication of Nepal Dairy Science Association (NDSA),

P. O. Box 7445, Kathmandu, Nepal Contact fax : 977-1-474492