

5. Recommendations for the Purpose of  
Business Solutions  
in the Food Processing Industry



## 5 Recommendations for the Purpose of Business Solutions in the Food Processing Industry

### 5.1 Recommendation concerning livestock and introduction of advanced technologies.

#### 5.1.1 Recommendation.

In this portion, the proposal about the importance of the advanced technology introduction activities concerning the raw-material quality improvement and the livestock raising policy regarding feed production, establishment of an agricultural improvement extension activity system, and quality improvement of the processed food and agriculture policy is made. The demonstration of the technical guidance also carried out in order to get the persons involved in the area to recognize the contents of the proposal.

#### (1) Recommendation concerning forage production.

In 4.2.6, the issue of raw materials about livestock field has pointed out. About the issues when using after-harvest residual substance and wild grass as storage feed. Reference is made the countermeasure about it. Although it differs from silage, the "urea treatment technique" of straw is recommended as one of the way to solve the problem. The feed fitted to each cattle species must be given. Now, in the North Kazakhstan state, the Holstein species was introduction in addition to conventional red Kazakh species. When dairy farmer introduces the Holstein species and want to improve the milk production, the re-examination of the whole feeding management must be made. Holstein cannot be performed its ability with the feeding resources of combination of wild grass and the post-harvest by-product adopted in the feeding system to the Red Kazakh

About solution of these issues, it is desirable to consider in the scheme of establishment of Holstein breeding management training system mentioned on the action plan.

#### (2) Establishment of dairy farming technology improvement and extension system.

In the 4.2.6, insufficient of basic technology about the feeding management of the Holstein is mentioned. Now, in the North Kazakhstan state, the Holstein species are introducing many in addition to conventional red Kazakh species. During the investigation, there are some opportunities to obtain the both cases which are having good performance or not so good performance, then, the necessity of some technical transfer activities were urged to the department of agriculture and milk processing companies.

#### (3) Improvement of veterinary serviceies

New veterinary department was established February 10. 2010. Their main activity is the providing veterinary service in all 13 districts and 205 areas (rural area, villages). There are specialists in 13 districts now, and in the most areas. They are going to set specialists in 205 areas in a two weeks period. The idea of veterinary service system was created by the Prime Minister in the scope of Medical and Prevention Plan for rural areas and villages. The government had subsidized 129 mil tenge in this sector last year. There are veterinary inspection facilities in every district from 1999. This inspection provided all kind of services control, legal services and veterinary services. The government had split their charges in a two organizations.

It is thought that such a policy is very suitable action when thinking of live stock policy in the future. About on-going activities concerning slaughtering facilities, among the limited number of personal should be done. Although we were anxious about delay of activities about future progress, considerable efficient deployment is expectable by this correspondence.

(4) Improvement of dairy farming management concerning small-scale farmers.

In 4.2.6, it is mentioned about the small-scale dairy farmer's management issue.

As measures, it is mentioned the establishment of the tentative name "dairy farming extension center" mentioned as an action plan.

In the agricultural office, when aiming at synthetic stable development of the area, the small-scale dairy farmer's economical improvement is very important thing. As first measure, it is not an extreme poverty farm but the farm which has dormant faculty comparatively, and also it is important to select the place which is able to work as area's mind. Furthermore, although instruction whose instructor goes to the spot directly is the optimal as a means to improvement the technology in the production site, it is guessed only by the extension system of the present condition of North Kazakhstan state that there are many conditions difficult for instruction to an end. Dairy extension center is very useful in that situation. It is a demonstration farm equipped with necessary conditions such as grassland, cattle barn and required for dairy management as a function. If farmers attend the technical training held in this institution, they will have obtained know-how of almost necessary dairy management.

Although it is a "dairy extension center", an institution in particular that makes big facility imagine is not required. It is enough if the place in which farmers and technicians meet with all the persons concerned and which can perform dairy technical guidance centering on training fundamentally is sufficient.

(5) The establishment of breeding system of dairy cattle.

Although the Holstein species from Canada was introduced aiming at improvement in local raw milk production capacity, if future development of prospective breeding business is taken into consideration, we believe the introduction of an excellent bull is more desirable.

In National Livestock Breeding Center, a system needs to be built where excellent Holstein Species frozen semen will be produced there as a base and distribute to various areas under suitable insemination plan. "Special selection centre" is prepared in Astana and a plan to produce the hybrid of the Holstein species and the Red Kazakhstan is in progress now. The purpose of this breeding plan is to produce new type dairy cow having two capabilities called the strong body and the feature of large adaptable-to-environment nature which the Red Kazakh species has, and the high milk production capacity which the Holstein species has. We believe this is fundamentally the most effective improvement method. In a sense, this will influence most the future of dairy cow situation in North Kazakhstanian state. Therefore, prudent management in collaboration with other section such as breeding division is expected.

According to analysis made by officers in charge of dairy in North Kazakhstanian state, the milk production in summer is much and it tends to decrease in winter. Therefore, a stable supply throughout the years to the dairy industry factories is not possible. In turn, factories have troubles in keeping their production schedule. During our work of consultation, we were asked many times about the suitable remedy by which they can carry out all-season stable supply.

In order to prevent this problem, the technology of artificial insemination of cattle was developed. In this technology, breeding can be made to suite the condition of individual cattle, and is different from free natural breeding in the field. Farmers can artificially inseminate in their barn by continuously observing the heat condition of the cows. As a result, delivery season is extended and seasonal difference of milk production can be reduced.

(6) Manufacturing special qualities pork ham and sausage

In 4.2.6, it is mentioned about the pork meat from small scale farm has high quality compare to large scale farm. The advice to the ham and sausage companies was given to specifying the difference of material with such special fattening method, and the other ordinary meat in a package by ham and sausage companies, it may give a high-class feeling and it can sell as a brand-name product of the area. Naturally, if a price can be set to evaluate an appropriate difference about the material meat which performed such long-term fattening process, it can contribute to the stable management of hog raisers. The advice was given using "hog raising manual"

5.1.2 Demonstration of introducing new technologies

(1) Improvement of raw milk quality

In order to manufacture the processed food which quality was stabilized, the most necessary conditions is cleanliness of raw materials. Then, it taught about livestock processed food and especially the stable production of clean raw milk made into the issues when manufacturing the processed food about dairy products.

One of the dairy processing companies which belong to working groups asked to companion support of technical improvement instruction especially concerning milking hygiene for the dairy farm which exists under the influence of the company.

When the background is checked, the number of bacteria of the raw milk produced from the contract production site is increasing in these days. The problem developing into the serious stage for the processing company, those situations are investigated carefully and consider necessary countermeasures. Initially to select the farm which is poor as for the situation, to begin from the first milk, inspection the number of bacteria for every point until the time of factory arrival, then to specify at which stage the problem has occurred, and to devise countermeasure about each.

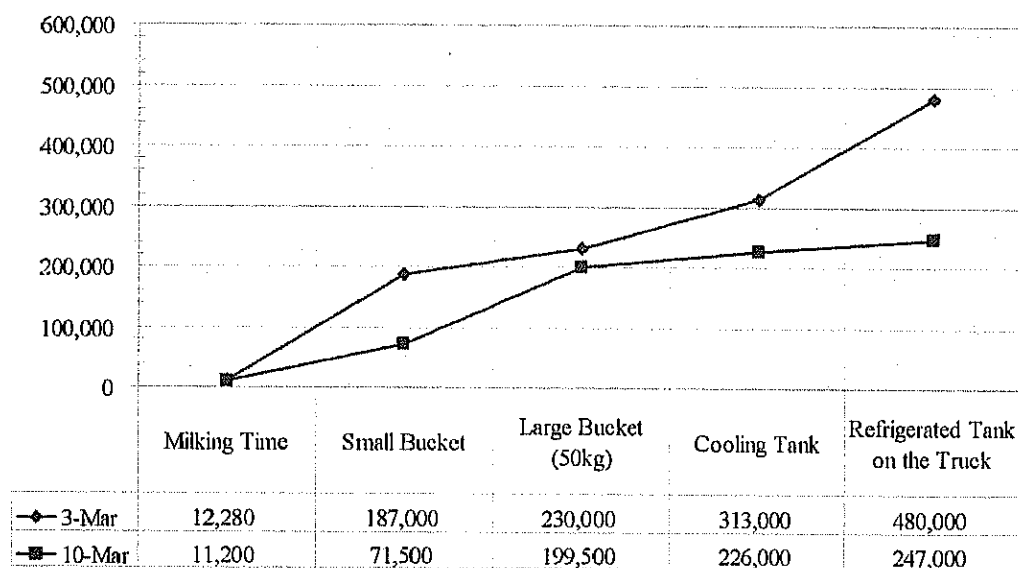
As an investigating mission, this support is an important subject linking directly to production of the clean raw milk here.

The purpose of this investigation was to specifying the pollution source of raw milk, and to consider concrete measures. The number of bacteria was increasing by the upward rise, and, as a result, became the very simple conclusion that there was issue in all the stages.

If such a situation is came out apparently, although the impression of being facing a lot of difficulties cannot be denied, but an investigating member thinks, according to efforts of the persons concerned, considerable issue is improvable from now on.

For example, since the situation about the farm 1 was poor this time, instruction was strictly opposed to the farm 1. First-time inspections have done on March 3, and many issues were recognized in the milking process of operation. The investigating member made the milking improvement instruction manual with an eye on issue solving about it. Actual instruction was made to the staff concerned on March 5 using the instruction manuals, and the second inspection was tried out after that on March 10.

As a result, the instruction activities took effect about decreasing until 247,000 on the time of arrives factory from 480,000. (Refer to the graph in next page)



Source: The laboratory data of dairy processing company

Figure 5-1 The number of bacteria in the raw milk (ml)

Based on this result, the processing company will be scheduled to make milking hygiene supervision instruction to the raw milk producer from now on. That it is improvable so far by only one time technical guidance impresses the earnest enthusiasm applied to the dairy producer of the state. If it compares this figure with the level (thousands of pieces) of Japan, although good results can never say, it will be made good in view of the natural environment of this country, and a social situation. The further improvement is possible by taking continuous improvement instruction from now on. The teaching materials used in the process of instruction are the milking improvement manual and the dairy technical improvement manual including the example of Japan.

About the dairy improvement manual, it has utilized at the opportunities', such as a steering committee, a workgroup meeting, and a presentation for producers. Emphasized matter especially in the manual is the point of being in the shortcut of a technical improvement studying an advanced effective example positively, and taking it into one's management one by one. Two dairy companies are included among workgroups and each has several contract dairy farmers in connection with raw milk purchase. Among the producers there are already considered introduction of the Holstein. Then, based on the dairy technical improvement manual, dairy technical guidance was performed.

## 5.2 Recommendations in relation to the establishment of practical educational facilities

The lack of man power is the one major issue in the food processing sector in North Kazakhstan. At higher education facilities, the introduction of technology and research of a high academic level is carried out however there is no structure for the provision of practical education that is deemed necessary by small and medium sized businesses in the region.

### 5.2.1 Proposal summary

#### (1) Managing entity

The education administrators of the main specialist education facility will operate as a new educational structure due to the existing Construction and Economic State College in North Kazakhstan and private business. If possible, it would be preferable to have a structure similar to a business corporation set up where the stock holders are the State Government and private business. Also, at the Construction and Economic State College in Kazakhstan, currently cooking practice is carried out with sweets and bread etc.

## (2) Features of the main curriculum

There are reports that there are 11 State junior colleges in North Kazakhstan. If all the teachers at these colleges were employed, it would be possible to process most of the liberal arts subjects.

- Raw material and product inspection • analysis method (The inspection • analysis institution would be a state institution that carries the same weight as a public institution)
- Entire experience including practical experience from raw materials to processing and from practical experience on the fields to processing.
- Food hygiene, food regulations, food analysis, production regulations, acquisition methods of HACCP and ISO
- Lectures can be taken via satellite by using a computer line.
- Lessons can be taken via intensive courses.

## (3) Characteristics of education administration

- A method where businesses that receive labour can cover boarding costs, food, class fees etc.
- There are problems with high interest rate education loans, so consideration is given to amounts that are payable to schools.
- Aim at export promotion, in particular, study of a language, produce graduates that are educated and are work ready.
- Have an effective curriculum that educates design, naming, etc.

### 5.2.2 The steps required to set up an educational institution

It is understood that in order to set up a technical education institution the following steps are necessary. In this case, at the time of taking the next step, it is not that the previous step needs to be completed, as this is ongoing and can be implemented in the image where the next step is incorporating into the project.

#### (1) 1<sup>st</sup> step

##### 1) A barrier free link between University and business

This starts from confirming the needs and possibility of both those involved with University and private enterprises etc. Together with private industry visits by education institutions which include company inspections and internships for students, with strategists including companies visiting Universities and teaching the students things such as what it is like on site and the structure of society. This has already been partly implemented in North Kazakhstan but will need to be established as a system.

## 2) Implementation of short term courses and intensive courses

Prior to implementing new departments or year round courses, it would be important to obtain feedback from both students and the private sector in relation to the implementation of a short term intensive course or a summer seminar which would include lessons conducted by business men from the private sector. With a short term course, utilizing a program at the JICA Japan centre (Astana) , inviting someone from a Japanese company who is stationed in Kazakhstan or providing new technology or stimulation from a related party such as sending a specialist from Japan would be conceivable.

### (2) 2<sup>nd</sup> step

#### 1) Formation of a supporter company

Through the 1<sup>st</sup> step, after building a trust relationship between the University and company, organize a company that will be the supporter that provides assistance to university activities. Through accepting graduate students and supporting the students the companies will create technicians which will match the needs of the region. Furthermore, it will be possible to provide guidance so that the University curriculum will meet the needs of business.

#### 2) Participation in events

The University and region can cooperate and participate in events such a trade fairs and product development. As for the students, not only will it be study of a practical nature it will allow the companies to reduce costs through the utilization of the students and they will be able to obtain the chance to employ talented students.

### (3) 3<sup>rd</sup> step

#### 1) Set up of departments and courses

Thinking of the steps up to now, the idea is to be able to formulate a department or a subject and establish a technical course at the level which secures places of employment for students and graduate students. At that time, continuous operation is possible by devising mechanisms that attracts money from external sources, such as courses doted by business, selling students produce where part of the money earned goes towards lesson expenses. At the same time, developing a plan which brings into view the establishment of a specialist education facility is the ultimate goal.

#### 2) The commencement of international exchanges

With the exchange between foreign Universities and technical colleges which have a proven educational track record in the food industry and agricultural sector, it will be possible to increase the consciousness of students and staff alike as well as expanding their experiences. Currently, there is lively inter University exchanges between Kazakhstan and Japan, and it is possible to search for target educational institutions in Japan.

## 5.3 Recommendation of Information Service for Finance

The effective information must be delivered both sides to suppliers and recipients of the



required business fund. Staffs of commercial banks regularly visit customers for further business promotion. However, this is only to the major and established entities instead of small and medium entities newly set up. For those new and small companies, the third party such as Techno Park in the province of North Kazakhstan should be necessary and effective organization to promote information availability between financial organizations and small and medium private companies. The study team identifies and proposes Techno Park as the specific organization to be the information provider. However, current Techno Park does not have enough capacity to handle such tasks.

Entrepreneurs expect that Techno Park is able to respond and suggest solutions correctly, timely and satisfactorily for comprehensive business issues. Although Techno Park has the business objective of the consulting for technical and marketing for new products, customers do not order so often. This is because present Techno Park does not own sufficient knowledge on the financial products and specific financial technology. It is important and effect that Techno Park should be prepared and provided with more practical knowledge and capacity on the corporate finance one by one so that Techno Park will perform and carry out the function of one stop shop. For insufficiency with business performance by Techno Park, team work in cooperation together with KasAgro Marketing should be the practical and tentative solution for a while. It is reasonable and recommendable that Techno Park will increase its turnover through one stop shop function upon providing the effective solutions expected by the general public customers

In the following chapter, the Master Plan will be reviewed how to provide Techno Park with the sufficient capacity for consultations and the practical methodology for identifying the financial solutions to the potential customers. The action plans will be detailed for the Master Plan as well.

#### 5.4 Recommendation to establish regional food processing technology center

##### 5.4.1 Needs for regional food processing technology center for food processing sector

To enforce the competitiveness in the food market, it is necessary to have nontraditional points of view for the production and marketing.

- To meet the variety of consumer needs
- To appeal the safety of raw material and final products
- To design the marketable products

Presently, there is no supporting organization for the purpose to enforce the competitiveness for small and medium-sized enterprise in North Kazakhstan Oblast. As mentioned in previous chapter, some organizations can provide several services to SMEs as followings;

- information dissemination for entrepreneur, certification acquisition, lending production facility by Techno park;
- Education for food processing experts in the classroom lecture of university;
- Financial information from DAMU and TOBOL

But the existing supporting system is not so functional because of vertical segmented administrative system and no adjustment function each other to providing services to SMEs. So, it is difficult for SMEs to access the information and services from existing organization.

JICA Study Team recommends the regional food processing technology center that has a

comprehensive and accessible supporting functions for SMEs. The center is not a physical facility but a set of functional group which has several functions of technical support, information dissemination, human resource development and marketing support from existing peripheral organization with one-stop function by the Techno park.

(1) The objectives of the regional food processing technology center

The regional food processing technology center has three objectives of its activity as follows:

- Enforcement of competitiveness in SMEs : To enforce the competitiveness by product development to comply with health oriented market needs with quality and safety assurance.
- Promotion of local industry including agriculture and livestock industry : The promotion of food processing industry is contributed to the vitalization of agriculture and livestock sector.
- Market expansion in domestic market and export promotion: To compete with products from foreign countries such as Russia and Belarus and other oblast in domestic market, to expand the domestic and international markets with competitive product development.

(2) Necessary functions for regional food processing technology center

The necessary functions are supposing as follows with a central one-stop function of comprehensive supporting center;

- Soft function for information dissemination and coordination to promote product development and business linkage
- Combined function between production and sales promotion such as technical advice and commissioned testing.
- Marketing function such as sales support and market strategy development

(3) Expected effects from regional food processing technology center

The expected effects from the regional food processing technology center is as follows;

- Development and improvement of value-added livestock process food
- Open laboratory and processing machine to meet the needs for regional industry characteristics with technical supports
- Promotion of product development and improvement of production and quality
- Farmer income increase in association with the sales increase of process food

#### 5.4.2 Function concept of regional food processing technology center

The regional food processing technology center is comprehensive supporting center with one-stop function for small and medium size food enterprise to solve the problem and receive necessary information on technical development, collecting information, human resource development, marketing survey.

The regional food processing technology center will have a following organization which is corresponding to each function, also entrust basic services of technical, information, and training to external intuitions.

Table 5-1 The function and organization of regional food processing technology center

Function	Services	Expected intuition
One stop center function	Window service	Techno park
Technical support function	Food processing and quality control support	Research institution and private company
Information dissemination function	Information collection support of Food technology and regulation	Education, Research, and Administrative institution
Human resource development function	Education and training	Education, Research, and Administrative institution
Marketing function	Market survey and sales promotion support	Private company
Management support function	Financial information support	Financial institution

#### 5.4.3 Basic design of regional food processing technology center

Based on the functional concept of regional food processing technology center, the JICA Study Team consider the basic design of regional food processing technology center to promote food processing industry in North Kazakhstan Oblast.

##### (1) Necessary functions

Necessary functions for regional food processing technology center are listed based on the present activities by companies and present services by government as following table.

Both dairy products and processed meat products should be produced in accordance with the Government certification, and it takes cost and time to develop new products, so the development of new products and introduction of new technology for enforcement of competitiveness is not promoted.

##### 1) Dairy products

	Present activities performed by companies	Present services performed by government	Necessary functions to be conducted by food processing technology center
Food packaging technology	Packaging material such as carton box and PP, and packaging machine	No service	Plastic bottle and its packaging machine Hygiene control in packaging room New packaging design
Quality and safety improvement	Raw material receiving inspection, Final product inspection, Preservation test etc.	Product inspection and factory audit for production and sales	Accelerated preservation test, packaging material test, Physical test, Foreign material test, Information collection of complain in the market etc.
New product development	It takes long time and cost to apply to the government, that not so much new product development	Certification and permission for the production and sales of new products	Development of original products and high value-added products
Equipment procurement	Direct talk to the equipment manufacture, information exchange at exhibition.	No service	Wide range of information

Staff education and training	In-house and external training	Food regulation seminar by Central committee of metrology and technical regulation	Practical training for microbiological testing and quality control
Marketing survey	Existing channel survey	No service	Market survey and test marketing for new product development and quality improvement

2) Processed Meat Products

	Present activities performed by companies	Present services performed by government	Necessary functions to be conducted by food processing technology center
Food packaging technology	Packaging material as Plastic casing	No service	Small size packaging as slice pack and its machine, hygiene control of packaging room, new packaging design
Quality and safety improvement	Raw material receiving inspection, Final product inspection, Preservation test etc.	Product inspection and factory audit for production and sales	Accelerated preservation test, packaging material test, Physical test, Foreign material test, Information collection of complain in the market etc.
New product development	It takes long time and cost to apply to the government, that not so much new product development	Certification and permission for the production and sales of new products	Differentiation strategy from other products
Equipment procurement	Direct talk to the equipment manufacture, information exchange at exhibition.	No service	Wide range of information
Staff education and training	In-house and external training	Food regulation seminar by Central committee of metrology and technical regulation	Practical training for microbiological testing and quality control
Marketing survey	Existing channel survey	No service	Market survey and test marketing for new product development and quality improvement

(2) Basic Design of Regional Food Processing Technology Center (Draft)

• Basic Service items of Regional Food Processing Technology Center (Draft)

Basic service items of Regional Food Processing Technology Center are provided to SMEs as follows;

- Target sector: Dairy and meat processing SMEs
- Purpose: To contribute to quality improvement and new products development for enforcement of competitiveness in food processing sector

Field	Service item
Food packaging technology	Open laboratory for packaging machine and inspection equipment, Inspection of packaging material, Information dissemination of functional packaging, Consulting for packaging design
Quality and safety improvement	Preservation test, Collection of market information, Provision of food safety information, Commissioned test (Microbiology, chemical analysis etc.)
New product development	Technical support for new product development, Information dissemination of new technology, Consultation for technical issue, Patent acquisition by collaboration research
Machine procurement	Database for food packaging machine and technology, Participation support for trade exhibition
Staff training	Training for microbiological test, quality control and marketing Food safety seminar
Marketing survey	Test marketing in the market, Market survey at exhibition, Support for establishment of marketing strategy for new product development

• Facility for Regional Food Processing Technology Center

To provide supporting services of Regional Food Processing Technology Center, following facilities and equipment for analysis and training are necessary;

Facility	Activities and equipment
Storage	Food storages (Freezing and refrigerated) , Supply shed
Market	Retail shops for test marketing (20 ~ 30 shops)
Open laboratory for food processing	Food processing machine, testing machine (Paid service)
Training and consulting	Seminar room, consulting room
Test and analysis	Equipment for testing
Administrative office	Director room, Accountant office, Reception, Reference room

## 5.5 Policies directed at constructing a regional brand

### 5.5.1 The implementation of technology transfer as a model business

In spite of producing products of a superior quality, compared to other regions, dairy products and processed meat products from North Kazakhstan lack attraction and fail to be sufficiently competitive. In order to enhance market competitiveness, not only the development of high value added unique products and their subsequent production but benefit from the development of a regional brand that is able to form a link with a good regional image and rediscover resources of the region.

With this study, the aim is to develop regional branding of North Kazakhstan, by conducting exchange of opinions between Government administration and private industry, and provide a collective view of the region. After that, work on a regional brand web site, promote participation in trade shows, work on forming ties between Government administration of North Kazakhstan and private business, which serves as a stepping stone to the cluster construction.

#### i) Recommendations for the location for exchange of opinion

After receiving an offer from North Kazakhstan department of New business and Industry, a food seminar was set up for 2 days on the 11<sup>th</sup> and 12<sup>th</sup> of March 2010 with the target being dairy product producers and meat-packing companies. Based on a specific theme like this, due to carrying out opinion exchange with others of the same trade in the region, it is possible to

construct relationships of mutual trust and it is possible to form cooperation between companies which is essential for cluster formation.

An example from a local company is that in order to protect local brands it is important to maintain product quality. On the other hand, there was criticism that even if domestic standards had already been cleared, the establishment of even higher standards would be at the expense of business. In order to send products to the market that have domestic and international competitiveness it is essential to show product differentiation. For that purpose, establishing a standard that certified the image of North Kazakhstan 「Safety and freshness」 and acknowledging this as a brand is important and related parties indicated understanding after the study team explained this to them. With this type of mutual contribution, it is necessary to build an environment where all can adjust. Also, the main opinions of participants in the opinion exchange have been noted below.

Long term strategy	<ul style="list-style-type: none"> <li>• Time is required in order for a brand to be established. For our brand to be established it took 30 years. It is necessary to have a long term view with building a regional brand.</li> </ul>
Quality standards	<ul style="list-style-type: none"> <li>• In order to maintain a regional brand it is necessary to have a fixed standard. With the establishment of a standard, quality maintenance of the regional brand product is possible.</li> <li>• Even in Kazakhstan there are strict standards, and in order to clear even higher standards it would require money and time and for regional companies this burden is large.</li> </ul>
Implementing agent	<ul style="list-style-type: none"> <li>• In relation to the construction of a regional brand, we are unable to see a body that would take on the responsibility of having central administrative duties.</li> <li>• Even in relation to the key private businesses, without the Governor of North Kazakhstan taking leadership it is thought that local companies may not participate.</li> </ul>
Establishment of an antenna shop	<ul style="list-style-type: none"> <li>• We want you to investigate the setting up of an antenna shop where local branded products can be sold. From the viewpoint of effective distribution an antenna shop would be convenient.</li> </ul>
Regional brand name	<ul style="list-style-type: none"> <li>• Petropavlovsk would be good as it has a higher level of awareness than North Kazakhstan.</li> <li>• As Petropavlovsk is registered as a trade mark for Masurajeru Co. Ltd. North Kazakhstan State would be good. Also, in Russia there are people that link Petropavlovsk to Kamchatka.</li> </ul>

#### ii) Making a web site for the regional brand

As for a tool for transmitting information about the regional brand a web site was attempted to be set up. With the setting up of a web site, not only carrying out advertising in relation to products and services and being thought provoking and carrying out promotional activities, but it is possible to conduct market surveys through questionnaire surveys directed at online users. Also, through the creation of a web site, it enables information exchange between companies and it is possible to build mutual understanding.

The internet diffusion rate in Kazakhstan is of a low standard as is the internet diffusion rate in the state of North Kazakhstan. Also, there are only a few companies that have a web site. However, the internet diffusion rate has been steadily increasing worldwide and it is expected that even in Kazakhstan the diffusion of the internet will occur.

Actually, in North Kazakhstan the web site of Government administrations of Petropavlovsk city are well developed, and in the future, with the linking to web sites of private business, it will be possible to expand the results of information transmission through the internet.

In the creation of corporate web sites, apart from the provision of material from the state

government, they are made with the cooperation of local businesses and information is extracted from corporate pamphlets as well as meetings with those same companies. With the information that is displayed on the web site, various companies identify that there is a consciousness of regional brand development and it is considered that there is a feeling of unity. Also, food producers in North Kazakhstan carry out sales activities to wholesalers and supermarkets and other retailers but there are many companies that do not consider doing sales promotions to the general public. Accordingly, with a web site, it is possible to include information on stores that stock the products which general consumers are able to purchase from. Below are the contents which should be displayed.

An example of the contents for a regional brand web site<sup>5</sup>

Name of contents	Contents
Introduction of regional brand	Greeting from the government institution, differences with other regions, PR points, etc
Company profile	Company history, profile, list of trading partners, etc
Representative's profile	Brief background of representative, photo, greetings, hobbies, work policy, etc
Staff introduction	Self introduction of key staff, photo, comments, etc
Consumer comments	Consumers comments, etc
Introduction of products and services	Summary of products and services, etc
Beneficial information for the consumer	Examples of recipes, etc

As for the approach to building the web site for the North Kazakhstan regional brand, it is necessary to prepare a schedule where the web site can be expanded thoughtfully and as such a period of 1 year would be required.

This time JICA started a regional brand web site but it is desirable that techno park or Government institutions in cooperation with the private sector continue with it. Below is an example of a schedule from start for a period of 6 months.

Example schedule for creation of a regional brand web site<sup>6</sup>

Plan	Contents
Start	Company profile, representatives profile, staff introduction
1 <sup>st</sup> month	Product and service introduction
2 <sup>nd</sup> month	Consumers comments
3 <sup>rd</sup> month	Upload information progressively which is important for the consumer
Between 4 <sup>th</sup> and 6 <sup>th</sup> month	Update and correct product and service introduction

### iii) Participation in trade shows

At the time of food seminars, there was a request from local business that antenna shops should be set up. In fact, when introducing regional brand products to other regions, in order to increase the awareness, the setting up of a regular antenna shop is very important. With that, as for the first step in setting up an antenna shop, it was proposed to participate as North Kazakhstan Oblast in "Inter Food" which was held in Astana for 3 days from the 27<sup>th</sup> of May to the 29<sup>th</sup> of May 2010.

As for businesses in North Kazakhstan, there are individual companies from the region that

<sup>5</sup> Reference to Web marketing institute of research Co. Ltd

<sup>6</sup> Reference to Web marketing institute of research Co. Ltd

have participated in the trade show but there has never been the case of a combined effort from businesses from within North Kazakhstan. At the time of advertising for participant companies, 1 company that deals with dairy products and 1 company that deals in meat products indicated they would participate. As for participation in the trade show, North Kazakhstan Department of Agriculture, Department of New Business and Industry and Techno park were discussing with the two participants from the private sector and carried out preparation for the exhibition.

As for the 2 companies that plan to participate in the trade show, they are both companies that provide produce to the Hyper markets of "Metro" and the Super market chain "Lambs Stall" located in Astana City. Accordingly, a study was carried out as to what the main items displayed are that can be purchased in Astana city by residents of Astana.

This time JICA served as the administrative office, but from now on the administrative functions will be performed by Techno Park in North Kazakhstan and it is recommended that it forms partnerships with private business and work on establishing participants for trade shows. As the participation fee is very high it is thought that participation by business is limited. In order to provide the opportunity to participate in the trade shows it is necessary for the State Government to bear some of the cost of booth fee or registration fees in the way of a fixed subsidiary etc. Currently, an event participation subsidiary program for corporate groups is being looked into by the central government with the purpose of promoting exports. It is recommended that systems of this type are positively put into practice.

#### 5.5.2 Policy for future developments

As for the market for dairy products and for processed meat products in Kazakhstan, the market for Russian and other foreign products is increasing. At the same time, there has been an increase in competition between domestic regions and the products of large domestic makers from Kazakhstan have entered regional markets. Even during the 9 months of the research it was confirmed that there was an increase in the space for products of a large maker from Almaty in the shelves of a large supermarket located in central Petropavlovsk.

Among the intensifying competition between domestic and foreign companies, it is clear that the way for local companies to survive is through product "differentiation". The provision of products where there is clear discrimination between other products, that is the so called "differentiation" will also become the starting point for a regional brand.

Furthermore, it is necessary to investigate the means where the features of differentiated products are clearly conveyed to the customer. That one thing will be the use of a web site. The quality of the product, concept, production method will be conveyed to the consumer via the web site and being able to "differentiate" will be extremely important. Kazakhstan is a typically vertical society, and a feature is that horizontal connections are very rare. For example, in North Kazakhstan because the distribution system is immature, the cost of maintaining a cold storage truck is at the expense of the producer. 1 company that participated in the working group mentioned that "if there was a system of a joint cold storage truck it would be beneficial to all companies but there is no opportunity to talk about such things".

Also in other regions, as for one policy which promotes the expansion of overseas sales routes, it would be effective to set up an antenna shop. Even from the side of businesses in North Kazakhstan, there was the opinion that if there was an antenna shop that stocked North Kazakhstan produce it would be efficient distribution and have good results for PR. However, in setting up an antenna shop costs and know how are essential, so in the immediate future it would be recommended to work on grasping the consumer needs and building up management experience by starting from establishing local events in established shops and participate in trade shows etc.



6. A Proposal in Relation to  
Food Processing Cluster Master Plan



## 6 A proposed draft for the food processing promotion master plan

### 6.1 Outline of Master Plan

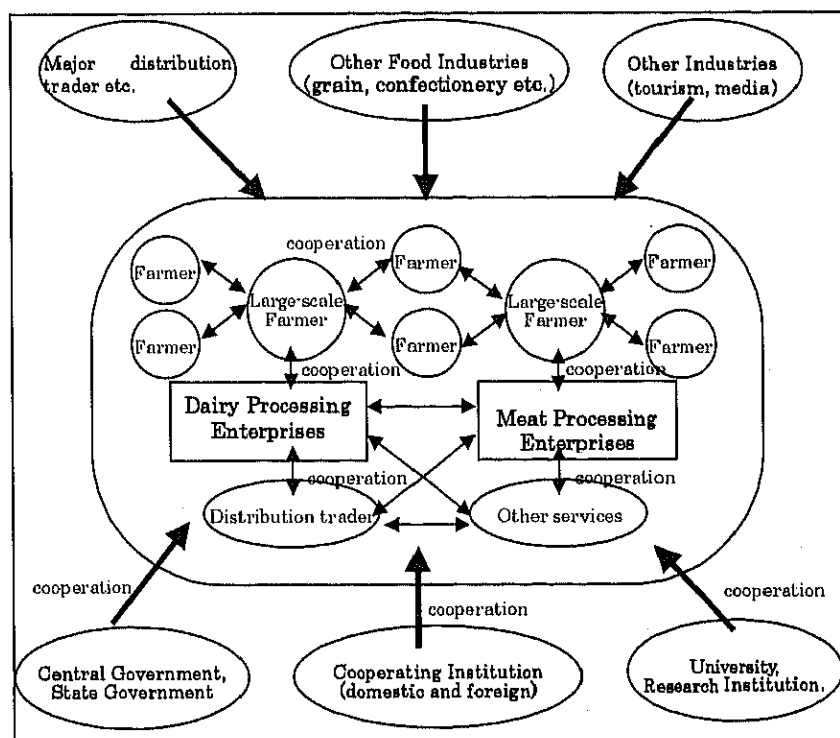
#### 6.1.1 Schedule

The assumed master plan from this study is to enhance the competitiveness of the food processing sector of North Kazakhstan and with the purpose of invigorating the regional industries, the issues are the implementation of cluster activities that are appropriate to the actual condition of the target region. With the proposed master plan presented by the study team, the assumed structure of the 3 phases for the cluster in North Kazakhstan is noted below.

In the embryonic period, the North Kazakhstan C/P will form the core of the structure of the working group, and it is assumed that raw material suppliers and retail distribution businesses will cooperate with food processing companies. In particular, it is expected that a synergetic effect will be generated by the cluster due to cooperation from meat processors and dairy product processors.

Table 6-1 Schedule for cluster formulation

Phase	Period	Level	Contents of main activities
1	1~3 years	Embryonic period	Systemization, trial and error accompanied by execution of business enterprises
2	3~5 years	Growth period	Define strategies, structural upgrading, expansion of business operations
3	More than 6 years	Stable period	Confirmation of economic effects, contribution to regional development

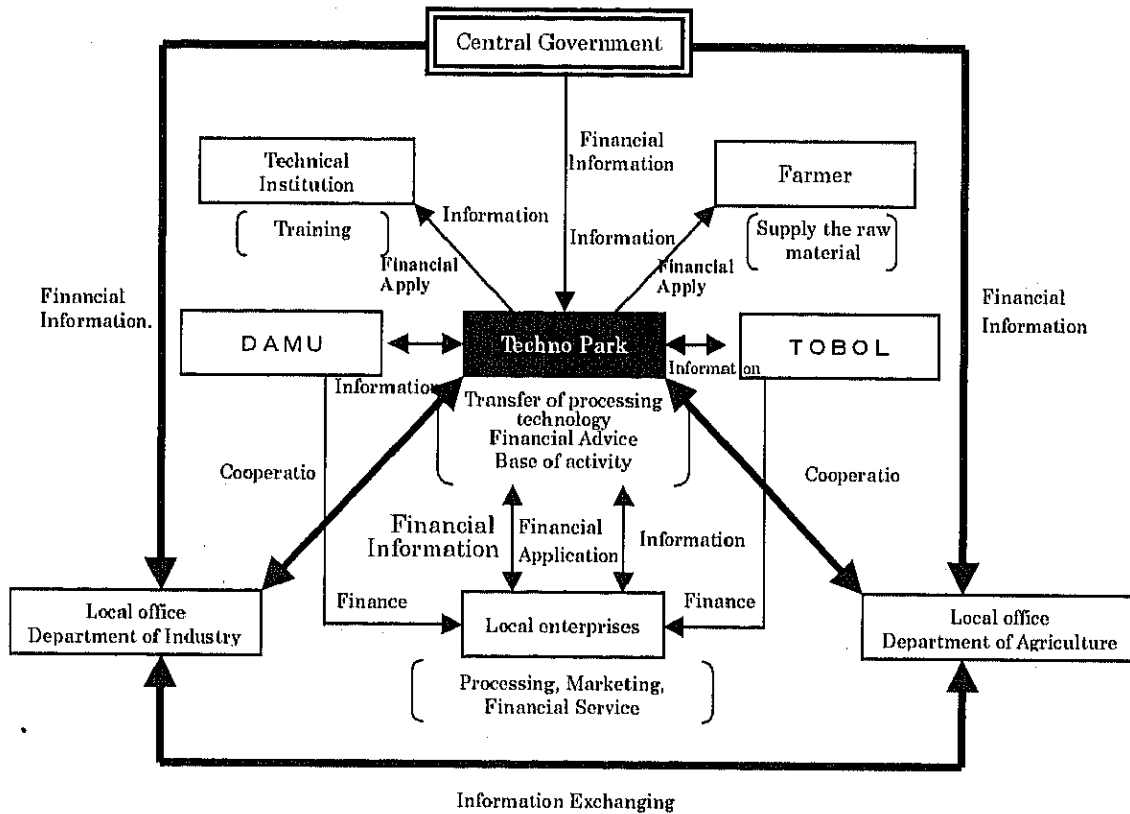


Source: Prepared by JICA Study Team

Figure 6-1 An outline of the cluster at the 2<sup>nd</sup> phase level

6.1.2 Draft implementation structure

When looking at cluster development, the most important point is the structure at its core. To set a cluster in motion, it is necessary to centralize information, labor and technology into one location, and the desired structure will be able to manage on a neutral and impartial ground with no conflicts of interest. With this study the team has placed the Techno Park at the core, and have envisaged the following structure which shows the various responsibilities.



Source: Prepared by JICA Study Team

Figure 6-2 Diagram: Techno park being central to North Kazakhstan food processing cluster operations Structure

6.1.3 Implementation of core business “Project on improvement of Regional food processing technology center”

At the time of shaping the cluster, the final goal is one where a specific project that attempts to enhance the competitiveness of regional small and medium sized companies is necessary, those related to the project do cooperate, the cluster starts to solidify and has the driving power to take the next step up. At this point, as for that core enterprise, the study team proposes the “Improvement of the regional food processing technology centre”.

Purpose	<ul style="list-style-type: none"> <li>• Technical assistance in order to improve product quality and develop new products</li> <li>• Market development support through brand development, sales promotion etc</li> <li>• Cluster development systemization in order to solve issues of food processing technology</li> <li>• Introduction of the Kaizen (Improvement) team for the purpose of quality management &amp; Food safety</li> <li>• Implementation of experiments, tests for the purpose of resolving practical issues in food processing</li> <li>• Implement training for the purpose of training food processing technicians</li> </ul>
Beneficiary target	Small and medium sized food companies in North Kazakhstan
Description of activities	<ul style="list-style-type: none"> <li>• Guidance for improving packaging technology</li> <li>• Guidance for improving quality in food factories</li> <li>• Support for new product development</li> <li>• Provision of information in relation to food processing equipment procurement</li> <li>• Support for staff training in relation to food processing technology (Quality improvement, Food safety, Management)</li> <li>• Provision of financial information</li> <li>• Marketing support (Trade shows, Web site construction, Brand development)</li> <li>• Other</li> </ul>

#### 6.1.4 Implementation of action plan

In order for the above proposal to materialize, we propose the implementation of an action plan similar to that below. As mentioned in the previous section, there will be cooperation with <Improvement of Regional food processing technology center > as it will be the core project. Those involved with the cluster will share the background and results of the various projects, in order to produce a synergetic effect, it is envisaged that many of the related projects will implement the regional food processing technology center.

(1) Procurement of raw materials	<b>FARMING MANAGEMENT</b>
	Establishment of a Dairy technology dissemination center
(2) Food processing	Establishment of a regional food processing technology center <Regional food processing technology center project>
	Food packaging technology improvement support plan <Regional food processing technology center project>
	Quality improvement and new product development support plan for processed foods <Regional food processing technology center project>
	Human resource development support plan for Food processing technologists <Regional food processing technology center project>
	Establishment of new departments at State Colleges
	Information provision support related to food processing
(3) Capital procurement	Financial information for infrastructure building plan
(4) Cluster promotion	Regional brand building plan <Regional food processing technology center project>

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Phase I (Plan, Design) : ◀.....▶      Phase 2 (Preparation, Test) : ↔      Phase 3 (Implementation): ↔

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6~
<b>Cluster Formulation</b>			◀.....▶	.....	.....	↔	↔	↔
Procurement of raw materials	Breeding management	Construction of guidance system	◀.....▶					
		Implementation of training	◀.....▶	↔	↔	↔	↔	↔
	Dairy farm propagation and establishment of centers	Set up operation structure	◀.....▶	↔	↔			
		Establishment of dairy propagation center	◀.....▶	↔	↔			
		Selection and guidance of technical guidance officers	◀.....▶					
		Implementation of training		↔	↔	↔	↔	↔
Food processing	Establishment of regional food and processing technology center	Management committee	◀.....▶	.....	.....	↔	↔	↔
		Basic plan formulation survey	◀.....▶					
		Facility maintenance		◀.....▶	.....	↔	↔	↔
		Machinery procurement		◀.....▶	.....	↔	↔	↔
	Food packaging technology improvement and support plan	Information accumulation and output of information food packaging technology information and related machinery			◀.....▶	↔	↔	
		Tests & analysis used on the food packaging material			◀.....▶	↔	↔	↔
		Use and supply of food packaging material (Usage levy)			◀.....▶	↔	↔	↔
		Consulting food packaging technology			◀.....▶	↔	↔	↔
	Quality improvements and new product development support plan for processed food	Collection and analysis of market information for the purpose of establishing a quality improvement target		◀.....▶	.....	↔	↔	
		A needs survey for the purpose of quality improvements and new product development (market survey) and the production of a written report		◀.....▶		↔		
		Training in relation to quality control and food hygiene		◀.....▶	.....	↔	↔	↔
		Technology and regulatory information for the purpose of new product development		◀.....▶	.....	↔	↔	
	Human resource development support plan for food processing technicians	Development of human resource development and programs		◀.....▶		↔		
		Human resource development			◀.....▶	↔	↔	↔
Development of factory hygiene guidance programs				◀.....▶				
Establish faculty in state college	Factory hygiene guidance				↔	↔	↔	
	Human resource development	◀.....▶	↔	↔	↔	↔	↔	
Food processing information provision support	Information accumulation and delivery	↔	↔	↔	↔	↔	↔	
Financing	Infrastructure construction and planning for financial information	Structural reorganization operations	◀.....▶	.....	.....	↔	↔	↔
		Financial information service operations	◀.....▶	.....	.....	↔	↔	↔

Cluster promotion	Creation and design of a regional brand	Operate regional branding structure WG	←.....→	←————→	←————→	←————→	←————→	←————→
		Establish and operate web site	←.....→	←————→	←————→	←————→	←————→	←————→
		Participation at domestic trade shows	←.....→	←————→	←————→	←————→	←————→	←————→
		Participation at overseas trade shows		←————→	←————→	←————→	←————→	←————→
		Establishment of an antenna shop		←————→	←————→	←————→	←————→	←————→

Source: Prepared by JICA Study Team

Figure 6-3 Action plan implementation schedule

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6.2 Action plan

6.2.1 Organization of action plan according to issues, strategy, recommendation

Sector	Issue	Strategy*	Recommendation	Action plan in response to the business solution
Raw materials (Livestock)	Technical improvements of rough fodder producers	I	In relation to rough fodder production	Farming management
	Lack of technical guidance in dairy sector		Dairy improvements extension activity system Enhance the placement of veterinarians	Farming management
	Contamination of milk		Operational improvements for small scale farmers	Dairy extension center
	Stable livelihood for full time farmers		Breeding and reproduction of cattle Production of specialty ham and sausages	Farming management, Dairy extension center
Food processing	Product differentiation for pig farmers	I, II	Establishment of practical education facilities	Quality improvements and new product development support planning for processed food
	Labor shortages			Establish a new faculty in the state college Staff training support (Quality improvements, food safety, management)
	Development of profitable products Packaging improvements Lack of Management strategy			Product quality improvements and new product development support plan for processed food Food packaging technology improvement support plan, human resource development support Human resource development support, Food processing related information support
Distribution sector	Increasing product value due to distribution	II, III	Establishment of regional food processing technology centre	Product quality improvements and new product development plan for processed food
	Lack of sales strategy			Human resource development support, food processing related information support
	Lack of information transmission			Product quality improvements and new product development plan for processed food
Finance	Conditions for fund procurement for business	III	Develop regional brands	Human resource development support, food processing related information provision support
	Lack of information re institutional finance			Development of regional brands, food processing related information provision support
Cluster policy	Secure constant administration and academic consultation center businesses	I, II, III	Finance information service Establishment of regional food technology centre Establish a regional food processing technology centre Establish regional branding Establishment of a practical training body	Infrastructure building for the purpose of analysis reporting for financial information aimed at private companies
	Establish events and education			Establish a regional food processing technology center Construction of a regional branding plan
	Establish cooperative structures domestically and overseas			Establish a new faculty at a state college

\* I = Enhancement of competitiveness for raw materials, II = Enhancement of competitiveness for product development, III = Enhancement of competitiveness for developing new markets



6.2.2 Procurement of raw material

(1) Livestock feeding management

Purpose	<ul style="list-style-type: none"> <li>The number of Holstein is increasing for the purpose of increasing raw milk production. In this connection, it is necessary to urge about introduction of necessary technology concerning Holstein raising management such as reproductive health, feeding management and milk hygiene which are introducing for increasing raw milk production.</li> </ul>
Back ground	<ul style="list-style-type: none"> <li>In the present, in the North Kazakhstan state, the Holstein species are introducing many in addition to conventional red Kazakh species since the Red Kazakh species is the native cow aiming at meat production, therefore, much milk production can not be expected. However, the Holstein species can produce more milk than the Red Kazakh species, but it is rather delicate species and the adaptability to different environment is by no means high. Therefore when dairy farmer introduces the Holstein species and want to improve the milk production, the re-examination of the whole feeding management must be made. Therefore, it is necessary to urge about introduction concerning technical transfer system.</li> </ul>
Organization of operation	<ul style="list-style-type: none"> <li>Department of agriculture in North Kazakhstan Oblast</li> <li>Raw milk producers</li> </ul>
Operation term	<ul style="list-style-type: none"> <li>To carry continuously</li> </ul>
Activities	<ul style="list-style-type: none"> <li>The shortcut of the acquisition about agricultural technology is learning the technology by analyzes an advanced similar management needed from there. Then, each raw milk producer dispatches some technicians to the advanced Holstein farm in north Kazakhstan state, takes a lecture on training, and makes the result reflect in management of the self-dairy farm.</li> </ul>
Output	<ul style="list-style-type: none"> <li>The raw milk production in the area increases because the producer who has only the breeding management techniques of native cow learns the technology about the Holstein and performs suitable breeding management.</li> </ul>
The source of revenue	<ul style="list-style-type: none"> <li>Providing by each producers</li> </ul>
Issues	<ul style="list-style-type: none"> <li>The friendly correspondence is necessary to obtained from the advanced Holstein dairy farm.</li> </ul>
The others	

(2) Establishment of dairy extension center

Purpose	<ul style="list-style-type: none"> <li>The portion which a small-scale dairy farm contributes about the dairy in a north Kazakhstan state has a very big, and about 70 percent of the present raw milk is come from the small-scale dairy farmer origin of a 2-3 average milking cow. However, these small-scale dairy farms cannot say that they have sufficient dairy technology, but the economical improvement of these farms is very important thing according to analysis in the department of agriculture. Then, establishment of a tentative name "dairy extension center" is proposed as a means to aim at technical improvement of small-scale farm in the area. This center is a demonstration farm equipped with all the necessary conditions about dairy farming as a function, such as pasture, cow barn, raw</li> </ul>
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	milk inspecting room, and milk deposit facilities. Any farmers can be learned almost necessary know-how about dairy management by attending the technical training held in this center.
Back ground	<ul style="list-style-type: none"> <li>• Technical transfer activities had held several times among dairy farmers. In this opportunities, there are many request from those farmers, that is, although the technical transfer activities has been held by the department of agriculture by the time among dairy farmers, it is very much useful if there are opportunities which can receive technical guidance with actually touched livestock etc., it will be effective to understanding about each technology deepens more. This is just same thing which the investigating mission has proposed.</li> </ul>
Organization of operation	<ul style="list-style-type: none"> <li>• Department of agriculture in North Kazakhstan state</li> </ul>
Operation term	<ul style="list-style-type: none"> <li>• To carry continuously</li> </ul>
Activities	<ul style="list-style-type: none"> <li>• Phase1, 1<sup>st</sup> year               <ul style="list-style-type: none"> <li>① Selection of instructors                      ② Selection of the site                      ③ Preparation of training materials</li> </ul> </li> <li>• Phase 2, 2<sup>nd</sup> year and 3<sup>rd</sup> year               <ul style="list-style-type: none"> <li>① Technical transfer activities to small-scale dairy farmers</li> </ul> </li> </ul>
Output	<ul style="list-style-type: none"> <li>• The production of raw milk of the area increases by the small-scale farmers learns sufficient dairy technology.</li> </ul>
The source of revenue	<ul style="list-style-type: none"> <li>• Department of agriculture in North Kazakhstan state and dairy farmers</li> </ul>
Issues	<ul style="list-style-type: none"> <li>• The place of training center is securable where the small-scale farmer gathers easily.</li> </ul>
The others	<ul style="list-style-type: none"> <li>• Although it is a "dairy extension center", it is enough if the place in which the farmers and technicians meet with all the persons concerned and which can perform dairy technical guidance centering on training fundamentally is securable. For example, there are planned of the construction of the dairy housing complex which introduces 2,500 Holstein cows in the state now, it is also a thought to give the function as a "dairy extension center" to the part.</li> </ul>

### 6.2.3 Food processing area

#### (1) Establishment of Regional Food Processing Technology Center

Purpose	<ul style="list-style-type: none"> <li>- Technical support for quality improvement and new product development</li> <li>- Support for market development through brand development and sales promotion</li> <li>- Cluster development for problem solving in food processing technology</li> <li>- Introduction of Kaizen (Improvement) Team for quality control and food safety</li> <li>- Testing and experiment for practical solution in food processing</li> <li>- Training for food processing technology</li> </ul>
Background	Currently the Techno Park is supporting incubation for SMEs in North

	Kazakhstan Oblast, but it is hard to say that the contribution for enforcement of competitiveness in SMEs is not enough since the functions is very limited for new production development, such as subsidy for inspection fee and market survey. And there is no research institute for food industry development, and not enough system to build competitive brand for regional industry development. It makes the disparity with other states widen, and disadvantage to regional industry in North Kazakhstan Oblast, therefore, it is necessary to have a supporting agency with community base for food industry improvement.
Responsible organization	<ul style="list-style-type: none"> <li>- Administrative organization: Techno Park</li> <li>- Cooperation organizations: Research institutions, Educational institutions, Financial institutions, Private consultants</li> </ul>
Execution Period	- Five years
Activities	<p>Phase I (1<sup>st</sup> year ~ 3<sup>rd</sup> year)</p> <ul style="list-style-type: none"> <li>i. Establishment and operation of management committee</li> <li>ii. Basic design study for design of facility, equipment and activities</li> <li>iii. Construction and maintenance of the facility</li> <li>iv. Office rent and equipment procurement</li> <li>v. Execution of action plans by outsourcing</li> </ul> <p>Phase II (4<sup>th</sup> year~5<sup>th</sup> year)</p> <ul style="list-style-type: none"> <li>i. Continuous operation of management committee</li> <li>ii. Operation and maintenance of facility and equipment</li> <li>iii. Continuous execution of action plans by outsourcing</li> </ul> <p>Phase III (6<sup>th</sup> year or later)</p> <ul style="list-style-type: none"> <li>i. Continuous operation of management committee</li> <li>ii. Operation and maintenance of facility and equipment</li> <li>iii. Continuous execution of action plans by outsourcing</li> </ul>
Expected results	<ul style="list-style-type: none"> <li>- To be able to apply to the diversification of consumer needs</li> <li>- To master the methodology to appeal the safety of raw material and final product</li> <li>- To design the sellable products with experiments</li> </ul>
Budget and financial resource	<ul style="list-style-type: none"> <li>- Budget for basic design study</li> <li>- Cost for establishment of management committee</li> <li>- Operation and maintenance cost</li> </ul>
Necessary issues on the realization	<ul style="list-style-type: none"> <li>- Formulation of public-private partnership</li> <li>- Collaboration with external experts (food packaging)</li> <li>- Collection of information on advanced example through overseas training</li> </ul>
Remarks	

(2) Project on improvement of food packaging technology

Purpose	<ul style="list-style-type: none"> <li>- Information dissemination and support to introduction of new food packaging technology</li> <li>- Support for equipment procurement of food packaging</li> <li>- Support for procurement of food packaging material</li> </ul>
Background	- It is difficult to introduce new packaging technology because of high cost

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	<p>of packaging machine and material</p> <ul style="list-style-type: none"> <li>- It is necessary to improve the packaging technology for expanding shelf-life.</li> </ul>
Responsible organization	Head office: Techno Park as
Execution period	From three to five years
Activities	<p>Phase I (1<sup>st</sup> year)</p> <ul style="list-style-type: none"> <li>i. Preliminary survey for function and activity plan of Techno Park, ii. Staff training for the operation and maintenance of Techno Park</li> </ul> <p>Phase II (2<sup>nd</sup> and 3<sup>rd</sup> year)</p> <ul style="list-style-type: none"> <li>i. Preparation of Facility and equipment for Techno Park (Esp. packaging equipment), ii. Commencement of Packaging machine operation</li> <li>iii. Trail sales in the market of Techno Park</li> </ul> <p>Phase III (4<sup>th</sup> and 5<sup>th</sup> year)</p> <ul style="list-style-type: none"> <li>i. Training and consulting for improvement of food packaging, ii. Marketing survey for food packaging, iii. Information of food packaging technology</li> </ul>
Expected results	<ul style="list-style-type: none"> <li>- New products will be developed and sold by introducing food packaging technology</li> <li>- Product development is promoted by enhancement of the consciousness on quality improvement and new product development in SMEs</li> </ul>
Budget and financial resource	<ul style="list-style-type: none"> <li>- Preliminary study on establishment of Techno Park (6M/M) (Mainly food packaging technology)</li> <li>- Cost for facility construction or room rent.</li> <li>- Cost for equipment procurement (esp. packaging machine)</li> </ul>
Necessary issues on the realization	<ul style="list-style-type: none"> <li>- Formulation of public-private partnership</li> <li>- Collaboration with external experts (food packaging)</li> <li>- Collection of information on advanced example through overseas training</li> </ul>
Remarks	

(3) Project on support for quality improvement and new product development of processed food

Purpose	<ul style="list-style-type: none"> <li>- Support to quality improvement and new product development for enforcement of regional food processing industry</li> <li>- To utilize consumer needs and complain to improve quality and new product development.</li> </ul>
Background	<ul style="list-style-type: none"> <li>- It is necessary to collect information and learn some techniques to differentiate the products from foreign and other state products.</li> <li>- It takes time and cost to improve quality and develop new products, because of Government certification system for production and selling.</li> </ul>
Responsible organization	<ul style="list-style-type: none"> <li>• Head office: Techno Park</li> <li>• Collaboration organization : North Kazakhstan State University, Central Committee of metrology and technical regulation, National Institute of Hygiene and Epidemiology</li> </ul>
Execution Period	Three years
Activities	<p>Phase I (1<sup>st</sup> year)</p> <ul style="list-style-type: none"> <li>i. To establish quality improvement targets by collection and analysis of market information, ii. Needs survey for quality improvement and new product development, iii. Practical training for quality control and food hygiene</li> </ul> <p>Phase II (2<sup>nd</sup> and 3<sup>rd</sup> year)</p> <ul style="list-style-type: none"> <li>i. Research on new and similar products in the market, ii. Training for quality control and food hygiene in the factory, iii. Support for obtaining ISO9001, HACCP</li> </ul>
Expected results	<ul style="list-style-type: none"> <li>- To clarify the methodology to improve the quality and to understand the market needs based on the complain from the market</li> <li>- To improve the quality continuously by enhancement of self-responsible consciousness</li> </ul>
Budget and financial resource	<ul style="list-style-type: none"> <li>• Constant active capital, burden share with private sector</li> </ul>
Necessary issues on the realization	<ul style="list-style-type: none"> <li>- Formulation of public-private partnership</li> <li>- Collaboration with external experts</li> <li>- Collection of information on advanced example through overseas training</li> </ul>
Remarks	

(4) Supporting human resource development (Quality improvement, Food safety, Management)

Purpose	<ul style="list-style-type: none"> <li>- Practical training on hygiene control of food processing</li> <li>- Practical training of microbiological testing</li> <li>- Quality control practice in food factory</li> <li>- Management training in food factory</li> </ul>
Background	<ul style="list-style-type: none"> <li>- No practical training educational system</li> <li>- Shortage of trainer for quality improvement</li> </ul>

Responsible organization	<ul style="list-style-type: none"> <li>• Head office : Techno Park</li> <li>• Collaboration organization : North Kazakhstan State University, Esil Agricultural Collage, North Kazakhstan State construction and economy collage</li> </ul>
Execution period	Three to Five years
Activities	<p>Phase I (1<sup>st</sup> year)</p> <ul style="list-style-type: none"> <li>i. Creation of training program (Microbiological testing, quality control), ii. Training of trainer, iii. Preparation of instruction manual for hygiene and quality control</li> </ul> <p>Phase II (2<sup>nd</sup> and 3<sup>rd</sup> year)</p> <ul style="list-style-type: none"> <li>i. Training implementation and its evaluation, ii. Factory hygiene control instruction and its evaluation</li> </ul> <p>Phase III (4<sup>th</sup> and 5<sup>th</sup> year)</p> <ul style="list-style-type: none"> <li>i. Revision of training program, ii. Revision of factory hygiene and quality control manual</li> </ul>
Expected results	Improvement of awareness on food quality and safety
Budget and financial resource	<ul style="list-style-type: none"> <li>• Constant active capital, burden share with private sector</li> </ul>
Necessary issues on the realization	<ul style="list-style-type: none"> <li>- Formulation of public-private partnership</li> <li>- Collaboration with external experts (food packaging)</li> <li>- Collection of information on advanced example through overseas training</li> </ul>
Remarks	

(5)Setting up a faculty in the state college

Purpose	<ul style="list-style-type: none"> <li>• Ongoing education for staff that have practical know-how in accordance with the business needs of the region</li> </ul>
Background	<ul style="list-style-type: none"> <li>• Up until now the the education style has been classroom focused and specialist study is quiet segmented.</li> <li>• In small and medium sized companies, many specialists have a grasp of a wide range of various fields, but people that can practically handle situations are in demand.</li> <li>• Not only in domestic North Kazakhstan, there are very few case studies of education of practical food processing nationwide.</li> <li>• With cluster promotion it is necessary for participation of young energetic people.</li> <li>• There are examples in Japan where University and high school students and staff cooperate with local businesses and contribute to the regions economic development through the development of new products and brand construction etc.</li> </ul>
Implementing body	<ul style="list-style-type: none"> <li>• North Kazakhstan State Construction • Economic college and local business</li> </ul>
Implementing perion	<ul style="list-style-type: none"> <li>• The preparation period will be between 3 to 5 years</li> </ul>

Activity details	<ul style="list-style-type: none"> <li>▪ Step 1 : <input type="checkbox"/> Barrier free link between University and business, <input type="checkbox"/> implementation of short term courses and intensive courses</li> <li>▪ Step 2 : <input type="checkbox"/> Development of support businesses, <input type="checkbox"/> participation in events</li> <li>▪ Step 3 : <input type="checkbox"/> Establishment of faculty and subjects, <input type="checkbox"/> commence overseas exchange</li> <li><input type="checkbox"/> At the time of moving to the next step, completion of the previous step is not necessary, rather continuing with it and implementation of a schedule that adds the next step to the project.</li> </ul>
Expected results	<ul style="list-style-type: none"> <li>▪ Securing staff for the regional food processing industry</li> <li>▪ Increasing the knowledge of students and staff, in particular practical knowledge</li> <li>▪ Activation of cluster activities</li> </ul>
Project budget	<ul style="list-style-type: none"> <li>▪ School fees, personal financial resources (contributions and project income), government support</li> <li>▪ Anticipation of support from international institutions in relation to dispatch of teaching staff and exchange programs</li> </ul>
Issues in relation to implementation	<ul style="list-style-type: none"> <li>▪ Acknowledgement from Ministry of Education, Culture, Sport, Science and Technology</li> <li>▪ Coordination with related businesses (unity of consciousness)</li> <li>▪ Secure personal financial resources (contributions and project income)</li> </ul>
Other special instructions	Carry out sale of local products and food that is produced as part of the lesson and participation in events. Pass on benefits from the sales to University activity expenses.

(6) Support on information dissemination of food processing technology

Purpose	<ul style="list-style-type: none"> <li>- Information dissemination of food processing machine</li> <li>- Information dissemination of food safety regulation</li> <li>- Information dissemination of new food processing technology</li> </ul>
Background	<ul style="list-style-type: none"> <li>- Not enough information on food processing machine procurement</li> <li>- Need to meet the requirements in the food regulations of imported countries</li> <li>- Necessary to collect new technology information for new product development and quality improvement</li> </ul>
Responsible organization	<ul style="list-style-type: none"> <li>▪ Head office : Techno Park</li> <li>▪ Collaboration organization : Central committee of metrology and technical regulations</li> </ul>
Execution Period	Three years
Activities	<p>Phase I (1<sup>st</sup> year)</p> <ul style="list-style-type: none"> <li>i. Establishment of database for food processing manufacturers from website and maintenance (Russian version)</li> <li>ii. Establishment of database for food regulations; EU, US etc.</li> </ul> <p>Phase II (2<sup>nd</sup> and 3<sup>rd</sup> year)</p>

	Revision of above database
Expected results	<ul style="list-style-type: none"> <li>- To confirm latest version of food machinery and regulations</li> <li>- To select the processing machine with high cost/performance</li> </ul>
Budget and financial resource	<ul style="list-style-type: none"> <li>- Cost for database development</li> <li>- Cost for data input</li> </ul>
Necessary issues on the realization	<ul style="list-style-type: none"> <li>- Formulation of public-private partnership</li> <li>- Collection of information on advanced example through overseas training</li> </ul>
Remarks	This project is easily implemented as daily operation, so roadmap and financial plan are omitted.

#### 6.2.4 Financial information service

(1) The Plan for organizing the Infrastructure for the analysis and communication of the Financial Information to the private companies of Northern Kazakhstan

The Purpose	<p>For realization of an effective funding mechanism both by public and private financial organizations</p> <ul style="list-style-type: none"> <li>• Collection and analysis of information on financial programs for small and medium entrepreneurs business and after analyzing, delivery of the result as [the information for the entrepreneurs].</li> <li>• Carrying out [Understanding the actual conditions of entrepreneurs of small and medium enterprises] and [Understanding the actual conditions of the financial demand], delivery of the result [the information for the financial organizations].</li> <li>• As the third party, deliver the information individually both to the financial organizations and the entrepreneurs.</li> <li>• In order to formulate [the appropriate package of loan scheme ], carried out [deliver the information simultaneously both to the financial organizations and the entrepreneurs].</li> </ul>
The Background	<ul style="list-style-type: none"> <li>• The person concerned with DAMU and/or TOBOL as the public financial organizations seeking the comprehensive information on the financial demand of the private sectors.</li> <li>• The Commercial Banks as the private financial organizations try to secure the new potential customers for the excellent loan schemes through participation in the operation for the public funding.</li> <li>• The entrepreneurs demanding funding are experiencing problems, i.e. required fund is not available on time</li> </ul> <p>(1)The entrepreneurs demanding funding do not have access to sufficient and appropriate financial information or a portfolio of the available financial products and do not fully understand them for deciding on an optimal financial program to meet their own financial needs.</p> <p>(2)The entrepreneurs may have incorrect funding because of the lack of the appropriate information.</p> <ul style="list-style-type: none"> <li>• The output analysis from the appropriate analysis on the financial programs should be given to the entrepreneurs. Such feedback is necessary to promote the cluster development.</li> <li>• To match the financial demand and supply is really necessary to promote the cluster development. In order to promote the</li> </ul>



	<p>effective matching of available funding and the demand requirements, ideally there should be a third party between the financial organizations as suppliers and the entrepreneurs as end users to ensure full transparency of any arrangements offered.</p> <p>The third party will also assist in analyzing the necessary information, which is delivered both to each sector.</p>
The Organization in charge	<ul style="list-style-type: none"> <li>• The Third Party as mentioned above, i.e. in “The Purpose”, “The Back Ground”, “Techno Park ( to promote the</li> </ul> <p>partnership with KazAgro Marketing, tentatively ” of the Department of Entrepreneurship under the Provincial Government is appointed as the Organization in charge</p>
The Period	<ul style="list-style-type: none"> <li>• 3 years</li> </ul>
The Activity	<p><u>The First Phase (The 1<sup>st</sup> year – The 2<sup>nd</sup> year)</u> (The 1<sup>st</sup> year)</p> <ul style="list-style-type: none"> <li>○ Restructuring “Techno Park” (Department of Entrepreneurship) to establish “Financial Information” Division (Tentative naming).</li> <li>○ The Financial Information is provided from Financial Suppliers, i.e. DAMU and TOBOL as Public Financial Organizations and Commercial Banks.</li> <li>○ “Financial Information Division” (Tentative naming) organizes “The Workshop for Exchange of Views” every month with Financial Suppliers, i.e. DAMU and TOBOL as Public Financial Organizations and Commercial Banks. “Financial Information Division” (Tentative naming) is to obtain “the Needs” from Financial End User and “the Seeds” from Financial Suppliers. “Financial Information Division” (Tentative naming) is to analyze the information provided from the Financial Suppliers and the “The Workshop for Exchange of Views”. The Output from the monthly analysis and the information on the Financial Products are to be announced on the Internet for the general public. The Information is to be updated monthly.</li> <li>○ Staff from “Techno Park” are to be placed in “Financial Information Division” (Tentative naming). The staff are to be “ Financial Officers” trained through OJT by Technical Assistance from Donors and the in house training scheme.</li> </ul> <p>(The 2<sup>nd</sup> year)</p> <ol style="list-style-type: none"> <li>(3) “Financial Officers” selected from “Techno Park” are trained through OJT by Technical Assistance from Donors and the in house training scheme continuously from the 1<sup>st</sup> year.</li> <li>(4) “Financial Officers” placed in “Financial Information Division” (Tentative naming) are to provide “Financial Consultation” for the entrepreneurs demanding funding where this service is provided free of charge. The output from the consultation is to be submitted to general public with agreement from those providing responses (data and information related to their operation) where this will be provided free of charge. As the pilot case, there is another “Financial Consultation for Funding Purposes” in public. Where this service is requested there is a charge of US\$10 per questionnaire (request).</li> <li>(5) “Case Studies” on financial products of “The Financial Organizations” are conducted for the practical consultation and advice for entrepreneurs demanding “Funding Schemes” where these will be used to introduce optimum Financial Schemes. If “Funding Schemes” are materialized, a contingent fee is paid from</li> </ol>

	<p>the customers (approx. 1% of the funding amount).</p> <p>(The 3<sup>rd</sup> year)</p> <ol style="list-style-type: none"> <li>1. To continue to carry on "Free Consultation" by "Financial Officers" placed in "Financial Information Division" (Tentative naming). The output from the consultation is to be submitted to general public with agreement from those being questioned where this is provided free of charge.</li> <li>2. "Financial Consultation for Funding Purposes" started in the 2<sup>nd</sup> year is to be implemented as the regular routine business by "Techno Park" and available to the general public. Where this service is requested there is an increased charge of US\$30 per questionnaire (request).</li> <li>3. Entrepreneurs demanding "Funding Schemes" order the "Financial Information Division" (Tentative naming) to provide a Case Study/s to introduce and analyze "Financial Products" of the "Financial Organizations" as "Financial Suppliers" for advising "Optimum Financial Schemes" for Entrepreneurs. If "Funding Schemes" are materialized a contingent fee is paid from the customers (approx. 2% of the funding amount).</li> </ol> <p>(After the 4th year)</p> <p>① When "Food Processing Center" is established, the functions of "Financial Information Division" (Tentative naming) of Techno Park will be consolidated into "Food Processing Center" ..</p>
Expected Result and Effect	<ul style="list-style-type: none"> <li>• Promotion of Cluster Development for Food Processing Industry through the optimum fund distribution, i.e. Funding , by Public Finance for Entrepreneurs in North Kazakhstan</li> </ul>
Financial Resources & Budget	<ul style="list-style-type: none"> <li>• Regular Fund: Budget from the Local Government of North Kazakhstan, Income from Entrepreneurs and Financial Organizations</li> <li>• Irregular Fund: Budget from the Central Government</li> </ul>
Required Solution for Realisation	<ul style="list-style-type: none"> <li>• Restructuring of "Techno Park" <ol style="list-style-type: none"> <li>① Identification of the role and business Definition of the job description</li> <li>② Restructuring the organization to set up "Financial Information Division"</li> </ol> </li> <li>• Training for "Financial Officers" through Technical Assistance by Donors and/or In House Training Course</li> </ul>
Other Special Arrangements	<ul style="list-style-type: none"> <li>• The Consolidation of the Function with "Financial Information Division (Tentative naming)" of Techno Park will be at the time of the Establishment of "Food Processing Center"</li> </ul>

### 6.2.5 Cluster promotion

#### (1) Development plan for North Kazakhstan regional brand

Purpose	<ul style="list-style-type: none"> <li>• With the utilization of regional resources and the provision of products and services that match the needs of the consumer, the aim is to enhance the competitiveness of the entire region by being able to differentiate between domestic and foreign products.</li> </ul>
Background	<ul style="list-style-type: none"> <li>• In the processed meat market and the dairy product market of North Kazakhstan, not only has the competition between regions for domestic</li> </ul>

	<p>products heated up, but there has been an increase in the distribution routes for imported products, in particular from Russia.</p> <ul style="list-style-type: none"> <li>• It needs to work in your favour when introducing dairy products and processed meat products from North Kazakhstan to overseas markets.</li> </ul>
Implementing body	<ul style="list-style-type: none"> <li>• North Kazakhstan cluster development working group</li> <li>• Administration office : Techno park</li> </ul>
Implementing period	<ul style="list-style-type: none"> <li>• Completed in 5 years. It will continue after that.</li> </ul>
Activity details	<ul style="list-style-type: none"> <li>• Phase 1 (Initial year) <ul style="list-style-type: none"> <li>i) Establish concept of regional brand</li> <li>ii) Set up Web site</li> <li>iii) Participation in domestic trade shows</li> </ul> </li> <li>• Phase 2 (2<sup>nd</sup> and 3<sup>rd</sup> year) <ul style="list-style-type: none"> <li>i) Development of regional branding accreditation standards</li> <li>ii) Participation in domestic and overseas tradeshow</li> <li>iii) Preparation for the Astana Antenna shop (A sales store in a supermarket etc)</li> </ul> </li> <li>• Phase 4 (After 4<sup>th</sup> and 5<sup>th</sup> year) <ul style="list-style-type: none"> <li>i) Investigate and establish a structure for internet sales</li> <li>ii) Participation in domestic and overseas tradeshow</li> <li>iii) Set up and operate an antenna shop</li> </ul> </li> </ul>
Expected results and advantages	<ul style="list-style-type: none"> <li>• Enhance the regional and international competitiveness of processed meat products and dairy products from North Kazakhstan</li> <li>• An increase in tourists born from the synergetic effect of tourism etc</li> </ul>
Project budget and financial resources	<ul style="list-style-type: none"> <li>• Constant funding for activities : The burden of private industry</li> <li>• Expenses for various events : Apply to the federal budget (exhibition etc)</li> </ul>
Issue with implementation	<ul style="list-style-type: none"> <li>• Develop a continuous cooperative structure between Industry, Administration and Academia</li> <li>• Work together with outside domestic and foreign specialists</li> <li>• accumulate information about advanced case studies through foreign research projects</li> </ul>
Other special instructions	—



## **7. Moving Towards Master Plan Implementation**



## 7 Moving towards master plan implementation

### 7.1 Implementation activities for advanced technology and the results of the model project

The implementation of the model project and implementation activities for advanced technology with the purpose of technology transfer to the C/P occurred simultaneously as analysis of current condition and issues as well as concrete measure and policy recommendations for the main study. In relation to the implementation activities for advanced technology, the introduction of technology from Japan into Universities and Technical Colleges, the introduction of hygiene management in the food processing industry and technical guidance for raw material producers (farmers) was carried out. Also, the model project was conducted with the cooperation of government institutions and companies which are members of the W/G which set up the local brand Web-site, participated in the Astana food trade show, and held the opinion exchange with different business types (Technology seminar).

As for the results of these activities, concrete results were shown even though the survey period was short. As for the study teams model, in dairy farms that received technical guidance, they were able to reduce by half within 1 week the number of bacteria that developed in fresh milk. Even in the food processing industry where hygiene implementation was carried out, changes were seen in the management methods of the facilities.

As for the model business, through participation in the Food trade show in Astana, confirmation of merits of cooperation between local industries were seen and there is a plan to carry out activities which will centre on local industry.

Also, through the opinion exchange, there was a proposal for problems that were shared by participating industries from the W/G to be resolved as a group.

Following is an evaluation from a participant in relation to the final debriefing session. 「It goes with out saying that the Master plan was a success, but the greatest support was the change in consciousness of the participants.」 The change in consciousness of the participating industries also had a favourable effect on the evaluation from finance institutions. An example was seen where a credit provision that had been put on hold was adopted.

At the time when this study commenced, the study team thought that the largest obstacle would be the change in consciousness of the participating industries. However at the completion stage of the joint work which was about 6 months, it was proven that overcoming those obstacles would be possible.

### 7.2 Performance target of the master plan

As for the performance target of the master plan the following is assumed.

- The Regional administrative bodies (Department of Agriculture, Department of New Industry and Entrepreneurship) will formulate measures and policy (Master plan) for the purpose of regional activation based on information from cluster members and related structures from the private sector and with submissions to the central government it will be possible to acquire grant funding directed at private industry.
- Local research and educational institutions can carry out technical development based on necessary technology and information needs in regional activation and private industry support capacities will be enhanced.
- The final objectives are the enhancement in the competitiveness of the local private sector as well as the increase in exports to regional countries and the increase in domestic market share.

The final objectives of the cluster promotion in North Kazakhstan is the enhancement of competitiveness of small and medium sized business in the area and with that implementation the most important component is the core operation "Local food processing technology centre" of the master plan. Looking at the functions on the technology side of the centre, there will be the provision of services such as technical support, support for staff training, provision of information (including financial information) and the catalyst for the cluster structure in the region is the dual function of the cooperation from government bodies and the collaboration with the private sector.

However, with the establishment of the [Regional food processing technology centre] there will be competition in the economic environment and other regions and in the instance that it is not established in North Kazakhstan, or even if there are instances where there are some functions of the implementation that are impossible, it is important to establish the above performance target, build a cooperative structure between the local industry, government and academia, and to continue the cluster activities.

More often than not Industrial clusters are compared to a [bunch of grapes]. That is, even if one of the grapes becomes rotten and disappears, should the remaining bunch be in a healthy state, then there is no change in the value of the bunch. Similarly, it is not necessarily the case that if part of the action plan for the proposed master plan can not be implemented then there is no significant change to the independent food processing cluster in North Kazakhstan.

With this master plan, 10 action plans have been proposed and the procedures for the implementation have been displayed by the road map moving towards implementation. However, according to the economic conditions of the participants, the acquisition of the budget and the social environment, should there be an issue with the implementation, it is thought that the implementation may be possible earlier than originally scheduled. Also, in relation to Techno Park which is assumed to be one of the implementing bodies, currently the institutional reforms by the government are still in progress and the viability is also unclear. In such circumstances, it is not the complete execution of the initial plan, through trial and error it is necessary to obtain the understanding from all the related parties in moving in the direction of performance targets by means of a flexible response.

### 7.3 The issues of implementation of the master plan

There are 4 factors that are necessary for the implementation of a master plan and they are 「capital」, 「technology」, 「man power」 and 「structure」. In relation to capital, Kazakhstan government have sufficient budget for the implementation of the proposed budget. This has been confirmed from the cooperation between the private sector and government in the final briefing.

In Kazakhstan, in order to implement the main proposals the specialists that have technology and knowledge are being trained. However, a leader has not been groomed who can generally disperse staff and technology of a high level in order to carry out cluster activities in the region. Also, for this project, a working group of industry, government and academia has been put in place in North Kazakhstan, and have been able to confirm the results similar to the above while working with the study team. The leader of the W/G has announced that the structure will continue in the future, and with the lack of stimulus from external sources such as this study team, many examples have been seen domestically in Japan where the cluster activities stop to function. Should these types of activities stagnate, there is a strong possibility that change in consciousness of the region planted during the period of the study will revert to the former state of affairs.

Accordingly, as for the issues of future master plan implementation, the two points which come into focus are □ the training of people who will become regional leaders, □ creation of a mechanism which gives periodic stimulus to the activities structure. As for North



Kazakhstan, it will be necessary to obtain cooperation from both domestic and foreign specialized institutions and overcome these issues. For example, as for the support from internal and external specialized institutions and donors, it would appear that training which includes facilitation of the dispatch of training specialists, food processing specialists and staff training as well as field surveys both external and internal and the dispatch of specialists related to the improvement of food quality.

#### 7.4 Other things to keep in mind

It is necessary for the various participating members to keep in mind the following points for implementation of this master plan at the same time as trying to have countermeasures to issues similar to those above.

##### (1) The aim of expansion due to the constant exchange with those from different sectors

With this study, the team has proposed a plan that builds a regional cluster with dairy products and meat processing sectors at its core. However, clusters fundamentally have knowledge and experience from different industries, for the purpose of taking advantage of the characteristics that provide a synergetic effect while using the network it is necessary to investigate the structure which guides those peripheral companies into the cluster. For example, it can be effective in order to make a regional brand through efficient distribution and product development with the cooperation from the grain production sector which the main industry in North Kazakhstan from which powder, pasta & macaroni and sweets etc are derived from. From this early stage, it is extremely important for the transmission of information and regular opinion exchanges between businesses from different sectors.

##### (2) Eliminating sectionalism

The entire Kazakhstan consciousness of bureaucratic sectionalism administration is a feature of the former communist block and still remains. With the younger generation in the cities, changes are visible, however in North Kazakhstan and in particular the regional areas this consciousness is felt strongly. Within changing market environments, new information and technology reflect the mechanisms of economic activities and it is important to make quick decisions, however, sectionalism will obstruct this. It is necessary to create an environment where candid opinion exchanges can be carried out between businesses from different sectors, together with differing government bodies and experts.

##### (3) The movement away from a top down system to a free and lively new entrepreneurial one

While carrying out this study, there was a request from a member of the North Kazakhstan side as follows "Please tell us to do something, we are good at following instructions". This is an effect of social change from the former Soviet Union, with changes to the political and economical environment, enterprise and the region need to establish their own strategy, and it is necessary to be aware of the progression of business with individual ideas. Even looking at policies such as "Business Road Map 2020", the Government has to strongly hammer out an approach which supports the project with a planned and strong entrepreneurial spirit. Former passive business practices are not desirable for future development.

