

## 付 属 資 料

- 1 . 事前評価調査ミニッツ (2005 年 8 月 19 日署名)
- 2 . 協議議事録 (R/D) (2006 年 2 月 21 日署名)
- 3 . ミニッツ (2006 年 2 月 21 日署名)
- 4 . 質問票に対する回答
- 5 . バビセンターにおける研修プログラム事例
- 6 . ワークショップ系図
- 7 . プロジェクト実施の背景・概要 (英文)

**MINUTES OF MEETINGS  
BETWEEN THE PREPARATORY STUDY TEAM AND  
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF  
THE SOCIALIST REPUBLIC OF VIETNAM ON  
JAPANESE TECHNICAL COOPERATION PROJECT FOR  
“IMPROVEMENT OF DAIRY FARMING TECHNIQUES  
FOR SMALL AND MEDIUM SCALE DAIRY FARMS  
IN VIETNAM”**

The Japan International Cooperation Agency (hereinafter referred to as “JICA”), dispatched the Preparatory Study Team (hereinafter referred to as “the Team”) headed by Mr. Masaharu KANAMEDA, to the Socialist Republic of Vietnam from August 8 to 19, 2005 for the purpose of discussing details about the Project for Improvement of Dairy Farming Techniques for Small and Medium scale dairy farms in Vietnam (hereinafter referred to as “the Project”).

During the study, the Team and the Vietnamese authorities concerned had a series of discussions with respect to desirable measures to be taken by both Governments for the successful implementation of the Project.

As the result of the discussions, the Team and the Vietnamese authorities concerned agreed to recommend to their respective Governments the matters referred to in the document attached hereto.

Hanoi, August 19, 2005



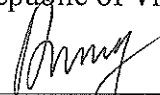
**Mr. Masaharu KANAMEDA**  
Leader  
The Preparatory Study Team  
Japan International Cooperation Agency  
Japan



**Mr. Nguyen Dang Vang**  
Director  
National Institute of Animal Husbandry  
Ministry of Agriculture and Rural Development  
The Socialist Republic of Vietnam



**Mr. Bui Liem**  
Deputy Director General  
Foreign Economic Relations Department  
Ministry of Planning and Investment  
The Socialist Republic of Vietnam



**Ms. Hoang Thi Dung**  
Deputy Director General  
International Co-operation Department  
Ministry of Agriculture and Rural Development  
The Socialist Republic of Vietnam

## THE ATTACHMENT DOCUMENT

### ACRONYMS AND DEFINITION


NDDP	National Dairy Development Program
Farm	Those who are getting their income from raising cattle.
Small scale dairy farm	Farm less than 10 heads of dairy cattle raised.
Medium scale dairy farm	Farm with 10 to 50 heads of dairy cattle raised.
Extension	Action to transfer proper and appropriate dairy techniques needed for farmers.
Extentionist	A general term for national trainer and local trainer
STED	Station for Training and Extension of Dairy Technologies
National trainer	Trainer at national level, who is assigned to STED as a full-time C/P to Japanese experts.
Local trainer	Extensionist such as Veterinarian, AI technician, Extension personnel both government and private, who participate and complete training course.

### 1. Background of the Preparatory Study Team

The Vietnam is located in the east side of the Indochinese Peninsula, with a population of 80,900,000 and GDP per capita of 483US dollars. Agriculture is a key industry which occupies 67% of all the work force and 23% of all GDP of the country.

After adoption of a "doi moi (reform) policy" in 1986, the country is advancing the economic-reform and is promoting socialist-oriented market economy, and modernization for the purpose of achievement of 7.5% of GDP growth rates, and holding down the rate of poverty to the level of 5% as a goal.

However, the subject such as a nutrition improvement of people and a measure to increase farmer's income, have not been necessarily progressing towards solution. It is urgent to take necessary measure toward nutrition unbalance of people, income differential between a city and a rural area, etc. For this reason, quality improvement of the livestock used as a source of animal protein is mentioned in the "Strategy for Socio-Economic Development" (2001-2010). In order to achieve the goal, importance of the dairy development concerning the milk production which serves with reliance and safe source of protein is defined in



"National Dairy Development Project" (2001- 2010),and increase of good dairy cows and improvement of milk production self-sufficiency rate are in trial stage through activating small and medium scale dairy farms.

Under such background, the Vietnam government requested this cooperation to Japan which have experience of Japan-Vietnam Technical Cooperation Project in the sector of livestock industry, and have high technical skill.

Responding to the official request, JICA dispatched the Team for the purpose of formulating the framework of the Project.

## **2. Purpose of the Preparatory Study Team**

The Team was dispatched to conduct the followings.

- (1) To discuss the outline of the Project.
- (2) To clarify the overall goal, project purpose, target to tackle with.
- (3) To collect basic information for implementing the Project.
- (4) To carry out the preparatory evaluation of the Project.

## **3. Tentative Framework of the Project**

Based on the results of the discussion, a framework of the Project is given as follows:

The framework of the Project will be confirmed when the Record of Discussion (hereinafter referred to as R/D) is signed.

### **3-1 Project Title**

Improvement of Dairy Extension Activities for Small and Medium Scale Dairy Farms in Vietnam

Requested Project Title was "Improvement of Dairy Farming Techniques for Small and Medium Scale Dairy Farms in Vietnam". After the discussion with the Vietnamese side, the title was changed into "Improvement of Dairy Extension Activities for Small and Medium Scale Dairy Farms in Vietnam", since the Project aimed the improvement of Extension activities through the strengthen of Station for Training and Extension of Dairy Technologies (STED)

### **3-2 Implementing Organization**

National Institute of Animal Husbandry (NIAH)

### **3-3 Main site**

Station for Training and Extension of Dairy Technologies (STED) in Bavi Cattle and Forage Research Center of NIAH

### **3-4 Target Area**

4 districts in Northern Provinces in Vietnam

Selection of target area is currently under discussion.



### 3-5 Project Duration

Five (5) years

### 3-6 Project Beneficiaries

Local Trainers, Dairy Farmers

### 3-7 Overall Goal

Milk productivity of dairy farms is increased in Northern Vietnam.

### 3-8 Project Purposes

Dairy extension activities of local trainers are improved in the target areas.

### 3-9 Outputs and Activities

Output 1: Capability of STED for planning, research, development, training and extension is improved.

Activity1-1: To study needs for further appropriate dairy techniques and training.

1-2: To develop proper dairy management and veterinary practices suitable for the field.

1-3: To develop training methods, transfer technology, training curriculums and teaching materials.

1-4: To develop demonstration methods and practical experiments.

1-5: To recommend necessary system and framework for dairy development.

Output 2: Capability of national trainers for training of local trainers is improved.

Activity2-1: To train national trainers for each specialization.

2-2: To train national trainers for training management skill.

2-3: To train national trainers for better teaching skill.

Output 3: Extension ability of local trainers on dairy farming techniques is improved.

Activity3-1: To train local trainers for practical dairy feeding and management.

3-2: To train local trainers for practical dairy veterinary techniques.

3-3: To train local trainers for better teaching skill.

Output 4: Appropriate dairy techniques are disseminated by local trainers.

Activity4-1: STED monitor activities of local trainers in target areas.

4-2: STED support local trainers for improvement of their own activities.

4-3: STED monitor small and medium scale dairy farms for dairy farming techniques in target areas.

### 3-10 Measures to be taken by JICA

The following matters were confirmed in the discussion between Vietnamese side and Japanese side, and the confirmed matters will be included in R/D.

#### (1) Dispatch of Japanese Experts

(a) Three (3) long-term Expert(s) will be dispatched in accordance with the Project activities that will be discussed.

1) Chief Advisor

2) Coordinator



- 3) Feeding Systems and Dairy Management
- 4) Management of Animal Health (Veterinary Practice)
- 1) and/or 2) can be combined with 3) or 4).

(b) Short-term Expert(s) will be dispatched, when the necessity arises, for the smooth implementation of the Project within the framework of the Project.

- 1) Mastitis control
- 2) Management of reproduction
- 3) Nutrition
- 4) Manure treatment, etc.

(2) C/Ps training in Japan and/or the third countries.

(3) Provision of machinery and equipment for project implementation (see ANNEX 5)

### 3-11 Measures to be taken by the Government of Vietnam

The following matters were confirmed in the discussion between Vietnamese side and Japanese side, and the confirmed matters will be included in R/D.

(1) Assignment of C/Ps personnel and administrative staff

- 1) Project Director
- 2) Project Manager
- 3) C/Ps personnel
- 4) Driver for the Project car and other necessary personnels.

(2) Provision of building and other necessary facilities.

(3) Budget Allocation

The Vietnamese government will secure the budget for the following items and is expected to take necessary measures to ensure the self-reliant operation of the Project during and after the period of Japanese technical cooperation.

- 1) Expenses necessary for customs, duties, internal taxes and other charges imposed on the equipment provided through JICA under the Project in Vietnam.
- 2) Supply of the replacement of machinery, equipment, instrument, vehicles, tools, spare parts and other materials necessary for the Project, other than the equipment provided under the Project.
- 3) All running expenses necessary for the Project.
- 4) Personnel expenses for training courses.

## 4. Administration of the Project

The organization chart of the Project is shown in ANNEX 4. The Administration of the Project may be changed over the course of future discussion before the signing of the R/D.

- (1) The Director of NIAH, as the Project Director, will bear overall responsibilities for the administration, implementation and supervision of the Project.
- (2) Deputy Director of NIAH, as the Project Manager, will be responsible for the managerial and technical matters of the Project.
- (3) The Japanese experts will provide necessary recommendation and advice for the Project Director and the Project Manager on any matters concerning the implementation of the

Project.

- (4) The Japanese experts will provide necessary guidance and advice for the C/Ps and concerned personnel on any matters concerned the implementation of the Project.
- (5) For the effective and successful implementation of the Project, the Joint Coordinating Committee and Project Management Unit will be established, whose functions and composition are described in ANNEX 6 and 7.

## 5. Justification of the Project

It can be said that the Project is justified for its implementation through preliminary evaluation conducted based on five evaluation criteria. The following describes it briefly.

### 5-1 Relevance

Milk production of the northern provinces of Vietnam is lower than the southern provinces since dairy farming was introduced recently. Ratio of the poverty in the northern provinces is higher than the southern provinces. Improvement of dairy farming techniques aims at sustainable development of agricultural sector on which a large proportion of the poor in Vietnam depends. Therefore, the target group is set to local trainers who are expected to extend appropriate dairy farming techniques for small and medium scale dairy farms. In this sense, "Project Purpose" is set focusing on improvement of local trainer's dairy extension activities to extend techniques needed for small and medium scale dairy farms, which is consistent with the policy of the national development plan, comprehensive poverty reduction and growth strategy of Vietnam. Therefore, the Project is relevant in the preliminary evaluation.

JICA Project will bring much larger effect, through the corroboration with the Belgian Project which focuses on the organizing of small dairy farmers.

### 5-2 Effectiveness

"Project Purpose" is clearly mentioned. According to the questionnaire survey and workshop, it is hardly to say that dairy farmers satisfied with dairy technique extension service at present level. Therefore, verifiable indicators mentioned in PDM will be proper indicators to evaluate of the "Project Purpose".

### 5-3 Efficiency

Verifiable indicators of "Outputs" accurately express their meaning. Means of obtaining the indicators for the "Outputs" are appropriate.

Sufficient "Activities" are planned to achieve the "Outputs". Input of an adequate quantity and quality is planned to perform "Activities". Important assumptions from "Activities" to the "Outputs" are perceived correctly.

### 5-4 Impact

Effects or influences beyond the "Overall Goal" are expected as follows; (1) Good influence on the future policy of dairy development. (2) Increase of job opportunities of non-dairy farmers such as milking labor. (3) Environmental consideration should be paid for protecting under water. As residential area extends to suburbs in Hanoi, and as medium scale dairy farms increased. Therefore proper measurement or Environmentally-friendly-farming would be preferable.



## 5-5 Sustainability

The effects of the Project are prospected to be continued by the Vietnamese government after the Project terminated. Experiences and outputs of the Project, especially those capacities developed in STED such as planning, research, development, training and extension, are expected to extend provincial level. According to the answer of the questionnaire, about 25-30% of the budget of NDDP in total 286 billion VND has been allocated for extension and training in livestock at the 1st phase of NDDP. Therefore, high sustainability of the Project is expected in the preliminary evaluation.

Therefore, it is recommended that the Project is implemented in accordance with the framework of the tentative Project Design Matrix as ANNEX1.

## 6. Issues to be further discussed

### 6-1 Establishment of the STED

The Vietnamese side will establish Bavi Cattle and Forage Research Center (BCFRC), which function as a center for training and extension on dairy farming for northern Vietnam. It will be newly organized through an alteration of an existing division in BCFRC. The procedure of establishment will be completed by the middle of September 2005.

### 6-2 Assignment of the counterpart staff of STED

The Vietnamese side will assign 5 full time staff for the national trainers of STED and another 25 part time staff for the management of STED.

### 6-3 Secure of the facilities of STED

The Vietnamese side will secure the Project facilities including project office, classroom, laboratory space, dormitory, etc within the land of BCFRC.

### 6-4 Selection of the Target Area

#### <STEP1>

The Dairy areas can classified into the 4 types as follows;

- 1) Dairy area around the city (Peri-urban),
- 2) Activation of breeding cattle supplying area (Breeding Cattle Supplier)
- 3) Activation area by utilizing dairy cooperative (Cooperative)
- 4) Area start dairy newly (Recent Participation).

#### <STEP2>

Eight (8) districts typical to four (4) types were nominated and surveyed.

#### <STEP3>

Based on the field study, the Team recommended 4 target areas, Vinh Thuong district, Tho Xuan district, Moc Chau district and Duy Tien district. The reasons are shown in ANNEX 8.

#### <STEP4>

After the mission, Vietnamese side will nominate the target areas to fulfill the three conditions mentioned below. Both Japanese and Vietnamese side will decide the target





area by signing of R/D by the middle of September.

The authorities of target areas will secure

- ◇ Selection of personnel as local trainers
- ◇ Expenses for the training of the local trainers in STED paid by local organization concerned
- ◇ Extension activities of the local trainers in the area conducted by local organizations concerned

#### 6-4 Counter Budget

The Vietnamese side will secure the counter budget of the Project, particularly spent for the personnel costs of Vietnamese for training of the national and local trainers, supporting the activities of national trainers in the target areas.

### 7. Further steps taken for the Project

Based on these discussions, Vietnamese and Japanese side will discuss matters in more detail and conclude R/D in October, 2005

- ANNEX 1 Tentative Project Design Matrix
- ANNEX 2 Tentative Plan of Operation
- ANNEX 3 Project Outline
- ANNEX 4 Organization Chart
- ANNEX 5 Tentative list of Machinery and Equipment
- ANNEX 6 Tentative Joint Coordinating Committee
- ANNEX 7 Tentative Project Management Unit
- ANNEX 8 Target Area Table
- ANNEX 9 Summary of the Workshop



ANNEX1. TENTATIVE PROJECT DESIGN MATRIX(PDM)

Project title : Improvement of Dairy Extension Activities for Small and Medium Scale Dairy Farms in Vietnam

Term of cooperation : 5 years

PDM(ver.0)

Implementing Agency(Vietnam side) : National Institute of Animal Husbandry(NIAH)

Implementing Agency(Japan side) : Japan International Cooperation Agency(JICA)

Main site : Station for Training and Extension of Dairy Technologies (STED) in NIAH

Target Area : 4 districts in Northern Provinces in Vietnam

Target group : Local trainers X person, Dairy Farmers X household-farms

19 Aug, 2005

	Narrative Summary	Verifiable Indicators	Mean of verification	Important Assumption
Overall Goal	Milk productivity of dairy farms is increased in Northern Vietnam.	Milk productivity will be increased by X %.	-Project report -Baseline survey	
Project Objective	Dairy extension activities of local trainers are improved in the target areas.	Satisfaction rate of farmers by activities of local trainers will be increased by X%.	-Questionnaire survey	Production cost and milk price are reasonably stable.
Outputs	1. Capability of STED for planning, research, development, training and extension is improved.	1-1 No. of field study implemented will be X times per year. 1-2 No. of experiments for developing proper techniques will be X times per year. 1-3 No. of training course developed will be X courses per year. 1-4 No. of demonstration proposed will be X times per year. 1-5 No. of teaching materials developed will be X items per year. 1-6 No. of recommendation of necessary system and framework will be X times per year.	1-1 Project report 1-2 Project report 1-3 Project report 1-4 Project report 1-5 Project report 1-6 Project report	National Dairy Development Program is continued.
	2. Capability of national trainers for training of local trainers is improved.	2-1 No. of national trainers capable of conducting of appropriate training techniques will be X person per year.	2-1 Project report	
	3. Extension ability of local trainers on dairy farming techniques is improved.	3-1 No. of local trainers capable of farmer's training will be X person per year.	3-1 Project report	

	4. Appropriate dairy techniques are disseminated by local trainers	4-1 No. of monitor of local trainer's will be X times per year. 4-2 No. of technical guidance for local trainers will be X times per year. 4-3 No. of techniques applied in dairy farm will be X per year.	4-1 Project report 4-2 Project report 4-3 Project report	
Activities	<p>1-1 : To study needs for further appropriate dairy techniques and training.</p> <p>1-2 : To develop proper dairy management and veterinary practices suitable for the field.</p> <p>1-3 : To develop training methods, transfer technology, training curriculums and teaching materials.</p> <p>1-4 : To develop demonstration methods and practical experiments.</p> <p>1-5 : To recommend necessary system and framework for dairy development.</p> <p>2-1 : To train national trainers for each specialization.</p> <p>2-2 : To train national trainers for training management skill.</p> <p>2-3 : To train national trainers for better teaching skill.</p> <p>3-1 : To train local trainers for practical dairy feeding and management.</p> <p>3-2 : To train local trainers for practical dairy veterinary techniques.</p> <p>3-3 : To train local trainers for better teaching skill.</p> <p>4-1 : STED monitor activities of local trainers in target areas.</p> <p>4-2 : STED support local trainers for improvement of their own activities.</p> <p>4-3 : STED monitor small and medium scale dairy farms for dairy farming techniques in target areas.</p>	<p>Input</p> <p>Japanese side</p> <p>1. Expert dispatch 1)Long term Experts 2)Short term Experts</p> <p>2. Provision of machinery and equipment for project implementation.</p> <p>3. C/Ps training in Japan and/or the third country</p>	<p>Vietnamese side</p> <p>1. Assignment of C/Ps personnel and administrative staff 1)Project Director 2)Project Manager 3)C/Ps personnel 4)Driver for the Project car and other necessary personnel.</p> <p>2. Provision of building and other necessary facilities.</p> <p>3. Allocation of operational cost. Personnel expenses for training courses.</p>	<p>Cooperation among STED and the target areas are continued.</p> <p>C/Ps continue to work in the project.</p> <p>Local trainers of the target areas continue to work.</p> <p>Pre-condition STED is established.</p>

# ANNEX 2 Tentative Plan of Operation

Ver. No.: 0.0

Project Name : Improvement of Dairy Extension Activities for Small and Medium Scale Dairy Farms in Vietnam  
 Duration : 2006~2010 (5years)

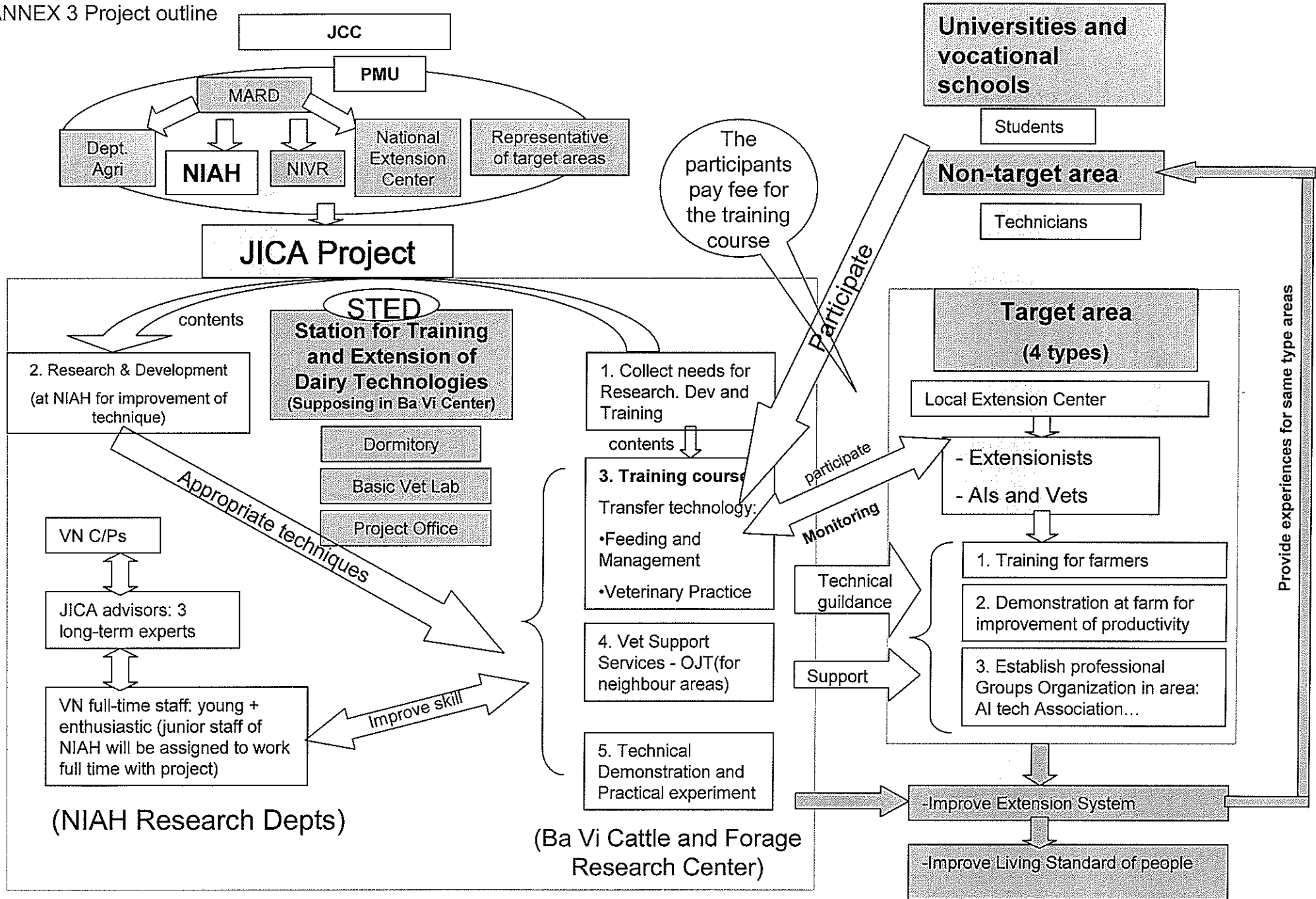
As of Aug 19, 2005

	2006	2007	2008	2009	2010
<b>1. Capability of STED for planning, research, development, training and extension is improved.</b>					
1-1 To study needs for further appropriate dairy techniques and training.					
1-2 To develop proper dairy management and veterinary practice suitable for the field.					
1-3 To develop training method, transfer technology, training curriculum and teaching materials.					
1-4 To develop demonstration method and practical experiment.					
1-5 To recommend necessary system and framework for dairy development.					
<b>2. Capability of national trainer for training of local trainer is improved.</b>					
2-1 To train national trainer for each specialization.					
2-2 To train national trainer for training management skill.					
2-3 To train national trainer for better teaching skill.					
<b>3. Extension ability of local trainer on dairy farming technique is improved.</b>					
3-1 To train local trainer for practical dairy feeding and management.	■ ■ ■ ■ ■				
3-2 To train local trainer for practical dairy veterinary techniques.	■ ■ ■ ■ ■				
3-3 To train local trainer for better teaching skill.	■ ■ ■ ■ ■				
<b>4. Appropriate dairy techniques are disseminated by local trainer.</b>					
4-1 STED monitor activities of local trainers in target areas.	■ ■ ■ ■ ■				
4-2 STED support local trainers for improvement of their own activities.	■ ■ ■ ■ ■				
4-3 STED monitor small and medium scale dairy farms for dairy farming techniques in target areas.	■ ■ ■ ■ ■				

- ■ ■ ■ ■ ■ ■ ■ ■ ■ Preparatory/Trial
- ■ ■ ■ ■ Depend on situation
- Regular

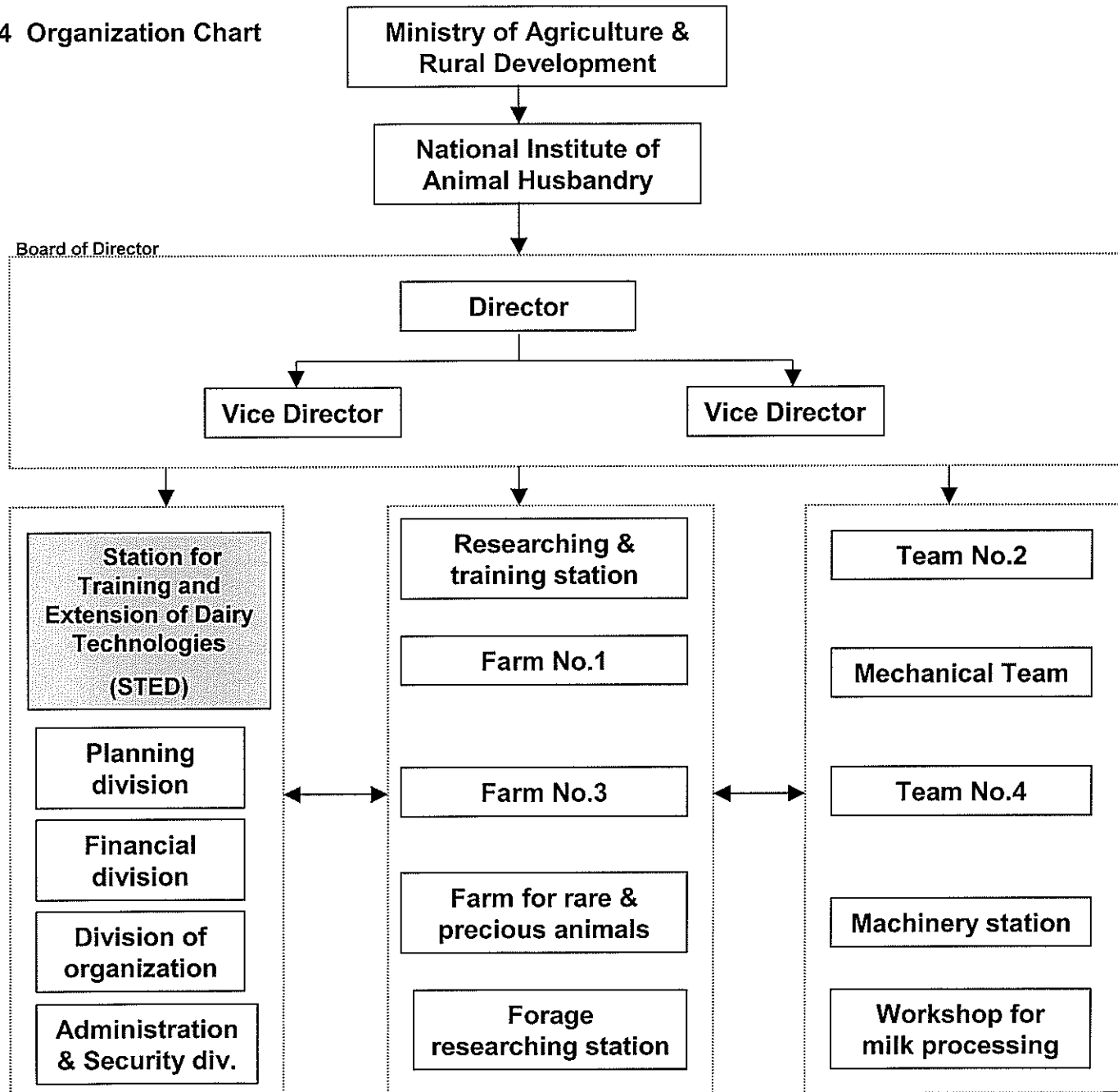
ANNEX 3 Project outline

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ANNEX 4 Organization Chart



## Annex 5 List of Machinery and Equipment

### 1. For Veterinary Practice

- Surgical operation instrument kit
- Cow-lifts
- Calving assistance instrument kits
- Post-mortem examination instrument kit
- Cow chutes
- Centrifuge (hematocrit, tubes)
- Cow whips, electrical

### 2. For Reproduction Management

- Ultra-sonic diagnosis device
- Ultra-sonic diagnosis device, portable
- Artificial insemination instrument kits
- Reproductive disorder treatment kits
- Liquid nitrogen tanks

### 3. For Feeding Management

- Blood test analyzer
- Clippers for cow
- Hoof trimming knives and instruments
- Cow weight estimating measure tapes
- Cow length and height measure instrument
- Dehorers
- Nose catchers

### 4. For Mastitis Control

- Incubators
- Ultra pure water maker
- Labo ware drier
- Autoclave
- Dry sterilizer
- Gas sterilizer
- Microscopes
- Material microscopes
- Refrigerator
- Freezer
- Milk collecting can
- Cooling equipment
- Bucket milkers

### 5. For Training Course Management

- Laboratory benches
- LCD projectors and screens
- Personal computers
- Copy machine
- Laundry machine
- Air-conditioners



## ANNEX 6

### JOINT COORDINATING COMMITTEE (Tentative)

#### 1. Function

The Joint Coordinating committee will meet at least once a year and whenever the necessary arises.

- (1) To formulate the Annual Work Plan under the framework of the Project.
- (2) To review the Overall progress and annual expenditure of the Project.
- (3) To review and exchanges views on major issues arising from on in connection with the Project.
- (4) To coordinate with the activity of other donors related to the Project.

#### 2. Chairperson : General Director of ICD, MARD

#### 3. Members

##### (1) Vietnamese side:

- 1) General Director (or Deputy General Director), Department of Foreign Economic Relations, MPI
- 2) General Director (or Deputy General Director), Department of Agricultural and Rural Development, MPI
- 3) General Director (or Deputy General Director), Department of International Cooperation Department, MARD
- 4) General Director (or Deputy General Director), Department of Agriculture, MARD
- 5) General Director (or Deputy General Director), National Agriculture Extension Center, MARD
- 6) General Director of NIAH
- 7) Deputy Director of NIAH

##### (2) Japanese side:

- 1) Chief Advisor
- 2) Coordinator
- 3) Other Japanese Experts
- 4) Resident Representative of the JICA Vietnamese Office





ANNEX 7

## Project Management Unit (Tentative)

### 1. Functions

The Project Management Unit will meet at least once a year and whenever the necessary arises.

- (1) To develop and improve detailed plan of activities
- (2) To monitor, coordinate and evaluate activities
- (3) To summarize the proceedings of activities and report it to the Joint Coordinating Committee

### 2. Chairperson: General Director of NIAH

### 3. Members

#### (1) Members of Vietnamese side

- 1) Representative of Department of Agriculture, MARD
- 2) Representative of National Center of Agricultural Extension, MARD
- 3) Deputy General Director, NIAH
- 4) Representative of NIVR
- 5) Representative of target area

#### (2) Members of Japanese side

- 1) Chief advisor
- 2) Coordinator
- 3) Other Japanese experts



ANNEX 8 Target Area Table  
1) Statistical information of 8 provinces

Name of province	Bac Ninh	Vinh Phuc	Tuyen Quang	Thanh Hoa	Ha Tay	Son La	Hung Yen	Ha Nam
Area of used land (Thousand ha)								
Agriculture land	52.1	66.0	71.6	253.1	122.5	191.8	62.6	51.9
Forestry land	0.6	30.2	363.1	481.2	16.5	480.7		9.6
Specially used land	14.5	19.6	13.7	70.7	40.4	24.3	16.2	12.1
Residential land	5.7	5.3	4.8	19.7	13.4	6.0	7.5	4.3
Population (Thousand)								
Male	472.7	567.1	350.7	1,770.3	1,200.5	479.5	540.0	396.2
Female	504.0	586.8	358.7	1,850.0	1,278.9	475.9	572.4	418.7
Total	976.7	1,142.9	709.4	3,620.3	2,479.4	955.4	1,112.4	814.9
Population density (Person/km <sup>2</sup> )	1,210	834	121	326	1,131	68	1,205	956
GDP								
GDP in Area (Billion dong)	5,483	6,402	2,408	13,430	10,544	2,848	5,086	3,138
GDP per capita (dong)	5,614,109	5,601,890	3,394,569	3,709,693	4,262,521	2,981,369	5,110,931	3,861,025
Output value of agriculture at constant 1994 prices (Billion dong)								
2000	1,319.4	1,200.8	655.7	3,270.5	2,947.4	885.6	1,897.1	1,119.2
2001	1,351.6	1,254.1	685.9	3,405.0	3,028.2	906.7	1,899.0	1,136.8
2002	1,437.5	1,335.3	711.3	3,592.5	3,153.1	1,100.0	2,101.1	1,204.1
2003	1,498.1	1,451.8	722.2	3,770.1	3,364.3	1,106.4	2,114.7	1,182.5
2004	1,549.2	1,528.8	746.5	3,858.5	3,532.5	1,108.5	2,284.9	1,218.5
Number of farms*1								
2000	43	115	77	1,874	88	94	14	19
2001	33	124	68	1,664	181	95	59	39
2002	33	146	68	1,661	190	48	44	74
2003	214	475	84	2,326	491	110	947	244
2004	1,501	482	83	2,882	696	126	1,535	298
Number of cattle (heads)								
2000	42,600	99,400	19,300	233,600	90,500	87,600	29,200	27,500
2001	42,000	101,500	20,100	233,600	95,000	95,100	29,800	26,400
2002	44,000	108,200	26,700	236,200	98,200	100,300	30,500	27,200
2003	48,300	121,400	32,500	243,000	105,700	106,400	31,600	29,900
2004	54,600	134,800	38,500	282,300	119,800	114,100	36,900	34,800
Number of Dairy cattle (heads)								
plan of dairy dev. in period 2005-2010								
2005	3,000	10,000	5,000	8,000	6,550	5,000	5,000	2,000
2010	5,500		10,000	35,000	20,000	10,000	10,000	4,000

\*1: Farm means only big farm (small scale is not included) according to the information from Vietnamese side. Source: Socio-Economic Statistical Data of 64 Provinces and City, 2005, Statistical Yearbook, 2004

2) Result of Dr. Kanameda's field survey conducted at 8 candidate target areas (July 2005)

Name of District	Tien Du	Vinh Thuong	Yen Son	Tho xuan	Tan Linh (Bavi)	Moc Chau	Khoai Chau	Duy Tien
Name of Candidate Target Area	Tien Du District (UBND)	Vinh Thuong District (UBND)	Yen Son Dairy Dev. Center	Lam Son Sugar Co.	Bevi Center	Moc Chau Dairy Corp.	Khoai Chau District (UBND)	Moc Bac Commune in Duy Tien District
Type	Type1 (Peri-urban)	Type2 (Breeding Cattle Supplier)	Type3 (Cooperative)	Type4 (Recent Participation)				
Distance from Hanoi (km)	30	80	165	220	55	194	40	45
Donor/NGO support	AFD (INGO in France)	Belgium (1st phase)	JOCV (JICA) activity	None	Canada	FAO	None	Belgium (2nd phase)
No. of Staff	20	20	Joint Stock Company	Joint Stock Company	65	Joint Stock Company	District UBND	District UBND
No. of Dairy farms	167	225	9 farms (JSC)	534	277	518	160	46 (34)
No. of Dairy cattle	438	640	4,146	3,150	900	3,142	697	128 (109)
Major Breed	Cross	Cross			Cross		Cross	Pure/Cross
Ratio of Dairy cattle in milk (%)	55	39	37	20	32	38	29	42
Number of Technical Personnel								
Extension worker	1 (private)		35	10	20 (2 are private)	15		None
Veterinarian (Univ. graduate)	No answer	No answer	5	9	6 (2 are private)	3	No answer	5 (2)
Veterinarian (No academic carrier)	No answer	7 (4 are private)	100	12	7 (6 are private)	5		7 (2)
A.1. Technician	3 (but not conducted)	15	20	6	5 (3 are private)	8		3 in Dairy center (2 are private)
Required condition to be Target Area	a) Selection of extensionist either extension staff in dairy technique or extensionist. b) Conducting of farmer's training after complete TOT (Training of Trainer) in STED. c) Shouldering budget for demonstration at farm level for improving milk productivity.	a) Conducting of farmer's training in the area after complete TOT (Training of Trainer) in STED. b) Conducting demonstration activity at farm level in the area for improving their milk productivity.	This type will be model of cooperative, in which technical extension activities is conducted, for introducing to the other areas. a) Conducting of farmer's training in the area after completed TOT (Training of Trainer) in STED. b) Strengthening of demonstration for improving dairy milk productivity towards dairy farms is required.	a) Selection of extensionist either extension staff in dairy technique or extensionist. b) Conducting of farmer's training after complete TOT (Training of Trainer) in STED. c) Shouldering budget for demonstration at farm level for improving milk productivity.				
Comments of the Study Team	Supporting policy likely to be weak.	Number of extensionist at commune level are sufficient. Cooperative exists.	Large scale Dairy Farming-oriented.	Plan to have dairy technique extension activity for medium scale dairy farms exists.	Benefit are expected to obtain from newly operated STED (Station for Training and Extension of Dairy)	Can be used for demonstration farm of proper dairy farming management, as a model toward the other areas.	Hard to communicate due to insufficient tel-communication system.	Plan to have Dairy Development Center exists.
Team's Recommendation		Suitable as a target area.		Suitable as a target area.		Suitable as a target area.		Suitable as a target area.

## Summary of the Workshop

### Confirmation of the needs (Implementation of PCM workshop)

#### 1) Method of workshop

Series of workshop were conducted in order to confirm the needs of requested project. Method of workshop is as follows:

##### (1) Data and place conducted

Data	Place	Numbers of Participants
Aug.2, 2005	Vinh Think commune in Vinh Phuc	Dairy farmer's group: Extension group:
Aug.3, 2005	Moc Bac commune in Ha Nam	Dairy farmer's group: Extension group:
Aug.12, 2005	Lam son in Thanh Hoa	Dairy farmer's group: Extension group:

Extension group: Veterinarian, AI Technician, Dairy farm Technician, Staff of commune, etc.

##### (2) Method of workshop

Purpose	All participants think together, learn each other, and share ideas and opinions each other.	
Method	Since time is only two hours, writing idea on each card and putting card on carton paper was adopted on the basis of PCM workshop method.	
Grouping	In order to facilitate the workshop, participants were grouped into two groups. One group is consisted with small scale dairy farmers. The other group is consisted with extensionists.	
Q/N to each group		
Dairy farmer's group	Core Problem	I can't learn dairy farming techniques. Why?
	Core Objective(solution)	I can learn dairy techniques. How?
Extension group	Core Problem	I can't transfer techniques to farmers. Why?
	Core Objective(solution)	I can transfer techniques to farmers. How?

#### 2) Finding from the work shop

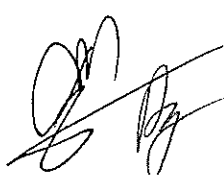
In the course of workshop, about 100 participants shared opinions and ideas towards better dairy farming. So many voices from extensionists and farmers (small and medium scale dairy farms) were collected. Finding from the work were summarized as follows:

	Extension group	Dairy farmer's group
Problem	<ul style="list-style-type: none"> <li>-Technical skill in not sufficient</li> <li>-Lack of transferring method</li> <li>-Difficult to conduct training courses for farmers. Reasons are many other works, insufficient budget for farmer's training, no time to teach, allowance is too little .etc.</li> <li>-Difficult to let farmers understand. Reasons are lack of teaching materials,</li> </ul>	<ul style="list-style-type: none"> <li>-No information about farmer's training</li> <li>-No chance to participate. Reasons are few training courses, lack of finance, busy in work, far from house, busy in daytime for women, etc.</li> <li>-Contents of training are not satisfied. Reasons are difficult to learn, lack of practice, insufficient document and material, lack of trainer's knowledge.</li> </ul>

	lack of experience and knowledge on dairy farming, farmer's ability is not satisfied, cost much when conduct practical training, etc. -Limited knowledge in specific field. -etc.	-etc.
Solution	-More training courses provided by NIAH. -Improve technical skill by participating training. -Improve teaching skill for farmer. -Provide visual aids for training. -Transfer technology with video tapes. -Need more equipments -Need sufficient allowance -Establish association for dairy farmers. -etc.	-More training courses for farmer. -More practical training. -Supporting training fee. -Study themselves. -learn from other farmers. -Visit advanced farmers. -etc.

Many of extensionists recognized the importance of proper technical transfer for dairy farmers. However, many of dairy farmer are not likely satisfied the activities of extensionists. Therefore, It is recommended that new project should focus on improvement of dairy technique skill for local extensionists to meet with farmer's demands. In this case, establishment of proper training center for local extensionists is very much in need. Functioning of training center should be rather practical-oriented than theory-oriented. Considering this function, existing Bavi center would be right place to add additional functioning.

If appropriate bridges (technical extension system) were constructed from new training center in Bavi center, NIAH, to dairy farms in rural area, extensionists would cross the bridges with appropriate technology for small and medium scale dairy farms.




2. 協議議事録 (R/D)  
(2006年2月21日署名)

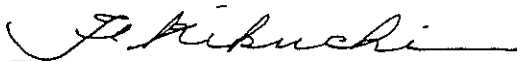
RECORD OF DISCUSSIONS  
BETWEEN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
AND  
AUTHORITIES CONCERNED OF THE GOVERNMENT OF  
THE SOCIALIST REPUBLIC OF VIETNAM  
ON  
JAPANESE TECHNICAL COOPERATION PROJECT  
FOR  
IMPROVEMENT OF PRODUCTIVE TECHNOLOGY  
IN  
SMALL AND MEDIUM SCALE DAIRY FARMS IN VIETNAM

In response to the request of the Government of the Socialist Republic of Vietnam, the Government of Japan has decided to implement Japan-Vietnam Technical Cooperation Project for Improvement of Productive Technology in Small and Medium Scale Dairy Farms in Vietnam (hereinafter referred to as "the Project") in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of the Socialist Republic of Vietnam, signed on October 20, 1998 (hereinafter referred to as "the Agreement"), the Embassy of Japan's note No. J.D.53/2005 dated April 19, 2005 and the Ministry of Planning and Investment of Vietnam's note No. 2983BKH/KTDN dated May 06, 2005.

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation program of the Government of Japan, will cooperate with the authorities concerned of the Government of the Socialist Republic of Vietnam in implementing the Project.

JICA and the authorities concerned of the Government of the Socialist Republic of Vietnam had a series of discussions on the framework of the Project. As a result of the discussions, JICA and the authorities concerned agreed on the matters referred to in the document attached hereto.

Hanoi, February 21, 2006



Mr. FUMIO KIKUCHI  
Resident Representative  
Vietnam Office,  
Japan International Cooperation Agency  
Japan



Mr. HOANG VAN TIEU  
Vice Director (Acting Director)  
National Institute of Animal Husbandry  
Ministry of Agriculture and Rural Development  
The Socialist Republic of Vietnam



Mr. HO QUANG MINH  
Director General  
Foreign Economic Relations Department  
Ministry of Planning and Investment  
The Socialist Republic of Vietnam



Ms. HOANG THI DUNG  
Deputy Director General  
International Cooperation Department  
Ministry of Agriculture and Rural Development  
The Socialist Republic of Vietnam

THE ATTACHED DOCUMENT

I. COOPERATION BETWEEN JICA AND THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIETNAM

1. The Government of the Socialist Republic of Vietnam will implement the Project for Improvement of Productive Technology in Small and Medium Scale Dairy Farms in Vietnam (hereinafter referred to as "the Project") in cooperation with JICA.
2. The Project will be implemented in accordance with the Master Plan which is given in Annex I.

II. MEASURES TO BE TAKEN BY JICA

In accordance with the laws and regulations in force in Japan and the provisions of Article III of the Agreement, JICA, as the executing agency for technical cooperation by the Government of Japan, will take, at its own expense, the following measures according to the normal procedures of its technical cooperation scheme.

1. DISPATCH OF JAPANESE EXPERTS

JICA will provide the services of the Japanese experts as listed in Annex II.

2. PROVISION OF MACHINERY AND EQUIPMENT

JICA will provide such machinery, equipment and other materials (hereinafter referred to as "the Equipment") necessary for the implementation of the Project as listed in Annex III.

3. TRAINING OF VIETNAMESE PERSONNEL IN JAPAN

JICA will receive the Vietnamese personnel connected with the Project for technical training in Japan.

III. MEASURES TO BE TAKEN BY THE GOVERNMENT OF THE SOCIALIST REPUBLIC OF VIETNAM

1. The Government of the Socialist Republic of Vietnam will take necessary measures to ensure that the self-reliant operation of the Project will be sustained during and after the period of Japanese technical cooperation, through full and active involvement in the Project by all related authorities, beneficiary groups and institutions.
2. In accordance with the provisions of Article IV of the Agreement, the Government of the Socialist Republic of Vietnam will ensure that the technologies and knowledge acquired by the Vietnamese nationals as a result of the Japanese technical cooperation will contribute to the economic and social development of the Socialist Republic of Vietnam.

3. In accordance with the provisions of Article VI of the Agreement, the Government of the Socialist Republic of Vietnam will grant in the Socialist Republic of Vietnam privileges, exemptions and benefits to the Japanese experts referred to in II-1 above and their families.
4. In accordance with the provisions of Article VIII of the Agreement, the Government of the Socialist Republic of Vietnam will take the measures necessary to receive and use the Equipment provided by JICA under II-2 above and equipment, machinery and materials carried in by the Japanese experts referred to in II-1 above.
5. The Government of the Socialist Republic of Vietnam will take necessary measures to ensure that the knowledge and experience acquired by the Vietnamese personnel from technical training in Japan will be utilized effectively in the implementation of the Project.
6. In accordance with the provision of Article V-(b) of the Agreement, the Government of the Socialist Republic of Vietnam will provide the services of Vietnamese counterpart personnel and administrative personnel as listed in Annex IV.
7. In accordance with the provision of Article V-(a) of the Agreement, the Government of the Socialist Republic of Vietnam will provide the buildings and facilities as listed in Annex V.
8. In accordance with the laws and regulations in force in the Socialist Republic of Vietnam, the Government of the Socialist Republic of Vietnam will take necessary measures to supply or replace at its own expense machinery, equipment, instruments, tools, spare parts and any other materials necessary for the implementation of the Project other than the Equipment provided through JICA under II-2 above.
9. In accordance with the laws and regulations in force in the Socialist Republic of Vietnam, the Government of the Socialist Republic of Vietnam will take necessary measures to meet the running expenses necessary for the implementation of the Project.

#### IV. ADMINISTRATION OF THE PROJECT

1. The Director, National Institute of Animal Husbandry, Ministry of Agriculture and Rural Development of the Socialist Republic of Vietnam (hereinafter referred to as "NIAH"), as the Project Director, will bear overall responsibility for the administration of the Project.
2. Deputy Director of NIAH, as the Project Manager, will be responsible for the managerial matters the Project.
3. The Japanese experts will give necessary technical guidance and advice to Vietnamese counterpart personnel on technical matters pertaining to the implementation of the Project.
4. For the effective and successful implementation of technical cooperation for the Project, a Project Management Unit and a Joint Coordinating Committee will be established whose functions and composition are described in Annex IV and Annex VI respectively.

#### V. JOINT EVALUATION

Evaluation of the Project will be conducted jointly by JICA and the Government of the Socialist Republic of Vietnam authorities concerned, at the middle and during the last six months of the cooperation term in order to examine the level of achievement.

#### VI. CLAIMS AGAINST JAPANESE EXPERTS

In accordance with the provision of Article VII of the Agreement, the Government of the Socialist Republic of Vietnam undertakes to bear claims, if any arises, against the Japanese experts engaged in technical cooperation for the Project resulting from, occurring in the course of, or otherwise connected with the discharge of their official functions in the Socialist Republic of Vietnam except for those arising from the willful misconduct or gross negligence of the Japanese experts.

#### VII. MUTUAL CONSULTATION

There will be mutual consultation between JICA and the Government of the Socialist Republic of Vietnam on any major issues arising from, or in connection with this Attached Document.



VIII. MEASURES TO PROMOTE UNDERSTANDING OF AND SUPPORT FOR THE PROJECT

For the purpose of promoting support for the Project among the people of the Socialist Republic of Vietnam, the Government of the Socialist Republic of Vietnam will take appropriate measures to make the Project widely known to the people of the Socialist Republic of Vietnam.

IX. TERM OF COOPERATION

The duration of the technical cooperation for the Project under this Attached Document will be five (5) years from the dispatch date of the first long-term expert.

- ANNEX I      MASTER PLAN
- ANNEX II     LIST OF JAPANESE EXPERTS
- ANNEX III    LIST OF MACHINERY AND EQUIPMENT
- ANNEX IV    LIST OF VIETNAMESE COUNTERPART AND ADMINISTRATIVE PERSONNEL
- ANNEX V     LIST OF BUILDINGS AND FACILITIES
- ANNEX VI    JOINT COORDINATING COMMITTEE

## ANNEX I      MASTER PLAN

### 1. Project Title

Project for Improvement of Productive Technology in Small and Medium Scale Dairy Farms in Vietnam

### 2. Overall Goal (to be achieved 5 years after completion of the Project)

Milk productivity of small and medium scale dairy farms in Northern Vietnam is increased.

### 3. Project Purpose (to be achieved by the end of the Project period)

Dairy technology extension activities are improved in the Project target areas.

### 4. Outputs (components to achieve the Project Purpose)

(1) Functions of the Station for Training and Extension of Dairy Technologies (hereinafter referred to as "STED") are improved.

(2) Training capability of STED's trainers (National Trainer: NT) to dairy technology extension workers and so forth (Local Trainer: LT) is improved.

(3) Capability of extension activities of dairy technology extension workers and so forth (Local Trainer: LT) towards small and medium scale dairy farms in the Project target areas is improved.

### 5. Activities

1-1 STED studies needs on dairy technology suitable for field level, and needs on training and extension.

1-2 STED develops and improves technology on veterinary practice and dairy feeding and management suitable for dairy farms at the field level.

1-3 STED develops and improves method on training and technology transfer, as well as training curriculum and teaching material.

1-4 STED proves and demonstrates technologies suited for dairy feeding and management.

1-5 STED collects and accumulates information at the field level needed for the dairy development.

2-1 To conduct training for NT on practical dairy veterinary technology and practical dairy feeding and management technology.

2-2 To conduct training for NT on training program planning and management.

2-3 To conduct training for NT on technology transfer method.

- 3-1 To conduct training for LT on dairy feeding and management technology.
- 3-2 To conduct training for LT on practical dairy veterinary technology.
- 3-3 To conduct training for LT on technology transfer method.
- 3-4 NT follows up training conducted by LT.
- 3-5 LT conducts extension activities (on-site dairy farm training, and actual proof and demonstration) for model dairy farm <sup>(a)</sup>.
- 3-6 STED advises to extension activities of LT in terms of technical aspect.
- 3-7 STED monitors progress of improvement of model dairy farm <sup>(a)</sup> in terms of applied dairy technology.

Note : <sup>(a)</sup>A figure of verifiable indicator, and a concrete definition of “model dairy farm” and “appropriate dairy technology” will be cleared based on the result of baseline survey within six months after the Project starts

In case in which the Master Plan should be changed due to the situation of the Project, JICA and the Government of the Socialist of Vietnam will agree to and confirm the changes by exchanging Minutes of Meeting.

## 6. Project site

- STED, NIAH
- Four districts in four provinces in Northern Vietnam as Project target areas
  - 1) Vinh Thuong district in Vinh Phuc province
  - 2) Khoai Chau district in Hung Yen province
  - 3) Moc Chau district in Son La province
  - 4) Tho Xuan district in Thanh Hoa province

## ANNEX II LIST OF JAPANESE EXPERTS

### 1. Long-term Experts

Long-term Experts in the following area of expertise will be dispatched.

- 1) Animal Health
- 2) Feeding and Management
- 3) Training

A Chief advisor and a project coordinator will be chosen from the Japanese expert's project team.

### 2. Short-Term Experts

Short-term experts in the fields of mastitis control, breeding and reproduction management and dairy farming management may be dispatched depending on the needs as specified in the annual plan of the Project

Short-term experts might be additionally designated if necessary.

ANNEX III LIST OF MACHINERY AND EQUIPMENT

1. Common Equipment: vehicles, office equipment, field work equipment and so on.
2. Training Equipment: laboratory benches, LCD projector, screen, PC, copy machine and so on.
3. Laboratory Equipment: cow-lift, centrifuge, ultra-sonic diagnosis device, ultra-sonic diagnosis device, blood test analyzer, incubator, refrigerator and so on.
4. Other machinery, equipment, tools, materials and their spare parts mutually agreed upon necessary.

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ANNEX IV LIST OF VIETNAMESE COUNTERPARTS AND  
ADMINISTRATIVE PERSONNEL

1. Counterpart:

The Vietnamese side will assign a sufficient number of counterpart officials, who are staff members of NIAH or representative from related authorities in the Project target area.

2. Project Management Unit (PMU)

2.1 Functions

2.1.1 PMU is inter-organizational unit responsible for the management and coordination of the Project.

2.1.2 PMU holds meetings when necessity arises, in order to fulfill the followings:

- (i) To supervise the working progress and adjust the working schedule of the Project if necessary
- (ii) To review and exchange views on major issues arising from or in connection with the Project, and
- (iii) To approve progress reports.

2.2 Composition (tentative)

- General Director , NIAH
- Deputy Director, NIAH
- Director (or Deputy Director), STED
- Director (or Deputy Director), Vinh Phuc Provincial Department of Agriculture and Rural Development
- Director (or Deputy Director), Hung Yen Provincial Department of Agriculture and Rural Development
- Director (or Deputy Director), Son La Provincial Department of Agriculture and Rural Developmente
- Director (or Deputy Director), Thanh Hoa Provincial Department of Agriculture and Rural Development

And other personnel as mutually agreed upon.

## ANNEX V LIST OF BUILDINGS AND FACILITIES

### 1. Office space at NIAH and the Project provinces

Office space for exclusive use of the Project will be allocated in the followings:

- Headquarters of NIAH
- STED

### 2. Model Site Arrangement

NIAH will make necessary arrangement and coordination with stakeholders of the Project target areas in order to get facilities in those sites ready for the relevant Project activities.

### 3. Other facilities necessary for the implementation of the Project.

## ANNEX VI JOINT COODINATING COMMITTEE

### 1. Functions

The Joint Coordinating Committee shall:

- (1) authorize an annual work plan of the Project based on the Plan of Operations within the framework of R/D,
- (2) monitor and evaluate the progress of the Project and the results of the annual work plan, and
- (3) discuss and advise on major issues that arise during the implementation period of the Project.

### 2. Compositions

The Joint Coordination Committee shall be composed of:

- (1) Chairman: Director General of International Cooperation Department, Ministry of Agriculture and Rural Development.
- (2) Members (tentative):
  - *Vietnamese side:*
    - Director General (or Deputy Director General), Department of Foreign Economic Relations, Ministry of Planning and Investment
    - Director General (or Deputy Director General), Department of Agriculture, Ministry of Agriculture and Rural Development
    - Director General, Department of Animal Husbandry, Ministry of Agriculture and Rural Development
    - Director General (or Deputy Director General), National Agriculture Extension Center, Ministry of Agricultural and Rural Development
    - General Director, NIAH
    - Deputy Director, NIAH
    - Director General, National Institute of Veterinary Research
    - Director (or Deputy Director), STED
  - *Japanese side:*
    - The Project Chief Advisor
    - The Project Coordinator
    - Other Project Japanese experts
    - Resident Representative of JICA Vietnam Office
    - Personnel concerned to be dispatched by JICA.
- (3) Observers: Official(s) of the Embassy of Japan may attend the committee sessions as observer(s).



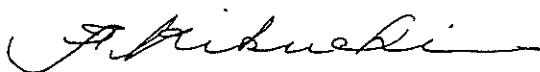
MINUTES OF MEETINGS  
BETWEEN  
JAPAN INTERNATIONAL COOPERATION AGENCY  
AND  
THE AUTHORITIES CONCERNED OF THE GOVERNMENT OF  
THE SOCIALIST REPUBLIC OF VIETNAM  
ON  
THE JAPANESE TECHNICAL COOPERATION PROJECT  
FOR  
IMPROVEMENT OF PRODUCTIVE TECHNOLOGY  
IN  
SMALL AND MEDIUM SCALE DAIRY FARMS IN VIETNAM

Resident Representative of the Japan International Cooperation Agency (hereinafter referred to as "JICA") Vietnam Office and the Vietnamese authorities concerned (hereinafter referred to as "the Vietnamese side") had a series of meetings for the purpose of working out the details of the technical cooperation program concerning Project for Improvement of Productive Technology in Small and Medium Scale Dairy Farms in Vietnam (hereinafter referred to as the "Project").


As a result of the discussions, JICA and the Vietnamese side agreed to recommend to their respective Governments the matters referred to in the Record of Discussions (hereinafter referred to as "R/D") signed on February 21, 2006.

Both JICA and the Vietnamese side also agreed to make this Minutes of Meetings in order to confirm the mutual understanding reached through the discussions as attached hereto.

Hanoi, February 21, 2006




Mr. FUMIO KIKUCHI  
Resident Representative  
Vietnam Office,  
Japan International Cooperation Agency  
Japan



Mr. HOANG VAN TIEU  
Vice Director (Acting Director)  
National Institute of Animal Husbandry  
Ministry of Agriculture and Rural Development  
The Socialist Republic of Vietnam



Mr. HO QUANG MINH  
Director General  
Foreign Economic Relations Department  
Ministry of Planning and Investment  
The Socialist Republic of Vietnam



Ms. HOANG THI DUNG  
Deputy Director General  
International Cooperation Department  
Ministry of Agriculture and Rural Development  
The Socialist Republic of Vietnam

## THE ATTACHED DOCUMENT

### 1. MEASURES TO BE TAKEN FOR THE SMOOTH IMPLEMENTATION OF THE PROJECT

National Institute of Animal Husbandry (hereinafter referred to as "NIAH"), Ministry of Agriculture and Rural Development (hereinafter referred to as "MARD") is responsible for coordinating and supporting the Project activities cooperated with related organizations including Vinh Phuc Provincial Department of Agriculture and Rural Development, Hung Yen Provincial Department of Agriculture and Rural Development, Son La Provincial Department of Agriculture and Rural Development, Thanh Hoa Provincial Department of Agriculture and Rural Development. In case where problems arise, the related authorities concerned should hold discussions to solve the problem.

### 2. TENTATIVE FRAMEWORK OF THE PROJECT

As a result of the discussions, the both sides agreed to adopt the Project Design Matrix (hereinafter referred to as "PDM") shown in the Annex 1 as the implementation guidelines of the project management. The PDM is commonly introduced to technical cooperation projects for the purpose of clear, efficient and effective management planning, implementation, monitoring, and evaluation of the Project.

The tentative Plan of Operations (hereinafter referred to as "P/O") of the Project agreed by the both sides is shown in Annex 2. Although it is ideal if the Project shall be implemented in accordance with the PDM and P/O without any amendment, they may be revised after the commencement of the Project within the framework of the Record of Discussions (hereinafter referred to as "R/D") through mutual discussions when necessity arises according to the progress of the Project.

### 3. ESTABLISHMENT OF STATION FOR TRAINING AND EXTENSION OF DAIRY TECHNOLOGIES (STED)

NIAH would make necessary arrangement for recruitment of National Trainer and take action for enlargement and strengthened functions of STED as an official organization. Progress of the establishment will be informed to JICA.

ANNEX 1 PROJECT DESIGN MATRIX

**Project title:** Improvement of Productive Technology in Small and Medium Scale Dairy Farms in Vietnam

**Duration:** April 2006 to March 2011

**Project counterpart:** National Institute of Animal Husbandry (NIAH)

**Project site:** Station for Training and Extension of Dairy Technologies (STED), NIAH

**Target area:** Vinh Thuong District in Vinh Phuc Province, Khoai Chau District in Hung Yen Province, Moc Chau District in Son La Province, Tho Xuan District in Thanh Hoa Province

**Target Group:** National Trainer (NT) of the STED, Local Trainer (LT) in the project target areas and the northern Vietnam.  
Dairy farms in the project target areas

Version 1

Project Summary	Verifiable Indicators	Means of Verification	Important Assumptions
<b>Overall Goal</b> Milk productivity of small and medium scale dairy farms in Northern Vietnam is increased.	Milk production of small and medium scale dairy farms in Northern Vietnam will increase X %.	- Field survey	
<b>Project Purpose</b> Dairy technology extension activities are improved in the Project target areas.	1. X% of model farms in the project areas will apply improved dairy technology. 2. Milk production of cow of model farms in the project areas will increase X%.	- Field survey - Field survey	- Production cost of dairy farming is reasonably stable.(such as forage/concentrate, Artificial Insemination, Animal Treatment, etc.) - Milk price does not fell suddenly.
<b>Outputs</b> 1. Functions of the Station for Training and Extension of Dairy Technologies (STED) are improved.  2. Training capability of STED's trainers (National Trainer: NT) to dairy technology extension workers and so forth (Local Trainer: LT) is improved.	1-1. No. of field study implemented by STED will be X times. 1-2. No. of training courses developed and improved by STED will be X courses. 1-3. No. of teaching materials for training and extension, which is developed and improved by STED, will be X items. 1-4. No. of actual proof and demonstration by STED for dairy feeding and breeding management will be X cases. 1-5. Information collected and accumulated by STED on dairy farming at the field level will be utilized X times for dairy development. 2-1. No. of NT capable for developing and guiding appropriate dairy technology will be X persons.	- List of field survey - List of training courses - List of guidelines, teaching manuals. - Evaluation record of the target area - Project report  - Evaluation record of the NT	- "National Dairy Development Program" (2001 to 2010) is continued.

*Stien - Cung VAY lps*

<p>3. Capability of extension activities of dairy technology extension workers and so forth (Local Trainer: LT) towards small and medium scale dairy farms in the Project target areas is improved.</p>	<p>3-1. No. of LT capable for conducting training on appropriate dairy technology will be X persons.          3-2. No. of extension activities (on-site dairy farm training, and actual proof and demonstration) by LT towards model dairy farm will be X cases.          3-3. No. of technical guidance to extension activities of LT will be X cases.</p>	<ul style="list-style-type: none"> <li>- Evaluation record of the LT</li> <li>- List of extension activities</li> <li>- List of guidelines, teaching manuals.</li> </ul>	
<p><b>Activities</b></p> <p>1.1. STED studies needs on dairy technology suitable for field level, and needs on training and extension.</p> <p>1.2. STED develops and improves technology on veterinary practice and dairy feeding and management suitable for dairy farms at the field level.</p> <p>1.3. STED develops and improves method on training and technology transfer, as well as training curriculum and teaching material.</p> <p>1.4. STED proves and demonstrates technologies suited for dairy feeding and management.</p> <p>1.5. STED collects and accumulates information at the field level needed for the dairy development.</p> <p>2.1. To conduct training for NT on practical dairy veterinary technology and practical dairy feeding and management technology.</p> <p>2.2. To conduct training for NT on training program planning and management.</p> <p>2.3. To conduct training for NT on technology transfer method.</p> <p>3.1. To conduct training for LT on dairy feeding and management technology.</p> <p>3.2. To conduct training for LT on practical dairy veterinary technology.</p> <p>3.3. To conduct training for LT on technology transfer method.</p> <p>3.4. NT follows up training conducted by LT.</p> <p>3.5. LT conducts extension activities (on-site dairy farm training, and actual proof and demonstration) for model dairy farm</p> <p>3.6. STED advises to extension activities of LT in terms of technical aspect.</p> <p>3.7. STED monitors progress of improvement of model dairy farm in terms of applied dairy technology</p>	<p><b>Input</b></p> <p><b>1. Japanese side</b></p> <p>a) Expert dispatch</p> <ul style="list-style-type: none"> <li>- Three long-term experts in the following area of expertise will be dispatched.             <ul style="list-style-type: none"> <li>1) Animal Health</li> <li>2) Feeding and Management</li> <li>3) Training</li> </ul> </li> <li>- A Chief advisor and a project coordinator will be chosen from the Japanese expert's project team.</li> <li>- Short-term experts will be dispatched according to necessity.</li> </ul> <p>b) Training</p> <ul style="list-style-type: none"> <li>- Training in Japan will be designed according to necessity.</li> </ul> <p>c) Equipment</p> <p>Equipment: Equipment for training and field activities.</p> <p><b>2. Vietnamese side</b></p> <p>a) Counterpart</p> <ul style="list-style-type: none"> <li>- Sufficient number of counterpart officials, who are staff members of NIAH or representative from related authorities in the Project target area.</li> </ul> <p>b) Office space and facilities</p> <ul style="list-style-type: none"> <li>- Project office space in NIAH and STED, facilities for operation of model sites</li> </ul> <p>c) Counter budget</p> <ul style="list-style-type: none"> <li>- Employment cost of counterparts, operation, maintenance and repair cost of project office such as electricity service, water supply, etc.</li> </ul>	<ul style="list-style-type: none"> <li>- Counterparts continue to work in the project.</li> <li>- Cooperation among STED and related offices in the project areas is continued.</li> <li>- LT trained at STED continues to work at field level.</li> </ul>	
			<b>Pre-condition</b>

*Stien Cuong MT*



Question		Answer	Source
Items	Information needed		
1.Definition	What is small-scale dairy farm? ( number of dairy cattle they feed)	Less than 10 heads/farm Less than 10 heads	NDDP DOA
	What is medium-scale dairy farm? ( number of dairy cattle they feed)	11heads to 50heads/farm 10-30 heads	NDDP DOA
2.Basic Information	Ratio of the small and medium-scale dairy farms in total number of farms in Northern provinces and Southern provinces.	Northern provinces : 77.4% Southern provinces : 91.44% Northern provinces : 95% Southern provinces : 90%	NDDP DOA
	Can small and medium-scale dairy farms earn their income from dairy farming? In this case, how many dairy cattle do they need? (for example: Farmer can earn income from only dairy farming, when they have 10 heads of milking cows.)	Yes From 5-10 heads	DOA
	Average number of dairy cattle fed by small and medium-scale dairy farms in Northern provinces and Southern provinces.	Northern provinces : 4.2heads Southern provinces : 6.0heads Northern provinces : 4-5heads Southern provinces : 5-8heads	NDDP DOA
	Ration of income from dairy farming in total income of small and medium-scale dairy farms in Northern provinces and Southern provinces.	Northern provinces : 30-50 % Southern provinces : 30-50 %	DOA
	If dairy farms have source of income except for dairy farming, what is that? (From rice , vegetable, fruit, and others)	Cultivations, other livestock, services, etc.	DOA
	Situation of demand and supply of milk (included milk products) in Northern provinces and Southern provinces.	Northern provinces : 10% Southern provinces : 25-30%	DOA
	Average income level of dairy farms compared with other agriculture farms such as farmer rice, vegetable, fruit farm.	Dairy farming advancing provinces: Dairy farming promoting provinces : Other provinces:	
3.General Extension system	Please briefly explain your general extension system.(by figure or diagram)	National Agricultural Extension Center – Provincial Agricultural Extension Center – District Agricultural Extension Station – Extension workers of communes	DOA
	Which department responsible extension works?	National Agricultural Extension Center (NAEC)	DOA
	What is the relationship among province, district and commune in terms of extension works?	The relationship of superior and subordinated organizations	DOA

	<p>Which section responsible for the extension works written below?</p> <ul style="list-style-type: none"> <li>-Field Veterinary Medicine</li> <li>-Field Artificial Insemination(A.I.) technique</li> <li>-Dairy cow management techniques</li> <li>-Other techniques, if any</li> </ul>	<p>Field Vets: under management of Veterinary Station of the District.  Field AI technicians: Depends on each area, but usually under management of Extension Center, sometimes, the local livestock breeding company or Veterinary Station of the District. However, at present, many of AI technicians are independent.  Dairy farming and management techniques: Mainly by DARD and District Agriculture Div, or Livestock Breeding Company, or Veterinary system, depends on each area.</p>	DOA
4.Budget allocated for extension works	<p>How much VND have you allocated for the extension system for the past five year (2001-2005)?</p>	<p>2001: about 20 billions,  2002: about 26 billions  2003: about 60 billions,  2004: about 80 billions,  2005: about 100 billions (estimation)</p>	DOA
	<p>How much VND have you allocated for the extension work written below?</p> <ul style="list-style-type: none"> <li>-Dairy Breed Management By Veterinarian</li> <li>-Field Artificial Insemination(A.I.) technique</li> <li>-Dairy Farming techniques</li> <li>-Breed Inspection</li> <li>-Other techniques, if any</li> </ul>	<p>About 25-30% of total extension budget is for livestock sector (in general)</p>	DOA
	<p>How much VND will you allocate for the extension system for next five year (2006-2010)?</p>	<p>Don't know the details</p>	DOA
	<p>How much VND will you allocate for the extension work as written below?</p> <ul style="list-style-type: none"> <li>-Dairy Breed Management By Veterinarian</li> <li>-Field Artificial Insemination(A.I.) technique</li> <li>-Dairy Farming techniques</li> <li>-Breed Inspection</li> <li>-Other techniques, if any</li> </ul>	<p>Don't know the details</p>	DOA

<p>5.No. of staffs assigned for extension works</p>	<p>How many staffs are there in the field of technique as of now written below?          -Veterinarian          -Field Artificial Insemination(A.I.) technician          -Dairy Farming technician          -Breed Inspection technician          -Other technician, if any</p>		
	<p>Do you have any plan to increase the Number of your staffs to achieve your goal by 2010?          If yes, please write down the numbers of staffs.          -Veterinarian          -Field Artificial Insemination(A.I.) technician          -Dairy Farming technician          -Breed Inspection technician          -Other technician, if any          If no, please write down alternative plan to achieve your goal.</p>	<p>yes, but it depends on each area, therefore I have no detail information          We try to have 1 technician / 50 head of dairy cow.</p>	<p>DOA</p>
<p>6.Activities for extension works</p>	<p>What kind of activities do they have in the field?          -Veterinarian          -Field Artificial Insemination(A.I.) technician          -Dairy Farming technician          -Breed Inspection technician          -Other technician, if any</p>	<p>Usually, 1 technician carries out many works: Veterinary, AI, other technical services...</p>	<p>DOA</p>
	<p>How often do they visit to their fields (small and medium-size dairy farm)?          -Veterinarian          -Field Artificial Insemination(A.I.) technician          -Dairy Farming technician          -Breed Inspection technician          -Other technician, if any</p>	<p>Only those who work everyday can earn living by these jobs.</p>	<p>DOA</p>



## 5 . バビセンターにおける研修プログラム事例

### 事例 1 : TIME TABLE OF TRAINING COURSE OF REPRODUCTION DISEASES AND MASTITIS AT BAVI CENTER

Day	Time	Content
1	7:00-9:45	Opening
	9:45-11:30	Present Situation of Dairy Industry of Vietnam
	11:30-16:30	Mastitis and reproduction diseases of dairy cattle in Vietnam and in the world
2	7:30-11:30	Factors affected to conception rate and reproduction of cattle
	13:30-16:30	Practice on live cow, pelvis and sex organs of cow
3	7:30-11:30	Late reproduction disease and problems of abortion, early delivery, embryo death...and
	13:30-16:30	Practice on live cow about reproduction disease
4	7:30-11:30	Apply technical measures to do treatment for late productive cattle
	13:30-16:30	Practice on using hormone products and medicine for late reproductive cattle: GnRH, Cird, Prid, PGF2a
5	7:30-11:30	Factors affected to bacteria contamination to udder and countermeasures
	13:30-16:30	Practice on live cow at farms about mastitis
6	7:30-11:30	Kinds of mastitis, early diagnosis methods and treatment
	13:30-16:30	Practice on live cow and check the milk sample by CMT and some other methods
7	7:30-11:30	Infectious diseases and parasite may caused mastitis and reproduction disease in dairy cattle
	13:30-16:30	Practice about mastitis and reproduction treatment at slaughter house and farms
8	7:30-11:30	Feeding and management technique for pregnant heifer, milking cow, dried
	13:30-16:30	Practice on live cow and medicine to treat for mastitis and reproduction disease-Milking procedure by machine and by hand
9	7:30-11:30	Housing and environment in dairy farm to prevent reproduction disease and mastitis;
	13:30-16:30	Answer questions and closing the course

### 事例 2 : Time table for veterinary practice training course

Day	Time	Content
1	8:00-10:00	Receive Trainees, arrange dormitory
	10:00-11:00	Popularize regulations and divide trainees into groups
	14:00-14:30	Opening Speech
	14:40-17:00	Present Situation of dairy development in Vietnam and in the world
2	6:50-7:30	Go to treatment with Vets
	8:30-11:00	Infectious diseases in dairy cattle and treatment
	14:00-16:30	Internal and surgical disease of dairy cattle; Go to do treatment with Vets in farms
3	6:00-7:30	Go to do treatment with Vest in farms

3	6:00-7:30	Go to do treatment with Vest in farms
	8:30-11:00	Methods of injection and practice on live cow
	14:00-17:30	Surgeical practice on live cow in slaughter house
4	6:00-7:30	Surgeical practice on live cow in slaughter house
	8:30-11:00	Reproduction diseases in dairy cattle
	14:00-16:30	Hormone in reproduction and usage of hormone
	16:30-17:30	Go to do treatment with Vest in farms
5	6:00-7:30	Go to do treatment in farms
	8:30-11:00	Air accumulation in “star-fruit” stomach disease and treatment
	14:00-18:00	Practice treatment on live cow in farms
6	6:00-7:30	Practice treatment on live cow in farms
	8:30-11:00	Parasitic and endoparasitic diseases and medicine for treatment
	14:00-18:00	Practice at chemist’s and practice on live calf, cow in farms
7	6:00-7:30	Practice at chemist’s and practice on live calf, cow in farms
	8:30-11:00	Veterinary management in dairy farming
	14:00-16:30	Feeding and management technique for dairy calves and cows
	16:30-18:30	Go to do treatment with Vets
8	6:00-7:30	Go to do treatment with Vets
	8:00-11:00	Practice for hoof disease treatment
	14:00-18:30	Practice treatment on live cow in farms
9	7:00-18:30	Examination and treatment for reproduction disease at dairy farms
10	6:00-7:30	Examination and treatment for reproduction disease at dairy farms
	8:30-18:00	Prepare disinfectant solution to clean udder; CMT reagent and practice on live cow
11	6:30-18:00	Go to do practical treatment in the field at Co Do commune
12	7:30-11:00	Discuss, evaluate the mid-term result of training and get experience in treatment
	14:00-18:00	Get feces sample of calf, cow to check worm by microscope. Detect endoparasite in intestine in laboratory
13	6:00-7:30	Get feces sample of calf, cow to check worm by microscope. Detect endoparasite in intestine in laboratory
	7:30-11:00	Reproduction management-management for cow before and after delivery
	14:00-18:00	Practice surgery for some surgeical diseases
14	6:00-7:30	Practice surgery for some surgeical diseases
	8:30-11:00	Factors affected to reproductive ability of dairy cattle and countermeasure
	14:00-18:00	Go to do practical treatment in field with Vets
15	6:30-18:30	Go to do practical treatment in field in Phu Dong Commune
16	6:00-7:30	Examination and treatment for reproduction
	8:30-11:00	Nutrition for dairy cattle
	14:00-18:00	Put Prid, CiRd, CueMete, GnRH, PG, HCG and flush the genital tract for reproductive cattle in Farm No 1 of Center
17	7:00-16:00	Go to visit some model farms in Center and neighbor area
	6:00-7:30	Examination and treatment for reproduction disease at dairy

18		farms
	8:00-11:00	Discuss about Suitable time for AL and some common cases in dairy cattle
19	7:00-11:00	Answer question, exchange experience after training
	14:00-16:00	Examination about theory and practice Evaluate the result of training
20	8:00-11:00	Closing and grant certificate

**事例 3 : Curriculum for 1 training course in local area (for dairy farming technique)**

Day	Time	Content
1	4:30-6:30	Milking and Practice
	7:00-7:30	Opening speech
	7:30-9:30	Feeding and management for dairy cattle
	9:30-11:30	Milking, processing and stocking milk
	13:30-16:00	Breeds, breed management and breed selection
	16:00-17:30	Milking and practice
2	4:30-6:30	Milking and practice
	7:30-11:30	AI and dairy reproduction diseases
	13:30-16:00	Dairy cattle diseases and treatment
	16:00-17:30	Milking and practice
3	4:30-6:30	Milking and practice
	7:30-9:30	Nutrition for dairy cattle
	9:30-11:30	Planting grass, processing green forage and hay
	13:30-15:30	Housing for cattle, examination test for trainees (milking)
	15:30-16:30	Closing

**事例 4 : Time table of training course from 21/9/2004-2/10/2004 at BAVI Cattle and Forage Research Center**

Day	Time	Content
1	14:00-17:00	Receiving trainees, arrange dormitory
	7:00-7:30	Divide trainee into groups
	7:30-8:30	Speech
	8:30-8:45	Opening speech

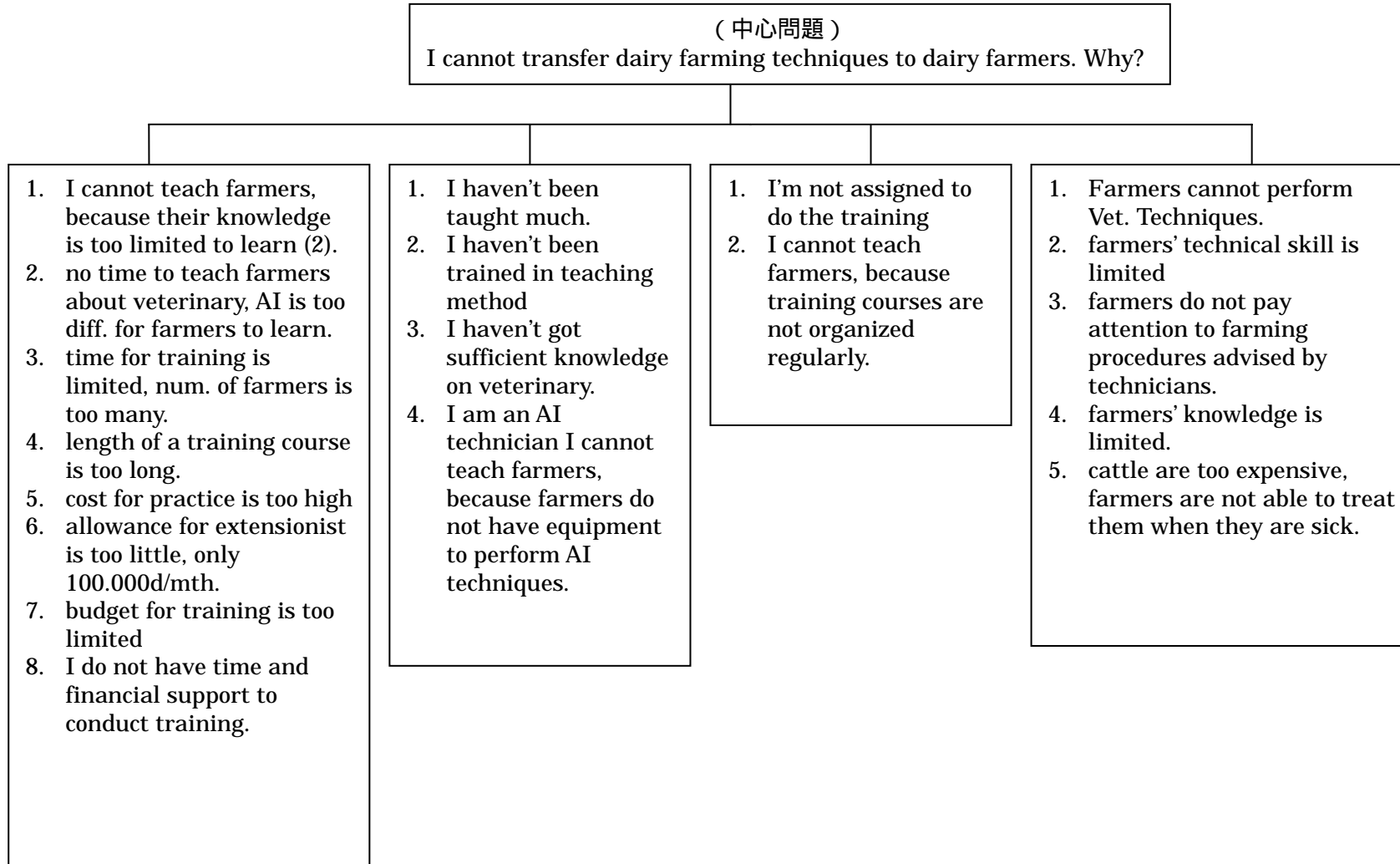
2	8:45-9:00	Speech
	9:10-11:15	AI for Cattle
	14:30-16:00	Milking technique and processing milk products
	16:00-16:30	Divide trainees into groups of practice
	16:30-18:30	Practice about milking + feeding
3	5:00-7:00	Practice about milking + feeding
	8:00-11:00	Reproduction diseases + houses for dairy cattle
	14:30-16:00	Define exactly time to do AL for dairy cattle
	16:00-18:30	Practice about milking + feeding
4	5:00-7:00	Practice about milking + feeding
	8:00-11:00	Technique of forage (plant, harvest, process, stock,...) for dairy cattle
	14:30-16:00	Practice about breed selection and introduce some breeds of dairy cattle + ternary
	16:00-18:30	Practice about milking + feeding
5	5:00-7:00	Practice about milking + feeding
	8:00-11:00	Nutrition in dairy cattle farming
	14:30-18:30	Method of combine feeds to make rations and standard ration for dairy cattle
		Include theory and practice
6	5:00-7:00	Practice about milking + feeding
	8:00-11:00	Diseases of dairy cattle and method of prevention and treatment
	14:30-16:00	Parasitic diseases and treatment
	16:00-18:30	Introduce medicines and feeds at shops of center
7	5:00-7:00	Practice about milking + feeding
	8:00-11:00	Technique of feeding and management
	14:30-16:00	Help delivery for cow + other techniques (shower, hair brush...)
	16:00-18:30	Practice about milking and feeding
8	5:00-7:00	Practice about milking and feeding
	8:00-11:00	Feeds for dairy cattle
	14:00-18:00	Milk quality checking, stocking and processing
		Go to visit milk processing and collection station
	5:00-7:00	Practice about milking

9	5:00-7:00	Practice about milking
	8:00-11:00	Breeds and breed selection
	14:30-18:30	Bio-product processing for dairy cattle
10	5:00-7:00	Practice about milking + feeding
	8:00-11:00	Go to visit MAIC and model farms
	14:00-16:00	Go to visit model farms
	16:00-18:30	Practice about milking + feeding
11	5:00-7:00	Practice about milking +feeding
	8:00-11:00	Economic efficiency calculate in dairy farming
	14:30-18:30	Examination both theory and practice
12	8:30	Closing training course, grant certificate

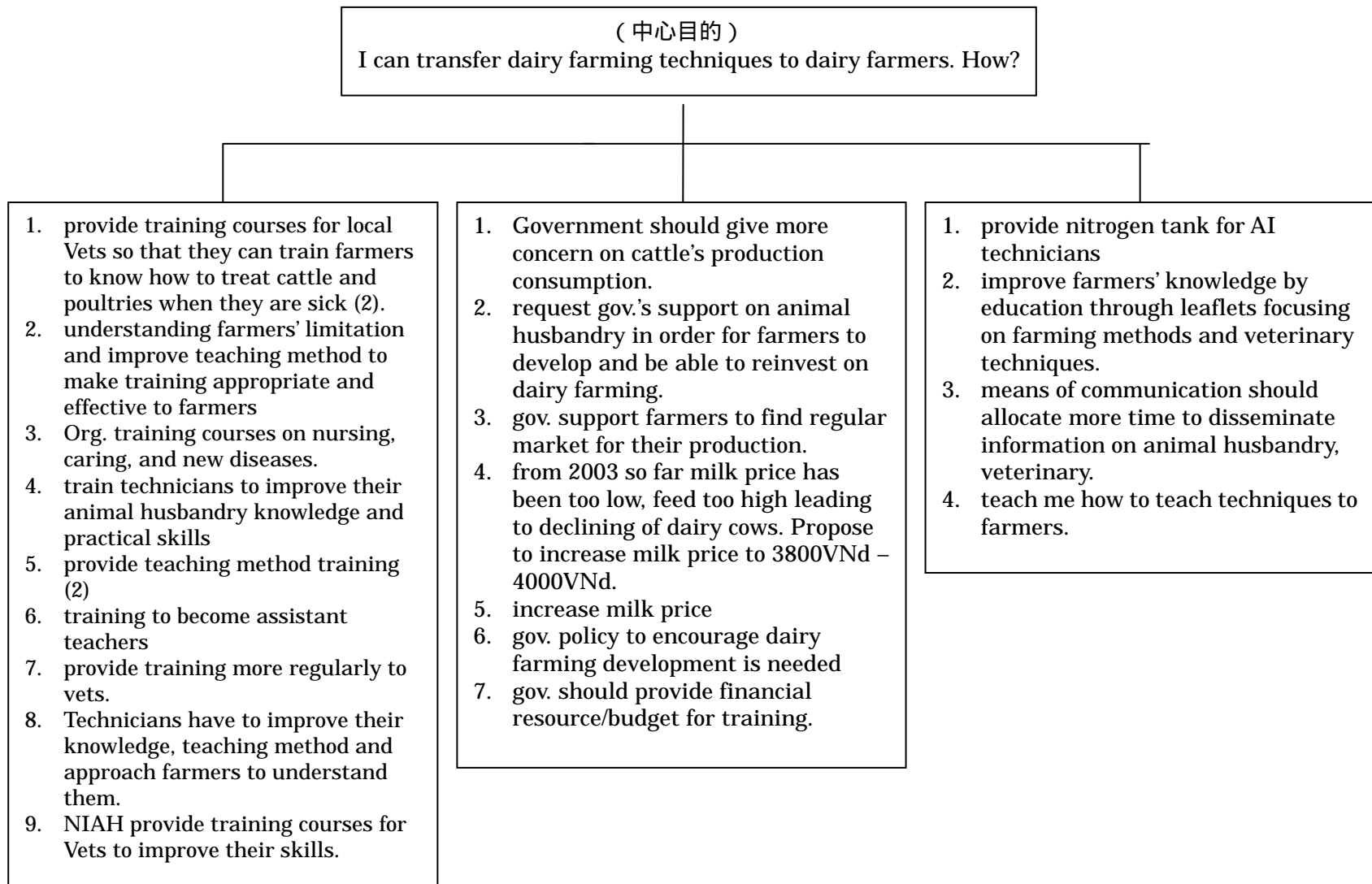
#### 事例 5 : Curriculum of AI training course at BAVI Cattle and Forage Center

Day	Time	Content
1	10:00-11:30	Receiving trainees, arrange dormitory
	14:00-16:00	Popularize regulations
2	8:00-9:00	Opening Speech
	9:00-11:00	Development of dairy and beef cattle in Ha Tay
	13:30-16:00	AI recording method and breed management in Ha Tay
	16:00-18:00	Practice AI for cattle
3	7:30-11:00	Breeds and breeding in Vietnam
	13:30-16:00	AI for cattle
	16:00-18:00	Practice AI for cattle in farms
4	7:30-11:00	Practice on pelvis
	13:30-16:00	Practice on live cow and pelvis
	16:00-18:00	Do AI for cattle in farms
5	7:30-11:00	Cattle diseases and treatment
	13:30-14:00	Practice on veterinary
	16:00-18:00	Reproduction disease treatment
6	7:30-11:00	Feeding and management for cow
	13:30-16:00	Detect suitable time for AI
	16:00-18:00	Check estrous cow

7	7:30-11:00	Help delivery for cow; teach calf to eat early
	13:30-16:00	Practice on live cow and pelvis
	16:00-18:00	Do AI for cattle in farms
8	7:30-11:00	Reproduction diseases and treatment
	13:30-18:00	Reproductive examination on live cow
9	7:30-11:00	Nutrition for ruminant
	13:30-16:00	ET technology
	16:00-18:00	Practice on pelvis
10	7:30-11:00	Practice super ovulation
	13:30-18:00	Practice on live cow
11	7:30-11:00	Go to visit farms and forage field
	13:30-18:00	Practice on live cow and pelvis. Do AI for cattle
12	7:30-11:00	Reproduction disease treatment
	13:30-18:00	Hormone for reproduction, practice on pelvis
13	7:30-11:00	Examination and treatment for late reproduction cow
	13:30-18:00	Practice on live cattle and pelvis
14	7:30-18:00	Embryo collection and transfer
15	7:30-11:00	Breed management
	13:30-18:00	AI recording method and practice on cow
16	7:30-11:00	Reproductive examination and treatment
	13:30-18:00	Practice on live cow and pelvis
17	7:30-11:00	Planting grass and forage processing
	13:30-16:00	Practice and practical examination
18	7:30-11:00	Housing for cattle
	13:30-18:00	Practice treatment for late reproduction cattle + AI for cattle
19	7:30-11:00	Check semen
	13:30-18:00	Practice and examination test for trainees
20	8:00 – 11:00	Closing and grant certificate

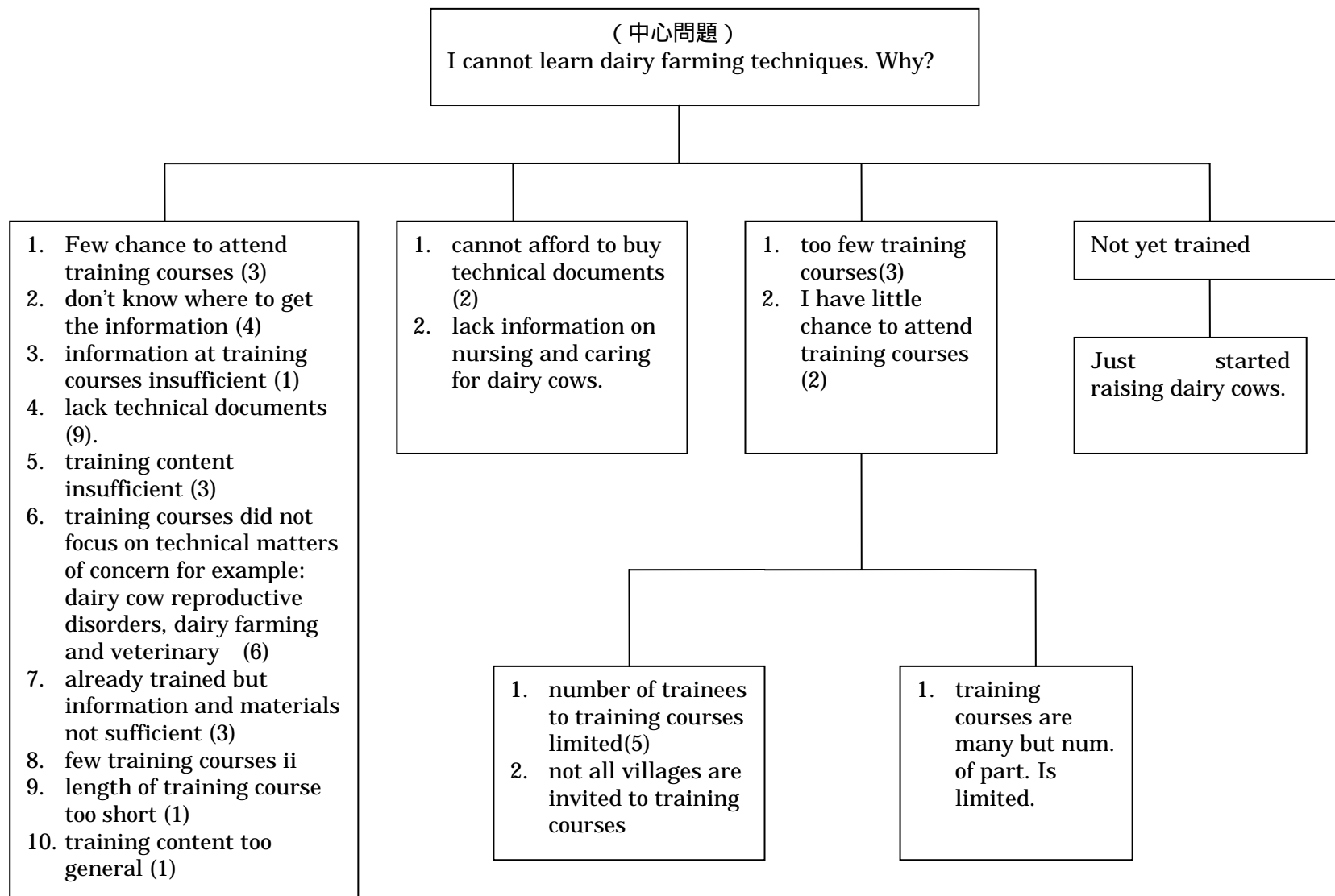


普及する側の問題分析系図(問題点の共有)【2005年8月2日(火) Vinh Phuc 省 Vinh Thuong 郡】



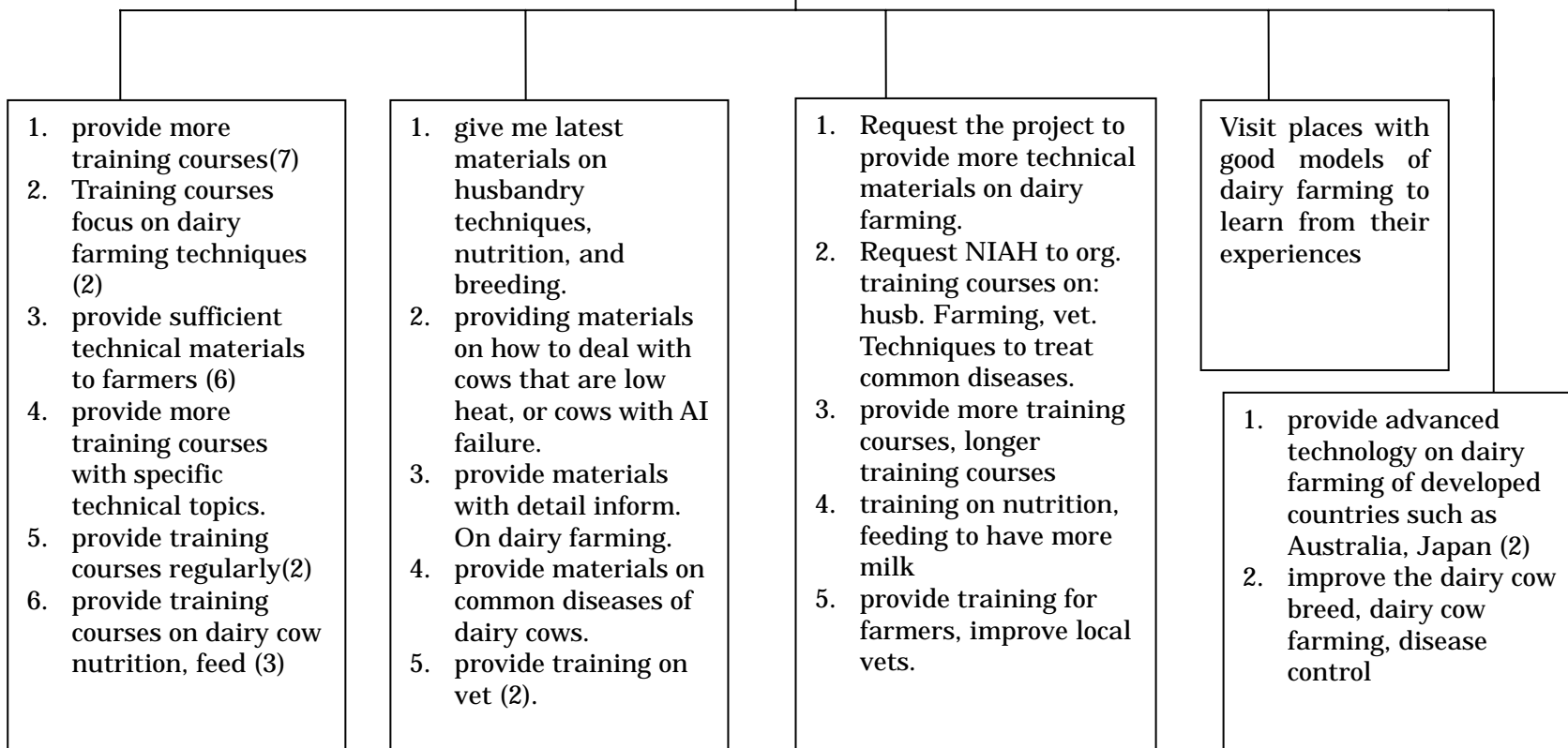
普及する側の目的分析系図（解決手法の共有）【2005年8月2日（火） Vinh Phuc 省 Vinh Thuong 郡】



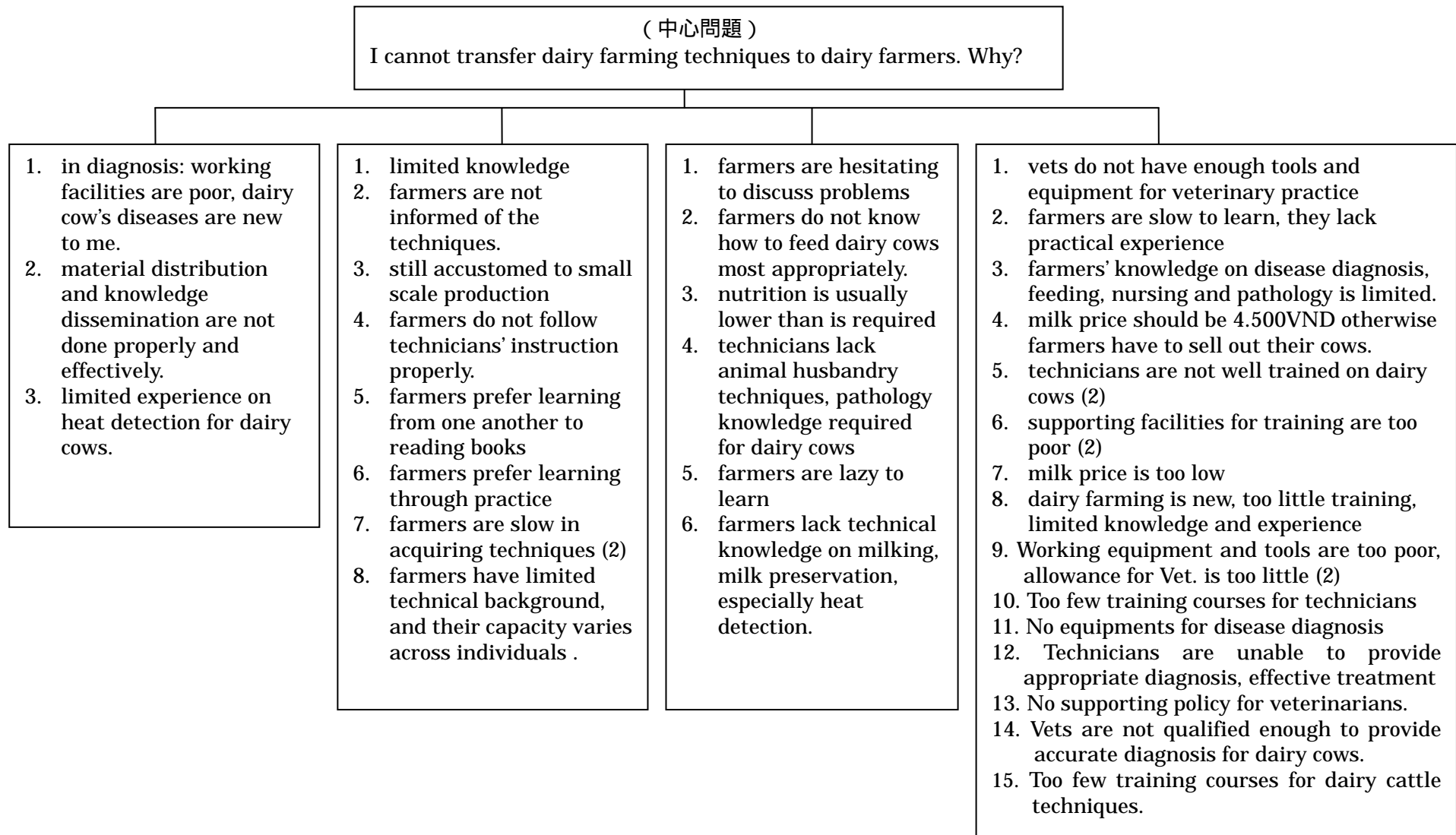


酪農家側の問題分析系図（問題点の共有）【2005年8月2日（火） Vinh Phuc省 Vinh Thuong郡】

(中心目的)  
I can learn dairy farming techniques. How?



酪農家側の目的分析系図（解決手法の共有）【2005年8月2日（火）、Vinh Phuc 省 Vinh Thuong 郡】



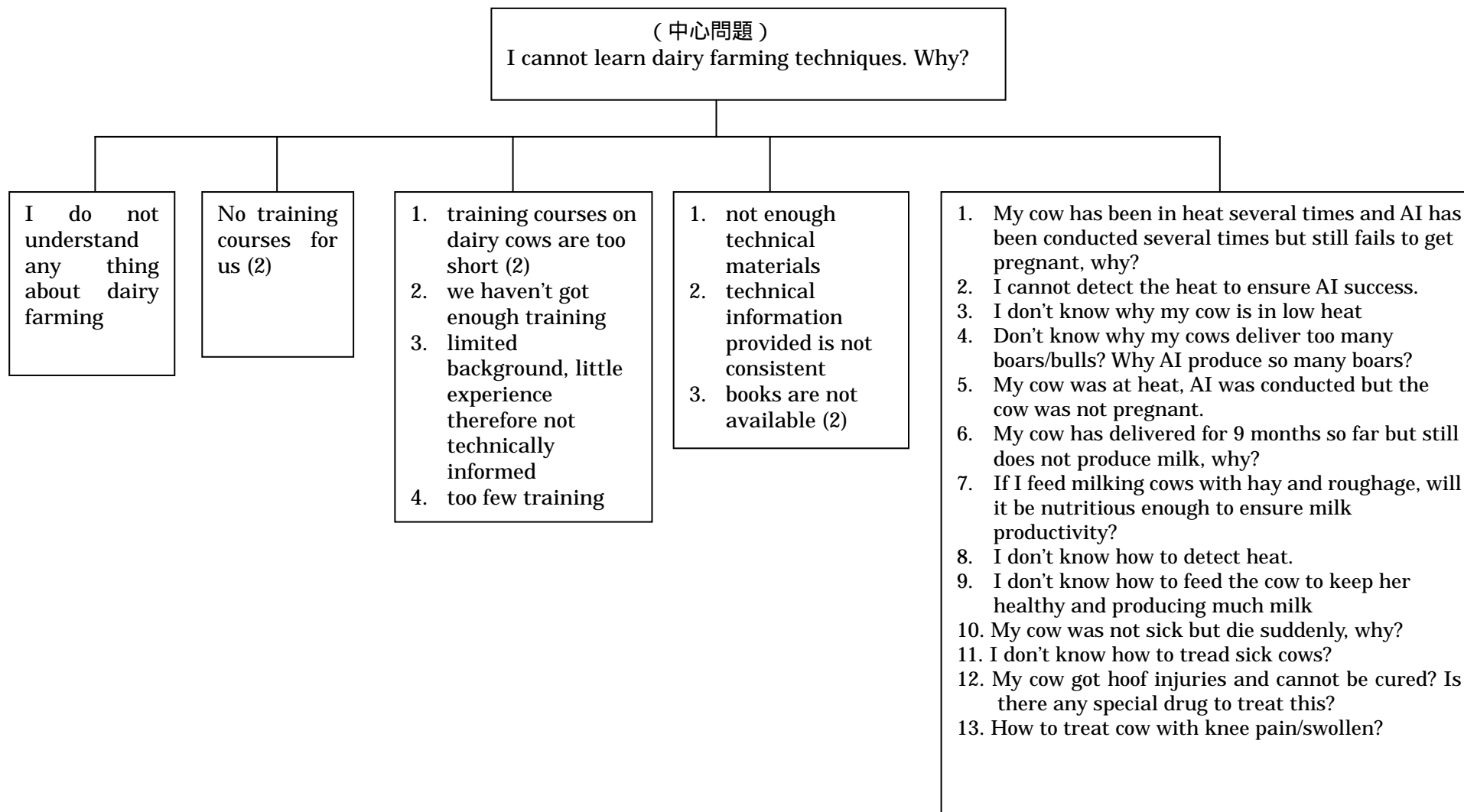
(中心目的) I can transfer dairy farming techniques to dairy farmers. How?

1. provide training courses on dairy cow diseases for technicians
2. training local Vets
3. provide allowance for local vets.
4. provide training courses to improve AI techniques for AI technicians.
5. provide sufficient nitrogen tanks to AI technicians in order for them to do AI timingly
6. provide modern disease diagnosis equipment for dairy cow centre (2)
7. retrain technical staff
8. provide trainings focusing on vital diseases of dairy cows.
9. provide equipment for AI, for semen storage.
10. improving technicians' knowledge
11. provide essential tools for local vets: stethoscope, syringe, thermometer, virginal cleaning tube.

1. study tours to successful models
2. more training courses for dairying farmers on veterinary, disease detection
3. in depth/intensive training on AI (2)
4. training combined theory with practice, twice a year (10 days each) is suitable for farmers
5. teach farmers to detect cow heat and ways to do AI
6. provide visual aids for training
7. guide farmers on how to diagnose dairy cows' diseases in the form of OJT
8. provide materials related to dairy cow farming.
9. provide training courses on dairy farming for trainers.

1. Ha Nam needs JICA assistance to establish dairy cow centre between 2005 and 2010.
2. technicians need to learn to be able to diagnose and treat dairy cow's diseases
3. train technicians to be able to treat: staphylococcus, cervicitis, arthritis, malnutrition
4. intensive training on dairy cow infertility
5. learn more about dairy cow malnutrition and appropriate diet for dairy cows
6. Trainers should train farmers on how to prepare feed for dairy cow by demonstration.
7. technicians need to learn more about abomasal disease, hoof injuries.

1. repeat training courses for in order for them to change their attitudes and practices
2. establish association for dairy farmers
3. provide intensive training course on veterinary, animal husbandry techniques, appropriate feed preparation
4. provide training on pregnancy check up, mastitis, cervical tumor, uterus diseases etc.
5. provide intensive training on obstetric diseases



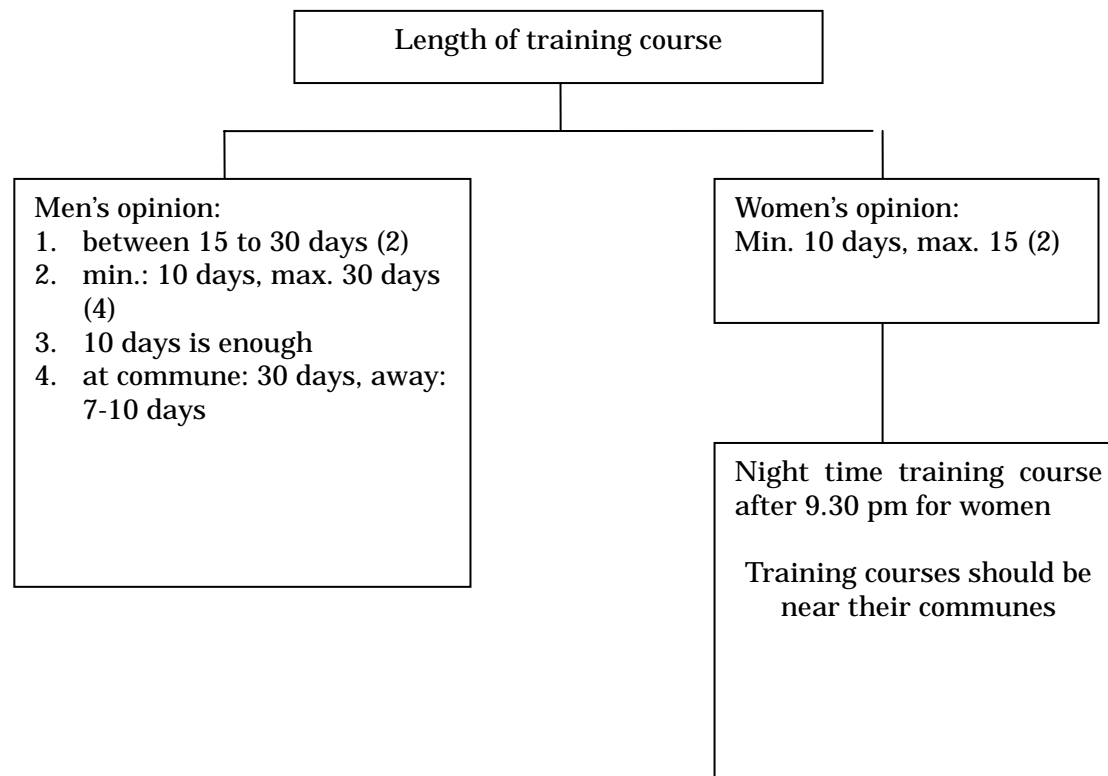
(中心目的)  
I can learn dairy farming techniques. How?

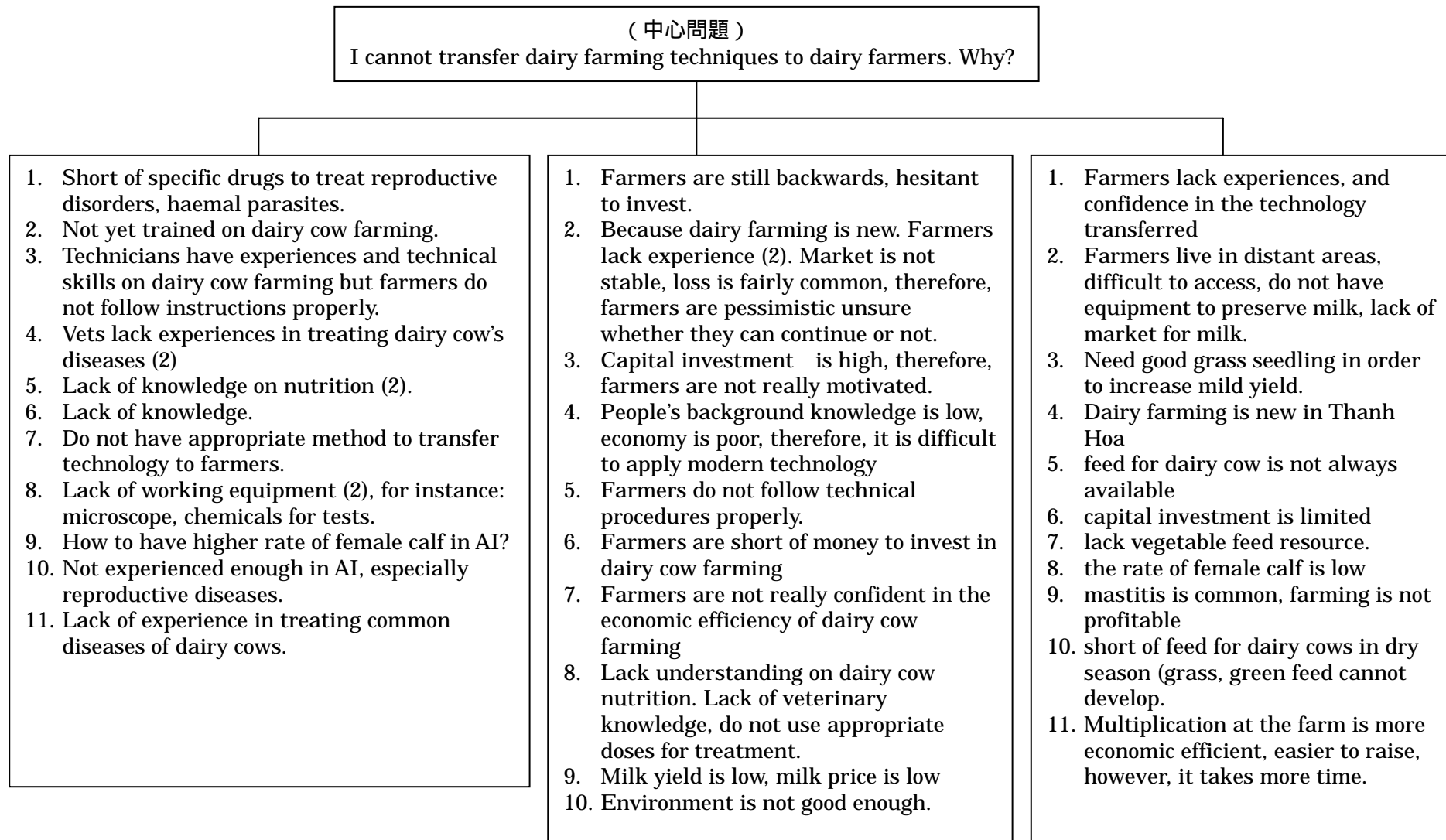
1. I want the centre to org. training courses every 3 months focusing on disease prevention and treatment, malnutrition and feeding.
2. I want to be trained on disease prevention and treatment for dairy cows (3)
3. training more AI technicians
4. provide materials and training courses on feeding for dairy cows
5. my cow has a pain in the leg, treated but not better, mild fever, poor appetite why?

1. provide books or magazines on dairy cow farming
2. provide experiences of other places for us to learn
3. I want to know about common diseases of dairy cows
4. provide more information on veterinary techniques
5. I can learn about techniques through reading
6. org. training courses on common diseases to dairy cow farmers
7. provide information on how to feed cows to ensure nutrition for them.

1. teach me to recognize sick symptoms of cows
2. give me address where high quality grass is sold
3. teach me to detect the cow in heat
4. I don't know why the cow stop milking just after the second milking. And that has lasted for 1 month so far.

I have a son, he is a veterinarian, I want him to be trained to become AI technician, is this possible?





普及する側の問題分析系図（問題点の共有）【2005年8月12日（金） Thanh Hoa 省 Tho Xuan 郡】



(中心目的) I can transfer dairy farming techniques to dairy farmers. How?

1. Provide technicians with Video tapes for them to conduct technology transfer to dairy farmers
2. Allocate some fund to organize training courses
3. Need illustrative pictures for technology transfer
4. materials for farmers should be simple because they have difficulty in memorization.
5. Need models for farmers to see by themselves and learn.
6. a supporting policy is needed to assist farmers when they have not been able to gain profit from dairy farming.
7. Provide farmers with dairy farming materials in the form of leaflets with pictures for illustration.
8. Give farmers more land to grow grass or set low tax for land in order to support farmers to develop animal husbandry.
9. More investment for farmers is needed ( for instance, breeder, land)
10. it is necessary to provide farmers with initial investment, give them veterinary tools, good drugs and qualified technicians to be responsible for each region, locality (these people should be given appropriate allowance)
11. Some fund must be allocated for the training for farmers.
12. Need suggestions for the specific drug to treat reproductive disorders, parasitic hematologv

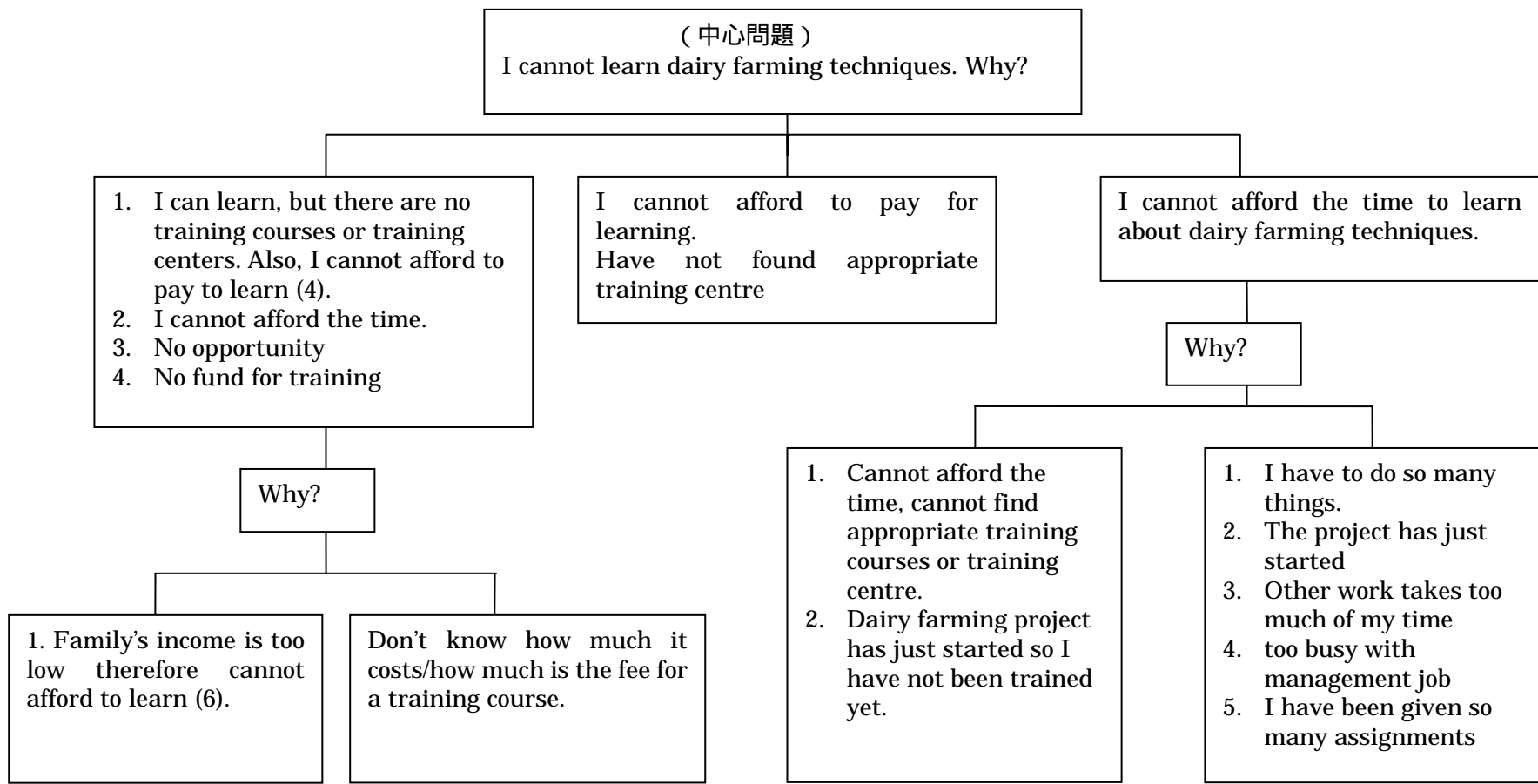
1. regularly updated with information regarding dairy farming.
2. Improve AI results.
3. Organize training courses on dairy cow farming for technicians (3).
4. Need training on teaching methodology.
5. Technicians should be trained and retrained with practices every year
6. Allowed to participate in training focusing on dairy cow farming (3)
7. Allowed to participate in training courses focusing on feed and diseases.
8. Identify area where climate is suitable for dairy cow farming.
9. Organize training courses for farmers to provide them with technical information regarding dairy cows.
10. Being provided or allowed to borrow tools such as microscope, device to test mastitis.
11. Training on teaching method for agriculture extension is needed.
12. We need knowledge to manage the cow herd.
13. More training on management, nursing, disease prevention (basically practical training) for technicians is needed.
14. Organize study tours for farmers to successful dairy cow farm.
15. Organize training courses for Veterinarians focusing on common diseases of dairy cows.

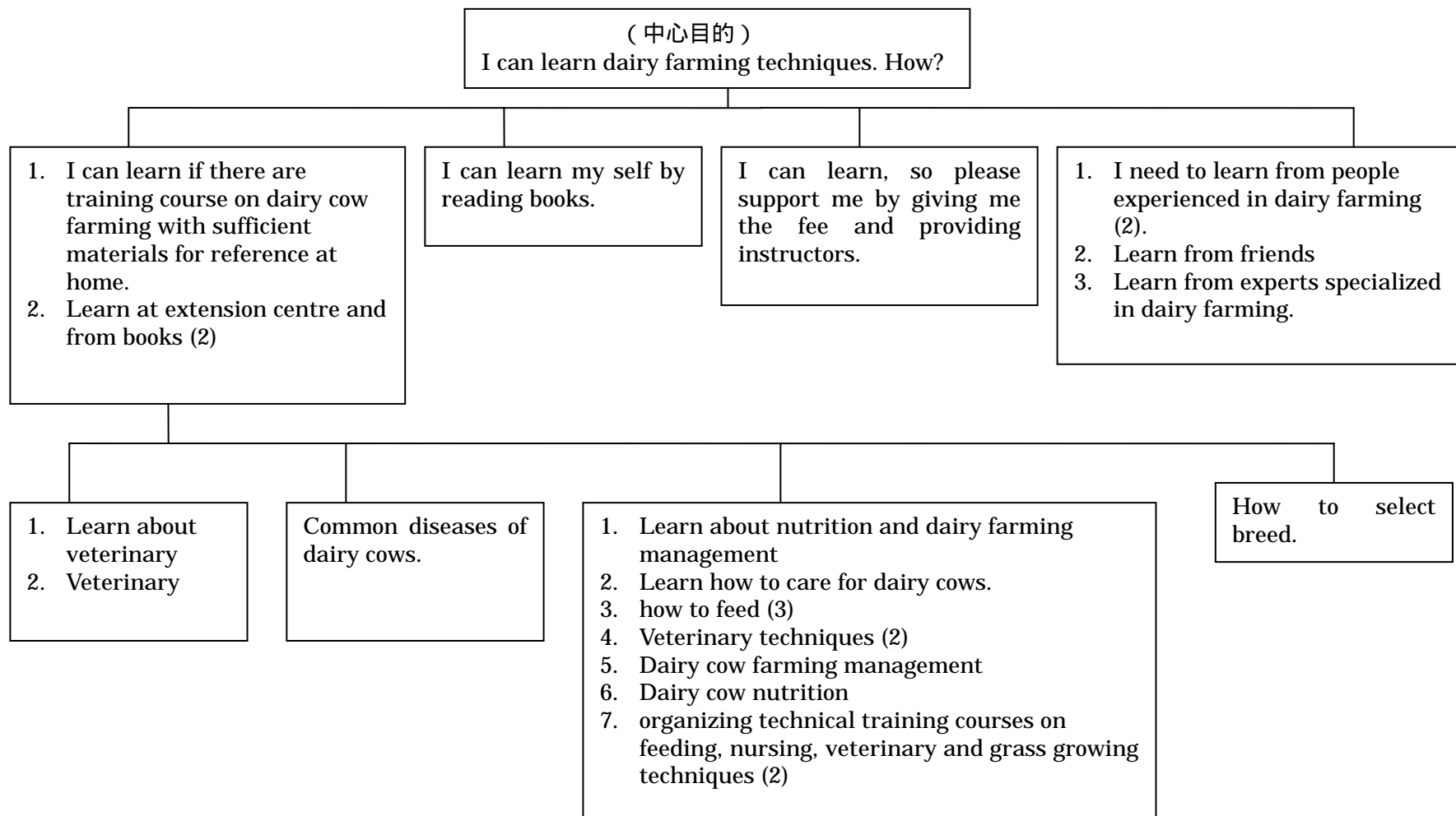
1. It is necessary to campaign to help farmers understand the usefulness of dairy cow farming
2. Campaign to raise farmers' awareness of the usefulness of dairy cow farming.

(cont.)

13. Provide appropriate grass seedlings for dairy farming households
14. Provide address where drugs treating mastitis and reproductive disorder are sold.
15. Provide contact number/person for them to consult when necessary.
16. A lab. that can do antibiotics sensitivity test is needed to improve the treatment effect for dairy cows.
17. Appropriate devices for mild preservation are needed for households living far from the centre or milk factory.
18. More veterinary devices/equipment are needed
19. Organize study tours for farmers to places where dairy farming is well developed/ successful.

普及する側の目的分析系図(解決手法の共有)【2005年8月12日(金) Thanh Hoa 省 Tho Xuan 郡】





酪農家側の目的分析系図（解決手法の共有）【2005年8月12日（金） Thanh Hoa 省 Tho Xuan 郡】

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0. Definition of wording used in this minutes

Wording	Definition
NDDP	National Dairy Development Program
Farm	Those who are getting their income from raising cattle.
Small scale dairy farm	Farm less than 10 heads of dairy cattle raised.
Medium scale dairy farm	Farm with 10 to 50 heads of dairy cattle raised.
Extension	Action to transfer proper and appropriate dairy techniques needed for farmers.
Extensionist	General term for national trainer and local trainer
STED	Station for Training and Extension of Dairy Technologies
National trainer	Trainer at national level, who is assigned to STED as a full-time C/P to Japanese experts.
Local trainer	Extensionist such as Veterinarian, AI technician, Extension personnel both in government and private, who participate and complete training course.
Milk productivity	Milk production from one dairy cattle.

## **1 . Background Information**

### **1-1 Socio-economic conditions**

#### 1-1-1 General

Land area of Vietnam is 329.241 km<sup>2</sup> which is 90% of that of Japan. Population is 82 million (as of October 2004), of which growth rate is 1.18 %. More than 90 % of the population belongs to the Kinh ethnic group, while the remaining consists of 54 minor ethnic groups. Buddhists occupy 80 % of the population, then, Catholic and Cao Dai follow.

The democratic Republic of Vietnam was established in 1945 and divided into the North and the South in 1954 according to Geneva Convention. After the Vietnam War, a unified nation was established as the Socialist Republic of Vietnam.

Since the unification, Vietnam has adhered socialism, however, since 1986, the Doi Moi Reforms have been promoted for introduction of foreign investment and strengthening of economic competitiveness in the international market. On the other hand, problems of disparity in wealth, bribery and bureaucracy have been prevailing.

Vietnam consists of 64 provinces, which are categorized into seven regions, namely, Northern Mountains, Red River Delta, North Central Coast, Central Coast, Central Highlands, South East and Mekong River Delta. Northern Mountains and Red River Delta are defined as “northern region”, while Central Coast, North Central Coast and Central Highlands are defined as “central region”. “South region” is composed of South East and Mekong River Delta.

#### 1-1-2 Economy

Agriculture, forestry, fisheries and mining are major industries in Vietnam. GDP is USD 39 billion (2004, IMF), which is equivalent to a per-capita GDP of USD 483 per person. Economic growth rate was 7.2 % per annum (draft, 2003) while price escalation rate was about 3.0 % (2003). Unemployment rate in the urban area was 5.8 % (2003).

The amount of export in 2003 (draft) was USD 19.87 billion, while that of import was USD 24.95 billion. Major exported commodities are crude oil, textile and marine products, whereas imported commodities were machines, textiles, oil products and leather materials.

Currency of Vietnam is Dong (VND) whole exchange rate to US dollar as of July 2005 was USD 1 = VND 15,863.

The Doi Moi Reforms came into effect in late 1980's and the economy of Vietnam recorded remarkable economic growth rate of 9 % and the economy of Vietnam recorded remarkable economic growth, the foreign investment to Vietnam fell down due to influence of Asian economic crisis and competition with neighboring countries, then growth rate fell to 4.8 % in 1999.

Growth rate recovered to 6.7 % in 2000 and maintained 6.8 % (2001), 7.0 % (2002) and 7.0 % in 2003 even with some constraints such as chronic trade deficit and unfavorable conditions for the investment.

### 1-1-3 Poverty

Food poverty rates in 1993 were 24.9 % for the whole country and 29.1 % for rural area, whereas they decreased, but 37.4 % of households in the country or 44.9 % in rural area are classified “poor households”. Since 77 % of the total households in the country reside in rural area, it is estimated that 95 % of the poor households reside in rural area.

Ministry of Labor, Invalids and Social Affairs (MOLISA) defines “poverty line” according to per capita income by residential area are as follows:

- Urban area: VND 150,000
- Islands and mountainous area: VND 80,000
- Other plain rural area: VND 100,000

Average poverty rate of the country was estimated at 9.5 % in 2003.

### 1-1-4 Human Resources

It is well known that education level of the Vietnamese people is quite high. However, constraints of human resources capacity are often pointed out in every situation of development activities. Capacity development declined both in term of quantity and quality due to insufficient budget allocation, and the incompatibility between development programs and new demands which occurred in drastic changes of socio-economic conditions after the Doi Moi Reforms.

## 1-2 Description of the Sector

### 1-2-1 Agriculture

Vietnam’s agriculture has made remarkable progress in the fields of agriculture including the crop and livestock production, forestry in the past 10 years. The growth rate is stable (from 4% to 4.5% annually) with the contribution to the GNP of 24%, creating jobs for 75% of population at working age. Agriculture has been playing an extremely important role in the country’s economy. Agricultural land in Vietnam in 2001 was 93.82 million ha, which occupied 28% of the total land. Major perennial commercial crops

Table1-2-1 Agricultural Land (2001, Unit: 1,000ha)

Lowland	Upland	Other annual crop	Garden yard	Perennial crop	Pasture land	Inland fishery	Total
4,148	634	1,244	623	2,192	38	503	9,382
44%	7%	13%	7%	23%	0.4%	5%	100%

Source : Statistical Year Book 2002

Farm lands per farm household consisting of lowland, upland and land for perennial crops by region were as follows:

Table1-2-2 Farm Land per Farm Household ( 2001, Unit: ha/household)

	Northern Region		Central Region	Southern Region	Nation Average
	Red River Delta	Northern Mountains			
Land Holding	0.24	0.38	0.78	1.10	0.71

Source : Estimated from data of “Vietnam Agriculture and Rural Area in the Renovation Period”

As shown above, land holding size is small particularly in the northern region. Farmers must spend lots of inputs in order to earn necessary income through crop diversification and improvement of productivity. Since prices of rice in the international market have fallen these years, the farmers are forced to diversify the crops for better income in their limited lands. Annual productions of the food crops in Vietnam are shown below.

Table1-2-3 Production of Major Food Crops ( Unit: 1,000 ton)

Year	Rice	Cassava	Maize
2002	34,063	4,157	2,315
2001	32,108	3,509	2,162
2000	32,529	1,986	2,006

Source : Statistical Year Book 2002

Vietnam has been a “rice exporter” since 1989, and is the second largest exporter following Thailand. According to FAO statistics, ‘FAOSTAT’, the rice production of Vietnam in 2002 was 22.976 million tons, of which 14% or 3.275 million tons ( 20% of domestic consumption) was exported.

According to the decline of the international rice price, the rate amount of rice export has decreased even with increase of exported volume. Qualitative improvement of rice is a main concern of Vietnam at present.

As for annual commercial crops, sugarcane (16.8 million tons), peanut (0.397 million tons), soybean (0.201 million tons), rush (0.085 million tons) and other are cultivated, while coconut (0.841 million tons), coffee (0.776 million tons), and rubber (0.327 million tons) are major perennial commercial crops.

#### 1-2-2 History of Dairy Development in Vietnam

Since 1920s, French had brought Zebu cattle such as India Red sindhy to Vietnam. Those cattle had been rising in Ho chi minh city and Hanoi in order to satisfy milk demand of French in Vietnam.

In the period 1937 – 1942, some dairy farms were set up in the South with total milk yield of nearly 400 ton.

In the North: from 1954 to 1960, Vietnamese Government started to pay attention to developing livestock including beef and dairy cattle. Some state-owner farms such as Ba Vi in Ha Tay, Moc Chau in Son La, Ha Trung in Thanh Hoa and some stations researching on breed and dairy raising techniques had been established. In 1960, it was the first time Beijing dairy cattle which was black and white and Holland origin were raised experimentally in Ba Vi, Sa Pa and Moc Chau.

In 1970, Cuban government donated 100 Holstein Friesian dairy cattle which then kept in Moc Chau. At the same time, Cuban government supported Vietnam to build up Moncada sire center for producing frozen cattle semen. This was the only processing frozen semen and the most modern centre in Asean countries. The program of crossbreeding between Holland and Indian dairy cattle and the program of sindhyalization have been carried out at the same time.



From 1976, dairy cattle have been moved to Duc Trong in Lam Dong and the movement of producing dairy cattle developed very well in South East area and Ho chi minh city.

1975 – 1985: due to poor socio-economics condition movement. Private sector and farming has been encouraged very much. Thank for the renovation, living condition was improved and milk demand was increase as well. This situation was leading to a movement of setting up private farms and dairy cattle herd has been increasing very quickly in number and quality as well.

### 1.2.3 Present Dairy situation

According to national statistic, the total of dairy cows in Vietnam is 41,152 heads in 2001, and is 55,848 heads in 2002, with average growth rate is 35.7% per year. Total milk production is 64.7 thousand tons in 2001, and 78.5 is 55,848 thousand tons in 2002 with growth rate is 21.3% per year.

Table 1-2-4 Volume of dairy cow, milk production and annually growth rate

Criteria	1990	1992	1994	1996	1998	2000	2001	2002	2003	2004
No. of dairy cow (1,000 cows)	11	13	17	22	35	35	41	56	80	95
Growth rate of herd (%)	5.0	9.0	12.9	16.5	14.6	14.6	17.8	35.4	43.3	
Total milk production(1,000tons)	9	13	16	27	52	52	65	79	126	135
Growth rate of milk production (%)	6.0	7.0	6.1	34.0	31.2	31.2	34.6	21.3	40.0	

Source: Department of Agriculture

## 1-3 National Development Strategies

1-3-1 Strategy for socio-economic development in period of 2001-2010 adopted by the 9<sup>th</sup> Party Congress

The basic policy of socio-economic development of Vietnam was identified in the Ten-Year Strategy for Socio- Economic Development 2001 – 2010 and the 7<sup>th</sup> Five- Year Plan for Socio- Economic Development 2001- 2005, which were adopted at the 9<sup>th</sup> general assembly of the communist party in April 2001. These are the uppermost official documents, which are referred to by various plans of development sectors. Annual budget allocation for the public investment is also determined in conformity to the policies mentioned in these documents. The Ten- Year Strategy clearly worked out a development vision of Vietnam to shift from agricultural nation to industrial one with the following targets.

- To double the GDP by 2010 with an economic growth rate of 7.5% from 2001 to 2005.
- To increase proportion of the investment in GDP from 25% of 1990s to 30%.
- Exports are to increase at a rate more than double that of GDP growth.
- Agriculture is to account for 16-17% of GDP, industry 40-41%, and services 42-43%.
- Agricultural labor is to drop to around 50% of the workforce.
- Urban population is to be increased from 25% to 33%.

The target was set forth:

+ “Increase the livestock component in the total agriculture output value by 25%”.

1-3-2 National Strategy on nutrition in period of 2001-2010(Decision No.23/2001/QD-TTg dated February 22, 2001)

Vietnam is the first country that drew up a full poverty reduction strategy paper (hereinafter referred to as “PRSP”) among East-Asian countries. The Ministry of Planning and Investment (hereinafter referred to as “MPI”) took an initiative and collaborated with ministries concerned. A draft PRSP was issued in March 2003. Then the draft PRSP was renamed as “Comprehensive Poverty Reduction and Growth Strategy” (hereinafter referred to as “CPRGS”, which was proposed to the donors unofficially at an intermediate CG Meeting in May 2005.

The government of Vietnam placed CPRGS as an action plan to implement the Five- Year plan and The Ten- Year Strategy with the targets of:

i) achievement of economic growth and ii) poverty reduction and social equity. Based on an understanding that the poverty reduction is closely connected with the economic growth, Vietnamese development strategies were formulated with the poverty reduction approach through acceleration of economic growth and equal distribution of wealth.

The target was set forth:

- + Rate of malnutrition subjecting to age in children under 5 years old counting in the whole country decreases by 1.5% annually so as to reduce by under 25% in 2005 and under 20% in 2010.
- + Rate of height malnutrition subjecting to age in children under 5 years old counting in the whole country decreases by 1.5% annually.
- + Rate of newborn baby under 2,500g weight reduces to 7% in 2005 and 6% in 2010.
- + Reduce by 1% annually the rate of continuous energy shortage in women of child-bearing age in the whole country.

1-3-3 National target plan on hunger eradication, poverty reduction and employment in period of 2001-2005 (Decision No.143/2001/QD-TTg dated September 27, 2001)

The target was set forth:

- + Generate the employment for 1.4 to 1.5 million per year.
- + Increase the use of labor’s time in rural areas to 80% in 2005.

1-3-4 National Plan on Dairy Cattle Breeding in Vietnam for the period of 2001-2010 (Decision No.167/2001/QD-TTg dated October 26, 2001)

The target was set forth:

- + Increase the total population of dairy herd up to 200,000 heads in 2010 and 600,000 heads in 2010.

#### **1-4 Prior and On-going Project/Assistance**

##### 1-4-1 Prior Project/Assistance by JICA

Name of the Project: Project for strengthening of National Institute of Veterinary Research in Vietnam.

Overall Goal: The livestock production in Vietnam increased by improved diagnostic technology of animal infectious diseases.

##### 1-4-2 On-going Project/Assistance by JICA

Name of the Project: Project for improvement of Cattle Artificial Insemination Technology in Vietnam.

Overall Goal: The productivity of milk and beef will be increased by improving cattle artificial insemination techniques.

##### 1-4-3 Activities of Donors

The start of the Belgian support to the development to the development of the dairy sector in North Vietnam goes back to 1996, with the first phase of the "Development and Extension of the Dairy Farming Activities around Hanoi". This project focused on rural Hanoi and one of the adjacent provinces, Vinh Phuc.

Despite the difficulty at that time, related to a not very favorable international milk market and the fact that dairy farming in the North of the country was relatively new, the Project achieved good results, aiming basically at the increase of the national dairy production and the restoration of its profitable.

Based on the achievements of the first project phase and the recommendations of the evaluation mission, both governments decided to continue the operation and extend the target area geographically to include three additional provinces.

The project has two principal objectives, which are closely linked to each other. One objective relates to the increase of the number of farmers becoming involved in dairy farming, the increase of the number of dairy cows on their farms, as well as his ability to better manage the overall dairy operation. The relevant activities relate mainly to access to credit and insurance, training and extension, and the development of the necessary social and physical infrastructures. The second objective relates to the improvement of the support services, at all levels, needed to develop the complex dairy sector.

Given the diversity of the dairy sector and its stakeholders, the Project makes provision for the creation of a Coordination Committee, to enhance cooperation and collaboration among the different sectors, including the farmer, the government 's technical services at all levels, and the private sector.

The National and International coordinators will ensure the management of the Project, while the Project Steering Committee will guide the implementation of the Project, and take the decision that are required to be taken at its level. The project duration is 48 months.

## **1-5 Detail of requested Project**

### **1-5-1 Background of the requested project**

The Vietnam is located in the east side of the Indochinese Peninsula, with a population of 80,900,000 and GDP per capita of 483US dollars. Agriculture is a key industry which occupies 67% of all the work force and 23% of all GDP of the country.

After adoption of a "doi moi (reform) policy" in 1986, the country is advancing the economic-reform and is promoting market-economy-izing under socialist political power, and modernization for the purpose of holding down achievement of 7.5% of GDP growth rates, and the rate of poverty to the level of 5%.

However, the subject such as a nutrition improvement of people and a measure to increase farmer's income, have not been necessarily progressing towards solution. It is urgent subject to take necessary measure toward a nutrition unbalance of people, the income differential between a city and a farm village, etc. For this reason, the quality improvement of the livestock used as a source of animal protein is mentioned in the "Strategy for Socio-Economic Development" (2001-2010). In order to achieve the goal, "National Dairy Development Project" (2001- 2010) is defined about the dairy development concerning the milk production which serves with reliance and safe source of protein. In order to achieve the goal, increase of good dairy cows and improvement of milk production self-sufficiency rate are in trial stage through activating small and medium scale dairy farms.

Under such background, the Vietnam government requested this cooperation to Japan which have experience of Japan-Vietnam Technical Cooperation Project in the sector of livestock industry, and have high technical skill.

### **1-5-2 JICA's Technical Cooperation until now**

In the "JICA's plan for country-specific program implementation, 2004", the "Program for supporting agriculture, forestry and fishery technical improvement and its extension" is written as a important subject in "agricultural and farm village development". In this connection, "The Project of strengthening the National Institute of Veterinary Research" (2001-2005) and "The Project for improvement plan of Cattle Artificial Insemination technology" (2001-2005) have been implemented. With this implementation, the Projects have achieved the outputs such as capability building for the targeted institutions in the field of dairy development and Animal health.

About the requested project, necessary measures are recommended by the Final Evaluation Committee (enforced in March, 2005) of " The Project for improvement plan of Cattle Artificial Insemination technology "as follow. "It is very important to examine the necessary policy and action such as construction of the extension system in transfer technology etc for the small and medium scale dairy farms who is a final beneficiary" while promoting a national policy further from now on

### **1-5-3 Present Status of the Requested Project**

Ministry of Agricultural and Rural Development (MARD) showed an understanding in general for the concept of a project to be "improvement in the milk productivity of the small and medium size dairy farms of the target area". For this reason, an Ex-ante Evaluation Study Team is dispatched in order to hear the needs of the project site and to form and agree the outline of the project together with Vietnamese government, at this time.

**2. Consistent with Japan’s foreign aid policy**

**2-1 Consistent with Japan’s foreign aid policy**

According to the Japan’s Official Development Assistance Policy for Viet Nam, The Japanese government holds rural development policy for institutional research as one of the priority promotion for Vietnam.

**2-2 Consistent with JICA’s plan for country-specific program implementation**

According to the Japan’s Official Development Assistance Policy for Viet Nam, The Japanese government holds rural development policy for institutional research as one of the priority promotion for Vietnam.

**3. Present situation of the targeted development project and analysis**

**3-1 Present situation of the targeted development sector**

Since the Decision no. 167/2001/QĐ-TTГ issuing by Prime Minister regarding about “Solutions and policies of development on dairy cattle breeding in Vietnam in the period 2001 – 2010”, dairy cattle herd has been developing very quickly.

Presently, more than 30 provinces are conducting Dairy cattle development program, many private farms has more than 100 head.

- Breed structure: Now Vietnam has 88,834 heads of hairy cattle. In which, 87% is HF crossbred including F1, F2, F3, F4 raising all over Vietnam. There are 11,000 pure HF and Jersey making up more than 12% of the total population. Those pure cattle are keeping in Son La, Moc Chau, Lam dong, Tuyen Quang, Thanh Hoa, Ho chi minh city and some other provinces.

Table3-1- 1 Dairy cattle population by area

No.	Area	Number of dairy cattle(head)	Percentage (%)
1	North and northern coastal area	21,121	23.78
2	Central region and Central Highlands	5,665	6.36
3	South and Ho chi minh city	62,048	69.86
	Whole country	88,834	100.00

Ho chi minh city and South provinces have a large number of dairy cattle which make up nearly 70% of total dairy cattle herd in Vietnam. Nearly 24% o dairy population is keeping in Northern area and more than 6% located in central region and central highland.

Table3-1-2 Milk production/lactation ( kg):

Year	1992	1994	1996	1998	2000	2002	2003
------	------	------	------	------	------	------	------

Crossbred HF	2200	2300	2500	3000	3300	3400	3450
Pure HF	3200	3400	3400	3600	4000	4500	4600

According to reports from Milk companies, in April 2004, milk companies buy about 365 ton of raw milk/day excluding some amount serving for local demand.

Table3-1-3 Total collected milk in nationwide per day

Milk company	Milk Yield ( tons)	%
1. Vinamilk in Hanoi	50	13.69
2. Vinamilk in the South	200	54.80
3. Dutch Lady	75	20.55
4. Nestle'	10	2.74
5. Others	30	8.22
<b>Total</b>	<b>365</b>	<b>100.00</b>

Table 3-1-4 Number of ruminant in the period 1994 - 2004

	Unit	Ruminant population in the period 1994 – 2004											Growth rate (%)
		1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
1. Cattle herd	Million head	3.47	3.64	3.80	3.90	3.98	4.06	4.13	3.90	4.06	4.39	4.91	4.1
2. Dairy cattle	Thousand head	16.5	18.7	22.56	24.50	26.64	29.40	35.0	41.2	55.8	80.00	95.80	48.06
3. Buffalo	Million head	2.98	2.96	2.95	2.94	2.95	2.95	2.90	2.82	2.81	2.84	2.87	- 0.04
4. Horse	Thousand head	131.1	126.8	125.8	119.8	122.8	149.6	126.5	113.4	110.9	112.5	113.37	- 1.35
5. Goat, sheep	Thousand head	427.9	550.5	512.8	515.0	514.3	470.8	543.9	569.0	621.9	780.4	1,020.0	13.84

Table3-1-5 Number of dairy cattle and milk yield from 1994 - 2004

	Dairy cattle population and milk yield in the period 1994 - 2004											Growth rate (%)
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	
1. Total ( 1000 head)	16.5	18.7	22.56	24.5	26.64	29.4	35	41.2	55.8	80	95.8	
Growth rate (%)		13.33	20.64	8.60	8.73	10.36	19.05	17.7	35.4	43.4	19.8	48.1
2. Milk production	16.2	20.9	27.8	30.7	32	39.7	52.2	64.7	95	126	151.31	
Growth rate (%)		29.1	33.1	10.4	42.3	24.0	31.5	24.0	46.8	32.6	20.1	8.3
3. Milk imported		240					455		505		689.2	
4. Milk consumption		260					507		600		840.5	
5. Self – sufficient rate (%)		8.0					10.2		15.8		18.0	

Table 3-1-6. Output value of livestock at constant 1994 price

	Year					
	1990	1995	2000	2001	2002	2003
Out put value of livestock (thousand billion VND)	10.28	13.6	18.5	19.2	21.0	22.94
Output value of livestock in output value of agriculture (%)	17.9	18.9	19.3	19.5	20.5	22.5

Growth rate in comparison with previous year (%)	-	-	6.7	4.1	9.9	8.2
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Source: Agriculture department, MARD

### 3-3 Comparison between Northern provinces and southern provinces

#### 3-3-1 Average number of dairy cattle of small and medium scale dairy farms

Table3-3-1 Number of dairy farms (who are raising dairy cattle) and dairy cattle rose as of April 2005

	Northern Provinces				Southern Provinces				Total	
	No. of farms	Ratio (%)	No. of cattle raised	Ratio (%)	No. of farms	Ratio (%)	No. of cattle raised	Ratio (%)	No. of farms	No. of cattle raised
範圍										
>1000	2	0.03	2,897	9.94	1	0.01	1,072	1.53	3	3,969
501-999	2	0.03	1,380	4.73	3	0.03	2,132	3.05	5	3,512
301-500	3	0.04	1,000	3.43	2	0.02	766	1.10	5	1,766
201-300	2	0.03	514	1.76	0	0.00	0	0.00	2	514
101-200	3	0.04	426	1.46	7	0.06	825	1.18	10	1,251
51-100	6	0.09	362	1.24	19	0.16	1,186	1.70	25	1,548
31-50	16	0.23	551	1.89	68	0.58	2,781	3.98	84	3,332
21-30	29	0.42	655	2.25	199	1.71	5,703	8.16	228	6,358
11-20	142	2.04	1,894	6.50	987	8.46	15,816	22.63	1,129	17,710
6-10	632	9.10	4,734	16.24	2,396	20.53	18,326	26.22	3,028	23,060
3-5	2,182	31.41	8,562	29.38	5,158	44.20	16,784	24.01	7,340	25,346
1-2	3,927	56.54	6,170	21.17	2,831	24.26	4,499	6.44	6,758	10,669
合計	6,946	100.00	29,145	100.00	11,671	100.00	69,890	100.00	18,617	99,035

Source: Made on the basis of reference submitted by NIAH(NDDP)

Table3-3-2 Average number of dairy cattle raised in a farm

	Northern provinces	Southern provinces
Number of dairy cattle of farms raising 1 to 50 heads in each farm	21,566 heads	62,909 heads
Number of dairy farms raising dairy cattle between 1 to 50 heads	6,928 farms	11,639 farms
Average number of dairy cattle	3.0 heads/farm	5.4 heads/farm

#### 3-3-2 Average milk production per day of a milking cow

Table3-3-3 Dairy milk purchasing production in whole country

Name of milk company	Milk production (tons/day)	Rate (%)	Area
1.Hanoi Vinamilk Company	50	12.50	Northern part
2.Southern Vinamilk Company	200	50.00	Southern part
3.Dutch Lady Company	75	18.75	Southern part
4. Hanoimilk Company	20	5.00	Northern part
5.Nestle Company	10	2.50	Northern part
6.Other company	45	11.25	Southern part
Total	400	100.00	

source : "Dairy production in Vietnam and oriented development", Dr. Hoang Kim Ziao

Table3-3-4 Estimated volume of fresh milk purchased from a farm

	Northern provinces	Southern provinces
Volume of fresh milk purchased by milk companies (tons)	80tons/day	320tons/day
Number of dairy farms	6,946 farms	11,671 farms
Volume of milk purchased from a farm	12Kg/day	27kg/day

### 3-3 Analysis

According to the report on “Dairy production in Vietnam and oriented development” by Dr. Hoang Kim Giao, the situation which dairy farming are facing, are analyzed as follows:

#### 3-2-1. Advantages and disadvantages

##### (1) Advantages

- The Domestic market is available

At the present, the milk production produced in domestic meet only 18-20% of total milk consumed as well as meet only 23-25% of the capacity of domestically milk processing companies, the rest (80-82%) of total milk consumed is imported from other countries.

- The labour is almost in rural is also available.
- The farmers have some experiences in raising dairy cows. The dairy keepers can get interest rate about 15-30% depending on different ecological conditions, herd size and investment level...
- There is a concrete State policies that is Decision No. 167/2000/QD-TTg date on 26/10/2001 of Prime Minister on measurements and policies to develop dairy cow farming in 2001-2010 period. There are also some other resolutions, decisions concern such as Resolution No. 06-NQ/TU dated on 10/11/1998 of Political Ministry on some policies to develop agriculture and rural, Resolution No 03-NQ/CP dated on 02/02/2000 of Government on farming economic, Resolution No. 09/NQ/CP dated on 15/6/2000 of Government on the shifting economic structure and consuming of agriculture products, Decision No. 225/1999/QD-TTg dated on 10/12/1999 of Prime Ministry on the approve cultivation plant varieties, livestock breeds, and forestry tree varieties in 2000-2005 period.

##### (2)Disadvantages

- The humid and hot climate that is not suitable for high-yield dairy cows as their origin.
- The raising dairy cows is not a long-time activity of farmers, so they lack the experiences.
- Lack of specific technician especially the veterinarian for dairy cows.
- The land is limit; lack of pastures; no area for grazing; lack of intensive grasses; grass and pasture have poor quality.
- The milk collection system is not timely; low buying prices don't encourage the farmer to raise the dairy cows.
- The policies, measurements on raising dairy cows are not synchronous from the central



to locals.

### 3-2-2 Future challenge (Learned experience lessons)

(1) Raising dairy cows connected with eco-environmental condition

(2) Before raising dairy cows, the breeders should:

- Be trained in basic knowledge's of breeds, feeds, breeding techniques and disease prevention for dairy cows heard;
- Set up breeding facilities with suitable equipments;
- Have pastures and/or land for grass

(3) In new regions which un-experienced in raising dairy cows, cross-bred dairy cows F1 (HF x improved Vietnam cows) are highly recommended. After breeders gain experiences and have adequate facilities for raising dairy cows, F2, F3 even pure HF cows could be introduced. A minimum scale of 4-5 cows or upward is should be set up in order to form centralized areas.

(4) The dairy cow's development should go together with the establishment of milk purchasing systems. Consumption markets and purchasing systems for dairy products shall decide development speed as well as the success or failure of dairy cows development.

(5) During dairy cows development, regions successful in establishment of cooperatives for raising dairy cows or service cooperatives for dairy cows shall enjoy sustainable development of dairy cows.

(6) The dairy cows development should connect with training human resources, especially training local veterinarian, artificial insemination technician and breeders.

(7) Dairy cows should be imported when conditions of technique, labor, breeding facilitates, feeds, veterinary are satisfied and output for dairy product is made.

## 4. Project Strategy

### 4-1 Confirmation of the needs (Implementation of PCM workshop)

#### 4-1-1 Method of workshop

Series of workshop were conducted in order to confirm the needs of requested project. Method of workshop is as follows;

(1)Data and place conducted

Data	Place	Numbers of Participants
Aug.2, 2005	Vinh Think commune in Vinh Phuc	Dairy farmer's group: Extension group:
Aug.3, 2005	Moc Bac commune in Ha Nam	Dairy farmer's group: Extension group:
Aug.12, 2005	Lam son in Thanh Hoa	Dairy farmer's group: Extension group:

Extension group: Veterinarian, AI Technician, Dairy farm Technician, Staff of commune, etc.

(2)Method of workshop

Purpose	All participants think together, learn each other, and share ideas and opinions each other.
Method	Since time is only two hours, writing idea on each card and putting card on

	carton paper was adopted on the basis of PCM workshop method.	
Grouping	In order to facilitate the workshop, participants were grouped into two groups. One group is consisted with small scale dairy farmers. The other group is consisted with extensionists.	
Q/N to each group		
Dairy farmer's group	Core Problem	I can't learn dairy farming techniques. Why?
	Core Objective(solution)	I can learn dairy techniques. How?
Extension group	Core Problem	I can't transfer techniques to farmers. Why?
	Core Objective(solution)	I can transfer techniques to farmers. How?

#### 4-1-2 Finding from the work shop

In the course of workshop, about 100 participants shared opinions and ideas towards better dairy farming. So many voices from extensionists and farmers (small and medium scale dairy farms) were collected. Finding from the work were summarized as follows;

	<u>Extension group</u>	<u>Dairy farmer's group</u>
Problem	<ul style="list-style-type: none"> <li>-Technical skill in not sufficient</li> <li>-Lack of transferring method</li> <li>-Difficult to conduct training courses for farmers. Reasons are many other works, insufficient budget for farmer's training, no time to teach, allowance is too little .etc.</li> <li>-Difficult to let farmers understand. Reasons are lack of teaching materials, lack of experience and knowledge on dairy farming, farmer's ability is not satisfied, cost much when conduct practical training, etc.</li> <li>-Limited knowledge in specific field.</li> <li>-etc.</li> </ul>	<ul style="list-style-type: none"> <li>-No information about farmer's training</li> <li>-No chance to participate. Reasons are few training courses, lack of finance, busy in work, far from house, busy in daytime for women, etc.</li> <li>-Contents of training are not satisfied. Reasons are difficult to learn, lack of practice, insufficient document and material, lack of trainer's knowledge.</li> <li>-etc.</li> </ul>
Solution	<ul style="list-style-type: none"> <li>-More training courses provided by NIAH.</li> <li>-Improve technical skill by participating training.</li> <li>-Improve teaching skill for farmer.</li> <li>-Provide visual aids for training.</li> <li>-Transfer technology with video tapes.</li> <li>-Need more equipments</li> <li>-Need sufficient allowance</li> <li>-Establish association for dairy farmers.</li> <li>-etc.</li> </ul>	<ul style="list-style-type: none"> <li>-More training courses for farmer.</li> <li>-More practical training.</li> <li>-Supporting training fee.</li> <li>-Study themselves.</li> <li>-learn from other farmers.</li> <li>-Visit advanced farmers.</li> <li>-etc.</li> </ul>

Many of extensionists recognized the importance of proper technical transfer for dairy farmers. However, many of dairy farmer are not likely satisfied the activities of extensionists. Therefore, It is recommended that new project should focus on improvement of dairy technique skill for local extensionists to meet with farmer's demands. In this case, establishment of proper training center for local extensionists is very much in need. Functioning of training center should be rather practical-oriented than theory-oriented. Considering this function, existing Bavi center would be right place to add additional functioning.

If appropriate bridges (technical extension system) were constructed from new training center in Bavi center, NIAH, to dairy farms in rural area, extensionists would cross the bridges with appropriate technology for small and medium scale dairy farms.

## **4-2 Outline of the concept**

### **4-2-1 Project purpose (Challenge by 2010 when project is terminated)**

Dairy extension activities of local trainers are improved in the target areas.

### **4-2-2 Overall goal (Challenge by 2015, 5 years after project terminated)**

Milk productivity of dairy farms is increased in Northern Vietnam.

## **5. Project Design**

### **5-1 Project Design Matrix (PDM)(draft) and Plan of Operation(PO) (draft)**

#### **5-1-1 Project Design Matrix (PDM)(draft)**

##### **(1) Project Purpose (Project Objective)**

The project objective is “Dairy extension activities of local trainers are improved in the target areas.”

##### **(2) Overall Goal**

The overall goal is “Milk productivity of dairy farms is increased in Northern Vietnam.”

##### **(3) Outputs and Activities**

The following four outputs are expected to achieve the Project purpose (project Objective).

1. Capability of STED for planning, research, development, training and extension is improved.
2. Capability of national trainers for training of local trainers is improved.
3. Extension ability of local trainers on dairy farming techniques is improved.
4. Appropriate dairy techniques are disseminated by local trainers.

Project activities to achieve the above outputs are as follows.

- (1) 1: Capability of STED for planning, research, development, training and extension is improved.

A1-1 To study needs for further appropriate dairy techniques and training.

A1-2 To develop proper dairy management and veterinary practices suitable for the field.

A1-3 To develop training methods, transfer technology, training curriculums and teaching materials.

A1-4 To develop demonstration methods and practical experiments.

A1-5 To recommend necessary system and framework for dairy development.

- (2) 2: Capability of national trainers for training of local trainers is improved.

A2-1 To train national trainers for each specialization.

A2-2 To train national trainers for training management skill.

A2-3 To train national trainers for better teaching skill.

- (3) 3: Extension ability of local trainers on dairy farming techniques is improved.

A3-1 To train local trainers for practical dairy feeding and management.

A3-2 To train local trainers for practical dairy veterinary techniques.

A3-3 To train local trainers for better teaching skill.

- (4) 4: Appropriate dairy techniques are disseminated by local trainers.



Long-term experts will consist of i) chief advisor cum reproductive practice expert , ii) feeding management and roughage production expert cum coordinator, iii) milking hygiene cum mastitis control expert.

b) Short-term Expert

Short-term experts will be assigned for specific technical fields which can not be taken charge by the long-term experts. Assumed technical fields are: postpartum disease, hoof and foot care, compost production and its utilization, anti-heat stress measurement, data recording management, examination for milk quality control, clinical mastitis control, extension method and communication methods(interpretation method and teaching method).

(2) Provision of machinery and equipment for training

Equipment needed for the Project implementation will consist of: equipment for training (leader' training courses and training of trainer courses), laboratory and research, model site activities, books and teaching materials and vehicles.

(3) C/Ps training in Japan and/or other country

The counterpart personnel and the trainers will be sent to Japan or other countries for the training.

**5-2-2 Vietnamese Side**

(1) Assignment of counterpart personnel and administrative staff.

a) Project Director

b) Project Manager

c) C/Ps personnel

- National trainer

- Local trainer

d) Driver for Japanese expert and other necessary personnel

Project Director and Project Manager will be assigned at NIAH and STED as a leader on behalf of Vietnamese side as well as a chairperson of PMU (Project Management Unit).

Full time counterpart personnel will be assigned at the project and DETC in accordance with the expertise of Japanese experts. Full time counterpart personnel are expected to play the role not only experimental activities but also demonstration and extension activities on farms. Therefore, rather younger and enthusiastic full time staff will be assigned.

(2) Provision of building and other necessary facilities

The Vietnamese side will provide project offices at NIAH and STED. Lands for project facilities will also be arranged by the Vietnamese side.

(3) Allocation of operational cost. Personnel expenses for training courses  
Employment cost of counterparts, operation, maintenance and repair cost of project office such as electricity service, water supply, etc.

### **5-3 TOR of Japanese Long-term Experts**

- (1) Chief advisor cum reproductive practice expert
- (2) Feeding management and roughage production expert cum coordinator
- (3) Milking hygiene cum mastitis control expert

### **5-4 Target Areas**

#### **5-4-1 Main site**

Main site should be STED in NIAH. STED would be set up in existing Bavi training center. The reason is as follow;

- (1) Bavi has long history of dairy development. Bavi has accumulated experiences of dairy farming.
- (2) Many kind of training courses are already conducted.
- (3) Practical training can be conducted.
- (4) Facilities such as buildings, training room, laboratory, dormitory and so on can be utilized.

#### **5-4-2 Candidate target Area for extension activities**

##### **(1) Northern Provinces under National Dairy Development Program**

Vietnam is consisted of 64 provinces. At present, 30 provinces are under National Dairy Development Program. Fifteen provinces are in southern region, and rest of 15 provinces are in northern region as mentioned below.

	Name of Province
Red River Delta	Ha Noi, Vinh Phuc, Bac Ninh, Ha Tay, Hung Yen, Thai Binh, Ha nam
North East	Tuyen Quang, Thai Nguyen, Quang Ninh, Phu Tho
North West	Son La, Hoa Binh
North Central Coast	Thang Hoa, Nghe An

##### **(2) Selection of 8 candidate areas from 15 provinces**

Criteria to select candidate areas are as follow.

- a) Condition of provincial government's support to Dairy development (Trend to activate dairy farming. If showing positive action. etc.).
- b) Distance from Hanoi as a large market of milk. (Nearer provinces are preferable).
- c) Distance from Bavi center where Dairy Technique and Extension Center is expected to start functioning (Nearer provinces are preferable for easier accessibility of Japanese expert and National trainer)

8 candidate target areas are as follow;

Japanese side proposed to categorize the dairy farming in Vietnam into four types, and the concept of categorization for target area has been understood and supported by Vietnamese side (NIAH).

Target area may be classified into 4 types considering history of dairy development and organization systems. Four type classifications are written below.

Type 1: Dairy area around big city (Peri-urban)

The areas are located around big cities, and have planning both enlarging dairy farming scale and increasing numbers of cattle. Because of good land condition and accessibility to market, the areas are often chosen as a site such as project of government, international cooperation, or investment.

In this type, problems to solve and candidate site are summarized as follow.

Subject: High incidence of reproductive disorder and mastitis with improvement of milk production. Incomplete of veterinary system and veterinary technology

Candidate target areas: VinhThuong in Vinh Phuc province, TienDu in Bac Ninh Province.

Type 2: Activation of breeding cattle supplying area (Breeding Cattle Supplier)

The areas are located far from big city. However breeding cattle supplying are well maintained under leadership of the provincial peoples committee. The areas intend to promote industry developing by supplying breeding cattle, production materials supply, producing job opportunity for employment, and so on.

In this type, problems to solve and candidate site are summarized as follow.

Subject: Failure of feeding management in large scale dairy farming, training system for veterinary practitioner and environmental pollution

Candidate target area: Phu Lam farm, Tuyen Quang province, LamSon in Thanh Hoa province

Type 3: Activating area by utilizing dairy cooperative (Cooperative)

The areas have already agricultural cooperative in order to promote dairy development. The areas intend to activate provincial development by dairy farming oriented.

In this type, problems to solve and candidate site are summarized as follow.

Subject: Restrain milk price cause by management cost of agriculture cooperative like maintenance milk collection facilities. Problems cause by enlarge scale, incomplete of veterinary training system.

Candidate target areas: MocChau in Son La province, TanLinh village ( area of Bavi cattle and forage center )in Ha Tay Province

Type 4: Area start dairy newly(Recent Participation)

The areas start dairy development recently. House hold farmers start to raise dairy cattle by leadership of provincial office. The areas intend to promote rural development by dairy farming.

In this type, problems to solve and candidate site are summarized as follow.

Subject: Failure of feeding management, lack of forage, incomplete of training system for veterinary practitioner.

Candidate target areas: DuyTien in Ha Nam province, KhoaiChou in Hung Yen Province

### (3) Selection of target model site for dairy extension

Criteria to select target model sites are as follow.

- a) Result of survey on the candidate target areas by short-term expert
- b) Ratio of small and medium scale dairy farms is higher.
- c) Ratio of cow in milk in total cattle raised is lower.
- d) GDP/Capita is lower.

Target model sites for extension are recommended based on the criteria mentioned above. These are 4 sites in Northern 4 provinces.

Model sites for extension	District	Province	Type
Vinh Think commune	Vinh Tuong	Vinh Phuc	Type 1(Pre-urban)
Lam son		Thanh Hoa	Type 2(Breeding Cattle Supplier)
Moc Chau Dairy Corp		Son La	Type 3(Cooperative)
Moc Bac commune	Duy Tien	Ha Nam	Type 4(Recent Participation)

### 5-5 Implementation Set-up and Project Management

The implementation of the Project will be supervised and coordinated by a Joint Coordinating Committee (JCC) and Project Management Unit (PMU), which will consist of the stakeholders of the central government and the local authorities to the model sites.

Roles of JCC will be; i) authorizing an annual work plan of the Project based on the Plan of Operations within the framework of R/D, ii) monitoring and evaluating the progress of the Project and the results of the annual work plan, iii) discussing and advising on major issues that arise during the implementation period of the Project.

PMU will play roles of; i) supervising the working progress and adjust the working schedule of the Project if necessary, ii) reviewing and exchanging views on major issues arising from or in connection with the Project, and iii) approving progress reports.

### 5-6 Important assumptions and Risk Analysis

Importance assumptions and risk to be considered are summarized as below:

Table5-6-1 Important Assumption and Risk Analysis

Category	Description	Assumption	Risk Analysis
Pre-condition	Important assumption which might affect the commencement of the project activities.	STED is established.	
Assumption on Activities	Important assumption which might happen in the course of the activities and affect the	Cooperation among STED and the target areas are continued.	



	realization of the outputs.	C/Ps continues to work in the project. Local trainer of the target areas continue to work.	
Assumption on Outputs	Important assumption which might affect realization of the project purpose even with achievement of the expected outputs	National Dairy Development Program is continued.	
Assumption on Project Purpose	Important assumption which might affect realization of the overall goal even with achievement of the expected project purpose.	Production cost and milk price are reasonably stable.	
Assumption on Overall Goal	Important assumption that might affect realization of super goal even with achievement of the overall goal.		

## **6 . Ex-ante Evaluation of the Project**

### **6-1 Relevance**

The project can be judged that validity is high from the following points.

- This project is in line with a priority policy of the agricultural sector in Vietnam. It contributes to the rural development and poverty reduction through agricultural development including the dairy development. Moreover, the project is consistent with the Japan's medium-term policy on Official Development Assistance, and the priority area of assistance of JICA's plan for country-specific program implementation. Therefore, the project is justified that the relevance of the implementation is high from viewpoint of the necessity and priority.
- The Vietnamese government positions livestock development as one of priority issues in the "Strategy for Socio-Economic Development (2001-2010)", and sets forth to increase the livestock component in total agricultural output value from 20% to 25%. In this strategy, strengthening of livestock breed improvement and improvement of veterinary and animal health techniques are set forth. The government has forwarded to set up center for improving technical skill of animal husbandry and veterinary medicine with technical cooperation from Japan. These are the "Project for improvement plan of Cattle Artificial Insemination technology" and the "Project of strengthening the National Institute of Veterinary Research". The result is that such a technical cooperation is highly appreciated from the government. In above project, it is recommended that the government should work on the policy in order to promote the national policy further, which is for formulating of the dairy techniques extension system, for the small and medium scale dairy farms as final beneficiaries. Although the government has started measures upon receiving these recommendations, it is in difficult situation to build a dairy farming techniques extension system, because of the reasons as follows. The northern Vietnam is the region in which dairy farming is a new agricultural form and technique extension activity in not performed systematically. Therefore, carrying out Japan's technical cooperation supports the priority issue of the government which has abundant technical know-how and experience in this field. It is judged that the enforcement validity of this project is high.
- Belgium government(Belgian Technical Cooperation) has been undertaking the second-phase dairy development around Hanoi since 2005, it is focusing on the strengthening of farmer's association and milk collecting system. Since the first phase project was initiated in 1996 in northern Vietnam, the Belgium project has accumulated baseline data on farm level required for the JICA's new project implementation. Therefore, it is thought that, the baseline data on a farm level may be able to be utilized by cooperating with the Belgium project. If close cooperation were made, the improvement of productivity of small and medium scale dairy farms of Vietnam would be achieved.

### **6-2 Effectiveness**

This Project can expect effectiveness from the following points.

- Technical training for the technical extensionist (local trainer) is performed with the project for improving milk productivity of the small and medium scale dairy farms who are final beneficiary.

The contents of training courses are developed based on the techniques needed for the small and medium scale dairy farmers. Therefore, it is judged that the proper technology and the knowledge which are acquired through training courses are to be great contribution to the technical improvement of small and medium scale dairy farms. Moreover, it is necessary that the capability improvement of the training leader (national trainer) who is in a position to improve the capability of administrator's technical skill and dairy technique extensionists (local trainer) in order to disseminate to the other areas (small and medium scale dairy farms of non-target area) through extension activity in target area (small and medium scale dairy farms in target area), and the government continues after the project terminate. Therefore, with this project, it is planned that wide range of training courses including the dairy technical extensionist of non-target area is conducted also, even though improving capability for training leaders (national trainer) are the first matter to do. Thus, four outputs are planned in this project in order to achieve project objective certainly. Four outputs are as follows; the improvement of capability of STED (Station for Training and Extension of Dairy Technologies), improvement of capability of national trainer, improvement of extension ability of local trainer, and dissemination of appropriate dairy techniques by local trainer.

### **6-3 Efficiency**

This Project can be expected that efficiency is high from the following points.

- The external factors in order to achieve outputs are that the dairy technique extensionist (local trainer) participating to the training courses continues to work in the field, counter-parts continue to work in the project, the cooperation among STED (Station for Training and Extension of Dairy Technologies) and the other organizations concerned of target area continue. In the course of the evaluation study, we met many personnel concerned, for example, the veterinarian who is in charge of the extension activities of dairy techniques and artificial insemination technician at the district level. They expressed that they wanted to improve dairy techniques. Moreover, we heard of the opinions that the person in charge of the ministry also expects improvement of capability by conducting training courses. Therefore, it is judged that the external factors of the project will be fulfilled.
- In this project, it is planned that the target areas are selected, full-time counterparts are assigned as well as securing staffs in order to make efficient activities, and the human resources are fully-utilized. These lead the expenses for long-term experts dispatch mitigate. With the project, long-term experts consist with three persons, and short-term experts will be dispatched according to the progress of the project.
- With this project, it is planned that STED (Station for Training and Extension of Dairy Technologies) is formulated as a station for appropriate dairy farming techniques. However, the input for constructing a building is not planned but STED is started functioning at the existing building. Although the inputs for maintaining as well as strengthening the function of STED are performed, neither large-scale machinery nor equipment is invested.

#### **6-4 Impact**

The impact of this project can be predicted as follows.

- The dairy technique extension system formulated in the project is planned to disseminate to the other areas by the Vietnamese side after the project terminates. The dairy extension model according to the type will be obtained by implementing dairy technique extension activities through four dairy farming types based on the history of dairy experience. Therefore, it is thought that these models can support the achievement of the overall goal.
- The dairy farming of a small and medium scale farm usually depends on woman. The improvement of milk productivity through technical improvement leads to the income generation for woman. Consequently, it is thought that there is an effect of improving the income of the whole area. On the other hand, for a woman in a small and medium scale farm, the increase number of dairy cattle may cause too many works for woman, so that adequate consideration is necessary to avoid such a situation.
- The increased number of dairy cattle means the increased amount of cattle manure. If cattle manure discharged without any treatment, environmental problems such as odor to residential area, increase of insect pests and groundwater contamination, might be arisen. The other hand, if a proper measurement was taken such as biogas and good organic fertilizer, it might make farm land environment soundly which is so called locally circulated type agricultural system.

#### **6-5 Sustainability**

The Sustainability of this project can be expected as follows.

- The Vietnamese government has set forth the nutritional improvement for the people, poverty reduction and increase of milk self-sufficiency rate through dairy development. This policy is expected to continue after the cooperation project terminates.
- Dairy technique training for the extensionist (local trainer) is performed on the basis of the appropriate technology which is required for farming improvement of small and medium scale dairy farms. Moreover, machinery and equipment, knowledge and technology which are used for the training courses, are developed right after the dairy farmer's on-site survey. Thus, consideration is made so that the extensionist can provide without large inputs after the project terminates, and activities are expected to be continued.

### **7. Monitoring and Evaluation**

#### Identification of Need through Baseline Survey

In order to evaluate the outcome of the Project, baseline survey will be carried out at the initial stage of the Project. Present condition and needs of the Project targets will be identified through the survey at the model sites. The targets of the survey will be regarded as “benchmark” which will be monitored through the Project Period to measure the effects of the Project.

A record of training will be maintained for each trainee to measure degree of improvement of their capacity. Items and standard of evaluation will be determined in accordance with the training program which will be prepared base on the needs identified through the baselines survey. The

evaluation should be objective with quantitative scores as much as possible.

(2) Schedule of Evaluation

The intermediate evaluation will be done in two years after commencement of the Project. The terminal evaluation will be held six months prior to the end of the Project. The ex-post evaluation will be done one or two years after the ending of the Project. The evaluation will be done on the basis of the evaluation of the benchmarks.