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Annex 1.1 List of Officers & Stakeholders Met (1<sup>st</sup> Stage)

Date	Name	Organization	Designation	Venue
Mar. 30	Mr. Govinda P. Grewel	ADB	Sr. Project Implementation Officer	WB Office
	Ms. Gayatri Acharya	WB	Sr. Economist	WB Office
	Dr. Shyam S. Ranjekar	WB	Sr. Irrigation Engineer	WB Office
Mar. 31	Mr. Bhashu Aryal	IFAD	Country Program Coordinator	IFAD Office
	Ms. Yuko Shibuya	JICA	POC/PPP, Expert	Filed Trip
	Mr. Mahendra Man Shrestha	DADO, Dhading	Sr. Agri. Dev. Officer	DADO Office
	Mr. Domo Dar Kimile	DADO, Dhading	Chair-person	Filed Trip
	Ms. XXXX	Muralibhanjyang ADC	Chair-person	Muralibhanjyang VDC
	Mr. Gunda Khana	Muralibhanjyang ADC	Chair-person	Muralibhanjyang VDC
	Mr. Jumuna Bisua	Benighat ADC	E/M Farmer	Farmers' Field
	Mr. Damodar Ghimire	Benighat ADC	Chair-person	Farmers' Field
	Ms. XXXX	Naubise ADC	Chair-person	Naubise VDC
	Mr. Ram Jujum Mahato	Naubise ADC	Chair-person	Naubise VDC
Apr. 1	Dr. Jnanadan Khadka	Horticulture Dev. Centre	Soil Scientist	Kiripur HDC
	Mr. Yasuo Kawamura	Horticulture Dev. Centre	Sr. Volunteer (Horticulture)	Kiripur HDC
Apr. 2	Dr. Deva Bhakti Shakya	NFCCI-AEC	Executive Director	AEC Office
	Dr. Kazuo Watanabe	DoIED	Sr. Volunteer (Mushroom)	JICA
	Mr. Suzuki	Institute of Aqua-culture	Sr. Volunteer (Aqua-culture)	JICA
	Mr. Wakabayashi	MoAC	Sr. Volunteer (Agricultural Machine)	JICA
	Mr. Sekiya	MoAC	Sr. Volunteer (Cooperative)	JICA
	Mr. Shimizu	Cooperative Federation	Sr. Volunteer (Cooperative)	JICA
	Dr. Punshottam P. Maanali	MoAC	Joint Secretary (Planning)	MoAC
	Mr. Indra Prasad Karki	MoAC	Under Secretary	MoAC
	Mr. Shankar Bahadur Thapa	DDC, Dholakha	LDO	DDC Office
	Mr. Rajendra KC	DDC, Dholakha	DDC	DDC Office
Apr. 5	Mr. Dandapani Khana	DADO	Sr. Agri Dev. Officer	DDC Office
	Mr. Yam Prasad Poudel	DADO	Plant Protection Officer	DDC Office
	Dr. Narayan Bahadur Shrestha	DLSO	Sr. Livestock Dev. Officer	DDC Office
	Mr. Karuna B. Jirel	Jiri VDC	Secretary	Field
	Mr. Chhabi Lal V. Vika	Farmer	Farmer & Black-Smith	Field
	Mr. Chhabi Lal Adhikari	Livestock Dev. Farm, Jiri	Managing Director	Livestock Farm
	Mr. Nurbu Sherpa	Jiri Tea Dev. Company Ltd.	Managing Director	Field
	Mr. Bhupal Baral	DDC, Ramechhap	Planning Officer	DDC Office
	Mr. Ram Ikwal Singh	DLSO, Ramechhap	Veterinary Doctor	DDC Office
	Mr. Yoj Bahadur Sunuwar	DADO, Ramechhap	IT	DDC Office
Apr. 6	Mr. Baburan Pandei	Farmer, Katara Ward 9	Farmer	Field
	Mr. Parushandha Shrestha	Rural Dev. Tuki Association	Executive Officer	RDTA Office
	Mr. Damodar Timalsna	Rural Dev. Tuki Association	Field Coordinator	RDTA Office
	Mr. Mukunda Dahal	Rural Dev. Tuki Association	Admin. & Account Officer	RDTA Office

Date	Name	Organization	Designation	Venue	
Mar. 23	Mr. Noriaki Niwa	JICA	Chief Representative	JICA	
	Mr. Yoshio Fukuda	JICA	Senior Representative	JICA	
	Mr. Yasuaki Momita	JICA	Representative	JICA	
	Mr. Toshiro Miki	JICA	Project Formulation Advisor	JICA	
	Mr. Narendra Kumar Gurung	JICA	Senior Program Officer	JICA	
	Dr. Birendra Bir Basyant	NARMA Consultancy	Managing Director	JICA	
	Mr. Gopi Kanal	MoLD	Program Manager	JICA	
	Mr. Rameshwar Lal Kayastha	NPC	Member	MoLD	
	Mr. Madhab Karkee	MoAC	Senior Agricultural Economist	NPC	
	Ms. Shabnam KC	MoAC	Agricultural Economist	MoAC	
	Mr. Masayuki Hirashima	MoAC	Senior Volunteer (Cooperative)	JICA	
	Ms. Chihiro Sano	JICA	Field Coordinator	JICA	
	Ms. Kyouko Suzumura	MoWD	JOCV (Community Development)	JICA	
	Ms. Nobuko Hirota	MoWD	JOCV (Community Development)	JICA	
	Ms. Kiwako Nishimura	MoWD	JOCV (Community Development)	JICA	
	Mr. Masahiro Kawamura	MoAC & AEC	Expert	JICA	
	Mar. 24	Mr. Takuya Tosaka	DADO, Kavre	JOCV (Agriculture)	Field
Mr. Bata Kunushina Adhikari		Persimon Cooperative	Member	Field	
Mr. Rishikanta Ghimire		DDC, Kavre	Program Officer	DDC, Kavre	
Mr. Mohan Adhikari		DDC, Kavre	Planning Officer	DDC, Kavre	
Mr. Ramkrishna Pridesalal		DDC, Kavre	Account Officer	DDC, Kavre	
Mr. Prakash Adhikari		VDC, Mahadesthan	Secretary	DDC, Kavre	
Mr. Krishna Danal		VDC, Ugrachadi Nala	Secretary	DDC, Kavre	
Mr. Shiyam Narayan Mahato		DLSO, Kavre	Sr. Livestock Development Officer	DADO, Kavre	
Mr. Ishwor Prashad Rijot		DADO, Kavre	Sr. Agriculture Development Officer	DADO, Kavre	
Mr. Bishnu Adhikari		DADDO, Kavre	IT	DADO, Kavre	
Mar. 25		Mr. G.K. Sangat	Love Green Nepal (LGN)	Executive Director	LGN Farm
		Mr. Krishna Prasad Khana	Krisak Milk Cooperative	Chairman	Chilling Centre
		Mr. Ram Hadur Khana	KRISAK Milk Cooperative	Manager	Chilling Centre
		Mr. Toshiro Izawa	Hazama - Taisei IV	Project Manager	Sindhuli Camp
		Mr. Yoshinari Suzuki	Hazama - Taisei IV	Deputy Project Manager	Sindhuli Camp
		Mr. Hideaki Takata	Hazama - Taisei IV	Admin Officer	Sindhuli Camp
		Mr. Koji Nakai	Nippon Koei,	Representative	Sindhuli Camp
	Mr. Dipac P. Koirela	Junar Association	Chairman	Sindhuli	
	Mr. Sagar Kumar Dhakal	DDC, Sindhuli	Program Officer	DDC, Sindhuli	
	Mr. Keshav Raj Subedi	DDC, Sindhuli	Planning Officer	DDC, Sindhuli	
	Mr. Fekan Rant	DDC, Sindhuli	District Technical Officer	DDC, Sindhuli	
	Mr. Ashok Kumar Das	DADO, Sindhuli	Acting Sr. ADO	DADO, Sindhuli	
	Mr. Narandra K. Mahaseth	DADO, Sindhuli	Agri. Extension Officer	DADO, Sindhuli	
	Mr. Govardhan Adhikari	DADO, Sindhuli	Plant Protection Officer	DADO, Sindhuli	
	Mr. Ragendra Prasad Sah	DLSO, Sindhuli	Veterinary Officer	DLSO, Sindhuli	
	Mr. Dipac Sapkota	Khanyakharka Junar Cooperative	Member	Farmer	
	Mr. Vishni Shrestha	Khanyakharka Junar Cooperative	Advisor (Ex-JOCV Trainee in JPN)	Farmer	
Mar. 27	Mr. Chhuda Ras Sharma	Kamula Municipality, W9	Leader of Juice Production Group	Farmer	
	Mr. Jit Bahadur Kingring	Kamula Municipality, W9	Pineapple Farmer	Farmer	
	Mr. Surya Kanta Jha	DDC, Mahottari	Local Development Officer	Field	
	Mr. Jay Krishna Mishra	DDC, Mahottari	Assistant Sub-engineer	DDC, Mahottari	
	Mr. Mishi Lal Yadav	DDC, Mahottari	Program Officer	DDC, Mahottari	
	Mr. Rukmani Raman Takur	DADO, Mahottari	Senior Agri. Development Officer	DADO, Mahottari	
	Dr. Rabindra Ythakun	DLSO, Mahottari	Veterinary Officer	DADO, Mahottari	
	Mr. Ram Balam Prasad Sah	DADO, Mahottari	Crop Development Officer	DADO, Mahottari	
	Mr. Sitaran Mandal	DADO, Mahottari	Horticulture Development Officer	DADO, Mahottari	
	Mr. Ram Sharan Yadav	DADO, Mahottari	Extension Officer	DADO, Mahottari	
	Mr. Suresh Mandel	Damhi Madai VDC	Tenant Farmer	Damhi Madai VDC	
	Mr. Azim Fakaur	Pipra Village	Farmer	Pipra VDC	
	Mr. Bidri Shaha	Pipra Village	Farmer	Pipra VDC	
	Mr. Shambhurnath Das	Dmkebar Market	Secretary (Management Committee)	Market	
	Mr. Sujit Shaha	Bhaldhibus Market	Chairman	Market	
	Ms. Pancha K. Jarghamager	Bhaldhibus Market	Manager	Market	
	Mr. Naresh Manato	Bhaldhibus Market	Ex-Chairman	Market	
Mr. Mahesh Kumar Jha	Bardivas VDC	Business Man & Farmer	Bardivas VDC		
Mr. Dinesh Kumar Jha	Bardivas VDC	Business Man & Farmer	Bardivas VDC		

They also complained of exploitations by traders in Banepa. Farmers have two organizations: one is the saving and credit cooperative and the other is the milk cooperative.

**Mar. 25**

- (1) Tree Nursery Farm of Love Green Nepal (NGO) Love Green Nepal (LGN) is an NGO that promotes organic farming in Kavre. Their activity covers 5 VDCs and 4,500 families. LGN's activities are listed as follows:
    - Production and distribution of fruit tree saplings such as persimmon, pear, kiwi and other tree saplings for reforestation
    - Distribution of Bio-gas plants, 650 nos. so far
    - Assisting management of 20 community forests
    - Technical transfer to produce compost manure for women's groups and production and sale of compost at Rs.25 per kg
    - Introduction and dissemination of organic farming through training and practices
    - Operation of Prakriti sales outlet, which was constructed by Japan's grassroots grant, for selling organic products for sale in Kathmandu Valley
    - Others
- They have been receiving technical inputs from "Daichi-no-Kai" Japan.



Milk Chilling Center at Bakundebeoshi

The operation of the center is managed by three staff members: a technician, an accountant and a helper. The technician checks the quality of milk.

It seems substantial quantities of water are used in the chilling plant, cleaning milk cans and so on. As for the source of water, the chairman of the cooperative explained that the Sindhuli Road contractor Hazama & Taisei J/V constructed the camp for the Section IV construction in the village. They had a tube well, which was handed over to VDC after the completion of construction works. Thus the center has sufficient high quality of water.

The facilities, such as the generator, chilling tank, storage tank, etc., look well maintained. Asked whether the cooperative deposits replacement costs of the facilities for the future, the chairman said that no replacement costs are deposited but the cooperative bears the operation and maintenance cost and it has already spent Rs.900,000. The Study Team considers that it is important to deposit not only O&M cost but also replacement costs of the facilities. Otherwise, the project may not be sustainable. Some sorts of input for the cooperative are necessary.

The Dairy Development Corporation has been sending its tanker truck every day to collect milk. The price of milk is Rs.30/l, which is not small for farmers, and even if farmers pay handling charges and deposit replacement costs, they can retain substantial income.

**ANNEX 1.2 FIELD TRIP REPORT**

**1 Schedule of Field Trips**

The Study Team carried out field trips to observe field conditions and to interview various stakeholders of district officers, cooperative managements, farmers, traders, wholesalers, and so on. The field trips conducted are listed as shown in the following Table 1:

**Table 1 Itinerary of Field Trip by the Study Team**

No.	Period	Area Covered	Participants		Remarks
			JICA	NARMA	
1	Mar. 24 - 28	Kavre, Sindhuli, Mahottari Along Sindhuli Road	Dr. H. Kanamori Mr. T. Miki	Y. Sano M. Matsumura	Mr. B.B. Basnyat
2	Mar. 31	Dhading, ATEP Area	Mr. N.K. Gurung Ms. Y. Shiyaya	Y. Sano	Nil
3	Apr. 1	Kirtipur Horticulture Center	Mr. T. Miki	Y. Sano	Nil
4	Apr. 5 - 8	Dolakha & Ramechhap	Nil	Y. Sano	Mr. A. Poudel
5	May 22 - 24	Bharungar, Jhapa, Sunsari, Morang	Nil	Y. Sano	Dr. B.B. Basnyat
6	May 28 - 29	Hetauda, Naryangar,	Nil	M. Matsumura	Mr. A. Poudel
7	Jun 10 - 13	Dhading Kavre, Dolakha, Ramechhap	Mr. T. Miki	M. Matsumura	Dr. B.B. Basnyat Mr. A. Poudel
8	Jun 14 - 17	Hetauda, Mahottari, Sindhuli	Nil	Y. Sano	Mr. B.B. Basnyat Mr. A. Poudel
				M. Matsumura	Mr. A. Poudel

**2 1<sup>st</sup> Field Trip, Mar. 24 -28**

This trip is the 1<sup>st</sup> field trip along the Sindhuli Road covering Kavre, Sindhuli and Mahottari districts.

**Mar. 24**

- (1) Visit to a Farmer Field Cultivating Persimmon Meeting with Mr. T. Tosaka, JOCV, and Mr. B.K. Adhikari, a farmer. The farmer planted 243 nos. of persimmon trees and produced 1,200kg of persimmon last year. He earned Rs.72,000 through persimmon and spent about Rs.40,000. He has a regulation tank of irrigation, approximately 6M<sup>3</sup> for irrigation. Water is collected from a spring close to the field. Sprinkler irrigation was also available utilizing natural head from tank to the field. He applied 5-10kg compost manure per persimmon plant as well as "bokashi" manure.
- (2) Courtesy Visit to Kavre DDC and DADO & DLSD Submitted the Inception Report, explained the purpose of the study and requested cooperation and support. Also attended by secretaries of VDC where the HH survey is being conducted.



Spring at Sramabanjan Village

- (3) Visit to Sramabanjan Village, North of Banepa In the village, farmers cultivate potato, maize and cauliflower without irrigation. People get drinking and domestic water from a spring, which is also used for irrigation providing a small storage. Farmers applied fertilizer and chemicals for potato cultivation and people complained of adverse effects from continuous potato cropping.

**Mar. 26**

## (1) Junar Association

The Junar association is not a federation of cooperatives, but a Junar producers' association, organized. The Association works closely with the OVOP program implemented jointly by the MoAC and AEC/FNCCI in partnership.

Asked how much quantity of Junar the association handles a year, no clear answer was given though in accordance with the statistics of Junar production in 2007/08, productions in Sindhuli and Ramechhap are 17,692 tons and 12,950 tons respectively. The association handled more than 110 tons of Junar last year.

Association management explained that most of the Junar are collected by Indian buyers at farm gates in October, a festival season, before the fruits are well ripened. The most appropriate season for harvest is in December, but the farmers cannot wait till the fruits are ripe since they need cash for the festival. Huge quantities are taken to India, but not much is marketed in Kathmandu. The price is less than Rs.20 per kg and ripened ones are sold at around Rs.40 per kg at farm gates.

According to a leader farmer, some Junar trees were cut a few years ago due to the lack of market as limited road access made transportation difficult. However, after completing Sindhuli Road Sections I and II, a lot of Indian buyers came to the villages. Farmers have been encouraged and restarted planting Junar. As a result, farmers have now experienced shortage of saplings as no Government farm produces and distributes saplings in the area.

## (2) Courtesy Visit to Sindhuli DDC and DADO &amp; DLSO

Submitted the Inception Report, explained the purpose of the study and requested cooperation and support. Also attended by secretaries of VDC where the HH survey is being conducted.

A DDC planning officer explained that FM radios cover a substantial area in the district, and 70-80% of farmers listen to them. It shall be an instrument to disseminate agriculture skills and information. He also requested to strengthen Junar production and marketing and to include agro-forest and agro-tourism programs in the study.

He responded to a question on NGOs that there are about 500 NGOs registered in the district, but only about 5% of them are active. According to him, one of the active NGOs in agriculture is SIDS (Sindhuli Integrated Development Services).

A DADO officer briefed the agriculture in the Sindhuli district as follows:

- a. Out of 62,713 ha of agricultural lands, 49,789 ha are cultivated. Irrigated land is 14,336 ha.
- b. Major commercial products in Sindhuli are Junar, other citrus and ginger. Ginger is mainly produced in the eastern part of the district and turmeric is produced in the western part.
- c. Under the OVOP program, about 110 tons of Junar are produced in two VDCs and they are graded in three categories of A, B and C; 37 tons, 23 tons and 50 tons respectively.
- d. Junar cultivation area is 1,329 ha. Besides this, other citrus fruits cover about 210 ha.
- e. Ginger production is also substantial: nearly 4,000 tons are produced. Farm gate price is Rs.5-30 per kg and the wholesale price in Kalimati exceeds Rs.50 per kg. It could be said that due to market issues, farmers complain to be sometimes exploited by traders.

A veterinary officer of DLSO briefed the livestock programs in Sindhuli as follows:

Due to budget shortage, no AI could be practiced in Sindhuli and vaccine for animal diseases is also in short supply. AI and vaccinations are fundamental requirements for promotion of livestock.

## (3) Khanyakharka Village of Ratanchura VDC

Visited a Junar cooperative engaging in Junar juice production, near Sindhulighadi on SR, where the elevation is about 1,400 m.

The cooperative possesses a Junar storage and processing facility, which was constructed through the financial assistance of UNDP at Rs.300,000 and a DDC budget of Rs.100,000.

The juice production group produces 5,000 bottles of 750 cc Junar juice annually and sells them at Rs.55 per bottle (retail price is Rs.60). One lot of Junar juice contains the following: a. pure Junar juice; 16 kg, b. water; c. sugar; 23 kg, and other preservative, acid, etc.

One Junar tree (15 years old) produces approximately 50 kg of Junar fruits.

## (4) Farm in Khanyakharka Village of Ratanchura VDC

Visited a farmer who is a member of the Junar juice production group. He possesses 0.75 ha of farm land and cultivates 1.0 ha of land including rented land. All lands are irrigated, though they are located on steep slopes. Family member is 10 nos. with parents, 3 brother and sisters and 3 children, his wife and himself. His final education is SLC passed.



Junar Saplings with a Farmer

He produces Junar saplings and earned about Rs.18,000 a year. The price of a sapling is Rs.18. He produces Junar cutting, 2,400 nos. from 100 saplings. The survival rate of cuttings is 42%, which is reasonable according to an officer at Kiripur Horticulture Development Center.

He produces about 15,000 pieces of Junar fruit and sells them at Rs.1.0 per piece to traders at the farm gate.

His main agriculture commodity is chili. He took a training course for chili cultivation from the NGO "Youth for Sindhuli Program." His group of 150 farmers obtained a district extension fund from DADO for procuring farm implements.

He produced 20 quintals (2,000 kg) of chili, green and dry, and earned approximately Rs.100,000 last year. Other than these incomes, he produces rice and the harvest is enough for nine months' family consumption. It seems that the rotation of paddy and chili avoids adverse effects of continuous cultivation of HVCs.

**Mar. 27**

## (1) Junar Storage in Sindhulimadi

The Junar storage facility was constructed under Japan's grassroots grant assistance. The area of the storage is approximately 150 m<sup>2</sup> including chilling facilities. The capacity of the storage is 360 tons at a time. In the off-season potato is stored. At the time of the Team's visit, neither Junar nor potato was stored. The land was procured by the association at a cost of Rs.9.9 million.

## (2) Pineapple Farm in Bhagamara Village in Kamala Municipality

Along the Sindhuli road, there are many pineapple plants growing. One woman farmer explained that she planted 500 pineapples on a sloping land which is not used for other crops. Seedlings were initially purchased from the Sindhuli farm. The pineapples are harvested by a trader and he pays Rs.8-10 per piece. Pineapple is a very profitable crop to farmers as not much care is required and no seedling is required from the second crop onward.

(3) Courtesy Visit to Sindhuli DDC and DADO & DLSO  
Met with the planning officer of the DDC, submitted the Inception Report, explained the purpose of the study and requested cooperation and support. Also attended by secretaries of VDC where the HH survey is being conducted.

The planning officer expressed that the Mahottari district requires the following assistances:  
a) irrigation, b) agriculture road, c) market facilities, d) technical improvement, e) establishment of a marketing system, and f) strengthening of farmers' organization.

He expressed that there is a great potential in fish farming and mango production, which are not yet developed in a systematic way.

A DADO officer expressed that there are two major points to be considered. One is irrigation, in the southern parts of the district where the ground water table is very deep, and the other is flood control. The flood has damaged not only irrigation intake but also changed the water course. Specifically, he requested that the Team discuss with DDC and DADO officers before finalizing the report. Furthermore, he informed the Team that the district has only four agriculture service centers. Therefore, delivering services to the entire district with the present setup is difficult.

A DLSO officer stated that improvement points on the livestock sector are as follows:  
a) pasture area development, b) marketing of milk and goat, c) strengthening of AI activities, and d) provision of training in the areas of animal health and veterinary medicines. There are 16 service centers/sub-centers/veterinary check posts under the DLSO.



Farmers Interview in Mahottari

paddy and wheat in 1.5 ha of irrigated field and vegetables, mainly gourds, in 0.25 ha of land. The land owner takes 50% of his paddy production and bears 50% of the total cost of cultivation. As he can produce food sufficient for only six months, he has to go to Janakpur for labor works to feed his family for the remaining six months of the year.

He has one buffalo and one cow to produce milk. After calving, milk is produced for eight months and there will be no production for 18 months. A buffalo and a cow produce 6 liters

and 4 liters of milk per day respectively. Four liters of buffalo milk and 2 liters of cow milk are sold out.

Seeds for cultivation are procured from India. He sells the vegetables in the village as traders come to buy vegetables there.

He did not go to school and is illiterate, but he can calculate. He has not sent all girl children to school, including the eldest one who is now 22 years old. However, he has been sending his 14-year-old son to school. He is in grade 6.

(5) Farmer Interview in a Village, Pipra  
The farmer has 0.33 ha land and cultivates paddy, wheat, dal and green bean. Earlier, this land had irrigation facility. Today, the land is not irrigated as the river changed its course and water does not come to the canal any more.

To inspect the conditions of the irrigation intake, which is not functioning at present, the Team visited the site and found that original intake had a temporary weir which raised water level by nearly 1.5 m. When the river changed its course, it was not possible to construct a temporary weir. This disturbed the irrigation facility. Furthermore, the quality of river water has been deteriorated due to a paper factory in the upper stream. Color of the water in the river has turned black and it smells bad. Even if the intake is rehabilitated, the water may not be appropriate for irrigation.

**Mar. 28**

(1) Visit to Dhalkebar Vegetable Transit Market

Met with a secretary (manager) of the Market Management Committee (MMC) and obtained information. The market is a facility of MOAC, but management is fully controlled by MMC. The market covers six VDCs.

The market was constructed in 1998 through the FAO's support. It has an area of 0.76 ha with two marketing buildings and one administration cum accommodation building, which provides 26 beds.

MMC consists of nine members: six members selected from 25 registered traders, one selected from representatives of 16 farmers' groups, one Dhalkebar VDC chairman and one DADO planning officer. Market manager is the secretary of MMC meeting.

The source of the market's income is as follows:

- a) rental shops: 32 chambers (Rs.300/month each), 28 retail shops (Rs.100/month each), 4 stores (Rs.250/month each)
- b) weighing facility: Rs.2.0/weighting for below 50 kg, Rs.5.0/weighting for above 50 kg
- c) parking: truck (Rs.50), mini truck (Rs.20), bus (Rs.20), tractor (Rs.20), etc.
- d) marketing charge: pumpkin (Rs.50 per 100 pieces), tomato (Rs.2.0 per 20kg crate)
- e) accommodation: Rs.25/night for farmers, Rs.30/night for traders
- f) plastic crate rental: Rs.0.5/piece/day

Total annual income reaches Rs.500,000-600,000. Of this amount, 20% is used for staff salary and remaining for the management cost of the market and high school operation.

It seems that the market is managed and functioning well though the day the Team visited was not a market day.

(2) Visit to Bardibas Collection/Transit Market

The Bardibas market was constructed in the same period when the Dhalkebar market was



Pineapple Plants in Bhagamara Village

constructed under UNDP fund. The MMC chairman and manager explained the present situation of the market. Land planned was 0.75 ha but actual land available was 0.4 ha, and as land is owned by a nearby high school, management is complicated. The market is located beside the Bardibas retail market opened twice a week. There seems to be little difference between the two.

Due to difficulty for trucks to enter, the market does not seem to be functioning well.

(3) Interview to a Leading Farmer in Bardibas:

The farmer's family has 18 members including his parents, his wife and seven children, and his brother's family, whose eldest son is married with three children.

His family immigrated to this village 60 years ago and settled after converting a forest into farmland. Later he procured other people's land too. According to the family, this family used to own 300 ha of land. Due to flood and other reasons they now cultivate only 2.25 ha. He has business in addition to farming. The present problem is that the irrigation facilities are not functioning well. He explained sugarcane cultivation is more profitable than paddy and other crops.

**3 Visit to Dhading ATEIP Area on Mar. 31**

Visited Dhading Besi, district headquarters of the Dhading district and met with DADO officers. Mr. Momita, JICA Nepal, Ms. Shibuta, ex-expert of ATEIP, and Mr. Kamamori were together.

Through the visit, the Team learnt that ATEIP contributed to the improvement of skills for vegetable cultivation for both DADO extension workers and farmers. Many ADC members also appreciated the activities of the Project, especially micro-irrigation. A DADO officer explained that activities carried out under ATEIP are continued with the support of SDC-funded Sustainable Soil Management Programme (SSMP).

It was also impressive that a Naubise ADC E/M farmer initiated to disseminate the bookkeeping of farming expenses in such a way that farmers could understand well about the cost and benefit of agriculture. The ADC was in the process of establishing an agriculture cooperative.

One of the key concerns now is that some ADC members have stopped attending the meetings regularly after the departure of Japanese experts. The chairperson appreciated the Team's visit and committed that after this everybody will attend the meeting.

**4 Visit to Kiripur Horticulture Development Center**

The facilities are constructed under the grant aid and it seems that the farms are maintained well. A soil scientist explained the past and ongoing research activities in the center.

Main crops under research at present are grape, persimmon, pear and citrus. Selection of better varieties of persimmon and pear has been completed. For persimmon, "Jiro" is preferable because of shape and taste. For pear, "Hostui" is recommended.

The present research focuses on how to prolong the harvesting period and to improve storage technologies. Research on rootstock of persimmon and pear is also continued. It seems that Junar is not a major subject for research now.



Crop of E/M Farmer of ATEIP

**5 Second Field Trip, Apr. 5 to 8**

**Apr. 5**

(1) Courtesy visit to Dolakha DDC and DADO & DLSO

Met with the Local Development Officer, DDC and submitted the Inception Report, explained the purpose of the study and requested cooperation and support. DTO, DADO, DLSO officers were also present. Also attended by secretaries of VDC where the HH survey is being conducted.

DTO explained that its priority in the district is (1) road, (2) water supply, (3) bridge, (4) irrigation and (5) community bridge. DADO's priority was slightly different.



Interview at Patital Village, Jiri

DADO explained about tea production in Jiri as follows:

- a. Tea in Jiri started in 2003. Saplings and technologies were introduced from Ilam.
- b. Now 150 farmers are involved and planting area has been extended to 170 ha.
- c. Last year production was 270 kg, including 70 kg by a cooperative and 200 kg by a private company.

**Apr. 6**

(1) Market Research in Jiri

In the early morning, research of the prices of agricultural commodity was conducted and the prices were as follows:

- a) dry chili: rounded chili (*Dalle Khursani* in Nepali), Rs.1,000/kg; Akasi, Rs.500/kg; Ramuche, Rs.400/kg
  - b) ginger, Rs.75/kg
  - c) turmeric, Rs.120/kg
  - d) dry onion, Rs.35/kg
  - e) garlic, Rs.65/kg
  - f) potato, Rs.20/kg
  - g) cabbage, Rs.25/kg
  - h) local egg, Rs.6.0/piece; egg from Kathmandu, Rs.5.0/piece
- Many vegetables come from Kathmandu.

(2) Interview with a Farmer at Patital Village in Jiri VDC

The farmer is Dalit as almost all villagers are Dalit and farmer cum blacksmith. His family consists of 14 members, which include the families of his three sons who are working abroad—two in Malaysia and one in India. He also has two other sons who live independently and two married daughters.

One of his sons working in Malaysia got a loan of Rs.110,000 with an interest of 3% per month. He has yet to pay back Rs.60,000. Because he must return the loan with interest, net earnings from working abroad is about Rs.2,000 per month. It might take another three years to repay the total loan.



Terrace near Charikot

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promoted to officers. However, organization setup has not been changed and the motivation of JT/JTA has been decreased. Moreover, no TA/DA would be provided. Therefore, it would be difficult for JT/JTA to visit farmers' fields to provide extension services. Another JT complained that though he has worked in the field of horticulture for a long time, he would have to work with vegetables and tea without any training.

A JT at the Livestock Service Center said that in case of livestock, he visits farmers as per the farmers' requests and the requesting farmer pays his TA. In case of livestock, as farmers need services urgently, they are willing to bear the TA for government technicians.

- (6) Meeting with President of Jiri Tea Development Company Ltd.  
The company was started four years ago with five investors and a share capital of Rs.20M. At present the company has 43 shareholders. The present tea plantation area under the company is 1,232 ropani (61.6 ha). Jiri tea production was initiated by Mr. Kohei Makita of JOCV and followed by Mr. Todoroki, a Japanese expert who visited Jiri privately.

There is no machine to process tea and all tea processing is done by hand. Brief processing is as follows:

- harvest two young browse by hand,
- dry in shadow on five-tier shelves and mix tea leaves every four hours for four times to obtain appropriate moisture,
- keep tea on table with heaps in 50 cm diameter for one hour for fermentation,
- knead for one hour to get flavor,
- knead for three hours to strengthen flavor,
- remove stems by hand,
- dry on pan heated by charcoal for 5-10 minutes while mixing with wooden paddle,
- dry under sun,
- package.

Staff working in the company consists of one technician from Ilam, four regular staff and 60-70 seasonal labors. One skilled labor can harvest 4 kg of tea leaf per day and 1 kg of tea is produced from 4 kg of harvested tea leaf. Members of tea cooperatives know the processing technologies and they process tea individually. The company produced 200 kg tea last year and 70 kg was produced by cooperative members. Marketing of the produced tea is all handled by the company. Price of the tea is Rs.1400/kg. Major buyers are travel agents for trekking and the tea is available at cooperative outlets in Charikot.

The Team visited one of the tea farms with the VDC secretary. Tea plants in the plantation are still young and it may take some more years to produce tea.

- (7) Visit to Alpaca Farm

Seven alpacas are reared at the farm, which is privately owned. The purpose is production of alpaca wool. Alpacas eat locally available grasses and are easy to look after. In the last year, income from alpaca wool was Rs.700,000; the cost incurred was Rs.300,000.

- (8) General Observation of Jiri Area

When the Team visited a tea plantation in Patital Village after one hour walk, the Team came across many small streams with flowing water. There were water mills and temporary irrigation intakes. The situation was much better compared to other areas in Ramechhap and Sindhuli.

#### Apr. 7

- (1) Courtesy Visit to Ramechhap DDC and DADO & DLSO



Jiri Livestock Farm

The farmer is illiterate. He owns 1.5 ha of land and produces food enough for about six months from his farm. He gets by with additional income from blacksmithing and remittance.

He possesses one cow and one buffalo for milk and a male buffalo for cultivation, as well as 10 goats, five chickens and one pig. He depends on DLSO for his livestock and he has to bear TA (Rs200-300) for JT of DLSO services. DADO JT/JTA came to the village twice in the last three years and provided training for compost making.

- (3) Interview with Jiri VDC Secretary

In Jiri VDC, the total number of households is about 1,800 and population is approximately 8,500. Annual VDC budget is Rs.2.15M; Rs.400,000 is spent for administration and the rest is for development. Priority order of development is: a) water supply, b) road, c) irrigation and d) agriculture training. VDC staff consists of a secretary, two social mobilizers, three technicians, four back-up teachers and one office helper.

The secretary explained about tea plantation. Tea 5,000 saplings were introduced by a JOCV member from Ilam and transportation cost was borne by VDC. There is a tea cooperative with about 70 members. Other than the cooperative, one private tea company has been established to produce tea.

Tea production of the cooperative is not much and its major activity is saving and credit. Tea production of the private company is increasing.

The secretary also explained that in Jiri VDC, seed potato production is popular and traders from Tarai come to procure potato and take them to Tarai and India. To produce seed potato, farmers use fully decomposed compost. Price of seed potato is usually three times higher than that of table potato and sometimes the price exceeds Rs.100/kg. Every season 60-70 trucks of seed potatoes are sent to Tarai through Kathmandu. If a bridge is built on Sun Koshi river, transportation time will be drastically reduced with the use of the Sindhuli Road.

- (4) Visit to Livestock Development Farm, Jiri

The farm was established in August, 1957 by the Government with financial and technical assistance from the Swiss Government. Later the farm became a component of Jiri Multi-purpose Development Project.

The farm has 85 ha of land with 23 permanent staff members. There are three JT/JTAs under one Livestock Development Officer to manage the farm. The purpose of the farm is to increase production and productivity of dairy cattle and pigs at the farmers' level.

There are 27 adult Jersey cows, eight adult Brown Swiss cows, two breeding bulls, and 17 female and two male swine for piglet production in the farm. Calf production in 2007 was 22: 10 male and 12 female. In 2007, it distributed 152 piglets to farmers at the rate of Rs.1,200 per piglet. As the demand is very high, the farm encourages farmers to breed.

- (5) Visit to Agricultural Service Center and Livestock Service Center

Both service centers are located in the same building near the Livestock Development Farm and the Team had a talk with JT/JTA.

After the new Government was formed, it was announced that experienced JTs were to be

A meeting was held at DDC with DDC, DADO, DLSO and DLSO officers. The Team explained the purpose of the study and requested cooperation and support. Secretaries of VDC where the HH survey is being conducted also attended.

A planning officer of DDC explained that Ramechhap has been isolated for a long time because the district was connected only through a road from Charikot. Once the bridge is constructed on Sun Koshi river within two years and the road between the bridge (Khurkot) and Charikot is blacktopped, Sindhuli Road will directly connect the district to Tarai. Thereafter, the situation of the district will be completely changed due to the increase in the export and import of several commodities.

A veterinary doctor explained that the potential of livestock in Ramechhap is very high and at present several cheese factories based on yak and cow milk are operating in the district along the Jiri-Bamti road. Goat rearing too has high potentials for income generation of the farmers.

A DADO officer explained that agriculture commodities produced in the district and exported outside are tomato, chili (green and dry), Junar and pulses, while substantial quantities of cereals are imported. There is potential in non-timber forest products (NTFP) also.

The seed potato production in the district will be encouraged further, as at present nearly 2,000 tons of seed potato are exported to Tarai and India through Kathmandu. The Sindhuli Road connects this district directly to Tarai, which will improve transportation drastically.

The DADO officer explained that the Junar cooperative organized 260 farmers and marketed Junar by grading them into four categories under OVOP. Products of grades A, B and C are exported to Kathmandu and D grade Junar is used to produce juice.

(2) Interview with a Farmer at Tilpung Katahare Village Near Khimi

The farmer is 48 years old with nine family members including his parent and five children. He possesses nine ropani (0.45 ha) of farmland. The farmland is irrigated throughout the year. He cultivates paddy in whole of his land and two ropani in dry season. He cultivates various vegetables for family consumption. He can produce food for 10 months' consumption and procures balance by earning from labor works in road construction.

The irrigation was constructed from a nearby river by 11 farmers but the group is not functioning well after the conflicts in the country. No cooperative activity has been planned so far. Once a milk chilling center was working in the village but it does not operate at present.

The constraints he is facing at present are as follows: a) lack of credit facility for initial capital of new activities, b) lack of extension services by JT/JTA, c) lack of group activities, d) lack of available vegetable seeds, and e) disease of animals.

Apr. 8

(1) Interview with Rural Development Tuki Association (RDTA, NGO), Charikot

RDTA was established in 1991 to improve the livelihoods of people in the Dolakha district. Tuki means local lump. Initially RDTA was assisted by the SDC but now no assistance is available from the SDC.

RDTA's activities include the integration of agriculture, irrigation, education, water supply and so on. RDTA imparts training to community representatives on agriculture, community development, and so on, and those who completed the training successfully are given Tuki certificates as the leaders of their communities. The Tuki cooperative has about 500 members and 294 shareholders.

One significant activity is to organize vegetable seed producers among Tuki farmers by contacting seed traders in Kathmandu. Three groups and 90 farmers were engaged in the production of 12 varieties of vegetable seeds. Seeds production operated well for four years till last year. Foundation seeds were supplied by a trader and seeds thus produced were procured by the trader. However, due to misunderstanding between the trader and the cooperative, the seed production agreement was not extended. RDTA is looking for channels of foundation seeds supply and markets of produced seeds including the cooperative federation channel.

(2) Inspection of the Chinese Border in Kodari

The Kodari customs and check point were inspected on the way back to Kathmandu. There were many Nepalese people waiting to re-enter after trips to China. Major agriculture commodities imported from China were apples, garlic and ginger. Many Chinese and Nepalese trucks full of apples and garlic were queued for inspection by the Nepalese customs. No export of agricultural commodity was observed at Kodari.

**5 Third Field Trip, May 22- 24**

May 22

- (1) Visit to Kakarbhitta Indian Border  
Many vegetables are imported to Nepal from Kakarbhitta Indian Border on trucks and rickshaws. Imported commodities are chili (green and dry), cabbage, cowpea, gourds, mango, and so on. Ginger was exported from here.

- (2) Interview with Traders at Birtamod Market  
The team interviewed a big trader, whose annual transaction amount is more than Rs.50M. His main commodities are potato and onion both for import and export to and from India, depending on the season. For example, he exports potato from October to December and imports it rest of the year.



Kodari Customs at the Chinese Border

He decides the wholesale prices first by making phone calls to Indian suppliers in 4-5 different markets in India. The market in which he has the biggest trade is Kanpur, UP. After deciding the price and quantity of import, he decides the wholesale prices in Nepal. Payment is made through the bank after receiving the goods.

The transaction on the day of the Team's visit was the import of 636 bags @ 50kg at the price of IRs. 1,000-1,050/quintal (approximately Rs. 19/kg). The custom duty he paid was Rs.5.0/kg, which is almost double of the previous import.



Retailers at Birtamod Market

According to the trader, seed potatoes were now handled by cold storage in Birtamod. Therefore he was not handling seed potato now.

Prices of commodities in Birtamod Market are as follows:



gradually.

The products are exported to EU countries and prices are US\$.30-70/kg depending on the quality.

#### May 24

##### (1) Visit to Biratnagar Wholesale Market

The market is owned by the Municipality. Wholesalers and retailers are accommodated in the same market and there are many retailers outside market building.

As the Study Team visited on a Sunday, most wholesalers were closed except one large wholesaler who handled mainly Chinese garlic and a few Indian onions. He pays a rent of Rs.15,000/month. He imports Chinese garlic through sea transport via Calcutta. Initially he imported them through Kodari. However, due to repeated road closures taking place during the conflict period, he decided three years ago to import them from China through sea transport. It was successful in terms of price and time requirement. The price at Biratnagar is about Rs.30/kg through sea transport while Rs.35/kg through Kodari. He imports 15-20 nos. of 30 ton containers (450-600 tons) of Chinese garlic per month. He opens LC for imports through a bank. His annual transaction is Rs.70M equivalent.



Interview with a Trader in Biratnagar Market

##### (2) Visit to Tarahara Regional Agriculture Research Station

The Study Team visited Tarahara Regional Agriculture Research Station, which was established in 1962. The Tarahara station has four sections to carry out research activities: Crop Research, Horticulture Research, Livestock Research, and Fishery Research.

The Team observed distribution of fingerlings of carp, Tilapia and freshwater prawn. The Team also interviewed a few farmers who purchased those fingerlings. Farmers expressed the profitability of fish culture as follows:

- Fish pond	600 m <sup>2</sup>
- No. of fingerlings procured	600 nos., Rs.180 (Rs.0.3/fingering)
- Survival rate	75% (450 nos.)
- Culture period	9 months
- Feed	Nil
- Production	450 kg in total (approximately 1 kg/fish)
- Income	Rs.49,000 in total (approximately Rs.110/kg)
- Net Income (excluding labor):	Rs.48,820

They explained that Tilapia and freshwater prawn were much more profitable than carp.

Accordingly, fish culture has a large potential in the Mahottari district.

#### **6 Fourth Field Trip, May 28-29**

#### May 28

(1) Transfer to Hetauda Market

Commodity	Wholesale Price (Rs./kg)	Origin	Retail Price (Rs./kg)	Origin
Garlic	40.0	China	45.0	China
Potato Red	18.5	Ilam	25.0	Ilam
Potato White	-	India	22.0	India
Onion Dry	15.0	India	20.0	India

The monthly rent of the shop in the market is Rs.3,500. The shop is located in a relatively good building. Rent for the retail shops is Rs.600 per month.

##### (3) Meeting with Businessmen in Biratnagar

A meeting was held with businessmen operating a large rice mill, a jute mill and a tea plantation and factory in Hile in Dhankuta district at their office in Biratnagar.

The manager of a tea garden and factory expressed that tea price is good but due to the lack of rain this year and labor troubles, business is going down and may not be profitable. When such problems are not there, tea business is profitable. Managers of a rice mill and a jute mill said that most of their products are exported to India.

#### May 23

##### (1) Visit to Dharan Market

The market was constructed with ADB's assistance in 1993 but operation commenced in 1996 after MMC was reorganized. MMC is comprised of nine members, which include three farmers' representatives, three traders' representatives selected by 150 traders, one DDC representative, one municipality representative, one manager (secretary) and two additional members nominated by DADO.

Income of the market is about Rs.1.5M and at present 80% of it is spent on administration and 20% on infrastructure. MMC intends to increase income by 30%, which could be used for improving physical infrastructures in the market.

MMC wants to have a cold storage for fruits, potato, tomato, etc. as in Biratnagar and Kathmandu. MMC is also considering to improve the price information system for orange, ginger, tomato, potato and so on.

##### (2) Visit to Kuwapani Tea Garden and Factory

The tea factory was started only three years ago, converting a milk production factory into a tea factory. The cost of starting the tea factory, mainly installing secondhand equipment and own developed machines was only Rs.10M. The tea garden spreads across 30 ha of land. The factory produced 10 tons of tea in 2008; 30% of the tea leaves were harvested from their own garden and 70% came from nearby farms and Ilam. Cost of plucking tea leaves is Rs.20/kg. (labor charge is Rs.84/day for male and female). Price of fresh tea leaves procured outside is Rs.28/kg. All the tea produced in the factory is organic tea. Usually, a good tea garden produces 1,000 kg of green leaves from 1 ha of tea plantation. The value is Rs.28,000.

The factory operates from March to December and the best tea is produced in May.

Processing procedure is as follows: a) natural dry for 12 hours by keeping tea leaves on trays while blowing air if necessary, b) knead leaves by machine twice, c) ferment leaves on tray for 2.5 hours, d) dry leaves in a rotating dryer, e) grade dried tea by blowing air and by hand, f) pack in boxes and seal.

Since the tea plants in the garden are still young, production is nominal but could be increased

In order to transfer to Hetauda Market, a road via Kulekhani Reservoir was taken. Just below the Kulekhani dam, there is a new restaurant operating. The manager of the restaurant explained that 200-300 Tata Sumo jeeps travel every day as public transportation between Birganj and Kathmandu, and many passengers stop at the restaurant to eat and drink. Five hundred meals are consumed by the passengers every day. This is a good business and also convenient to the passengers. It could be adopted to the Sindhuli Road by establishing a drive-in restaurant or Michi-no-Eki serving drinks and food and selling local products, with a parking area and clean toilet facilities.

(2) Hetauda Market

Hetauda Market, under the control of Municipality, is operated in two places; the old market and the new market. MMC has not been officially organized, but the management committee of traders in the market is functioning. There are seven wholesalers and 250 retailers in the market, who are divided in two places. Although the Committee is not recognized officially, the market is being operated by the committee, as the committee pays rent to the Municipality amounting to Rs.200,000-300,000 annually.



Hetauda Market

The vegetable and fruit shops (wholesalers and retailers) were requested to move to the ex-saw mill premises in 2006. The majority moved but some are still operating in the old place.

Though Indian vegetables and fruits are available throughout the year, many Nepalese products are brought in to the market, such as carrot, green onion, cauliflower, gourds, coriander, and green vegetables during the Indian off-season from May to September. They are exported to India through Birganj. Major sources of Nepalese vegetables are Dhading, Kavre and Makwanpur.

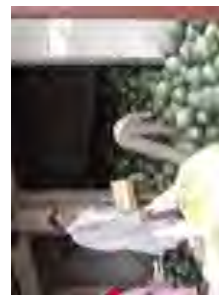
Wholesalers check the prices in Indian markets and Kalimati Market by phone every day and determine the prices of commodities. Sometimes wholesalers take risks as they have to purchase products at higher prices than other markets.

**May 29**

(1) Visit to Narayangadh Vegetable and Fruit Market

Met with a MMC member and he informed the market is property of the Municipality. The market is being renovated by UNDP Fund. He is a fruit wholesaler handling grape, apple, banana, mango, lychee, pomegranate and others, all imports from India. His monthly handling amount is about Rs.1.0M. There are 40 fruit wholesalers.

Met with a vegetable wholesaler cum retailer who sells vegetable in units of 2.5 kg. He handles vegetables mostly imported from India. However, there are some Nepalese products, such as carrot from Bhaktapur, long beans from Dhading, ginger from Udayapur and tomato from India and Makwanpur. The price of tomato from India is Rs.50/2.5 kg, but that from Makwanpur is Rs.100/2.5 kg. He said there are a few buyers to export vegetables to India from the market.



Narayangadh Market in Chitwan

There are eight vegetable wholesalers and 50 vegetable wholesalers cum retailers in the market.

The Narayangadh market is very dirty and muddy and many children look in the garbage for things to eat.



Malekhu Cooperative Collection Center

(2) Visit to Malekhu, Dhading

A vegetable market is attached to a gas station, where many passengers buy vegetables. It could be adopted to the Michi-no-Eki concept. A retailer explained that she pays Rs.1,000/month to rent a shade. The goods she sells are all products from around the area. More than 10 shades are operating in Malekhu.

Visit to a vegetable collection center in the village. The collection center is operated by Malekhu Fruits and Vegetables Multi Purpose Cooperative, established three years ago. One of the founding members of the cooperative explained about the cooperative as follows:

- a. Membership consists of about 800 farmers, all of whom have a share of Rs.100.
- b. Marketing is the most important activity of the cooperative. The cooperative has direct communication with Kalimati wholesalers and has good relations with them. Large farmers whose products are enough for one truckload sell their products to wholesalers directly but they have to pay a little handling charge to the cooperative. Small farmers' products are procured by the cooperative, and the cooperative sells them in quantities that wholesalers could buy. In that way, small farmers also benefit from the cooperative. The cooperative rents a small building at the collection center equipped with a weighing machine, office and a small outlet of agriculture inputs with three employees. The marketing transaction is Rs.50,000-100,000/day. The organization of the cooperative has empowered farmers as they have gained bargaining power to market their products.
- c. Agriculture inputs, seeds, fertilizer and chemicals are procured in bulk and sold to members at cheaper prices than when bought individually.
- d. The cooperative is no longer dependant on JT/JTA for obtaining farming skills, but from time to time the cooperative organizes training programs by inviting private sectors and NGOs.

A farmer who has 12 ropani (0.6 ha) of land expressed that his agriculture income has increased after the establishment of the cooperative.

Most of farmers used hybrid seeds for growing vegetables.

The founder member reiterated the following:

- a. Agriculture shall be changed from subsistence agriculture to commercial agriculture.
- b. A better managed marketing system shall be planned and implemented through the cooperative.
- c. Irrigation is essential for increasing productivity.

**7 Interviews Conducted during Field Visits/ Workshops**

**June 10**

- (1) Visit to Shree Gramin Mahila Bikash MP Cooperative Tiniple Village, Panchkhal VDC.

- (1) Visit to Kunauli Village of Bhaluwajor VDC  
Before the Ramechhap workshop, the Team intended to visit the old district headquarters of Ramechhap on the same day. But the road was closed due to a bus accident. Instead, the Team visited Kunauli Village of Bhaluwajor VDC, near Manthali along the Tamakoshi River.

The village is a settlement of traditional fishery caste families and 90 HH are all fishery caste except a few Bramin families. Although the village people traditionally live on fishery in the Tamakoshi River, they cannot depend upon their life on fishery, as the number of fish in the River is declining drastically due to overexploitation on the upper stream of the River and water pollution. As a result, only five families continue to fish in the River, but all are depending more on vegetable cultivation.

The vegetables they cultivate are tomato, cauliflower, cabbage, chili, etc. All produces are brought to Manthali Town on a 30 min. walk to be sold individually. Tomato price these days is Rs.35/kg which is higher than in Kathmandu. Some farmers have constructed water harvest tanks for irrigation, which cost Rs.40,000 each.

There is a saving and credit cooperative in the village and all HH are members of the cooperative. People expressed that credit provided by the cooperative is very helpful for housing, education and so on, as interest is only 2% per month.

Recently, villagers constructed a fish pond on a dry riverbed near the village at the cost of Rs.0.1M using human labor for which the fund was provided by ILO.

#### June 13

- (1) Visit to Cooperative Outlet Shop  
The Team visited a cooperative outlet shop managed by a businessperson who is a member of the District CCI. The shop is located in a building at the main junction of Charikot. In the shop they sell products from various cooperatives in Dolakha, such as tea from Jiri, handmade papers (wash), honey, Lapsi candy, craftworks and so on. It seems to be an antenna shop for a variety of products. A similar concept could be introduced in Michi-no-Eki.



Cauliflower in Makaanpani Village in Dolakha

- (2) Visit to a Leading Farmer's Field  
One of the leading farmers resides at Makaanpani Village in Bhimeshwar and produces cauliflower and other vegetables. He attended at the workshop as a representative of farmers. Although the farmer was not available, the team met and interviewed his brother.

The two brothers cultivate 60 ropani (3 ha) of irrigated land. Their main crop is cauliflower, but they cultivate all kinds of vegetables, such as potato, cabbage, radish, green vegetables and so on. They cultivate all their fields three times a year introducing crop rotation, such as potato-cauliflower-cabbage, in order to avoid the adverse effects of growing the same crops. Use of little chemical fertilizer and chemicals and a lot of organic manure have also helped to minimize the adverse environmental effects in the field.

They organized a group of 31 farmers, each of whom owns a land of 10 ropani (0.5 ha) on average. The group conducts saving and credit and gives credit to members at the rate of 1% interest per month.

The group procures poultry manure from Kathmandu. The two brothers apply 300 bags of

#### Kavre

After finishing the workshop in Kavre, the Team visited the above cooperative and interviewed the chairperson. She first explained the history of the cooperative: It was started in 1985 as a women's group for saving and credit. In 1996 the cooperative was established with 83 members. Now membership is 1,800. At the time of the establishment, the cooperative had a saving of merely Rs.150,000. At present, it is successful enough to expand its business and is qualified for borrowing from Nepal Rastra Bank's Self Help Development Fund. It has borrowed Rs.549,000 from this fund and annual turnover is Rs.24M.

At the beginning, men were not interested in the women's activities, but now they understand well. The cooperative has appointed three male advisors.

Major activities of the cooperative are: (a) providing credit for income generation activities to its members, such as vegetable cultivation and livestock raising; (b) implementing goat exchange programs of DOLS and organizing training programs on agriculture and livestock. The cooperative has been paying remuneration to JT/JTA to work as resource persons. The cooperative is not involved in marketing because many traders come to the farm gate to procure products.

Now the cooperative employs six permanent staff members and makes a profit of nearly Rs.500,000/year.

#### June 11

- (1) Visit to Charikot Vegetable and Fruit Market  
Before the Dolakha Workshop, Charikot Vegetable and Fruits Market, constructed and managed by DADO, was visited. The market was constructed for vegetables and fruits, but no vegetable and fruit retailers operated in the main market building. Only one vegetable shop operates outside of the main market building with a temporary shade. The main building accommodates about 20 shops and there are nearly 15 shops outside.

The owner of the vegetable shop explained that as people are not coming to the market all vegetable retailers sublet the shops to other merchants selling spices and daily commodities. He also rents a shop in the main market building but he uses it as a storage and opens a shop outside. The monthly rent of a shop is Rs.800-1,000 in the main market building and Rs.150 outside.

He explained that there are weekly markets held at roadsides outside the main market on Wednesday and Saturday mornings. However, not many shops and customers were observed on Wednesday, June 14.

The shop owner displayed substantial quantities of dried chili in the shop, which were of Indian and Ramechhap origin. The Indian ones were relatively large and of a clear red color, while the ones from Ramechhap came in two varieties: one in uniform color of dark red and the other in a mixed color of dark red and yellow. There was a big difference in their prices; the Indian ones were Rs.2,000/kg and the ones from Ramechhap were Rs.350/kg for mixed color and Rs.450/kg for uniform color. The owner said he was a wholesaler of chili in Charikot and monthly transaction of chili was Rs.150,000, while his daily business other than chili was Rs.3,000-4,500/day.

He suggested that the Team meet a chili trader in Ramechhap, but when they tried to meet him on June 12, he was out of town.

#### June 12

poultry manure for 3 ha annually. It cost about Rs.75,000 in total. They employ labors at Rs.100/day each when family labor of four persons is not available.

The group also markets the products together so that a truck could be hired to transport them to Kalimati. Transportation cost is approximately Rs.1.0/kg, which is very low because they hire trucks returning to Kathmandu empty after carrying goods from there.

The brother procures hybrid seeds from Kathmandu.

The Team interviewed their neighbor, a female farmer. She is 23 years old and started farming a few months ago after her father passed away. She has 15 ropani (0.75 ha) of field, and manages it with her mother. Her annual expenses are anticipated to be more than Rs.100,000, while farming costs would be approximately Rs.27,000, consisting of seeds (Rs.3,000), manure (Rs.10,000), chemical fertilizer (Rs.10,000), pesticide (Rs.1,000), and hired labor (Rs.3,000 plus).

She has one brother working in Malaysia and one sister studying in Kathmandu. To send her brother abroad, she took a Rs.110,000 loan from a village moneylender with an annual interest of 36%. It takes two years to repay the credit.



Panchkhal Collection Centre in Kavre

distribute to farmers.

In the 1990s, the farm's Junar were damaged by a viral disease. It was suspected that the elevation of the farm, 500m, is too low for Junar, which grows well in altitudes of over 800m. Therefore, MOAC no longer produces Junar saplings but farmers produce and distribute them at a cost of Rs.15 per sapling.

At present, the farm is carrying out researches on root crops, such as potato, cassava, sweet potato, yam, etc., and producing saplings for tropical fruits, such as mango, lychee, pineapple, macadamia nuts, and so on. Their quantities of production and distribution prices are as follows:

- mango: 600 nos., Rs.50 and Rs.25 per sapling depending on variety
- lychee: 500 nos., Rs.24 per sapling
- macadamia nuts: 100 nos., Rs.15 per sapling
- pineapple: 2,500 nos., Rs.2-3 per seedling

The Swiss-funded DRSP procured 7,000 nos. of pineapple seedlings last year to be distributed and planted on roadside slopes. Pineapple can be grown at altitudes up to 1,600m.

### (2) Visit to Sindhuli Integrated Development Services (SIDS, NGO)

SIDS was established 13 years ago. This NGO has partnered with PAF (Poverty Alleviation Fund) Project of the World Bank. PAF was appraised in 2004 and started in six districts as pilot bases. PAF II is now being implemented. In the SRC, four districts out of five were selected for implementing PAF.

Activities of a partner organization under PAF consist of three phases. Phase one is a three-to-four-month preparatory phase that comprises of a) social mobilization, b) community organization (CO) building, c) facilitation of COs in preparing sub-project proposals, and d) technical assistance. Phase two is a one-year operational phase that comprises of a) technical assistance, b) capacity building, c) monitoring and evaluation, and d) coordination and facilitation. Phase three is a six-month follow-up phase that comprises of a) monitoring and evaluation, b) capacity building, and c) coordination and linkage development.

In Sindhuli, 10 NGOs cover 41 VDCs and SIDS covers 10 VDCs. The project is a cycle of activities from one VDC to another. First, poor wards are selected in a VDC base meeting. Then a specific area or group is selected in a ward meeting, after which the poor are organized for income generation activities and provided a group fund on the basis of Rs.3,000 per person. Fifty percent of the members of a group and office bearers of a group should be women.

A group is to open current and savings accounts in Rastra Bank. IG activities are decided by the group, and the money is disbursed and distributed to members. Members are to contribute 10% of the fund to IG activities. When IG is progressed, members are to return the money, which will then be used as a revolving fund for the group. The PO provides technical assistance and organizes public audits (by political parties, teachers and members of the group).

For people not categorized as the poor, a fund for infrastructure with 20% contribution is available.

After the initial organization is completed, local communities (beneficiaries) return the fund so as to make available for other members in the group. In this context, it might be possible to incorporate PAF groups into future JICA programs whenever opportunities are available.

### June 16

#### (1) Visit to the Sindhuli Farm

Before starting the Sindhuli workshop, the Study Team visited the Sindhuli Farm, which was constructed as part of the Janakpur Agriculture Development Project. The Team met horticulture development officers, who explained that the farm, whose area is 6.65 ha, was initially the base for Junar research and extension works, and produced Junar saplings to

If the prices of commodities in Kalimati were to be displayed on a board at the center's office, it may help both traders and farmers.

#### (3) Visit to Panchkhal Collection Centre

The collection center resumed operation in early June after a six-month closure. The reason for the closure was due to a shortage of commodities. During the closure period, private collection centers located along the highway handled all the incoming products.

The collection center was constructed more than 10 years ago, assisted by UNDP. The center is under DADO and 13 traders managed the center, with one manager and two sweepers cum security guard. The market operates from 2 p.m. to 8 p.m. every day. Farmers bring their products to the collection center and sell them to traders. Prices of vegetables were Rs.2-3/5kg lower than the prices in Kalimati on the day of the Team's visit.

The main users of the center are a farmers' cooperative with a membership of more than 500 HH. However, all transactions are between individual farmers and traders. There is no charge to farmers while a trader has to pay Rs.1.0 per crate and Rs.6.0 per plastic bag which accommodates 12-20 kg of vegetable. A truck has to pay Rs.20/trip. Income of the collection center per month is Rs.8,000 to Rs.10,000. The traders take most of the commodities to Kalimati. Commodities being handled are tomato, long beans and brinjals.

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### Annex 1.4 List of Officers & Stakeholders Met (2<sup>nd</sup> Stage)

May 22	Mr. Tara Chand Shah	Birtamod Market	Trader	Birtamod Market
	Mr. Shurendra Kumar Jha	Kankai Irrigation Project	Sr. Devisional Engineer	Kankai Office
	Mr. Arnod Acharya	Biratnagar	Owner of Satigahatta Tea Gaden	Office of Mr. Rijar
	Mr. Gayatri Prasad Rijar Mr. Santos Rijar	Biratnagar Biratnagar	Owner of a Rice Mill & Oil Mill Owner of Swatic Jute Mill	Office of Mr. Rijar Office of Mr. Rijar
May 23	Mr. Kajigiri	Dharan Market	MMC Chairman	Dharan Market
	Mr. Shatrugoan Shah	Dharan Market	Acting Manager	Dharan Market
	Mr. Sriwar Shrestha	Dharan Market	MMC Member	Dharan Market
	Mr. Raju Basnyat	Dharan Market	MMC Member	Dharan Market
	Mr. Bhim Dewan	Dharan Market	Ex-manager of Janika Seed Farm	Dharan Market
Mr. Peter Orchard	Tea Garden near Hile	Manager	Kuwapani Tea Factory	
May 24	Mr. Arjun Bahador Thapa	Tarahara RARS	Scientist for Fish Culture Section	Tarahara RARS
	Mr. Sanjay Limbu	Tarahara RARS	Coordinator, World Vision	Tarahara RARS
May 28	Mr. Khadka Pahador	Hetauda Market	Chairman, MMC	Hetauda Market
	Ms. Meera Gole	Hetauda Market	Vice Chair-person, MMC	Hetauda Market
	Mr. Vishnu Hari Devkota	Hetauda Market	Treasure, MMC	Hetauda Market
	Mr. Badri Ghemire	Hetauda Market	Member, MMC	Hetauda Market
May 29	Mr. Purusottam Gautam	Narayangart Market	Member (Fruit Wholesaler), MMC	Narayangart Market
	Mr. Satyandra Kumar Chauhan	Narayangart Market	Vegetable Wholesaler & Retailer	Narayangart Market
	Ms. Sarada Upreti	Malekhu Market	Vegetable Retailer	Melekhu, Dhading
	Mr. Rajendra Kaudel Mr. Mitra Raj Lohani	Malekhu F&V MP Cooperative Malekhu F&V MP Cooperative	Founder Member of Committee Member Farmer	Melekhu, Dhading Melekhu, Dhading
June 10	Ms. Jhala Kumari	Shree Gramin Mahila Bikash MP Cooperative	Chair-person	Tinpiple, Panchikar, Kavre
June 11	Mr. Yam Bahador Thakuri	Charikot Market	Wholesaler & Trader	Charikot Market
June 12	Mr. Rajesh Thapa	Kunarcree, Vilajaur, Ramechhap	Technical Staff, VDC	Valajaur Fishery Village
	Mr. Gopini Majabi	Kunarcree, Vilajaur, Ramechhap	Farmer	Valajaur Fishery Village
June 13	Mr. Ramashowar Manandhar	Dolakha Cooperative Outlets	Dolakha CCI Member	Cooperative Shop
	Mr. Chandra Tanang	Makai Bari, Bineshwar, Dolakha	Farmer, Group Leader	Makai Bri, Bineshwar
	Ms. Lecka Tamang	Makai Bari, Bineshwar, Dolakha	Farmer, Woman Head, Group Member	Makai Bri, Bineshwar
	Mr. Gopal Timilsina Mr. Bidur Prasad Battarai	Punchkar Collection Center Punchkar Collection Center	MMC Member, Trader Manager	Punchkar Collection Center
June 16	Mr. Tora Bahador Bhujel	Sindhuli Farm	Horticulture Development Officer	Sindhuli Farm
	Mr. Dhalak Bahador Thapa	Sindhuli Farm	Horticulture Development Officer	Sindhuli Farm
	Mr. Deepak Ghimire	SIDS/Nepal, Sindhuli	Chairman, SIDS/Nepal	SIDS Office
June 17	Mr. Ishwar Chandra Jha	Janakpur Town	Journalist, Janakpur Today	Hotel
	Mr. Laxman Yadav	Janakpur Town	Reporter, Janakpur Today	Hotel
June 26	Mr. Raj Babu Shrestha	Poverty Alleviation Fund	Executive Director	PAF Office, Kathmandu

**Annex I.5 Questionnaire for Household survey**  
**Program Formulation Survey for Sindhuli Road Corridor/Development**  
**HOUSEHOLD SURVEY**

Name of enumerator: \_\_\_\_\_  
 Date: \_\_\_\_\_ / \_\_\_\_\_ / 2009  
 Time: start \_\_\_\_\_ end \_\_\_\_\_

**Section A Basic data**

1. Interviewee Name: \_\_\_\_\_ A1
2. District Name.: 1. Dolakha 2. Rammachhap 3. Kavre A2  
 4. Sindhuli 5. Mahottari
3. VDC Name: \_\_\_\_\_ A3a  
 1. SRN Road 2. LRN road/no road A3b  
 Ward Number A4
5. Village Name: \_\_\_\_\_ A5a  
 1. Road connected A5b  
 2. No road connected A6  
 6. Age of respondent: \_\_\_\_\_ A7  
 7. Sex of respondent: 1. Male 2. Female
8. Relationship with head of household \_\_\_\_\_ A8
9. Religion \_\_\_\_\_ A9  
 1. Hindu 2. Christian 3. Muslim  
 4. Buddhist 5. Other
10. Caste \_\_\_\_\_ A10  
 1. Brahmin/Chettri 2. Ethnic 3. Madhesi  
 4. Dalit 5. Others

**Section B Family**

1. How many family members? B1 \_\_\_\_\_ members  
 (Family means a unit of relative people who live together and share a livelihood)
2. Structure of your family:  
 a Male (age 15 and above) \_\_\_\_\_ person B2a  
 b Male (age under 15) \_\_\_\_\_ person B2b  
 c Female (age 15 and above) \_\_\_\_\_ person B2c  
 d Female (age under 15) \_\_\_\_\_ person B2d
3. Age of the head of family: B3 \_\_\_\_\_ years old
4. Sex of the head of family: 1. Male 2. Female  
 B4 \_\_\_\_\_  
 B5 \_\_\_\_\_
5. Education of the head of family :  
 1. Can read and write 2. Can count only  
 3. School drop-out (Below class 4. SLC Pass  
 5. Higher Secondary Completed 6. Graduate and above

**Section C Tenancy and Land Holding by type**

- 1 a. Do you have land? \_\_\_\_\_ C1a  
 1. Yes 2. No

- b If yes, please provide the details  
 1 Owned, family cultivated with year the round irrigated land (Khet) C1 b1  
 2 Owned, family cultivated with partial irrigation/seasonal (khet) C1 b2  
 3 Owned, family cultivated with not irrigated (rainfed) khet C1 b3  
 4 Owned, family cultivated bari (upland) C1 b4

- 2 a. Have you rented in land?  
 1. Yes 2. No  
 1 Rented in with year the round irrigated Khet C2a  
 2 Rented in with partial irrigation Khet C2 b1  
 3 Rented in non-irrigated land Khet C2 b2  
 4 Rented in Bari Land C2 b3  
 C2 b4

- 3 If rented in land, for what purpose have you rented in  
 a Fruits C3a  
 b For growing seasonal vegetable crops only C3b  
 c For growing potato only C3c  
 d For other crops C3d

- 4 a. Have you rented out land?  
 1. Yes 2. No  
 1 Rented out with year the round irrigation C4a  
 2 Rented out with partial irrigation C4 b1  
 3 Rented out not irrigated land C4 b2  
 4 Rented out bari land C4 b3  
 C4 b4

- 5 a. Have you left land fallow?  
 1. Yes 2. No  
 b. If yes, please specify area  
 C5a  
 C5b  
 c. Give reason (Main three)  
 1 Lack of irrigation C5 c1  
 2 Lack of work force/shortage of labour C5 c2  
 3 Out migration of family member C5 c3  
 4 Un-profitable/high cost of cultivation  
 5 Lack/untimely availability of technical service  
 6 Untimely availability of production inputs  
 7 Lack of market/market price  
 8 Displaced from village  
 9 Others specify



**Section D Farming Practices**

1. Do you grow the following agricultural product?

	No	self- consumption	self- consumption & sell	for sell
a Cereals	1	2	3	4
b Vegetable (i.e., tomato, squash)	1	2	3	4
c Potato	1	2	3	4
d Fruits for eating (i.e., orange, apple)	1	2	3	4
e Pulses	1	2	3	4
f Oil seeds	1	2	3	4
g Industrial fruit crops (i.e., Coffee)	1	2	3	4
h Spices (Ginger, turmeric, etc)	1	2	3	4
i Others (specify)	1	2	3	4

2. For how many months your own production is sufficient to meet household food need?

- 1. Less than 3 months
- 2. 3 – 6 months
- 3. 6 – 9 months
- 4. More than 9 months

3. Do you keep livestock ?

	No	self- consumption	self- consumption & sell	for sell
a Chicken	1	2	3	4
b Goat	1	2	3	4
c Pig	1	2	3	4
d Sheep	1	2	3	4
e Cow	1	2	3	4
f Buffalo	1	2	3	4
g Horse/Mule	1	2	3	4

4. Do you produce the following livestock products?

	No	self- consumption	self- consumption & sell	for sell
a Egg	1	2	3	4
b Milk	1	2	3	4
c Milk products (Curd, ghee, cheese etc)	1	2	3	4
d Wool	1	2	3	4

5. Do you do fishing?

	No	self- consumption	self- consumption & sell	for sell
a Cultivation of fish	1	2	3	4
b Fishing from nature	1	2	3	4

6. Do you do bee keeping?

	No	self- consumption	self- consumption & sell	for sell
a Rearing bee	1	2	3	4
b Collecting from nature	1	2	3	4

D1a
D1b
D1c
D1d
D1e
D1f
D1g
D1h
D1i

D2

D3a
D3b
D3c
D3d
D3e
D3f
D3g

D4a
D4b
D4c
D4d

D5a
D5b

D6a
D6b

7. How much does your family spend on the following (Average of last 12 months)

a Seeds (cereal crops)	NRs	/year	D7a
b Seeds (vegetables)	NRs	/year	D7b
c Seeds (potato)	NRs	/year	D7c
d Fruit saplings	NRs	/year	D7d
e Chemical fertilizers	NRs	/year	D7e
f Pesticides	NRs	/year	D7f
g Procurement and repair of farm implements and machinery	NRs	/year	D7g
h Water for irrigation	NRs	/year	D7h
i Procurement of animal feeds	NRs	/year	D7i
j Veterinary medicines	NRs	/year	D7j
k Livestock insurance	NRs	/year	D7k
l Others, specify	NRs	/year	D7l
m Agriculture wage (others)	NRs	/year	D7m
n Agriculture wage (self)	NRs	/year	D7n

**Section E: Income and Expenditure**

1. Main job of the head of family :

- 1. Farming
- 2. Wage earning (non-farm)
- 3. Farm labor (Wage)
- 4. Services (Govt, Non-govt, Private)
- 5. Business
- 6. Foreign employment
- 7. Occupational works
- 8. Retired/Pension (Govt and non-govt)
- 9. Others (Specify \_\_\_\_\_)

E1

2. Who else is working/earning in your family other than the head of your household?

- a Number of male members
- b Number of female members

E2a  
E2b

**3. Seasonal migrant workers**

- a Do any of the family members work as seasonal migrant worker? 1. Yes 2. No
- b IF yes, how many members of family work as seasonal migrant worker?
- c Remitted amount in the last 12 months
- d How many months?

E3a  
E3b  
E3c  
E3d

e What kind of work?

- 1. Construction
- 2. Factory
- 3. Farm labor
- 4. House keeping
- 5. Tourism
- 6. No idea/Don't know
- 7. Others specify

main E3e1  
sub E3e2

f Working place of migrant workers.

- 1. Katmandu
- 2. Inside Nepal
- 3. India
- 4. Other countries (specify \_\_\_\_\_)

main E3f1  
sub E3f2

**4. Foreign migration/Remittance**

a Do any of the family members has gone for foreign employn I. Yes 2. No E4a

b IF yes, how many members of family wo? E4b

c Remitted amount in the last 12 months E4c

d How many years? E4d

e What kind of work? E4e1

1. Construction 2. Factory 3. Farm labor main E4e1

4. House keeping 5. Tourism 6. No idea/Don't know sub E4e2

f Working place of migrant workers. E4f1

1. Katmandu 2. Inside Nepal 3. India main E4f1

4. Other countries (specify \_\_\_\_\_) sub E4f2

**5. What are your family's cash income sources?**

	none	minor	sub-	main	
a Crops sale (including by-products)	1	2	3	4	E5a
b Livestock sale (including by-products)	1	2	3	4	E5b
c Salaries/wages (Farm labour)	1	2	3	4	E5c
d Off farm employment/labor (non-govt)	1	2	3	4	E5d
e Occupational work	1	2	3	4	E5e
f Business/Merchandise sales	1	2	3	4	E5f
g Service	1	2	3	4	E5g
h Land/property rent	1	2	3	4	E5h
i Migrant works (Seasonal migration)	1	2	3	4	E5i
j Remittance from family members/relative	1	2	3	4	E5j
k Assistant from government	1	2	3	4	E5k
l Forest product sale	1	2	3	4	E5l
m Pension	1	2	3	4	E5m
n Other (specify _____)	1	2	3	4	E5n

**5. How much is your family's annual income (from Jan. 2008 to Dec. 2008)?**

(Income does not include Debt/Loan/Credit in this question)

a NRS E6a

b Contribution of farm income in (%) E6b

**6. How much is your family's annual expenditure (from Jan. 2008 to Dec. 2008)?**

a NRS E7a

Purpose

b Food NRS E7b

c Cloths and dresses NRS E7c

d Religious affairs NRS E7d

e Education NRS E7e

f Others specify NRS E7f

**Section F Facility of the house and expenditure on household utility**

1. Housing

a House 1. Yes 2. No F1a

b Number of House F1b

c Roof type (No) Thatch No F1c

Zinc No F1d

Concrete No F1e

**2. Does your family have the following goods and electric appliances?**

a Radio	1. Yes	2. No	F2a
b Television	1. Yes	2. No	F2b
c Wind fan	1. Yes	2. No	F2F
d Iron	1. Yes	2. No	F2F
e Washing machine	1. Yes	2. No	F2e
f Refrigerator/Freezer	1. Yes	2. No	F2f
g Personal computer	1. Yes	2. No	F2g
h Telephone	1. Yes	2. No	F2h
i Mobile Phone	1. Yes	2. No	F2i
j Motorcycle	1. Yes	2. No	F2j
k Car (Sedan/Pickup)	1. Yes	2. No	F2k
l Truck/Tractor	1. Yes	2. No	F2l
m Bio-gas facility	1. Yes	2. No	F2m
n Solar power	1. Yes	2. No	F2n
o Battery power generator	1. Yes	2. No	F2o

**3. What type of light sources does your family use in the house?**

	no use	sub-	main	
a Electric light	1	2	3	F3a
b Kerosene oil lamp	1	2	3	F3b
c Gas lamp	1	2	3	F3c
d Battery cell lamp	1	2	3	F3d
e Candle	1	2	3	F3e
f Solar	1	2	3	F3f

**4. How much does your family spend on electricity, kerosene, gas, dry cell and candle for lighting in total?**

NPs. \_\_\_\_\_/month F4

(Average of last 12 months)

**5. What type of fuel does your family use for cooking and heating in the house?**

	no use	sub-	main	
a Electric heater	1	2	3	F5a
b Firewood	1	2	3	F5b
c Twig, husk and/or stem of vegetables	1	2	3	F5c
d Charcoal, Coal	1	2	3	F5d
e Dry animal dung	1	2	3	F5e
f Kerosene	1	2	3	F5f
g Gas stove	1	2	3	F5g

**6. How much does your family spend on fuel for cooking and heating in total?**

NRS \_\_\_\_\_/month F6

(Average of last 12 months)

6. Are you satisfied with the following issues regarding health care supplied by government?

	not at all	not so satisfied	neutral	satisfied	very satisfied
a. Location and access	1	2	3	4	5
b. Doctor	1	2	3	4	5
c. Nurse	1	2	3	4	5
d. Facility of hospital/clinic	1	2	3	4	5
e. Charge for services	1	2	3	4	5

G6a  
G6b  
G6c  
G6d  
G6e

7. Are you satisfied with water management and/or policy of water utilization of the government?

	not at all	not so satisfied	neutral	satisfied	very satisfied
a. Quantity of water	1	2	3	4	5
b. Security/quality of the water	1	2	3	4	5

G7a  
G7b

**Section H Environment**

1. Are you satisfied with environment of your communities?

1. very clean 2. Clean 3. so so 4. Dirty 5. Very dirty

2. Have you ever cleaned your village together with other inhabitants?

1. Yes, regularly we do 2. Yes, but not often 3. Seldom 4. Never

H1  
H2

3. How do you manage solid waste generated from your kitchen/households ?

1. Burried 2. Burn 3. Take to solid waste collection point 4. Throw in open/public place 4. Do nothing

H3a  
H3b

4. How long does it take to the nearest public solid waste collection point?

1. 5min and less, 2. 6~10min. 3. 11~20min. 4. More than 21min. 5. I don't know. 6. Does not exist

5. Do you think if the natural environment is damaged for recent years?

1. Yes 2. No 3. No idea

H4  
H5

6. What do you think about the following fauna and flora around your village?

	very little	little	no change	increase	very increase
a. Natural forest	1	2	3	4	5
b. Forest plantation	1	2	3	4	5
c. Practice of shifting cultivation (silv)	1	2	3	4	5
d. Grass	1	2	3	4	5
e. Wild animals	1	2	3	4	5
f. Wild birds	1	2	3	4	5
g. Fish	1	2	3	4	5
h. River cutting/erosion	1	2	3	4	5

H6a  
H6b  
H6c  
H6d  
H6e  
H6f  
H6g  
H6h

7. What type of water supply for drinking does your family use in the house?

	no use	sub-sidiary	main
a. Tap water supply (Own)	1	2	3
b. Tap water supply (Community)	1	2	3
c. Private tube-well of the house	1	2	3
d. Public tube-well in the village	1	2	3
e. Bottle water	1	2	3
f. Tube-well of the landlord	1	2	3
g. Gravity water	1	2	3
h. River, Pond and/or Lake	1	2	3

F7a  
F7b  
F7c  
F7d  
F7e  
F7f  
F7g  
F7h

8. How much does your family spend on water for drinking and washing?

NRs /month (Average of last 12 months)

9. What kind of toilet do you use?

1. Pit latrine 2. Flush toilet 3. Public toilet 4. No designated toilet 5. Others (specify )

F8  
F9

**Section G Public Service and Infrastructure**

1. Are you satisfied with the following public services and infrastructure?

	not at all	not so satisfied	neutral	satisfied	very satisfied
a. Health care	1	2	3	4	5
b. Education	1	2	3	4	5
c. Road condition	1	2	3	4	5
d. Drinking water management	1	2	3	4	5
e. Waste disposal	1	2	3	4	5
f. Electricity	1	2	3	4	5
g. Support for income generation	1	2	3	4	5
h. Bank / Credit system	1	2	3	4	5
i. Job creation	1	2	3	4	5
j. Agriculture service	1	2	3	4	5
k. Veterinary service	1	2	3	4	5

G1a  
G1b  
G1c  
G1G  
G1G  
G1f  
G1g  
G1h  
G1i  
G1j  
G1k

2. a. How long does it take to the nearest primary school?  
b. How many km from house to there?

G2a  
G2b

3. Are you satisfied with the following issues regarding education?

	not at all	not so satisfied	neutral	satisfied	very satisfied
a. Location and access	1	2	3	4	5
b. School teacher	1	2	3	4	5
c. Facility of school	1	2	3	4	5
d. After care of graduation	1	2	3	4	5
e. Education of basic knowledge	1	2	3	4	5
f. Vocational education	1	2	3	4	5
g. Cost for education	1	2	3	4	5

G3a  
G3b  
G3c  
G3G  
G3G  
G3f  
G3g

4. How long does it take to the nearest hospital/clinic?  
5. Is the facility of health care hospital or clinic?

1. Hospital 2. Clinic 3. Public health post 4. Others/private

G4  
G5a  
G5b

**Section I Information sharing and Marketing**

1. Are you interested in modern technology and information?

1. No, not at all 2. Yes, a little 3. Yes, very much

2. What kind of information do you want to have?

	No	a little	yes
a Institution of credit for investment	1	2	3
b Modern technology	1	2	3
c Potential business partners	1	2	3
d Price information	1	2	3
e New products / new varieties	1	2	3
f Production inputs	1	2	3
g Disease and pest control	1	2	3

3. How do you get business information now?

	No	a little	yes
a TV program	1	2	3
b Radio program	1	2	3
c News paper and Magazine	1	2	3
d Neighbors	1	2	3
e Traders/ Middleman	1	2	3
f Merchant of input and machineries	1	2	3
g Cooperative / associations	1	2	3
h Trade fare / Exhibitions	1	2	3
i Governmental dissemination programs	1	2	3
j Other agencies awarness programme	1	2	3

4. Do you think that the issues below are the constraints of the business and marketing?

	no	not at	a bit	problem	very
idea	all	complai			big
a Road condition (paved)	1	2	3	4	5
b Less Bargaining power	1	2	3	4	5
c Less Purchasing power	1	2	3	4	5
d Shortage of transportation means	1	2	3	4	5
e Price information	1	2	3	4	5
f Fluctuation of price	1	2	3	4	5
g Less capacity of warehouse	1	2	3	4	5
h Less capacity of refrigerators	1	2	3	4	5
i Shortage/cost of labour force	1	2	3	4	5
j Quality control at farmland	1	2	3	4	5
k Unclear quality standard at market	1	2	3	4	5
l Value added (Process etc.)	1	2	3	4	5
m Poor local market's facility	1	2	3	4	5

I1

I2a  
I2b  
I2c  
I2d  
I2e  
I2f  
I2g

I3a  
I3b  
I3c  
I3d  
I3e  
I3f  
I3g  
I3h  
I3i  
I3j

I4a  
I4b  
I4c  
I4d  
I4e  
I4f  
I4g  
I4h  
I4i  
I4j  
I4k  
I4l  
I4m

**Section J Credit**

1. Have you borrowed the money past one year? If the answer is NO, please go to Section I.

1. Yes 2. No

J1

2. If yes, how many times during the past one year

J2

3. From whom did you borrow? Please select up to 3.

- 1 Moneylender/Pawn broker Rank 1  
2 Relative/Friend Rank 2  
3 Middleman Rank 3  
4 Cooperatives  
5 Micro credit association/institutions  
6 Private Bank  
7 Government Bank  
8 Others (Specify \_\_\_\_\_)

J3a  
J3b  
J3c

4. Why did you borrow the money? Please select up to 3 reasons from the followings.

1. Education for child/children Rank 1  
2. Foods Rank 2  
3. Daily goods (Soap, fuel, etc.) Rank 3  
4. Durable Household goods (TV, Motorbikes, etc)  
5. To buy agricultural input (Seeds, Fertilizer, Pesticide)  
6. Other investment in Agriculture  
7. Health/ illness, injury  
8. Wedding/Funeral/Festival  
9. Property purchase  
10. Others (Specify \_\_\_\_\_)

J4a  
J4b  
J4c

5. How much debt do you have now (in NRs) ?

6. What is the lending term in month?

7. What is/was the interest/commission rate per year?

J5 NRs  
J6 months  
J7 %/year

**Section K Membership in Community organizations**

1. Have your family member obtained membership in any community organizations?

1. Yes 2. No

K1

2. On how many COs

Number

K2

3. Number of family members representation in COs

Male Female

K3a  
K3b  
K3c

4. Number of family members representation in decision making of COs

Male Female

K4a  
K4b

5. Have your family member obtained membership in the following type of COs

- Agriculture related  
Livestock related  
Saving and credit

1. Yes 2. No  
1. Yes 2. No  
1. Yes 2. No

K5a  
K5b  
K5c

6. What benefits you have received from participating in above community organizations?

- 1 Access to input/ services increased Rank 1  K6a
- 2 Credit facilities increased Rank 2  K6b
- 3 Technical knowledge increased Rank 3  K6c
- 4 Income/employment increased
- 5 Managerial capacity/social skills increased
- 6 Social prestige increased
- 7 Able to influence service providers
- 8 Others specify

6. What problems you have faced due to participation in community organizations

- 1 Shortage of time to participate in household affairs Rank 1  K7a
- 2 Unnecessary tensions Rank 2  K7b

Section L Effect of Past Conflict

1. How was your family affected by the past conflict?

- a. None  L1a
- b. Property and land seized/captured 1. Yes  L1b 2. No
- c. Joined Combatants/Militia 1. Yes  L1c 2. No
- d. Family members killed/displaced/abducted/status unknown 1. Yes  L1d 2. No
- e. Donation/Cash support 1. Yes  L1e 2. No
- f. Free food/Provided food item 1. Yes  L1f 2. No
- g. Forced labour 1. Yes  L1g 2. No
- h. Physically tortured/injured 1. Yes  L1h 2. No
- i. Others 1. Yes  L1i 2. No

2. How much do you provide support on following?

- a. Donation/Cash support  L2a
- b. Food  L2b
- c. Laborer  L2c

3. On Property

During the past conflict whether your property have been seized or captured ?

Type of property	Approximate	Returned	1. Yes	2. No	L3a
Land	L3b	L3f	1. Yes	2. No	L3f
Houses	L3c	L2g	1. Yes	2. No	L2g
Households assets	L3d	L2h	1. Yes	2. No	L2h
Livestock	L3e	L2i	1. Yes	2. No	L2i

4. On Family members

a. During the past conflict whether your family members has affected ?

1. Yes  2. No  L4a

Person	Number	Person	Number
Abducted	L4b	Killed	L4e
Displaced	L4c	Status un-known	L4f
Combatants	L4d	Physically tortured/injured	L4g

5. Support and compensation

- a. Have you received any support, compensation from the government ?  L5a  
1. Yes  2. No  L5b
- b. If yes, what you or your family member have received ?  L5c  
1. Yes  2. No  L5d
- c. Have you received any support from other agencies to cope up with the impact of past –conflict? (Social and economic service)  L6a  
1. Yes  2. No  L6b
- d. If yes, what you or your family member have received ?

6. Agencies involved in peace facilitation

- a. Are there any community organization/peace co l. Yes  L6a  
1. Yes  2. No  L6b
- b. If yes, what they have been doing ?

Section M Problem and Awareness

1. What types of problems are the recent major concerns with your life?

Please answer all the items below.

	very satisfi	1	2	3	4	very un-satisfi	complain
a. Education of children	1	2	3	4			M1a
b. Land management	1	2	3	4			M1b
c. Food and nutrition	1	2	3	4			M1c
d. Security	1	2	3	4			M1d
e. Cash income	1	2	3	4			M1e
f. Transportation	1	2	3	4			M1f
g. Lighting and heating	1	2	3	4			M1g
h. Marketing (selling the products)	1	2	3	4			M1h
i. Health	1	2	3	4			M1i

2. Could you tell us more details of the concerns which your family members are facing?

	no	little	more or less	yes	very much	
a. Shortage of education opportunities	1	2	3	4	5	M2a
b. High cost of education	1	2	3	4	5	M2b
c. Children's low motivation in study	1	2	3	4	5	M2c
d. Having trouble on land ownership	1	2	3	4	5	M2d
e. Registration of land	1	2	3	4	5	M2e
f. Low land quality and low yield	1	2	3	4	5	M2f
g. Insufficient irrigation systems.	1	2	3	4	5	M2g
h. Shortage of labors	1	2	3	4	5	M2h
i. Shortage of business opportunities	1	2	3	4	5	M2i
j. Inaccessibility of electricity	1	2	3	4	5	M2j
k. High living expenses	1	2	3	4	5	M2k
l. Inaccessibility of information	1	2	3	4	5	M2l
m. Security problems	1	2	3	4	5	M2m
n. Inaccessibility of health care services	1	2	3	4	5	M2n
o. Shortage of transportation means	1	2	3	4	5	M2o
p. Insufficient road conditions	1	2	3	4	5	M2p
q. Low selling price of your products	1	2	3	4	5	M2q
r. Broken family network due to immigrat	1	2	3	4	5	M2r
s. Less collaboration with neighbors	1	2	3	4	5	M2s
t. Inaccessibility of micro credit	1	2	3	4	5	M2t
u. Less availability of production inputs	1	2	3	4	5	M2u

3. Have you ever heard about troubles concerning land ownership of neighbors?  
1. Yes (specify ) M3   
2. No

4. What do you think about modern civilization? Do you want to change your life style or not?  
Please select most satisfied answer from below: M4

1. Strongly keep traditional life style (conservative)
2. Change of traditional activities is not desirable (passive resistance of modernization)
3. Anything will do. No idea.
4. Change of some traditional activities is acceptable (less positive for modernization)
5. Willing to modernization of the villages (positive for modernization)

**Section N Potential and Constrains**

1. If you have dreams for future, please indicate.
2. If you have some ideas to solve the constrains of the socio-economic condition, please indicate.
3. Other comments

Thank you very much for your cooperation.

**ANNEX 1.6 TRADERS SURVEY QUESTIONNAIRE**  
**Program Formulation Survey for Sindhu Road Corridor Development**

Name of enumerator: \_\_\_\_\_ / 2009  
 Date: \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_  
 Time: start \_\_\_\_\_ end \_\_\_\_\_

**Section A Basic data**

- Interviewee Name: \_\_\_\_\_ A1 \_\_\_\_\_ A2 \_\_\_\_\_
- District Name:
  - Dolakha
  - Sindhuli
  - Kathmandu
- Market Name: \_\_\_\_\_ A3a \_\_\_\_\_ A4 \_\_\_\_\_ A5 \_\_\_\_\_ A6 \_\_\_\_\_ A7 \_\_\_\_\_
- Age of respondent: \_\_\_\_\_
- Sex of respondent:
  - Male
  - Female
- Relationship with the owner of shop/company
  - Owner
  - Relatives
  - Employee
  - Brahmin/Chettri
  - Ethnic
  - Others
  - Dalit
  - Mahottari
  - Makwanpur
  - Dhanusa
- Caste
  - Brahmin/Chettri
  - Ethnic
  - Others
  - Dalit

**Section B Outline of Business**

- Operation of stall
  - Inside
  - Outside
  - Both
- Ownership of shop/stall
  - Own shop/stall
  - Tenant in yearly
  - Tenant in monthly
  - Tenant in daily
  - Beside the road
- Business period of this place
  - Open everyday (6-7 days)
  - 2-3 days per week
  - 2-4 days per week
  - Once a week
- Place of business
  - Do you have other branch shops/stalls other than this market place?
    - Yes
    - No
  - Do you move to other market places?
    - Yes
    - No
- Characteristics of the trader
  - Producer
  - Trader only
  - Both
- Type of business (by sales)
  - Wholesale
  - Retail
- Customers
  - Regular customers
  - Non-regular customers
- Items dealt with
  - Grains
  - Beans
  - Root crops
  - Green fresh vegetables
  - Fruits
  - Flowers and ornament plants
  - Live animals
  - Fish
  - Industrial cash crops
  - Spices
  - Milk
  - Eggs
- Started year of the business \_\_\_\_\_ B9 \_\_\_\_\_ B10 \_\_\_\_\_
- How many family/staff members involving this business? \_\_\_\_\_

- Sex of the owner:
  - Male
  - Female
- Education of the owner:
  - Can read and write
  - Can count only
  - School drop-out (Below class 10)
  - SLC Pass
  - Higher Secondary Completed
  - Graduate and above

**Section C Tendency of Business**

- Tell us the tendency of business in last 3 years
 

	very decrease	decrease	same	increase	very increase
a. Profit	1	2	3	4	5
b. Sales volume	1	2	3	4	5
c. Prime cost (purchase)	1	2	3	4	5
d. Transportation Cost	1	2	3	4	5
e. Quantity (number of commodities)	1	2	3	4	5
- Selling price fluctuation from your view point
  - Last year's fluctuation
    - very fluctuate
    - fluctuate
    - stable
  - Tendency in 3 years
    - mostly decrease
    - almost stable
    - mostly increase
- How fluctuation is large, local produce and imported one?
  - Local is large
  - Almost Same
  - Imported from outside is large
  - I cannot say/ no idea

**3. What is the reason of price fluctuation you think?**

- |                                       | not at all | a little | yes | much | yes | very much |
|---------------------------------------|------------|----------|-----|------|-----|-----------|
| a. Seasons                            | 1          | 2        | 3   | 4    | 5   | 6         |
| b. Crop production due to climate     | 1          | 2        | 3   | 4    | 5   | 6         |
| c. Crop production due to infestation | 1          | 2        | 3   | 4    | 5   | 6         |
| d. Transportation cost                | 1          | 2        | 3   | 4    | 5   | 6         |
| e. Banda and social condition         | 1          | 2        | 3   | 4    | 5   | 6         |

**4. According to your observation, which price fluctuation is large and serious in last 3 years.**

- |                                | not at all | a little | yes | much | yes | + or - |
|--------------------------------|------------|----------|-----|------|-----|--------|
| a. Grains                      | 1          | 2        | 3   | 4    | 5   | +/-    |
| b. Beans                       | 1          | 2        | 3   | 4    | 5   | +/-    |
| c. Root crops                  | 1          | 2        | 3   | 4    | 5   | +/-    |
| d. Green fresh vegetables      | 1          | 2        | 3   | 4    | 5   | +/-    |
| e. Fruits                      | 1          | 2        | 3   | 4    | 5   | +/-    |
| f. Flowers and ornament plants | 1          | 2        | 3   | 4    | 5   | +/-    |
| g. Livestock (meat)            | 1          | 2        | 3   | 4    | 5   | +/-    |
| h. Fish                        | 1          | 2        | 3   | 4    | 5   | +/-    |
| i. Industrial cash crops       | 1          | 2        | 3   | 4    | 5   | +/-    |
| j. Spices                      | 1          | 2        | 3   | 4    | 5   | +/-    |
| k. Milk                        | 1          | 2        | 3   | 4    | 5   | +/-    |
| l. Eggs                        | 1          | 2        | 3   | 4    | 5   | +/-    |

**5. How do you decide the price to sell? Please select appropriate answers up to 3 in order of importance.**

- I don't make a decision (consignment)
- Depend on buying price
- Depend on consumers' habit
- Depend on time
- Depend on quality
- Depend on supply
- Depend on the originals of the products

B11 \_\_\_\_\_  
 B12 \_\_\_\_\_

C1a \_\_\_\_\_  
 C1b \_\_\_\_\_  
 C1c \_\_\_\_\_  
 C1d \_\_\_\_\_  
 C1e \_\_\_\_\_

C2a \_\_\_\_\_  
 C2b \_\_\_\_\_  
 C2c \_\_\_\_\_

C3a \_\_\_\_\_  
 C3b \_\_\_\_\_  
 C3c \_\_\_\_\_  
 C3d \_\_\_\_\_  
 C3e \_\_\_\_\_  
 C3f \_\_\_\_\_

(1) \_\_\_\_\_  
 (2) \_\_\_\_\_  
 C4a \_\_\_\_\_  
 C4b \_\_\_\_\_  
 C4c \_\_\_\_\_  
 C4d \_\_\_\_\_  
 C4e \_\_\_\_\_  
 C4f \_\_\_\_\_  
 C4g \_\_\_\_\_  
 C4h \_\_\_\_\_  
 C4i \_\_\_\_\_  
 C4j \_\_\_\_\_  
 C4k \_\_\_\_\_  
 C4l \_\_\_\_\_

C5a \_\_\_\_\_  
 C5b \_\_\_\_\_  
 C5c \_\_\_\_\_

**Section D Consumer Habit (to sell)**

- According to your observation, which is most appropriate answer to describe consumer habit in majority.
 

D1	
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  - They are very conscious of quality, and if it's low quality they don't buy.
  - They are conscious of quality, but if price down, they buy it.
  - They are conscious of price and take lower price anytime with or without quality.
  - I don't know / no idea.

**2. What is your key point of selling commodities to consumers?**

- Please rank following 3 items in order of importance.
- Price
  - Quality
  - Mutual trust
  - Additional services (aftercare, information, home delivery)
  - Volume of handling
  - Rich assortments in variety of commodities
  - Grading
  - Packaging / appearances
  - Convenience location
  - Timing (stable assortments)
  - Transportation services
  - Credit
  - Regularity of supply

D2a	
D2b	
D2c	

**Section E Supplier's Habit (to purchase)**

- Do you change the suppliers often?
  - Yes, very often
  - There are regular sellers but sometimes changes
  - Almost fixed.

E1	
----	--

**2. Where do you buy commodities? (by cost price)**

- Self production
- Direct from farmers at farmlands
- Direct from farmers at this shop (farmers come to sell this shop)
- From wholesalers at the market/collection points
- Wholesalers coming to sell regularly

E2a		
E2b		
E2c		
E2d		
E2e		

**3. What is the origin of the commodities you deal with?**

- Local
- Adjoining districts
- Nepal
- India
- China
- Others

E3a		
E3b		
E3c		
E3d		
E3e		
E3f		

**3. What is your key point of selection of suppliers?**

- Please rank following 3 items in order of importance.
- Price
  - Quality
  - Mutual trust
  - Additional services (aftercare, information, home delivery)
  - Volume of handling
  - Rich assortments in variety of commodities
  - Grading
  - Packaging / appearances
  - Convenience location
  - Timing (stable assortments)
  - Transportation services
  - Credit
  - Regularity of supply

E4a	
E4b	
E4c	

**Section F Turnover (sales) and cost**

- What is your shop's/stall's monthly turnover?
 

F1	
----	--
- What is your shop's/stall's monthly cost?
  - Operating cost
 

F2a	
-----	--
  - Prime cost (purchasing cost)
 

F2b	
-----	--
- What is your profit margin ?
 

F3	
----	--

Thank you very much for your cooperation.



**Acronyms and Abbreviations**

ADB:	Asian Development Bank
AEC:	Agro-enterprise Center
CBO:	Community Based Organization
CCI:	District Chambers of Commerce and Industries
CO:	Community Organization
DADO:	District Agriculture Development Office
DDC:	District Development Committee
DLSO:	District Livestock Service Office
DTO:	District Technical Office
GAP:	Good Agriculture Practice
GoN:	Government of Nepal
HH:	Household
JICA:	Japan International Cooperation Agency
JT/JTA:	Junior Technician/Junior Technical Assistant
LDO:	Local Development Officer
MOAC:	Ministry of Agriculture and Cooperatives
MLD:	Ministry of Local Development
NRs:	Nepalese Rupees
OVOP:	One Village One Product
SIMI:	Smallholder Irrigation and Market Initiative Project
UNDP:	United Nations Development Program
VC:	Value Chain
VDC:	Village Development Committee

**ANNEX 1.7**

**Final Report  
of  
Program Formulation Study for Agriculture and Rural Development  
in  
Sindhuli Road Corridor**

**Report of the Workshops  
(Districts and Kathmandu)**

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- Appendix 2: List of Participants by District
- Appendix 3: List of Participants (Kathmandu Workshop)

## Report of the Workshops

### 1. Background

As a part of the Program Formulation Survey along Sindhuli Road Corridor, a series of six half-day workshops were organized in five survey districts and Kathmandu. Of the six workshops, five district-level workshops were organized in Kavre Palanchok, Dolakha, Ramechhap, Mahottari and Sindhuli<sup>1</sup>. The overall objective of the workshops was to solicit opinions and suggestions of the key stakeholders on a possible technical cooperation which Japan International Cooperation Agency (JICA) may carry out in the future along the SR Corridor in order for the impact of this road to be further enhanced and for the socioeconomic conditions of the poor and disadvantaged people to be improved as well<sup>2</sup>. Specifically, the workshop aimed to:

- present preliminary findings of the HH survey, community survey and market surveys carried out in Sindhuli Road Corridor districts and obtain opinions of stakeholders on the findings.
- understand further key issues and concerns for improvements in the socioeconomic conditions of the poor and disadvantaged people along the Sindhuli Road Corridor area, focusing on possible future JICA assistance.

Prior to organizing the workshops in the districts, the Ministry of Local Development and the Ministry of Agriculture and Cooperatives had issued a letter to their respective district offices requesting to provide all possible support, as well as to coordinate and participate in the workshop. This is indicative of further ownership by the Government of Nepal with regard to future technical cooperation from JICA for Sindhuli Road Corridor. Annex 1 presents the district workshop program.

Following the completion of the district workshops, a half day workshop was organized in the Ministry of Agriculture and Cooperatives under the coordination of the Joint Secretary, Planning Division of the Ministry of Agriculture and Cooperatives. The purpose of the Kathmandu workshop was to update senior officials of the two ministries and other key stakeholders on the status of the project and the outcome of the district workshops in addition to aforementioned two specific workshop objectives. This report is presented in five sections. Section 2, 3 and 4 present the organization of the district workshops, key issues and recommendations by district and summaries of the five district workshops. The last fifth section depicts the Kathmandu workshop.

### 2. Organization of the District Workshops

In each district, the workshop was coordinated by the Local Development Officer of the District Development Committee (DDC) and participated by the DDC, District Agriculture Development Office, District Livestock Service Office (DLSO), District Technical Office (DTO), District Chambers of Commerce and Industries (CCI), Market Management Committee, cooperative societies and leader farmers nominated by the DADO and DLSOs. The table below shows the dates of the workshops, number of participants and workshop

venues by district. One of the key features of the workshop was that it was highly participatory and attended by the field/grassroots level staff too.

District	Date	Number of Participants	Workshop Venue
Kavre Palanchok	June 10, 2009	26	DDC Hall
Dolakha	June 11, 2009	31	DDC Hall
Ramechhap	June 12, 2009	24	DDC Hall
Mahottari	June 15, 2009	18	DLSO Hall
Sindhuli	June 16, 2009	22	DDC Hall

Annex 2 presents lists of participants by district with their organization affiliations.

From the side of JICA, Mr. Toshinobu Miki Participated in the Kavre, Dolakha and Ramechhap workshops. Due to pre-announced strikes and transport closures, workshop organizers had to rush to Mahottari and Sindhuli. As a result, JICA representatives could not participate in these two districts<sup>3</sup>. The workshop was organized by the JICA Study Team with the assistance of NARMA Consultancy Private Limited. Team leader Mr. Y. Sano of M&Y Consultants, Japan, marketing specialist Ms. Mika Matsumura of KRI, and representatives of NARMA Consultancy facilitated the district workshops<sup>4</sup>. Likewise, Mr. Damodar Gauli, technical assistant at the Agriculture Information and Communication Center of the Department of Agriculture, participated in the district workshops.

The workshop was started with a welcome speech by the local development officer. Then the Japanese team leader of the JICA Study Team, Mr. Y. Sano highlighted the objectives and importance of the workshop. Following the brief speech by Mr. Sano, Dr. Birendra Bir Basnyat of NARMA Consultancy, the team leader from the Nepalese side, presented the findings of the Household Survey, Community Organization Survey and Market Survey. Likewise, Mr. Bijendra Basnyat, Program Director and Livelihoods Specialist, presented the survey results in Mahottari and Sindhuli districts. Annex 3 presents a sample of NARMA's power point presentation. From the side of NARMA, Mr. Amir Poudel, Research Officer, participated in the workshops.

After presenting the survey results and receiving feedbacks and questions from the participants, Mr. Y. Sano requested the participants to present their views on the following five key issues<sup>5</sup> which the Study Team had found very important and were considering for JICA's possible technical cooperation in the future.

- Issue no. 1: Rural infrastructure, specifically focused on irrigation
- Issue no. 2: Technical services and advice
- Issue no. 3: Strengthening and capacity building of farmers' organizations
- Issue no. 4: Post-harvest and marketing
- Issue no. 5: Environment improvements

After the presentation of the brief conclusions of the workshop, JICA Nepal's representative to the workshop, Mr. Toshinobu Miki, thanked the participants for their active participation and interests on behalf of JICA Nepal and the respective DDCs for their support and cooperation. He specifically highlighted the fact that JICA Nepal is still not sure about the definition of Sindhuli Road Corridor and that the program formulation survey carried out at present is just the start of a long exercise. This reflects JICA Nepal's interest in continuing

<sup>3</sup> Earlier, organizers had planned to organize district workshop on 7th June and 8th June in Mahottari and Sindhuli district respectively. However, it was cancelled in the last moment when some parties called strikes and transport closures in Terai district suddenly due to some political reasons.

<sup>4</sup> The workshop was organized in Nepali language and Power Point presentation was therefore translated into Nepali language.

<sup>5</sup> Participants were asked whether the study team missed any other issues that were relevant to their particular districts but they unanimously agreed with the five key areas identified by the team.

- (d) **Exploitation by traders and middlemen:** Participants agreed with the survey findings that farmers/producers have not been able to receive reasonable income for their produce as most of the market margins go to the middlemen and traders. Producers have not been appropriately organized into powerful institutions nor received market information timely. Farmers have attempted to benefit from the district's proximity to Kathmandu Valley, but they still have not been able to do so fully due to several constraints, particularly observed in the post-harvest and marketing subsectors.
- (e) **Information on livestock and related products:** The survey results included little information on livestock and livestock-related products such as milk. They wanted to know whether it is all or the report has appropriately attended justice to the emerging livestock enterprises too.
- (f) **Emerging crops such as coffee:** The area and amount of coffee production have been expanding in the district. Its potential has already been verified and the district has been considered as one of the leading districts. Participants wanted to know to what extent the survey has analyzed this. They were skeptical about the household survey carried out in four VDCs being adequate to fully assess the district potentialities.
- (g) **Mapping out district potentialities:** Participants wanted to map out the agricultural potentialities and pocket areas in the district by VDCs and their resources. They asked to what extent the survey has analyzed this. They were skeptical about the household survey carried out in four VDCs being adequate to fully assess the district potentialities.

#### Team's responses

- (a) With regard to the program coverage, Mr. Miki, in his concluding remark, replied that the definition of Sindhu Road Corridor was not yet available. The discussions are ongoing and at this time it is difficult to depict the length and breadth of Sindhu Road Corridor. This will be finalized in due course of time. He noted that the present workshop is the continuation of the discussions and will continue for some time in the future. Defining Sindhu Road Corridor explicitly is the problem.
- (b) Due to time and resource constraints, the market survey was carried out only in Panchkhal VDC in the Kavre district as the collection center established in this VDC has been one of the key sources of vegetables for the Banepa municipality in Kavre district, Kalimati Fruits and Vegetable Wholesale Market, Tukucha Vegetable Market, Baneshwor Market and Banepa Vegetable Wholesale Market. Other markets in the district have not come up as aggressively as Panchkhal. This market was specifically selected to understand why it did not remain fully operational throughout the year. The Study Team wanted to understand what led most of the producers and traders to carry out their businesses outside the markets despite such a good market infrastructure provided by the Government of Nepal with the support of the UNDP. Other questions confronted by the Study Team were: Are there any lessons to learn regarding to the management of this market so that they could be replicated or avoided in the future? What were the key issues to be considered for the operation of the collection center?
- (c) Participants' concerns with regard to the use of chemical fertilizer and pesticides were noted. Kavre's problem with regard to the common use of pesticides has been reported in the report. The Team agreed with the participants that this issue must be tackled urgently or it will be too late to succeed in the future. The reason for including the environment as one component of the technical cooperation was due to the heavy use of fertilizers and pesticides. People have already experienced several harmful effects and health hazards due to this factor.
- (d) The Team acknowledged the participants' concern for the exploitation of the producers. However, although it is true that producers have not been able to get reasonable payment for their products, what is reasonable remains a controversial issue. What is reasonable for the producers might not be reasonable for the consumers.

their support of the Sindhu Road Corridor. He highlighted the importance of implementing technical cooperation projects following the completion of the Sindhu Road. He further noted that it will take at least another three years to complete the road and to hand it over to the Government of Nepal, although the road is already open in Sections 1, 2 and 4. The remaining portion is Section 3 (between Khurkot and Nepalthok). As the track has been opened, public and private vehicles are plying the road but it is not fully operational. The present workshop is the start of the discussions required prior to the formulation of the program formulation survey and will be further continued in the future. Specifically, Mr. Miki emphasized the fact that nothing has been decided at present and will take some more time to make decisions.

This workshop report presents issues raised by participants, their recommendations, responses provided by the workshop organizer and conclusions drawn by each of the five survey districts.

### 3. District Reports

#### 3.1 Kavre Palanchok 3.1.1 On survey reports

Most of the participants expressed their pleasures for the reliable, detailed and extensive survey carried out by the team. They were of the opinion that the results of these surveys would be useful during the formulation of technical cooperation programs along the Sindhu Road Corridor. However, they requested clarifications on the following issues from the team.

- (a) **Program coverage:** What is the definition of Sindhu Road Corridor? Does it cover the whole district, a few VDCs covered by the HH survey or a few kilometers on the left and right sides of Sindhu Road Corridor?
- (b) **Market center coverage:** The survey seemed to include only one market in the district, the Panchkhal market. Why? What were the criteria for its inclusion? Why were other markets not included?
- (c) **Usage of chemical fertilizers:** Participants agreed that the district is a heavy user of chemical fertilizers, but certainly not for all the crops. "As we have not read the report," they said, "hopefully, the survey report has highlighted the fact that the district is a heavy user of chemical fertilizers, but only for selected crops such as potato and vegetables, and in limited parts of the district. Chemical fertilizers are not used heavily for some crops and in some areas."



Apart from chemical fertilizers, they wanted to know whether the team has reported about the heavy use of pesticides in the district or not. Participants reported that like chemical fertilizers, Kavre district is also a heavy user of pesticides. Pesticide pollution is also one of the key problems in Kavre district.

expressed their concerns for the poor market infrastructures, the lack of basic facilities within the market yards and so forth. If Kavre is to succeed in benefiting from its proximity to Kathmandu, the district should give priority to market infrastructure. Participants noted that irrigation is necessary but not sufficient.

When asked why the producers do not bring their products to Panchkhal Collection Center but sell their products outside the collection center, participants replied that these days many traders collect produce directly from the villages because of increased expansion of rural road networks. Traders visit farms with empty vehicles and return with loads of vegetables. Both producers and traders have benefited by this. As this has reduced the amount of products that come to the market centers, some do business outside the market centers in places provided by roadside grocery shops because it is convenient to the producers. Slowly, produce have started entering the collection center when there is not enough space provided by the two roadside shops, especially during peak vegetable seasons. However, participants provided the following reasons for the poor operation of the collection centers established by the government:

- Management of the collection center is weak and is least concerned over the minimum welfare, facilities and securities for the traders and producers.
- Like the private traders, the collection center too does not post the latest market prices of the different products for the producers to refer to.
- The business yard is small and not adequate if all the producers bring their products inside the collection center. Producers would not like to take the risk of not finding a space. Doing business in an overcrowded area is risky and likely to be cheated by some unknown elements.
- The government has not established an appropriate market management committee. Local groups and organizations such as youth clubs and cooperatives have been managing the collection on their own initiatives. They have not been provided necessary training and skills to manage markets. What is happening now is due to the self-interest of the local producers and organizations.
- The lack of an elected Village Development Committee (VDC) is also partly responsible for the situation. If the VDC had been functional, it would have taken initiative to facilitate the management of the collection center effectively. But nothing can be said now.

#### *Rural roads*

People have high demands for the roads. Expansion and improvements of rural roads should be one of the key priorities of the district. Participants highlighted the need for upgrading the present vehicle pliable roads to the extent that they would survive minor landslides and be used as many number of months as possible. Instead of opening new roads, what is needed now is to raise the standard of the existing roads.

#### **(b) Weak technical services and advice from the part of the government**

While most of the participants agreed that the technical services and advice from the part of the public extension services were weak, at the same time, they wanted to record their sheer inability to provide timely and quality services as per the demands of the farmers due to the reduction in the number of agriculture and livestock service centers. They said that earlier the district had 17 service/sub-centers which has now been reduced to six. This, in turn, implies coverage of about 13 VDCs by a JT/JTA. This is simply not possible or practical. Although the expectation is that farmers will come to service centers to seek advice, but according to them, this assumption is incorrect.

Unless farmers increase the amount of production, become more competitive and focus on quality, it is likely that middlemen and traders would keep benefiting more than the producers. This necessitates strong producers' organizations. The traders' survey will highlight this issue. The household survey has raised this issue but more will be explained in the traders' survey.

- (e) The survey has studied livestock production and marketing of livestock products too. Due to time constraints, they have not been discussed here in detail. Participants' concerns are well taken care of.
- (f) The household survey has studied the dynamics of new emerging crops such as coffee only when a respondent reported about these crops and commodities. As the present survey is not a baseline study, it has not studied all crops and commodities. Also some crops might have been omitted due to limited time and resources and surveys carried out in selected VDCs, but this is inevitable.
- (g) To map district potentialities was an extremely important suggestion. The Team has reviewed district potential and indicated some in the HH survey report. However, a detailed study on this issue must be carried out and documented prior to implementing the project in the district. The survey was not done extensively this time. The present survey is very preliminary and its purpose is to provide input to the cooperation program during project design.

#### **3.1.2 Participants' views on five key issues**

The following sections present participants' viewpoints on the five key issues identified by the Study Team. Prior to discussing the issues, participants were asked if they foresaw any other issues and concerns. However, participants expressed their satisfaction and support. They were of the opinion that these issues fairly cover Kavre's issues. Having expressed their support and expectations for the forthcoming technical cooperation, participants emphasized the following aspects with regard to each of the five key issues.

##### **(a) Infrastructure**

###### *Irrigation*

Participants confirmed that irrigation is inadequate in the district. They provided two reasons for this. First, in recent years, they have witnessed continual drying of water sources due to environment degradation. Secondly, they have not been able to repair and rehabilitate many existing farmers' irrigation systems due to limited technical and financial resources. They emphasized that if irrigation facilities are expanded, the district could further supply fresh vegetables to Kathmandu Valley and uplift the socioeconomic conditions of the poor people. However, they reiterated that the project would also need to explore the possibilities of implementing micro-irrigation such as drip irrigation, water harvesting, sprinkler irrigation to target sloping bari land<sup>6</sup> too. The project should not only focus on low-lying land. The project could learn from the experiences of Nepal-SIMI (Smallholder Irrigation and Market Initiative Project) too.

###### *Market infrastructure*

The majority of agriculture produces in the district are collected in and traded from Banepa and Panchkhal. However, both of these prime market locations do not have proper cold storage facilities and the markets do not run systematically. According to the participants, construction of a cold storage has become an urgent matter because of frequent strikes, protests and transport closures by different groups to pressure the government into fulfilling their demands. This in turn has made producers throw their products at a low price, but it has also fulfilled consumers' demands for fresh and quality products. Furthermore, participants

<sup>6</sup> Sloping bari land is upland or highland which does not retain water and therefore not suitable for growing rice.

When asked how the services could be expanded and strengthened, participants said to identify the leader farmers (e.g. Village Agriculture Development Workers and Village Animal Health Workers) who are already available in most of the villages and mobilize them appropriately by training them to become trainers. They said that it is a cost-effective transfer of technology approach and has already been successful in many areas. There are several evidences where leader farmers have proved to be better and more effective than the government JT/JTA. On one hand, JT/JTAs want farmers to come to them; on the other, farmers want JT/JTAs to come to them. As farmers have no access to JT/JTAs, they go to agro-vets and seek advice. Obviously, agro-vets' advice will be guided by what kinds of pesticides and chemicals they have and centered on selling their products. Unable to decide what is better for them, farmers will then purchase high priced chemicals as they have no alternatives. This is why Kavre's agriculture has turned into high input chemical agriculture.

The other thing that is utmost necessary is to update the technical knowledge and skills of government technicians. Their knowledge and skills have become almost obsolete.

What participants wanted to highlight was that providing training to leader farmers to work as grassroots extension workers is not sufficient. They will also need to be backed by appropriate material and equipments.

#### (c) Strengthening and capacity building of farmer organizations

Participants confirmed the need to organize, strengthen and build the capacity of farmer organizations. Having depicted how weak the farmer groups, cooperatives and community organizations are, they indicated that, in recent years, local communities have been divided and that political issues have dominated village affairs and local relationships. As a result, organizations have been greatly politicized. This has restricted their services and benefits to limited groups of people with common political motivation/interest.

Having appreciated the Study Team's observation, the participants suggested that what is needed for the government is to designate priorities in the district and identify appropriate pocket areas. For developing and sustaining a particular pocket area, the government will need to stop providing blanket support and assistance but adjust them to specific commodities in particular pocket areas. For example, if the government would like to develop tomato pocket areas in Mahadevsthan, instead of providing assistance for growing tomato to farmers all over the Kavre district, it should state that farmers in Mahadevsthan will get such support. This suggestion corresponds with the mission scheme currently introduced by the Government of Nepal. Having identified the pocket areas and commodities, the next step will be to identify the existing community organizations to strengthen and upgrade them to the level of cooperative societies that focus on not only production but also marketing aspects.

Highlighting the reasons behind the unsustainability of most community-based organizations (CBOs), participants were of the opinion that most of them are formed to receive a particular support or subsidy from government organizations. When this objective is fulfilled, such types of organizations move towards becoming dysfunctional. Many times the availability of resources is also the factor that leads the CBOs towards their breakage. Therefore, social mobilization needs to be given a higher priority. This is important for the sustainability of COs.

In the past, subject-specific offices emphasized the formation of groups for their activities. The idea of providing integrated services did not exist then. As a result, a person who is a member to a number of groups has no time to contribute effectively to the group activities and participate in them. Therefore, participants again suggested that support should be provided based on the area's potentialities. A number of crops and commodities can be produced in a certain area but it can only excel in one or two.

#### (d) Post-harvest and marketing

The district workshop confirmed the importance of value addition and marketing for improving the income of poor and disadvantaged farmers. They said, "It is indeed true that government support to farmers in the areas of post-harvest and marketing have been limited and often not available. For value addition, post-harvest and marketing knowledge and skills are important. As farmers are not only producers but also stakeholders in the value chain as well as traders, they need to be given appropriate training and skills in post-harvest and marketing. Knowledge and skills needed for production is different from post-harvest and marketing. We were of the opinion that farmers could increase their income even just by grading their agricultural products. However, they have simply not been doing so, leaving it to the wholesalers and retailers. But the latter too hardly practice scientifically."

To market agricultural produces and to achieve better scale of economy, the organization of cooperative should be promoted.

Establishment of collection centers should be preceded by formation or strengthening of cooperatives which, in turn, should be responsible for the management of the collection centers. Construction of a collection center is very easy, but making it operational and managing it efficiently is difficult.

Unless the collection centers provide timely and latest market information, farmers will hardly use them. In other words, to increase their effectiveness, provision of market information is a must. Physical improvement of the facilities in the collection center does not mean that farmers will bring products for sale there.

#### (e) Environment

Indiscriminate use of chemical pesticides has resulted in severe public health risks to the farmers and the consumers. Most of the producers seemed aware of it but were doing little to protect themselves and the consumers from the harmful effects of chemical fertilizers and pesticides in the crops.

With regard to the environment, participants made a number of suggestions, which, among others, include the following:

- (a) Implement a target group focused fodder development program based on agro-forestry components.
- (b) Give priority to integrated pest management programs.
- (c) Promote organic agriculture and raise awareness of the farmers against heavy use of chemical fertilizers and pesticides.

Participants also highlighted the following things:

- Due to deforestation and conversion of land into farmland, the great loss of fertile topsoil during rainfall has become a major challenge.
- Depletion of water resources is a major challenge for both irrigation and drinking water.
- There is a lack of proper solid waste management in the market areas of Panchkhal.
- Due to the increasing scale of livestock rearing in the district, less than 2% of the forage demand has been met.

### 3.2 Dolakha

#### 3.2.1 On survey reports

Generally participants were satisfied with the results of the surveys. However, they wanted clarifications on the following issues.

- (a) **Program coverage:** What is the definition of Sindhuli Road Corridor? How did the district become a part of Sindhuli Road Corridor?
- (b) **Revenue:** Does the government collect taxes for agricultural products imported from foreign countries? For the sake of increased revenue, the government allows cheap import of products such as garlic, as a result of which our products have become less competitive. Since a few years ago, DADO has been promoting garlic cultivation, and farmers were encouraged and getting a reasonable profit margin. However, farmers could not sell their produce (garlic) last year due to import from China. As a result, many farmers left garlic cultivation due to the lack of market (China factor). Production is not the problem but market assurance is an issue. How would the project support Nepalese farmers to tackle problems and challenges like these?
- (c) **Livestock development issue:** It seems that the survey was focused on horticulture and cereal crops. Livestock-related issues have not been appropriately highlighted.
- (d) **Organic potato:** The area and production of organic potato have been expanding in the district. If Dolakha district is to be known worldwide, it is through the commercial production and sale of highland organic potato. Hopefully, the marketing survey will highlight this issue appropriately.
- (e) **Market competition with India:** Dolakha's potato has been going to Kathmandu and other cities of Nepal. Although potato produced in Dolakha can reach Terai districts, this has not happened due to the lack of a direct road connecting Dolakha and Terai districts of Nepal. However, it was reported that some Indian traders come to Dolakha district to buy potato seeds. The reason for Dolakha potato not going to Terai is not solely because of the lack of the road but it is also because of the import of cheap potato from India. How can Nepalese farmers compete with Indian farmers? Has this survey provided any recommendations in this regard?



- (f) **Sample size:** Isn't the sample size in HH survey too small? How can we generalize the findings when the survey was carried out in four purposefully selected VDCs? Average annual household income of the district appears too high. The interest rate is also not as high as shown in the survey result.

#### Team's responses

- (a) **Program Coverage:** The Team is still in the process of defining the Sindhuli Road Corridor. However, it is the conviction of JICA that the socioeconomic development of Dolakha district is linked with the connectivity and accessibility created by Sindhuli Road. This road will complete the north-south corridor and provide the Dolakha people, particularly those living south of Chankot, with connection to Terai in the shortest time. Likewise, SR will become a part of the road linking Charikot and Dolakha with Mahottari and Janakpur when the Tamakoshi-Manthali road is upgraded to blacktop level and a bridge is built on Sun Koshi river at Khurkot with

ADB's assistance. Therefore, Dolakha district was also included in the study. Inclusion of Dolakha district in the study suggests that JICA's viewpoints with regard to SR Corridor is broad.

- (b) **Revenue:** Participants were informed that the government levies both agriculture and VAT from the importers of agricultural products. However, they are levied not on the actual procurement price but on the prices set by the government (custom point) which, are generally lower than that of the procurement price. The country cannot ban the import of products from other countries, not only because it is a member of the WTO but also because it is not possible to meet domestic demand with domestic production of, say, for example, garlic. Nepalese farmers, therefore, need to become competitive and focus on areas where they have comparative advantages. If they could produce high quality products and follow appropriate marketing strategies, they could probably compete with neighboring countries. The good thing is that the number of farmers ready to pay premium price for high quality products is increasing. Therefore, we might need to practice Good Agricultural Practices (GAP) and capture its benefits. Participant's concerns with regard to the use of chemical fertilizers and pesticides have been noted. Kavre's problem with regard to the high use of pesticides has been reported in the report. The team agreed with the participants that it is urgent to tackle this issue now, or it will be too late to succeed in the future. The reason for including the environment as one of the components of technical cooperation was due to the heavy use of fertilizers and pesticides. People have already experienced several harmful effects and health hazards due to this factor.
- (c) **Livestock production:** The team assured the participants that the survey has duly focused on livestock development issues in the district, which include both livestock production and marketing issues.
- (d) **Organic potato:** Participants were told that the HH survey results too have confirmed the contribution of potato to the district's agricultural gross domestic production. This is quite substantial. However, the survey did not focus on the topic of production of highland organic potato. The survey team agrees with the participants regarding the issue they raised on the production of highland organic potato. This issue will be taken care of during program formulation.
- (e) **Market competition with India:** The Team agreed with the participants that support and services available to the farmers in India have undermined the competitiveness of Nepalese agriculture. This is an external factor. Nepal can neither make India follow what it has been doing nor provide support to its farmers at par with support available in India. Likewise, it is also a fact that the situation has been aggravated by the proximity of Indian farmers to Terai in terms of transport facilities. As a result, it is natural that agricultural products from hilly areas are not able to compete with similar Indian products. Therefore, as mentioned earlier, Nepal needs to focus on a few commodities where Nepalese farmers have competitive and comparative advantages over India due to climatic and other socio-cultural factors. What is needed for Nepal is to benefit from its proximity to India and to open border facilities, rather than raise issues over which it has no control and are outside its remit.
- (f) **Sample size:** The Team warned the participants not to generalize the results for the district as a whole for two reasons. First, the VDCs were selected purposefully to understand the farming situation along road corridors. Secondly, samples were not drawn randomly. In terms of sample size, the number is quite large, had it followed robust sampling methodology. But it still provided a general idea and good comparisons between neighboring districts as the same methodology was used in other districts too. With regard to the average HH income, those shown in the HH survey findings are a little bit high because of the location effect of the survey VDCs as well as the share of remittance and agricultural wage. Interest rate is high in the survey areas because of young people going to foreign countries for work. Banks and finance companies usually do not finance work migration and village moneylenders often charge up to 36% interest for such activities.

that it is just giving employment to somebody. Therefore, participants suggested identifying what minimum basic facilities are needed for a service center and developing them thereafter accordingly.

**(b) Weak technical services and advice from the part of the government**

While most of the participants agreed that the weak technical services and advice from the part of the public extension services were weak, at the same time, they wanted to record their inability to provide timely and quality services as per the demands of the farmers due to the reduction in the number of agriculture and livestock services centers and the number of technicians. As the district now has only four service centers, each service center is required to cover 18 VDCs on average. Expecting focused and quality technical service under such circumstances is simply not possible.

When asked how the services could be expanded and strengthened, participants said, as in Kavre, to identify the leader farmers (e.g. Village Agriculture Development Workers and Village Animal Health Workers) who are already available in most villages and to mobilize them appropriately. In the mean time, a representative of farmer groups warned not to expect too much from leader farmers as they would often not pass all information to neighbors due to competition. Although it is a cost-effective transfer of technology approach and has already been successful in many areas, this might not always be the case.

**(c) Strengthening and capacity building of farmer organizations**

Participants confirmed the need to organize, strengthen and build the capacity of farmer organizations. Having depicted how weak the farmer groups, cooperatives and community organizations are, they indicated that, in recent years, the importance of social mobilization has increased further.

Having appreciated the Study Team's observation, they suggested that what is needed for the government is to designate priorities in the district and to identify appropriate pocket areas.

Highlighting the reasons behind the unsustainability of most community-based organizations (CBOs), participants were of the opinion that they are often formed to receive a particular support or subsidy from government organizations, and cease to operate after receiving such benefits.

**(d) Post-harvest and marketing**

The district workshop confirmed the importance of value addition and marketing for improving the income of poor and disadvantaged farmers. A farmer representative said that if it is confirmed that there is a market, farmers in Dolakha district can produce anything. But the problem is that there is no guarantee of a market. He added that what has now become important for the farmers in Dolakha district is their survival. The issue of producing quality products comes only after there is enough production. Because of the lack of market facilities, farmers have started to leave rice production and collect Sisnoo<sup>7</sup>. No one is concerned to know why this happened. DADO has no capacity to support farmers regarding post-harvest technologies and marketing. Nevertheless, participants were of the opinion that farmers could increase their income even just by grading agricultural products. However, they have simply not been doing so, leaving it to the wholesalers and retailers.

<sup>7</sup> Sisnoo is a weed which grows itself from Tarai to Mountain. It has a medicinal value. Many farmers make organic pesticides from this plant. In English it is called Stinging nettle.

**3.2.2 Participants' views on five key issues**

The following sections present participants' viewpoints on the five key issues identified by the Study Team. As in Kavre district, participants in Dolakha district did not raise any additional issues besides the five key issues noted earlier. Having expressed their support and expectations for the forthcoming JICA cooperation program, participants emphasized the following aspects with regard to each of the five key issues.

**(a) Infrastructure**

*Irrigation*

Participants confirmed that irrigation is inadequate in the district. In Dolakha, participants were particularly concerned over small scale support of about NRs.75,000-100,000 for small scale irrigation projects. They advised to undertake medium scale projects. Besides this, they emphasized the need to implement complementary agriculture projects after the completion of the irrigation projects. Likewise, participants suggested expanding micro-irrigation projects such as drip irrigation, water harvesting and sprinkler irrigation by targeting sloping bari land (high land). According to the participants, the local people's mandatory share in total investment could become a structural barrier for the participation of the poor and disadvantaged people in infrastructure development. While participants appreciated JICA's support in constructing small scale irrigation projects, they noted that the 50% mandatory share of beneficiaries was too high for the ultra-poor and deprived some sections of the opportunity to participate in the schemes. As a result, they collected 25% from the beneficiaries and 25% from the respective VDCs. Therefore, the participants suggested introducing flexibility in the program so that the share of the participants could be adjusted case by case on the basis of the economic status of the beneficiaries.

*Storage*

The majority of agriculture produces in the district are collected and traded in Kathmandu (Kalimati Market). Potato produced in Dolakha often gets a premium price in Kathmandu Valley. However, producers need to sell all their produces right after harvest due to the lack of storage facilities. If storage facilities could be built in high altitude areas such as Jiri and Sailing and organic cultivation of potato could be popularized with appropriate marketing strategies, Dolakha farmers are likely to benefit. Therefore, the project needs to support the development of storage facilities for potato.

When asked why the producers do not bring their products to Charikot Collection Center, participants replied that these days many traders collect produces directly from the villages and take them to Kalimati Market because of increased expansion of rural road networks. Some vegetables come to Charikot Bazaar from Kalimati. Sometimes, these vegetables are cheaper than those produced in nearby villages. Because of the low demand in Charikot, commercial farmers have been targeting their products to Kalimati Market. Lack of facilities and support prices have also discouraged producers from bringing their products to Charikot.

*Rural roads*

There is a high demand for rural roads. Expansions and improvements of rural roads should be one of the key priorities in the district. Participants highlighted the need for upgrading the existing village roads and constructing new ones as necessary.

*Physical infrastructure development for agriculture/livestock service centers*

Participants suggested giving high priority to developing minimum physical infrastructure facilities for the JT/JTAs at the service centers. Providing a technician with no facilities implies that the government is not concerned about delivering services to the local people, but

### (e) Environment

Lack of fodder and forages in the forest has now become a serious issue in Dolakha district. Firewood is not available in the forest. Men and women have been spending a full day just to collect a bundle of firewood. The soil is being degraded. The number of cows and buffaloes has decreased not only because the amount of organic manure has decreased but also because a lack of labor, knowledge and skills has made it difficult for people to prepare good compost manure. Farmers have been cutting young fodder trees self-grown in terrace risers with no replacements or time to regenerate them. The soil does not get sufficient organic manure. In this situation, many vegetable growers have been going to Bhaktapur and Kathmandu to procure poultry manure but this is costly.

With regard to the environment, participants had a number of suggestions, which, among others, include the following:

- Implement a target group focused fodder development program based on agro-forestry components.
- Give priority to integrated pest management programs.
- Encourage tree plantation in upstream and downstream areas to assist in water recharging for irrigation and drinking water.
- Implement an integrated agriculture and livestock development program.

## 3.3 Ramechhap

### 3.3.1 On survey reports

Generally participants were satisfied with the results of the surveys. However, they wanted clarifications on the following issues.

- Livestock development issue:** It seems that the survey was focused on horticulture and cereal crops. Livestock-related issues have not been appropriately highlighted.
- Storage:** Due to the lack of storage facilities, potato farmers have been selling their potato at very low prices right after the harvest. This issue was not discussed during the presentation. To what extent was this issue raised by the respondents in the HH survey?
- Irrigation:** The survey has appropriately identified the shortage of irrigation as one of the key issues for agriculture development. Irrigation is indeed the district's number one priority.
- Value chain:** Has the survey assessed the value chain of key commodities? This is very important in the present context when commercialization of agriculture has become a common agenda to all the stakeholders in the district.
- High interest rate:** In Ramechhap, the average interest rate is not as high as shown in the figure.

### Team's responses

- Livestock production:** The Team assured the participants that the survey has duly focused on livestock development issues in the district, which include both livestock production and marketing issues. Due to time constraints, the presentation was shortened. This, in turn, seemed to shadow livestock-related issues.



However, these are justifiably discussed in the final report.

- Storage:** Participants were told that the HH survey results have confirmed the need for improving storage facilities for both potato and Junar. The Survey Team responded that it fully agrees with the participant regarding the storage issue they raised. This issue will be taken care of during program formulation.

- Irrigation:** Nothing to comment/respond.

- Value chain:** The HH and CO surveys have not focused on the value chain aspects. However, the marketing survey, which was just completed but whose preliminary results were not yet ready, has focused on the value chain aspects and the study on the following four commodities along value chain analysis will contribute each actors and stakeholders in the value chain and be helpful in designing the projects. The key commodities are potato, tomato, Junar and milk. Respondents were told to be patient till the market report becomes public.

- High interest rate:** Survey results show that incidences of taking loan from informal moneylenders/merchants have increased due to increased opportunities to work overseas. Moneylenders often charge 3% per month interest. This makes 36% annual interest. Therefore, average annual interest rate was high in the district. For agricultural purposes, interest rate is generally 11-13% but access of HHs to official credit is still low.

### 3.3.2 Participants' views on five key issues

The following sections present participants' viewpoints on the five key issues identified by the Study Team. As in Kavre district, participants in Ramechhap district did not raise any additional issues besides the five key issues noted earlier. Having expressed their support and expectations for the forthcoming JICA cooperation program, participants emphasized the following aspects with regard to each of the five key issues.

#### (a) Infrastructure

##### Irrigation

Participants confirmed that irrigation is inadequate in Ramechhap district. Soil is very dry and it is in the rain shadow of the Mahabharat range. Similar to Dolakha, participants in Ramechhap were also attracted to micro- and nonconventional irrigation. They suggested either to undertake very big projects, such as bringing Tamakoshi River from Khimti VDC to the valleys of Manthali, Mugitar and Pakarbas, or to focus on micro-irrigation that serves one or a few HHs but enable them to irrigate rain-fed sloping upland areas and utilize household waste water. Generally, participants were of the opinion that there has been too much work and emphasis on small scale irrigation projects. But these are generally same projects undertaken after two to three years of interval. Poor and marginal people will benefit more from micro-irrigation than from small and medium scale irrigation projects.

Likewise, participants also suggested exploring the possibility of lifting water from Tamakoshi River. The river flows in the middle of the district but the land across both sides of the river are dry due to the lack of irrigation.

Developing infrastructure facilities is fine but what is more important is to ask ourselves first the purpose behind the development of a particular infrastructure. If irrigation facilities are developed with no corresponding packages for agricultural development focused on cereal, vegetable or fruit production, anticipated results will not be achieved. Therefore, infrastructure development can be a means but not an end.



### Storage

The majority of agriculture produces in the district are collected and moved to Sindhuli, Dolakha and Kavre districts. Following the completion of the Sindhuli Road, Ramechhap will benefit much as the products could go straight to Terai districts too. However, producers will need to sell all their produces right after harvest due to the lack of storage facilities. If storage facilities could be built in high altitude areas such as Bamti and Doramba, and organic cultivation of potato can be popularized with appropriate marketing strategies, it is almost certain that the district will change its shape. This will benefit Ramechhap farmers. Therefore, the project needs to support the development of storage facilities for potato and Junar.

When asked why the producers do not bring their products to Charikot Collection Center, participants replied that these days many traders collect produce directly from the villages and take them to Kalimati Market because of increased expansion of rural road networks. Some vegetables come to Charikot Bazaar from Kalimati. Sometimes, these vegetables are cheaper than those produced in nearby villages. Because of the low demand in Charikot, commercial farmers have been targeting their products to Kalimati Market. Lack of facilities and support prices have also discouraged producers from bringing their products to Charikot.

### Rural roads

There is a high demand for rural roads. Expansions and improvements of rural roads should be one of the key priorities in the district. Participants highlighted the need for upgrading the existing village roads and constructing new ones as necessary.

### Physical infrastructure development for agriculture/livestock service centers

Participants suggested giving high priority to developing minimum physical infrastructure facilities at the service centers. What is necessary at this time is to build the minimum basic infrastructure for the service center and develop it accordingly.

### (b) Weak technical services and advice from the part of the government

While most of the participants agreed that the technical services and advice from the part of the public extension services were weak, at the same time, they wanted to record their inability to provide timely and quality services as per the demands of the farmers due to the reduction in the number of agriculture and livestock services centers and the number of technicians. As the district now has only six service centers, each service center is required to cover 8-11 VDCs, or 70,000 to 75,000 persons (7,000 to 9,000 HHs) on average.

When asked how the services could be expanded and strengthened, participants said, as in Kavre and Dolakha, to identify the leader farmers (e.g. Village Agriculture Development Workers and Village Animal Health Workers) who are already available in most villages and to mobilize them appropriately.

### (c) Strengthening and capacity building of farmer organizations

Participants confirmed the need to organize, strengthen and build the capacity of farmer organizations. Having depicted how weak the farmer groups, cooperatives and community organizations are, they indicated that, in recent years, the importance of social mobilization has increased further. Having appreciated the Study Team's observation, they suggested that what is needed for the government is to designate the district priorities and identify appropriate pocket areas.

Highlighting the reasons behind the unsustainability of most community-based organizations (CBOs), participants were of the opinion that they are often formed to receive a particular support or subsidy from government organizations, and cease to operate after receiving such benefits.

### (d) Post-harvest and marketing

The district workshop confirmed the importance of focusing on value addition and marketing for improving the income of poor and disadvantaged farmers. A farmer representative said if it is confirmed that there is a market, farmers in Ramechhap district can produce commodities such as Junar, potato and ginger. But the problem is that there is no guarantee of a market. The issue of producing quality products comes only after there is enough production.

The key problem with markets in Ramechhap is the lack of coordination among producers, transporters and traders. If there is good coordination, the district would certainly benefit. The district's One Village One Product (OVOP) project too has not been successful enough due to the lack of coordination between producers, transporters and traders.

### (e) Environment

Lack of fodder and forages in the forest has become a serious issue in Ramechhap district. Firewood is not available in the forest. Men and women have been spending a full day just to collect a bundle of firewood. The soil is being degraded. The number of cows and buffaloes has decreased not only because the amount of organic manure has decreased but also because a lack of labor, knowledge and skills has made it difficult for people to prepare good compost manure. Farmers have been cutting young fodder trees self-grown in terraced risers with no replacements or time to regenerate them. The soil does not get sufficient organic manure. In this situation, many vegetable growers have been going to Bhaktapur and Kathmandu to procure poultry manure but this is costly.

With regard to the environment, the participants had a number of suggestions, which, among others, include the following:

- Implement target group focused fodder development program based on agro-forestry components.
- Give priority to integrated pest management programs.
- Encourage tree plantations in upstream and downstream areas to assist in water recharging for irrigation and drinking water.
- Implement integrated agriculture and livestock development programs.

### 3.4 Mahottari

#### 3.4.1 On survey reports

Generally participants were satisfied with the results of the surveys. However, they wanted clarifications on the following issues.

- Sindhuli Road Corridor:** Participants wanted to know what is meant by Sindhuli Road Corridor. How will it be defined?

**Irrigation:** The survey has appropriately identified the shortage of irrigation as one of the key issues for agriculture development. Irrigation is indeed the district's priority. It appears that the survey did not sufficiently focus on ground water irrigation and utilization of diesel pumps distributed earlier



- through Janakpur Agriculture Development Project (JADP).
- (c) **Competitiveness of Nepalese agriculture:** It seems that the survey report has not raised the issue of competitiveness of Nepalese agriculture. In India, the cost of production of agricultural commodities is relatively low due to different types of input and output subsidies available to the farmers from the state and central governments. Nepalese farmers are frustrated that they are forced to sell their products at low prices due to the cheap products coming from bordering villages of India. How can Nepalese farmers compete with Indian farmers? Has this survey provided any recommendations in this regard? Why have farmers not been able to bring their products to the markets?
- (d) **Storage:** Due to the lack of storage facilities, farmers have not been able to fetch good prices for their products. Most warehouses constructed by the JADP through JICA assistance have become very old; they are about to fall and have not been utilized for various reasons. To what extent this survey has brought out this issue in its report?
- (e) **Livestock keeping:** The potentiality of Mahottari district with respect to livestock keeping is high. But this opportunity has not been reasonably utilized. It seems that this survey too did not provide adequate focus on this aspect.
- (f) **Lack of improved agricultural tools and equipments:** A shortage of agriculture labor has made farmers mechanize farming and use improved agricultural tools and equipments. However, these are not available in the district. Has this survey looked into this aspect too?

#### Team's responses

- (a) **Definition of Sindhuuli Road Corridor:** Defining SR Corridor at this moment is both difficult and too early because, at present, the GoN (particularly MOAC and MLD) and JICA are working closely to define Sindhuuli Road Corridor. Generally, by SR Corridor, we refer to those areas through which Sindhuuli Road<sup>8</sup> passes; i.e. from Dhulikhel in Kavre district to Bardibas in Mahottari district via Mangaltar in Kavre district; and Nepalthok, Khurkot, Sindhuuli Bajar and Bhirman in Sindhuuli district and Ratu Village in Dhanusha district. However, considering the importance of the road to the socioeconomic development of the people in the region, it might also include areas close to Sindhuuli Road situated in other neighboring districts such as Ramechhap and Dolakha. Some parts of Ramechhap district falls in SR Corridor but the problem is Sun Koshi River, which separates Sindhuuli and Ramechhap districts. When bridges are constructed in Khurkot in Sindhuuli district and on Roshi River in Nepalthok, adjoining parts of Ramechhap will automatically come under SR Corridor. Therefore, the present study is not limited to SR Corridor in the technical sense. It covers a broader area by including Ramechhap and Dolakha, which are likely to contribute substantially to enhancing the impact of SR and the socioeconomic development of the region.
- (b) **Exploitation of groundwater:** The HH survey does not focus on the sources of irrigation. The Team, however, agrees with the participants regarding the need to look at the sources of irrigation as well. The importance of groundwater in the Terai region of the country is obvious and this will need to be exploited.
- (c) **Competition with Indian farmers:** The Team agreed with the participants that support and services available to the farmers in India have undermined the competitiveness of Nepalese agriculture. This is an external factor. Nepal can neither make India follow what it has been doing nor provide support to its farmers at par with support available in India. Likewise, it is also a fact that the situation has been aggravated by the proximity of Indian farmers to Terai in terms of transport facilities. Therefore, Nepal will need to focus on a few commodities where Nepalese farmers

<sup>8</sup> This road is also known as BP Marga in Nepal.

have competitive and comparative advantages over India due to climatic and other socio-cultural factors. What is needed for Nepal is to benefit from its proximity to India, open border facilities and take it as an opportunity, rather than raise issues over which it has no control and are outside its remit.

- (d) **Repair and maintenance of warehouses:** The Team concurred with participants' concerns over the need to emphasize the development of storage facilities to enable farmers to get reasonable prices for their products, and to rehabilitate old warehouses.
- (e) **Livestock keeping:** This will be taken care of during the project formulation.
- (f) **Agriculture mechanization:** The survey has not focused on this aspect. However, the Team agrees with the participants about the importance of agriculture mechanization and the use of improved agriculture equipments and tools. This will be taken care of during the project formulation.

#### 3.4.2 Participants' views on five key issues

Having expressed their support and expectations for the forthcoming technical cooperation, participants emphasized the following aspects with regard to each of the five key issues.

##### (a) Infrastructure

###### Irrigation

Participants confirmed that irrigation is inadequate in Mahottari district. With this backdrop in mind, the majority of participants highlighted the importance of expanding groundwater irrigation and supporting the conversion of existing diesel engines distributed by JADP to electric pumps. In recent years, the price of diesel fuel has increased so much that using diesel fuel for pumps has been very costly and non-sustainable. As the government has been providing subsidies on electricity for electric pumps, the cost of electricity is cheap. Therefore, the government should implement schemes to support farmers in replacing diesel pumps with electric pumps. Many diesel pumps are lying idle now.

Apart from the above, participants suggested implementing an integrated agricultural improvement program in Mahottari district to assist farmers in repairing and rehabilitating irrigation channels and physical infrastructures built earlier by JADP, and to facilitate farmers to replace diesel pumps with electric pumps.

*Repair of warehouses and storage facilities and establishment of small collection centers*  
In Bardibas, JADP has constructed a warehouse for cooperatives, which is now waiting for serious repair and maintenance. It cannot be used. There are also other warehouses in the district which are not in use because of the lack of repair and maintenance. Therefore, repair and maintenance of warehouses and their effective utilization could be the second component of the proposed Mahottari Agriculture Improvement Project (MARIP). The cooperative societies could be strengthened, and repaired warehouses could be handed over to them later. The cooperative society will also be strengthened and developed to establish small collection centers where producers could bring their products and traders could assemble to procure them.

###### *Rehabilitation of physical facilities at Janakpur Agriculture Development Project*

Physical facilities at JADP were created with JICA's assistance more than three decades ago. Physical infrastructures of this project have been waiting for repair and maintenance for a long period of time. Due to resource constraints, the government has not been able to repair and maintain them effectively. A small support from JICA at this time could increase the life of the project by many years and help to uplift the socioeconomic conditions of the people in SR Corridor.

- (f) Responses to decline in water table due to unsustainable and unplanned extraction of groundwater

**3.5 Sindhuli**  
**3.5.1 On survey reports**

Generally participants were satisfied with the results of the surveys. However, they wanted clarifications on the following issues.

- (a) **Livestock development issue:** The district has great potential for livestock improvements, particularly goat and dairy. Has this survey highlighted this issue appropriately?
- (b) **Irrigation:** The survey has appropriately identified the shortage of irrigation as one of the key issues for agriculture development. Irrigation is indeed district's priority.
- (c) **Landslides and erosion:** Hundreds of fertile agriculture lands in the district have been swept way by landslides and erosion. To what extent has this survey identified this issue as the district's number one enemy?
- (d) **Storage:** Due to the lack of storage facilities, Sindhuli's Junar and oranges have not been able to fetch good prices. Farmers are already encountering second generation problems in Junar farming due to the infestation of foot rot and other diseases. To what extent was this issue raised by the respondents during the HH survey?

**Team's responses**

- (a) **Livestock production:** The team assured the participants that the survey has duly focused on livestock development issues in the district, which include both livestock production and marketing issues. Due to time constraints, the presentation has been shortened. Although it seemed that livestock-related issues had been shadowed in the HH survey, this was not the case. This issue has been reasonably discussed in the final report.
- (b) **Irrigation:** Nothing to comment/respond.
- (c) **Landslides and erosion:** One of the key reasons to emphasize environmental issues in future JICA support is due to the degradation of environment, landslides and soil erosion. This issue has been specifically discussed in the survey report.
- (d) **Storage:** The team concurred with participants' concerns over the need to emphasize the development of storage facilities to secure reasonable prices for the products, particularly Junar. The importance of post-harvest handling of fresh Junar will be taken care of during the future project implementation.

**3.5.2 Participants' views on five key issues**

Having expressed their support and expectations for the forthcoming technical cooperation, participants emphasized the following aspects with regard to each of the five key issues.

**(a) Infrastructure**

**Irrigation**  
 Participants confirmed that irrigation is inadequate in Sindhuli district. With this backdrop in mind, the majority of participants highlighted the importance of expanding



*Discourage the habit of inventing new wheels*  
 Prior to developing new infrastructures, it is necessary to assess the condition of the existing facilities first. What we have seen is that the agencies and projects prefer to create the new facilities instead of utilizing the existing facilities. There is a need to discourage the habit of inventing new wheels.

**(b) Weak technical services and advice from the part of the government**

Most of the participants agreed that the technical services and advice from the part of the public extension services were weak. The district has four service centers and two contact offices to provide technical support services to the farmers. This means that, on an average, a service center is required to cover 18-20 VDCs, (20,000-25, 000 HHs). It is unreasonable to expect that a service center which lacks even the most crucial basic facilities such as a transport facility will deliver focused services to such a large number of HHs.

When asked how the services could be expanded and strengthened, participants were of opinion that well facilitated resource centers should be established in appropriate places so that the farmers could avail themselves to the centers' services as to their demand. Likewise, they suggested facilitating the linkage among resource centers, cooperatives and collection centers.

**(c) Strengthening and capacity building of farmer organizations**

Following the liberalization of cooperatives, previous government sponsored cooperatives have almost ceased to operate. Cooperatives established through private initiatives have been focusing primarily on mobilization of saving and credits. When cooperatives focus on production activities, they are least involved in marketing aspects. Therefore, there is a strong need for the mobilization of farmers' organizations, particularly cooperatives. The need of the day is to establish multipurpose cooperatives which focus on both production and marketing activities of small scale farmers. The capacity of the cooperative societies should be enhanced so that they will be able to deliver technical support and services to farmers. Unless farmers produce good quality products at low costs, they would not be able to compete with neighboring Indian farmers. The role of farmer organizations in these efforts should not be undermined. This survey has appropriately highlighted this aspect.

**(d) Post-harvest and marketing**

The district workshop confirmed the importance of focusing on value addition and marketing for improving the income of poor and disadvantaged farmers. Producing quality products at low costs of production was emphasized by most of the participants. Therefore, they suggested giving priority to reducing post-harvest handling losses and adopting good marketing strategies. Construction of market infrastructure is necessary but not sufficient. Traders and producers will need to be trained to ensure the quality of the products they handle and manage the market centers effectively. The need for promoting small scale processing technologies was also identified by the participants.

**(e) Environment**

Participants emphasized the following aspects with regard to environmental protection:

- (a) Control of floods and soil erosion
- (b) Use of organic manure and integrated plants nutrients management system
- (c) Reduction in the use of pesticides
- (d) Support for waste management
- (e) Raising awareness against the use of polythene and plastic bags

**(c) Strengthening and capacity building of farmer organizations**

Participants confirmed the need to organize, strengthen and build the capacity of farmer organizations. Having depicted how weak the farmer groups, cooperatives and community organizations are, they indicated that, in recent years, the importance of social mobilization has increased further.

Having noted some of the key factors responsible for the unsustainability of most community-based organizations (CBOs), participants emphasized the need to undo the habit of organizing groups for receiving targeted support and subsidy.

Participants were of the view that the cooperative model is the most appropriate model for inclusive development and incorporating all sections of the communities.

**(d) Post-harvest and marketing**

The district workshop confirmed the importance of focusing on value addition and marketing for improving the income of poor and disadvantaged farmers. Participants suggested implementing a market-oriented agriculture production program in order that balanced efforts could be given to production and marketing. The importance of post-harvest support for Junar during post-harvest and marketing was emphasized by most of the participants. The role of the Junar Association in assisting small and disadvantaged groups was hailed by many, but they were concerned with its limited technical knowledge and skills.

As in Ramechhap, one of the key problems with markets in Sindhuli is the lack of coordination among producers, transporters and traders. If an effective coordination can be achieved among them, the district would certainly benefit. Participants were hopeful that the survey has adequately examined the issues of post-harvest and marketing, particularly focusing on Junar and ginger.

**(e) Environment**

While the lack of fodder and forages in the forest has started to become an issue in Sindhuli district, the key challenge of Sindhuli is landslides and floods. The district will need to give priority to conserving not only the Chure range but also the Mahabharat range. Failing to protect the Chure range is to fail to protect the fertile Terai land. And if Mahabharat is not protected, no one can protect the Chure range. Therefore, Sindhuli district has a pivotal role in the protection of Terai and the humankind.

The number of cows and buffaloes has decreased not only because the amount of organic manure has decreased but also because a lack of labor, knowledge and skills have made it difficult for people to prepare good compost manure.

With regard to the environment, participants had a number of suggestions, which, among others, include the following:

- (a) Proactively implement participatory Chure and Mahabharat conservation programs
- (b) Implement target group focused fodder and forage development program based on agro-forestry components
- (c) Pilot zero tillage technologies along certain defined corridors immediately adjoining the road
- (d) Provide priority to integrated pest management programs
- (e) Encourage tree plantations in upstream and downstream areas to assist in water recharging for irrigation and drinking water
- (f) Promote organic farming and the use of organic fertilizers

micro-irrigation and nonconventional irrigation targeting sloping high lands of the poor and disadvantaged groups in the district. Some participants were of the opinion that either the government should undertake medium irrigation projects if big projects are not possible due to the lack of human, financial and technical resources, or expand micro-irrigation proactively. The majority of participants noted that the economic conditions of the poor and disadvantaged people would be improved substantially through the expansion of micro- and nonconventional irrigation.

*Landslides and flood control*

Although landslides, soil erosion and floods are common problems for most people in Nepal, this issue was specifically raised in the Sindhuli workshop. Recent years have given much emphasis on the conservation of Chure, but there is equal importance in the conservation of Mahabharat as the conservation of Chure and Terai. Construction of small and large scale structures is necessary to control and abate the effects of landslides and flooding.

*Storage*

The majority of agriculture produces in the district are collected and carried to Ramechhap and Terai districts. Following the completion of the Sindhuli Road, Sindhuli district will benefit much as the products could go straight to Terai districts via Sindhuli. Construction of storage facilities will enable the producers to regulate their trade and to avoid selling all their produces right after harvest.

*Rehabilitation of Sindhuli Agriculture Farm<sup>9</sup>*

Sindhuli Agriculture Farm was established with JICA's technical assistance more than three decade ago. Physical infrastructures of this farm have now become nearly obsolete. The farm is not able to respond to farmers' problems as satisfactorily as it used to. Implementation of the socioeconomic development program along Sindhuli Road Corridor should therefore be undertaken together with the rehabilitation of this farm to transform it into an agricultural knowledge center for the farmers, not limited to tuber vegetables. This farm is extremely important for the farmers of Sindhuli, Ramechhap and Dolakha districts.

*Rural roads*

There is a high demand for rural roads. Expansions and improvements of rural roads should be one of the key priorities in the district. Participants highlighted the need for upgrading present village roads and constructing new ones as necessary.

**(b) Weak technical services and advice from the part of the government**

Most of the participants agreed that the technical services and advice from the part of the public extension services were weak. But, at the same time, they wanted to record their inability to provide timely and quality services as per the demands of the farmers due to the reduction in the number of agriculture and livestock services centers and the number of technicians. As the district now has only six service centers, each service center is required to cover 8-10 VDCs, or 60,000 persons (10, 000 HHs) on average.

When asked how the services could be expanded and strengthened, participants said, as in Kavre and Dolakha, to identify the leader farmers (e.g. Village Agriculture Development Workers and Village Animal Health Workers), then train and mobilize them. However, participants highlighted the need for providing them material support too. Training is necessary but not enough and they will need to be appropriately remunerated.

<sup>9</sup> The farm is now named as Tuber Crop Development Farm, Sindhuli

(g) Maintain hygiene and cleanliness around animal slaughterhouses and slaughter spots

#### 4. Conclusions (District Workshops)

The key conclusion of the five district workshops was that the five focus areas identified by the consultant team through their field visits, reviews of government policies and plans and different surveys (HHs, community organizations and market) reflect most of the issues and concerns of the people in the Sindhuli Road Corridor area. The five focus areas are:

- Infrastructure development
- Strengthening technical support and services (skills improvement)
- Capacity building of farmer organizations (Institutional development)
- Post-harvest and marketing support
- Support for environment conservation

Other key conclusions which can be drawn from the outcomes of the district workshops are:

- People are greatly concerned over the connectivity and market accessibility benefits and opportunities created by Sindhuli Road. Therefore, projects focused on socioeconomic development along the Sindhuli Road Corridor area have a good chance of success and ownership by the local communities.

- There is a need to define the Sindhuli Road Corridor area appropriately. People expect that the project covers total districts than a portion of them. Rural road networks have expanded so much in recent areas that only focusing on areas adjoining Sindhuli Road will not make sense.

- A three pronged approach to service delivery is needed. It is comprised of (a) infrastructure development, (b) institutional development and (c) capacity enhancement.

- There is a need to place equal importance and priority on livestock development at par with horticulture development in the Sindhuli Road Corridor area.

- Issues regarding the common use of pesticides and chemical fertilizers, particularly in vegetable production pockets areas, and likelihoods of exploitations by Agro-vets need to be addressed appropriately.

- For effective service delivery and enhancement of agriculture commercialization, cooperative societies will need to be promoted and strengthened. Cooperative societies enjoy high support in rural areas.

- For facilitating transition of subsistence agriculture to commercialization, there will be a need to focus on improvements in market facilities, market information and the quality of products traded in markets/collection centers. Districts will need to shift their agriculture development strategies from production-focused agriculture to market-oriented agriculture.

- Irrigation is people's number one priority. But they want support primarily in medium to large scale irrigation projects. If these are not available, they rather prefer micro- and nonconventional irrigation targeting poor and deprived people and highlands over small scale irrigation projects. Many projects and local government bodies have supported small scale irrigation projects for many years. As not many projects remain

to be implemented, it is seen that same projects have been receiving support at an interval of two to three years, supported by multiple donors.

- There is a high demand for strengthening and effectively utilizing Sindhuli Agriculture Farm, JADP, cooperative warehouses and other infrastructures developed nearly three decades ago through the assistance of JICA. Before creating new infrastructure, there is a need to respond to two questions, first of which is related to the purpose of creating new infrastructure and the second to assessing whether there are such infrastructures created earlier lying idle elsewhere. Instead of inventing a new wheel, what is necessary is to repair, maintain and utilize the existing infrastructures.

- Physical facilities and resources in agricultural service centers do not motivate farmers to visit these centers. Their status will need to be improved and upgraded.

- There is a common consensus that experienced leader farmers, which include village Agriculture Development Workers and Village Animal Health Workers, can transfer improved technologies to farmers. But their capacities will need to be improved by training and material support.

#### 5. Kathmandu Workshop

##### 5.1 Objectives and Organization

As stated earlier, a central level workshop attended by key policymakers and stakeholders was organized in the meeting hall of the Ministry of Agriculture and Cooperatives (MOAC) on June 28, 2009.

The objectives of the workshop were to:

- report the current status of the program formulation study
- share survey results (HHs, COs, Marketing) carried out as a part of program formulation survey for Sindhuli Road (SR) Corridor development
- present outcomes of district workshops
- discuss and agree on key specific issues needed to be considered with respect to SR Corridor development

A total of 20 participants representing different ministries, departments and private sector were present during the workshop (Annex 4).

The workshop was started with a short startup welcome speech by Dr. Purusottam Maimali, Joint Secretary, Planning Division of the MOAC. This was followed by a short introduction to the objectives of the workshop and the Sindhuli Road Corridor program formulation survey by Mr. Y. Sano, team leader of the Study (Japanese side, M&Y Consultants Co. Ltd., Japan). Following Mr. Sano's presentation, Dr. Birendra Bir Basnyat, team leader (Nepalese side, NARMA Consultancy) presented the findings of the Household Survey, Community Organization Survey and Market Survey. Dr. Basnyat's presentation was again



followed by Mr. Sano's presentation on tentative program formulation

## 5.2 Issues and Recommendations

Prior to furnishing suggestions and recommendations, participants congratulated the Study Team for completing the study in a timely manner. They were of the opinion that the findings and conclusions have captured most of the district situations comprehensively and properly. They also thanked the Team for its comprehensive presentation. As in district workshops, participants in Kathmandu agreed with the five key focus areas identified by the Team, and appreciated the Team's recommendations on institutional development. They further emphasized that the infrastructure development is necessary but institutional development is equally important for its sustainability and effective operations to benefit the target groups.

Issues raised by the participants together with their recommendations are briefly described below:

**Considering externalities:** Having stated that when SR is completed, it is not only that agricultural products from Sindhuli or Ramechhap will come to Kathmandu, but it is equally likely that the products from Kathmandu and other big cities will go to those districts, participants suggested taking into account these kinds of externalities as well.

**Provisioning complementary infrastructure support:** In hilly districts such as Sindhuli and Ramechhap, infrastructures such as roads should be complemented by other infrastructures like suspension bridges. Due to a lack of small bridges, access of large sections of the rural areas has been limited.

**Learning from others' experiences:** Not very far from the SR Corridor, in districts such as Dhading and Nuwakot, the concept of agriculture corridor development has been implemented for a long period of time. Future program formulation should learn from the experiences of these road corridor projects.

**Focusing on minimizing post-harvest loss:** Post-harvest loss of agriculture production is one of the key constraints for producers, accounting for nearly 40% of the total production. Therefore, future projects should consider assistance with regard to the minimization of post-harvest losses.

**Focusing on Good Agricultural Practice (GAP):** Given the current situation, where pesticide use in SR Corridor districts such as Kavre and Mahottari is very common, the need to encourage the farmers to follow IPM is plausible. But this is only one side of the coin. Implementation of IPM will not fully capture the issues of quality production and likely health hazards. Therefore, the time has come to shift focus from IPM to GAP.

**International Certification:** Given the current trend in agriculture trading systems, where quality standardization and certification are fundamental bases for customer preference, Nepalese agriculture, particularly in the SR Corridor areas, should emphasize international certification of agriculture produces, specifically for organic production. By getting the products certified from institutions such as NASA, the scope of marketing Nepalese produces such as Junar could be enhanced.

**Preserving the genetic pool of livestock:** The number of high milk producing livestock breeds are currently declining in Kavre. These breeds are reportedly being exported to Terai districts and to India. This situation is likely to affect the milk production along the SR Corridor area. Future program formulation should emphasize preserving the genetic pool of important high milk yielding livestock varieties in order to maximize future milk production.

**Strengthening farmers' organizations to link farmers to markets:** Roads link farmers/producers to markets but experiences show that such opportunities are often captured by medium and large scale farmers. Small scale poor farmers do not have the capital or capacity to compete with large scale farmers and benefit from the opportunities created by the roads. As suggested by the survey results, cooperatives could be strengthened to enable small scale farmers to organize among themselves. Besides cooperatives, the project should also consider facilitating networking and information sharing among producers so that they could get reasonable prices for their products and adjust the production and quality of products as per the demands and needs of the consumers.



**Identifying quick impact products:** Future program formulations should identify commodities that will bring quick improvements in the livelihoods of the farmers, which should be followed by facilitation of marketing of such products.

**Environment as a cross-cutting theme:** Given the importance of livestock improvements, environmental considerations and cross-cutting issues under environmental conservation, most of the participants suggested putting livestock development and environmental improvements as two different components rather than integrate the two as suggested in the program strategy.

**Focusing on the coordination mechanism and gender sensitive approach:** As the SR Corridor involves hosts of stakeholders, MLD participants suggested giving high priority to coordination issues and mainstreaming gender rights from the program formulation stage to implementation and evaluation.

Last but not least, participants further suggested being cautious and thoughtful during the program formulation on the following issues:

- Selecting project coverage areas and targeting specifically disadvantaged groups such as Dalits and conflict affected HHs
- Responding to factors affecting farmers to keep their land fallow
- Giving priority to the environmental issue and the need to consider it as a separate component
- Facilitating a shift from production-focused agriculture to market-focused agriculture
- Assessing commodity/crop feasibilities based on contour mapping
- Tentative scheduling of the program

MOAC suggested revising the program schedule so that some of the propositions such as wholesale market development could be more advanced than what has been suggested in the program schedule.

Following the comments and suggestions from the floor, Mr. Sano, Ms. Matsumura and Dr. Basyrat responded to the queries and issues raised by the participants. They committed to including the participants' constructive comments and suggestions as much as possible within

### Appendix 1: District-Level Workshop Schedule

#### A. Objectives of the Workshop

- To present preliminary findings of the HH, community and market surveys carried out in Sindhuli Road Corridor districts
- To further understand key issues and concerns for improvements in the socioeconomic conditions of the poor and disadvantaged people along the Sindhuli Road Corridor area, focusing on possible future JICA assistance

#### B. Venue: District Development Committee, Meeting/Conference Hall

#### C. Participants (Approximately 25)

SN	Organization	Participants
1	District Development Committee	1. Local Development Officer 2. Programme Officer 3. Planning Officer 4. Chief, District Technical Office 5. VDC Secretaries (4 from survey VDCs)
2	District Agriculture Development Office	1. Chief-1 2. Subject Matter Specialists-3 (Horticulture, Agriculture Extension, Crop Science) 3. JT/JTAs (2 Survey VDCs)
3	District Livestock Service Offices	1. Chief-1 2. Subject Matter Specialists-1 (Veterinary/Livestock) 3. JT/JTAs (2 Survey VDCs)
4	Others	Representative- 2
	4.1 District CCI	Milk Cooperative- 1
	4.2 Cooperatives	Agriculture cooperative-1
	4.3 NGOs (Agriculture Sector)	Representatives-2 (from 2 organizations)
	4.4 Market Management Committee	Representative-1
	4.5 Leader farmers	DADO- Nomination 1 DLSO- Nomination-1

#### D. Workshop Schedule

SN	Date	Workshop District Venue	Time
1	June 10, 2009	DDC, Kavre, Dhulikhel,	10:30 AM – 2:00 PM
2	June 11, 2009	DDC, Dolakha, Charikot	10:30 AM – 2:00 PM
3	June 12, 2009	DDC, Ramechhap, Manbahi	10:30 AM – 2:00 PM
4	June 15, 2009	DDC, Mahottari, Jaleshor	1:30 PM – 5:00 PM
5	June 16, 2009	DDC, Sindhuli, Sindhuli Madi	10:30 AM – 2:30 PM

the given time and resources. Prior to the wrap up and closing of the workshop by Dr. Mainali, Mr. Toshinobu Miki of JICA thanked the ministries and other organizations for participating in the workshop on behalf of JICA. As he said in the district workshops, he mentioned that the present study has opened up a platform for discussions with a focus on Sindhuli Road Corridor development. It was just a start and JICA will carry out further discussions and consultations with the key stakeholders when the consultant team submits their report, most probably at the end of July following discussions with the JICA headquarters in Japan.

Dr. Mainali, in his short and comprehensive concluding remarks, thanked JICA, the consultant teams and participants for their active participation in the workshop. Given people's high expectations and demands for their overall socioeconomic development, he said that the government is not in a position to wait for a long time. The ministry is looking for a holistic, complete and sustainable development package targeted to the poor and deprived people in the area. He was confident that the team will come up with concrete and visible programs and packages that would substantially increase the agricultural income of the households in the area. He said that the program should focus on enhancing the agricultural income of the HHs as the poverty in these districts are rampant and the share of agricultural income in the total HH income has been declining. He emphasized that the outcome and outputs of the assistance should be tangible, specific and measurable. He thanked JICA for the good support and reiterated that the GoN is looking forward to the final report in due course of time.

## Appendix 2: List of Participants by District

District:	Kavre,	Date:	June 10, 2009
SN	Name	Designation	Organization
1	Ms. Laxmi Kunwar	PO	JICA Nepal
2	Ms. Chhiro Sano	FC, Volunteer	JICA Nepal
3	Mr. Bhuvan Hari Adikhari	Secretary	Kavre VDC
4	Mr. Mani Pd. Sapkota	Programme	DLSO
5	Mr. Laxmi Lal Rajbhandari	KLJI	Banapa
6	Mr. Man Kaji Pradhan	KLJI	Banapa
7	Mr. Madhukar Mahat	Secretary	Chalal Ganeshtan VDC
8	Mr. Mukunda Dahal	D.Do.P.T.	CP
9	Mr. Manju Kumar Shrestha		FNCCI-Kavre
10	Ms. Laxmi Khanal		DDCI
11	Ms. Sarita Sapkota		DDC
12	Mr. Dilip Kumar Deuja	Vet. Officer	DLSO Kavre
13	Mr. Megha Nath Kafle	LDO	DDC
14	Mr. Pashupati Pokhrel	Planning Officer	DADO
15	Mr. Surya Bd. Thapa	Horticulturist	DADO
16	Mr. C.N. Adikhari	For. SADO	DADO
18	Mr. Rashi Kanta Ghimire	Programme Officer	DDC
19	Mr. Shyam Mani Kafle	Engineer	DDC
20	Mr. Shree Kant Ghimire	Programme Officer	DADO
21	Mr. Prakash Adikhari	Secretary	Mahadevsthan VDC
22	Mr. Sashi Raj Khadka	JTA	DLSO
23	Mr. Shyam Neupane	JTA	DLSO
24	Mr. Bishwa Nath Dahal	Secretary	Patihelel VDC
25	Mr. Govinda Bd. Deuja	JT	DADO
26	Mr. Santosh Thapa	Enumerator	Branch Statistics Office

## District: Kavre, Date: June 10, 2009

SN	Name	Designation	Phone
1	Mr. Om Kar Ghimire	Secretary	9841343772
2	Mr. Birendra Shrestha	Vice-President	9851059939
3	Mr. Dilip Kumar Guragai	LDO	9841511544
4	Mr. Konal Shankar Ghimire	President	011-490266
5	Dr. Narayan Bd. Shrestha	Livestock Development Officer	011-490246
6	Mr. Kul Bd. Thapa	Farmer	9841382500
7	Mr. Lal Bd. Shrestha	Secretary	9841463711
8	Mr. Basistha Gunu Bhandari	Secretary	9841500687
9	Mr. Kausal Ghimire	Engineer	9841483842
10	Mr. Sahdev Yadav	HDO	9841104810
11	Mr. Yoj Bd. Sunwar	JT	9841005783
12	Mr. Krishna Bd. Bhujel	JT	9741164586
13	Mr. Ganendra Thapa	JT	9841394609
14	Mr. Harhar Adikhari	SADO	9841495469
15	Mr. Javan Budathoki	JT	9841490891
16	Mr. Narayan Das Shrestha	Planning Officer	9741039426
18	Mr. Bipul Baral	Planning Officer	9841414913
19	Mr. Deepak Subedi	Planning Officer	
20	Mr. Nirmal Dashan Acharya	C.D. Engineer	
21	Mr. Ram Ekbal Singh	Vet. Officer	
22	Mr. Umesh Lal Pradhan	V.T.	
23	Mr. J.N. Dahal	Vice Chairman	
24	Mr. Ram Shiv Narayan	JT	

## District: Dolakha, Date: June 11, 2009

SN	Name	Designation	Institution	Phone
1	Mr. Shree Lal Baral	HDO	DADO	049-421130
2	Mr. Yam Pd. Poudel	PPO	DADO	
3	Mr. Shankar Pd. Chaudhary	JT	DADO	
4	Mr. Kaji Man Pradhan	JTA	DADO	
5	Mr. Krishna Bd. Khadka	JTA	LSSC Gairimudi	9741040539
6	Mr. Padam Bd. Jiral	JT	JSC Jiri	9741074270
7	Mr. Pan Bd. Magrati	Farmer	Bhimeshwar Municipality-5	9744028853
8	Mr. Karan Bd. Jirel	Secretary	Jiri VDC	9741025962
9	Mr. Gyanendra Adikhari	Marketing Manager	APPMC, Charikot	9844059920
10	Mr. Sher Bd. Tamang	Farmer	Taja Tarkari Production Farmers Group	9844061506
11	Mr. Hem Raj Rimal	Chief	DDCI	9741029121
12	Ms. Santoshi Karki	FM	DDC	9844067809
13	Mr. Shankar Bd. Thapa	LDO	DDC	049-421142
14	Mr. Jagadish Aryal	Internal Audit Officer	DDC	049-421139
15	Dr. Ram Kumar Karki	Chief Livestock Dev. Officer	DLSO	049-421115
16	Dr. Jagat Bd. Simkhada	Chief District Engineer	DLSO	049-421115
18	Mr. Kesheh Pd. Bimali	Chief District Engineer	DDC	049-421141
19	Mr. Rameshwar Marhatta	EO	DDC	049-421049
20	Mr. Narayan Pd. Sivakoti	EO	DDC/DRSP Bhimeshwar Municipality	049-421469
21	Mr. Tulsi Bd. Shrestha	EO	Municipality	049-421469
22	Mr. Nawaraj Sapkota	HDO	DADO	049-421130

## District: Mahottari, Date: June 15, 2009

SN	Name	Designation	Institution	Phone
1	Mr. Surya Kant Jha	LDO	DDC	
2	Mr. Rukmini Raman Thakur	SADO	DADO	9844025195
3	Dr. Rabindra Thakur	SDVO	DLSO	9854030593
4	Mr. Raj Kumar Goit	CDE	DDC	9744003165
5	Mr. Mishri Lal Yadav	PO	DDC	9842820400
6	Mr. Om Prakash Biraj	AO	DADO	9804898060
7	Mr. Bachu Raj Lal	JT	DADO	044550179
8	Mr. Ram Bhaban Singh	Member	FNCCI-Jaleswor	9854030012
9	Mr. Love Raja Singh	Member	FNCCI-Jaleswor	9844058051
10	Mr. Laxman Mandal	JTA	DLSO	9844068854
11	Mr. Sita Ram Mandal	HDO	DADO	
12	Mr. Ramesh Chaudhari	JT	DADO	
13	Mr. Dhavesthor Prasad Sah	Leader Farmer	Damthi Madai	
14	Mr. Ram Balam Pd. Sah	CDO	DADO	9804869641
15	Mr. Kripa Shankar Sah	General Secretary	FNCCI-Jaleswor	9854030007
16	Mr. Raghu Bir Pudey	Farmer	Dairy Cooperative	
17	Mr. Surya Dev Yadav	Secretary	DLSO	
18	Mr. Ram Narayan Jha	Secretary	Pipara VDC	9744017684

## District: Ramechhap, Date: June 11, 2009

SN	Name	Designation	Institution	Phone
23	Mr. Dhruba Basnet	P. Engineer	Tea Cooperatives	9841566480
24	Mr. Chitra Bd. Thapa	DRSP	DRSP	9744028438
25	Man Bd. Gurung	Secretary	Gairimudi VDC	9744000830
26	Ms. Bhawani Siwakoti	CM	CEPPAARD	9741085824
27	Mr. Badri Bd. Rimal	Secretary	Pawati VDC	9741054356
28	Mr. Bhanu Bhakta Acharya	Secretary	Babare VDC	9741051871
29	Mr. Purshurtha Shrestha	Executive Officer	Rural Dev. Tuki Association	9741054933
30	Mr. Basu Dev Basnet	Farmer	Women Foundation	9844060331
31	Ms. Sunita Jirel			

## District: Mahottari, Date: June 15, 2009

SN	Name	Designation	Institution	Phone
1	Mr. Om Kar Ghimire	Secretary	Okharani VDC	9744016332
2	Mr. Birendra Shrestha	Vice-President	NGO Federation	9844043101
3	Mr. Dilip Kumar Guragai	LDO	DDC	9744023830
4	Mr. Konal Shankar Ghimire	President	NGO Federation (Loktantrik)	9854040151
5	Dr. Narayan Bd. Shrestha	Livestock Development Officer	DLSO	9744007890
6	Mr. Kul Bd. Thapa	Farmer	Khimri Milk Cooperative	9744015399
7	Mr. Lal Bd. Shrestha	Secretary	Daduwa VDC	048-540116
8	Mr. Basistha Gunu Bhandari	Secretary	Tilpung VDC	042-540362
9	Mr. Kausal Ghimire	Engineer	DDC	9844044884
10	Mr. Sahdev Yadav	HDO	DADO	9844044884
11	Mr. Yoj Bd. Sunwar	JT	DADO	9744015489
12	Mr. Krishna Bd. Bhujel	JT	DADO	9844027964
13	Mr. Ganendra Thapa	JT	DLSO	9744023955
14	Mr. Harhar Adikhari	SADO	DADO	9744007802
15	Mr. Javan Budathoki	JT	DADO	9744000388
16	Mr. Narayan Das Shrestha	Planning Officer	FNCCI	9841390131
18	Mr. Bipul Baral	Planning Officer	DDC	048-540480
19	Mr. Deepak Subedi	Planning Officer	DDC	9744016052
20	Mr. Nirmal Dashan Acharya	C.D. Engineer	DDC	
21	Mr. Ram Ekbal Singh	Vet. Officer	DDC	
22	Mr. Umesh Lal Pradhan	V.T.	DLSO	
23	Mr. J.N. Dahal	Vice Chairman	RCCI	
24	Mr. Ram Shiv Narayan	JT	DADO	9741050011

## District: Ramechhap, Date: June 15, 2009

SN	Name	Designation	Institution	Phone
1	Mr. Surya Kant Jha	LDO	DDC	
2	Mr. Rukmini Raman Thakur	SADO	DADO	9844025195
3	Dr. Rabindra Thakur	SDVO	DLSO	9854030593
4	Mr. Raj Kumar Goit	CDE	DDC	9744003165
5	Mr. Mishri Lal Yadav	PO	DDC	9842820400
6	Mr. Om Prakash Biraj	AO	DADO	9804898060
7	Mr. Bachu Raj Lal	JT	DADO	044550179
8	Mr. Ram Bhaban Singh	Member	FNCCI-Jaleswor	9854030012
9	Mr. Love Raja Singh	Member	FNCCI-Jaleswor	9844058051
10	Mr. Laxman Mandal	JTA	DLSO	9844068854
11	Mr. Sita Ram Mandal	HDO	DADO	
12	Mr. Ramesh Chaudhari	JT	DADO	
13	Mr. Dhavesthor Prasad Sah	Leader Farmer	Damthi Madai	
14	Mr. Ram Balam Pd. Sah	CDO	DADO	9804869641
15	Mr. Kripa Shankar Sah	General Secretary	FNCCI-Jaleswor	9854030007
16	Mr. Raghu Bir Pudey	Farmer	Dairy Cooperative	
17	Mr. Surya Dev Yadav	Secretary	DLSO	
18	Mr. Ram Narayan Jha	Secretary	Pipara VDC	9744017684



## Appendix 3: List of Participants (Kathmandu Workshop)

Date: June 28, 2009

Venue: Conference Room, MoAC

SN	NAME	DESIGNATION	INSTITUTION	E-MAIL	PHONE
1.	Gopal Prasad Shrestha	Proj. Director	Vegetable Dev. Director	gopalshrestha@yahoo.com	5523701
2.	Uttam K. Bhattarai	Director General	DFTQC	ukbhattarai21@yahoo.com	4262430
3.	Tek Bahadur Bam	Project Coordinator	CDP	bamtekbahadur@yahoo.com	9851029799
4.	Sabnam Sivakoti	Agri. Economist	MOAC	shabaryal@yahoo.com	4211665
5.	Tika Ram Sharma	Planning officer	MOAC	sharmatika@yahoo.com	4211665
6.	Shyam Prasad Dhakal	Potato De. Officer	NPDP	tpsdhakal1@yahoo.com	9841335688
7.	Shambhu Pd. Dhakal	Senior Pot. Dev. Officer	NPDP	dhakal_sp@yahoo.com	5526249
8.	Dr. Purushotam Mainali	Joint Secretary	MOAC	ppmainali@hotmail.com	
9.	Dr. P. Pathak	Director General	DLS	drppathak@yahoo.com	5522056
10.	B.P. Aryal	Deputy Director General	DOA	aryalbisnu@yahoo.com	5521127
11.	Dr. D.B. Shakya	Executive Director	AEC/FNCCI	aec-fncci@mos.com.np	
12.	Indu Ghimire	Under Secretary	MLD	ghimireindu@yahoo.com	9851026223
13.	Bijaya Prasain	Section Officer	MLD	prasain_bijaya@yahoo.com	9841773742
14.	Dr. Mina Nath Paudel	Chief	ORD, Khumaltar	mnpaudel@yahoo.com	9851107324
15.	Ram Bahadur Shrestha	Senior Horticulture Officer	NPDP	rbshrestha_2000@yahoo.com	9841664337
16.	I.P. Pandey	Senior Ag. Ext. Officer	MOAC	ippanday@hotmail.com	9841664337
17.	K.P. Rijal	Senior Livestock De. Officer	MOAC	kprijal2003@yahoo.com	9849255146
18.	Ram Krishna Khatiwada	Joint Secretary	MOAC	ramkrishnakhatiwada@yahoo.com	9851093956
19.	Devendra K. Saraf	Senior Horticulture Officer	FDD	devksaraf@yahoo.com	9841941743
20.	Tulasi Gautam	Executive Director	Kalimati	tulasigautam@yahoo.com	9841580960

June 16, 2009

Date:

District: Sindhuuli,

SN	Name	Designation	Institution	Phone
1	Mr. Ashok Kumar Das	SADO	DADO	047520166
2	Mr. Brahma Dev Thakur	JT	DADO	9844076316
3	Mr. Aalim Sati	JT	DADO	9744001197
4	Mr. Ram Chandra Yadav	JT	DADO	047520166
5	Mr. Nutheri Yadav	JT	DADO	9844045250
6	Mr. Sagor Kumar Dhakal	PO	SIDS/Nepal	9844091273
7	Mr. Deepak Ghimire	President	SIDS/Nepal	9844041206
8	Mr. Milan Shrestha	Programme Head	CDP Sindhuuli	98440003897
9	Mr. Ram Mani Bhandari	LDO	DDC	9741079145
10	Mr. Kashi Raj Subedi	Planning Officer	DDC	9844040402
11	Mr. Goverdhan Adikhari	PPO	DADO	
12	Mr. Rajendra Pd. Sah	Vet. Officer	DLSO	9844041519
13	Mr. Naraj Gajurel		MMSD	9844075969
14	Mr. Ramdhan Wajhi	DC	CDPIS	9844014811
15	Mr. Tej Bikram Thapa	JT	DLSO	9844042053
16	Mr. Raj Kumar Magar	Secretary	Kakur Thakur VDC	9844076308
17	Mr. Ram Babu Sah	JTA	DLSO	9842836619
18	Mr. Bisheshwar Pd. Chaudhary	JT	DLSO	04752185
19	Mr. Dhilaki Bd. Thapa	VPO	Vegetable Promotion Center	047520185
20	Mr. Ram Dular Sah	PO	DADO	9844045525
21	Mr. Nirmal Kumar Ramtel	Member	Junar Organization	9841052340
22	Mrs. Dhan Maya Shrestha	Farmer	Kamalamsai Municipality	9741058113



**Annex 2.2****Major functions/roles of different of organizational units of DOA in the delivery of agricultural extension services (from bottom to the top)**

S. N.	Responsible organizations (Key actors)	Major functions/activities	Remark
1	Agricultural services centre/sub-centers	<ul style="list-style-type: none"> <li>Plan programs in consultation with farmer groups, local leaders, CBOs and community organizations</li> <li>Implement devolved agricultural services programs in the respective focus/command VDCs.</li> <li>Provide technical advice to farmers to adopt improved agricultural technologies</li> <li>Assist farmers to solve their farming problems and to establish linkages with agricultural research</li> <li>Undertake extension activities such as demonstration and training</li> <li>Mobilize farmers groups</li> </ul>	Grassroots organization at the district level
2	District Agriculture Development Office (DADO)/ District Development Committee	<ul style="list-style-type: none"> <li>Coordinate the implementation of agricultural development programs in the district</li> <li>Field and supervise frontline extension workers (JT/JTAs) in the district and ASCs</li> <li>Implement, supervise and monitor agricultural development programs in the district</li> <li>Provide secretariat service to the District Agriculture Development Committee and member-secretary to this committee</li> </ul>	Key actor for agricultural development (crops, horticulture and fisheries) in the district Each of the 75 districts of the country has a DADO
3	Regional Directorate of Agriculture (RDA)	<ul style="list-style-type: none"> <li>Provide technical backstopping to DADO</li> <li>Coordinate agriculture (crops, horticulture and fisheries) programs/units at the regional level</li> <li>Supervise and monitor district programs</li> <li>Administratively control DADO</li> </ul>	Each of the five regions of the country has a Regional Directorate of Agriculture
4	Program Directorates	<ul style="list-style-type: none"> <li>Assist to formulate national policies, strategies, plans and annual programs in respective subject areas;</li> <li>Undertake regular monitoring and evaluation of programs/projects in respective thematic areas;</li> <li>Impart training and extension functions in respective subject areas/themes</li> <li>Facilitate private sector participation in the respective areas as appropriate and applicable</li> </ul>	12 Program Directorates operate under the DOA
5	Department of Agriculture	<ul style="list-style-type: none"> <li>Provide technical backstopping to DADO</li> <li>Administratively control RDAs</li> <li>Review and submit district agricultural programs to the Ministry for approval</li> <li>Delegate financial and program implementation authorities to DADOs</li> <li>Enhance DDC's capacities for planning and supervising district programs</li> <li>Act as implementing agencies of the externally assisted projects placed under the DOA</li> </ul>	The lead public sector agency for extension services in crops, horticulture and fisheries sector.
6	Ministry of Agriculture and Cooperatives	<ul style="list-style-type: none"> <li>Overall responsible for achieving agricultural development goal and objectives set by the National Planning Commission</li> <li>Formulate agriculture sector policy and strategies</li> <li>Manage and delegate authorities to the departments, boards, corporations and committees pursuant to the law of the country</li> <li>Administer civil servants appointed under Agriculture Service faculties</li> <li>Cause organizations under it to plan, implement and supervise programs as per the instruction of the GoN which include Cabinet and NPC</li> </ul>	

## Annex 2.3

### Import of selected agricultural and related commodities from India and countries other than India

#### Import from India

(Rs. In '000)						
S. N.	Commodities	2002/03	2003/04	2004/05	2005/06	2006/07
1	Rice	744,900	555,500	437,100	2,309,800	1,505,000
2	Vegetables	772,800	738,400	949,400	1,139,600	834,500
3	Cumin seed and Peppers	199,300	225,000	404,800	317,200	157,200
4	Chemical Fertilizer	183,500	563,000	389,200	1,052,300	624,000
5	Fruits	284,500	336,800	387,200	75,900	493,900
6	Tea	39,500	36,000	25,400	17,900	19,000
7	Pulses	539,300	619,400	589,900	578,300	58,400
8	Live Animals	404,000	403,400	417,800	512,100	187,600
9	Coffee	37,000	40,500	49,000	44,500	58,000
10	Wheat	216,500	270,300	1,600	49,400	107,100
11	Cotton Thread	542,200	575,800	506,100	44,800	625,800
12	Baby Food and other Milk Products	508,800	428,300	360,600	571,900	357,800
13	Tobacco	534,300	659,900	591,100	59,600	644,200
14	Sugar	119,500	12,800	61,200	226,000	17,400
15	Insecticides	145,800	144,600	111,300	283,800	452,800
16	Cotton	91,400	96,100	143,000	113,300	68,800
17	Sugar molasses	122,200	101,900	93,000	86,100	12,200
18	Pan Leaves	8,000	8,400	15,000	9,400	3,600
19	Chewing Tobacco	53,400	15,700	29,800	62,600	1,300
20	Bidi Leaves	7,300	7,400	7,100	7,300	200
	<b>Total</b>	<b>5,554,200</b>	<b>5,839,200</b>	<b>5,569,600</b>	<b>7,561,800</b>	<b>6,228,800</b>

Source: Agriculture Marketing Information Bulletin (Special Issue) 2008, DoA.

#### Import from countries other than India

(Rs. In '000)						
S. N.	Major Commodities	2002/03	2003/04	2004/05	2005/06	2006/07
1	Chemical Fertilizer	800,600	1,281,900	170,500	389,100	617,300
2	Rice	38,000	-	8,800	400	31,700
3	Small Cardamom	558,800	421,200	361,600	209,500	268,800
4	Cumin Seed	135,800	111,600	16,200	1,900	600
5	Raw Wool	1,604,800	2,017,800	2,059,800	1,511,100	1,184,500
6	Palm Oil (Inedible)	236,400	308,500	228,200	2,788,400	324,700
7	Edible Oil PP	145,300	416,600	360,500	456,200	635,200
8	Betelnut	600,200	768,000	638,700	806,700	1,418,300
9	Soft Drink Concentrate	328,400	414,700	301,900	313,700	312,500
10	Cloves	197,700	98,700	90,400	11,300	98,100
11	Coconut Oil	81,000	125,300	63,600	76,000	50,200
12	Powder Milk	154,000	84,100	43,400	29,100	54,100
13	Pepper	159,400	169,900	144,400	52,600	64,700
14	Insecticides	18,800	16,700	20,700	130,500	19,100
15	Sugar	1,200	1,800	335,000	248,200	95,200
16	Raw Cotton	23,000	5,600	2,000	4,400	9,300
	<b>Total</b>	<b>5,083,400</b>	<b>6,242,400</b>	<b>4,845,700</b>	<b>7,029,100</b>	<b>5,184,300</b>

Source: Agriculture Marketing Bulletin (Special Issue) 2008, DoA.

**Annex 2.4****Export of selected agricultural and related commodities to India and countries other than India****Export to India***(Rs. In '000)*

S. N.	Commodities	2002/03	2003/04	2004/05	2005/06	2006/07
1	Pulses	880,400	579,100	667,100	643,200	306,900
2	Cardamom	469,600	451,000	607,000	608,100	848,100
3	Ginger	315,400	287,100	161,000	275,200	541,300
4	Live Animal	62,500	55,100	56,000	58,000	20,000
5	Herbs	111,900	91,500	132,400	133,500	104,300
6	Dried ginger	108,400	78,000	80,100	62,200	49,600
7	Cinnamon	4,700	6,300	9,200	29,100	16,000
8	Vegetable Seeds	-	300	-	-	600
9	Vegetables	43,000	18,100	30,500	27,300	11,000
10	Fruits	2,400	900	1,800	1,200	100
11	Turmeric	-	-	100	1,000	9,100
12	Vegetable Ghee	3,812,300	2,959,000	4,635,900	3,861,700	NA
14	Hide and Skins	248,500	332,300	338,600	334,800	363,100
15	Rice Bran Oil	210,000	194,700	199,000	112,600	178,300
16	Oil Cakes	311,100	324,100	317,100	291,800	318,100
17	Noodles	309,700	259,700	369,300	414,700	237,400
18	Linseed	45,800	37,600	41,400	47,500	23,300
19	Raw Jute	-	900	-	500	1,600
20	Biscuits	25,100	15,500	8,800	6,000	700
21	Cattle Feed	405,900	550,900	547,400	454,600	80,300
22	Bran	62,800	40,500	57,100	105,900	121,300
23	Sacks	855,900	1,056,500	1,456,200	1,265,400	1,408,800
24	Catechu	145,400	162,500	438,700	382,400	542,800
25	Ghee	54,600	76,500	83,100	103,000	81,400
26	Cotton Seeds	300	200	-	-	-
27	Jute Cuttings	-	-	1,300	48,200	-
28	Wheat Flour	7,100	32,200	400	-	4,200
29	Linseed Oil	-	500	-	5,200	-
30	Mustard Seed	900	-	2,900	-	-
<b>Total</b>		<b>8,493,700</b>	<b>7,611,000</b>	<b>10,242,400</b>	<b>9,273,100</b>	<b>5,268,300</b>

Source Agriculture Marketing Information Bulletin (Special Issue) 2008, DoA

**Export to countries other than India***(Rs. In '000)*

S. N.	Commodities	2002/03	2003/04	2004/05	2005/06	2006/07
1	Pulses	214,900	280,700	106,500	191,700	488,100
2	Tea	44,500	113,700	106,700	107,800	114,700
3	Herbs	33,300	48,300	54,700	19,000	39,500
4	Cardamom	125,400	231,400	205,300	109,200	129,800
5	Niger seeds	10,600	8,500	-	7,000	800
6	Hide and skins	227,300	309,000	235,800	310,400	275,500
<b>Total</b>		<b>656,000</b>	<b>991,600</b>	<b>709,000</b>	<b>745,100</b>	<b>1,048,400</b>

Source: Agriculture Marketing Bulletin (Special Issue) 2008, DoA.

Annex 2.5

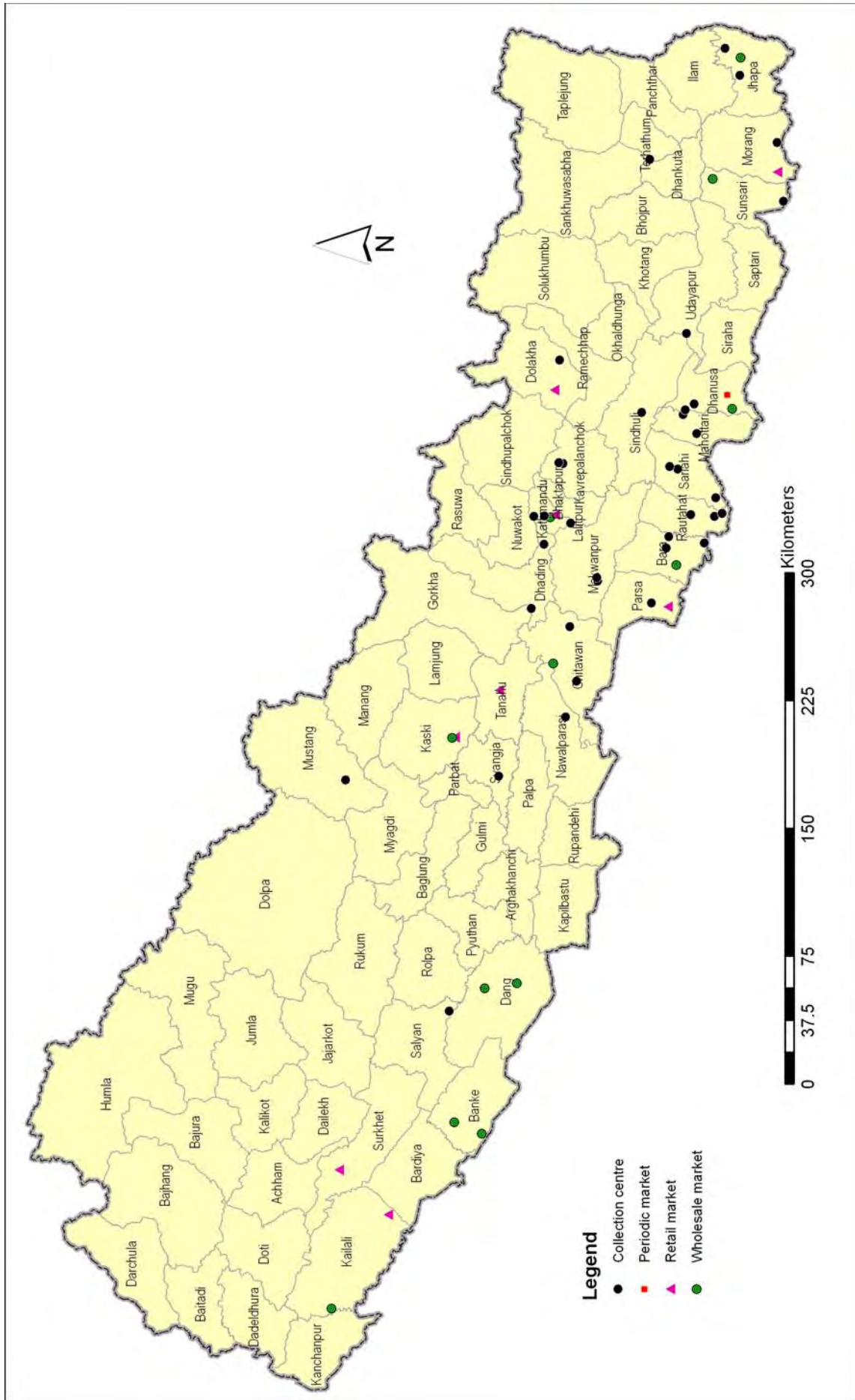
## Agriculture markets network in Nepal

S. N.	Agriculture Markets	Type	Key agricultural commodities/ products	District
<b>Eastern Development Region</b>				
1	Biratnand	Wholesale Market		Jhapa
2	Budhabare	Collection Centre		Jhapa
3	Suranga	Collection Centre*		Jhapa
4	Dharan	Wholesale Market		Sunsari
5	Kaptanganj	Collection Centre		Sunsari
6	Katahari	Retail Market		Morang
7	Rangeli	Collection Centre*		Morang
8	Basantapur	Collection Centre (Inactive)		Tehrathum
9	Katari	Collection Centre (Inactive)		Udayapur
<b>Central Development Region</b>				
1	Kalimati	Wholesale Market	Vegetables and Fruits	Kathmandu
2	Balaju	Collection Centre	Fruits and Vegetables	Kathmandu
3	Chhainmali	Collection Centre	Pears	Kathmandu
4	Kabhreshali	Collection center	Organic vegetables	Kathmandu
5	Narayangadh	Wholesale Market		Chitwan
6	Bhandara	Collection Center	Vegetables	Chitwan
7	Jagatpur	Collection Center		Chitwan
8	Janakpur	Wholesale Market		Dhanusha
9	Dhalkebar	Collection Centre	Vegetables and Fruits	Dhanusha
10	Hansapur	Periodic Market (twice weekly)		Dhanusha
11	Bardibas	Periodic Market and collection centre	Vegetables	Mahottari
12	Gaushala	Collection Center		Mahottari
13	Charikot	Periodic Market (weekly) and retail market		Dolakha
14	Jiri	Periodic Market (weekly) and collection center	Potato	Dolakha
15	Sindhulimadhi	Weekly Market and Collection Center	Junar and Orange	Sindhuli
16	Lalgadh	Collection Center	Vegetables	Sarlahi
17	Nawalpur	Collection Center	Vegetables	Sarlahi
18	Gadaria	Collection Center		Sarlahi
19	Haripur	Collection Center		Sarlahi
20	Saru Aitha	Collection Center	Vegetables	Rautahat
21	Mohamadpur	Collection Center		Rautahat
22	Handikholra	Collection Center	Vegetables	Makwanpur
23	Basipur	Collection Center		Makwanpur
24	Charaundi and Khairitar	Collection Center		Dhading
25	Dharke	Collection Center (Inactive)		Dhading
26	Teempile and Panchkhal	Collection Centre (inactive)		Kabhre
27	Tamaghat	Collection Centre		Kathie
28	Simrangadh	Collection Centre	Vegetables	Bara

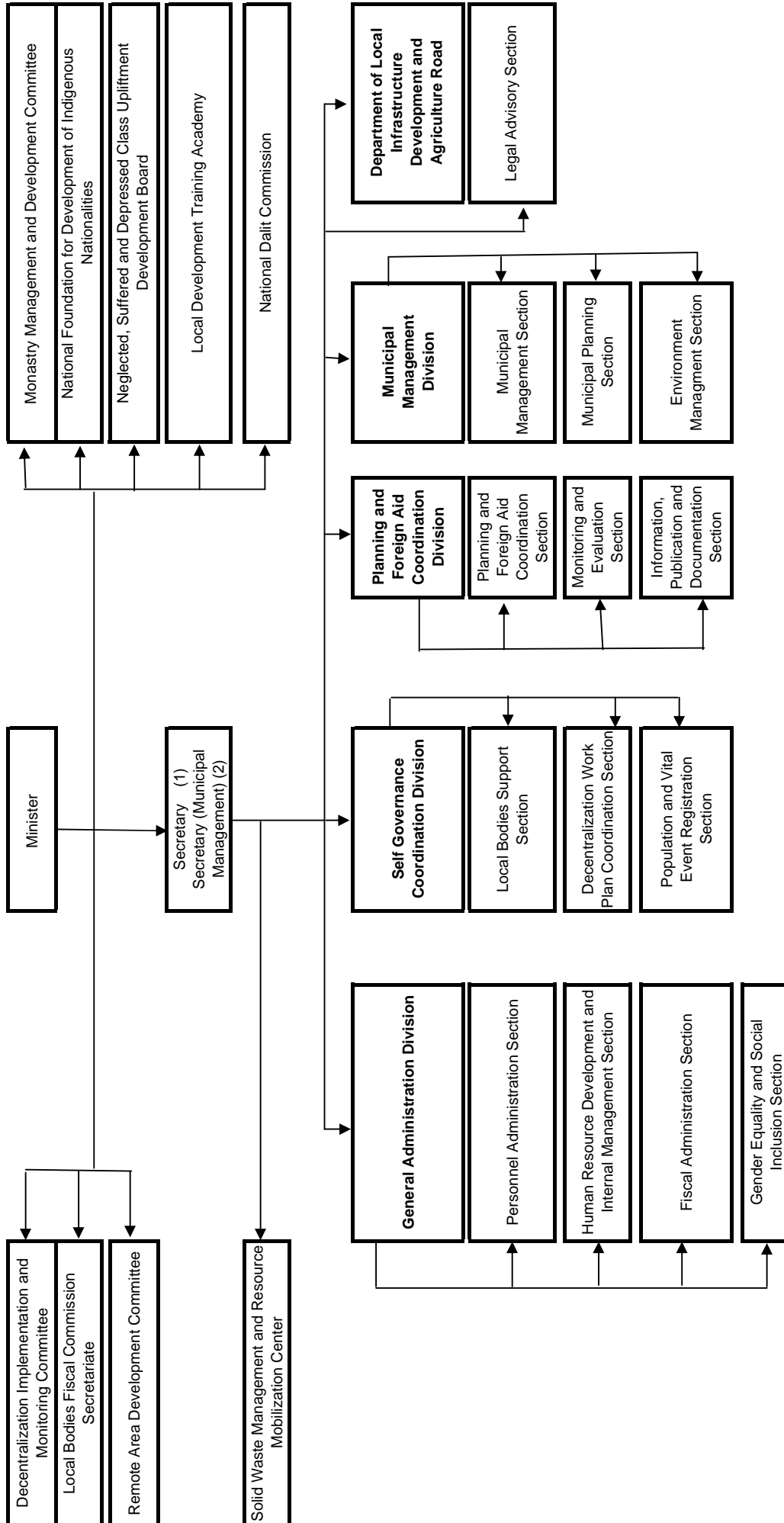
S. N.	Agriculture Markets	Type	Key agricultural commodities/ products	District
29	Kalatiya	Collection Center and wholesale market*	Vegetables	Bara
30	Basantapur	Collection Center		Bara
31	Klohabi	Collection Center		Bara
32	Bodhavan	Collection Center (farmers' chautari)		Bara
33	Pathariya	Collection Centre	Vegetables	Parsa
34	Pokhariya	Bi-weekly and Retail Market		Parsa
35	Jawalakhel	Retail Market	Vegetables	Lalitpur
<b>Western Development Region</b>				
1	Pokhura	Wholesale Market	Fruits and Vegetables	Kaski
2	Prithivichowk and Birauta	Retail Market	Fruits and Vegetables	Kaski
3	Damauli	Retail Market	Fruits and Vegetables	Tanahun
4	Jomsom	Collection Centre	Apple	Mustang
5	Kawasoti	Collection Centre	Banana, Orange and Vegetables	Nawalparasi
6	Waling	Collection Center*		Syanja
<b>Mid-western Development Region</b>				
1	Lamahi	Wholesale Market		Dang
2	Ghorahi	Wholesale Market		Dang
3	Kohalpur	Wholesale Market		Banke
4	Chaulikka Baba	Wholesale Market*		Banke
5	Kapurkot	Collection Centre		Sallyan
6	Babiyachaur	Collection Centre and retail market	Vegetables	Surkhet
<b>Far-western Development Region</b>				
1	Tikapur	Collection Center	Banana	Kailali

\* Under construction

Annex 2.6  
Map of Nepal Showing the Agriculture Market Network



Annex 2.7



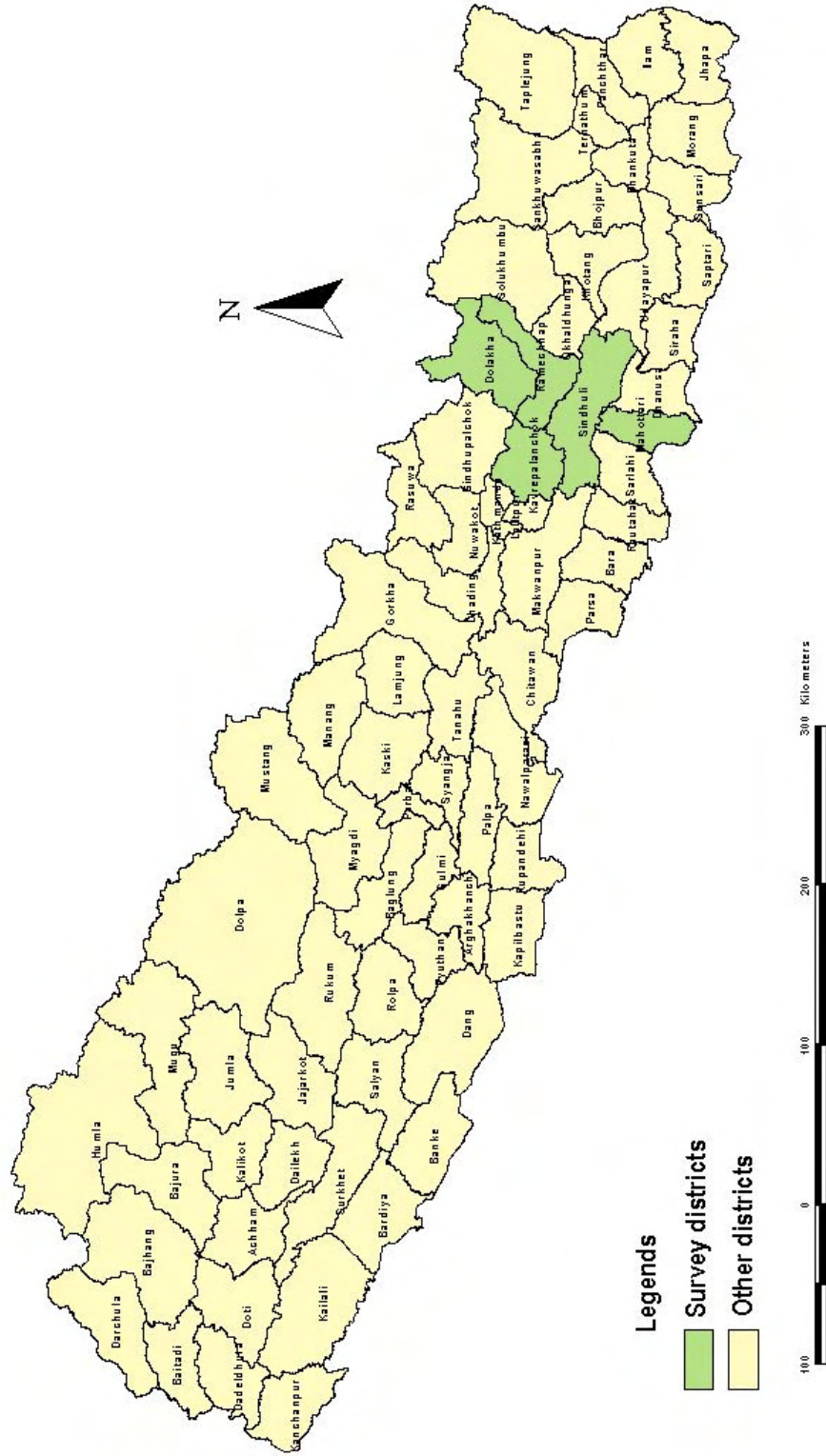
Note: There are 75 district Development Committees, 58 Municipalities, 3915 Village Development Committees and 75 District Technical offices Under this Organogram.

### Organization Chart of Ministry of Local Development



Annex 3.1

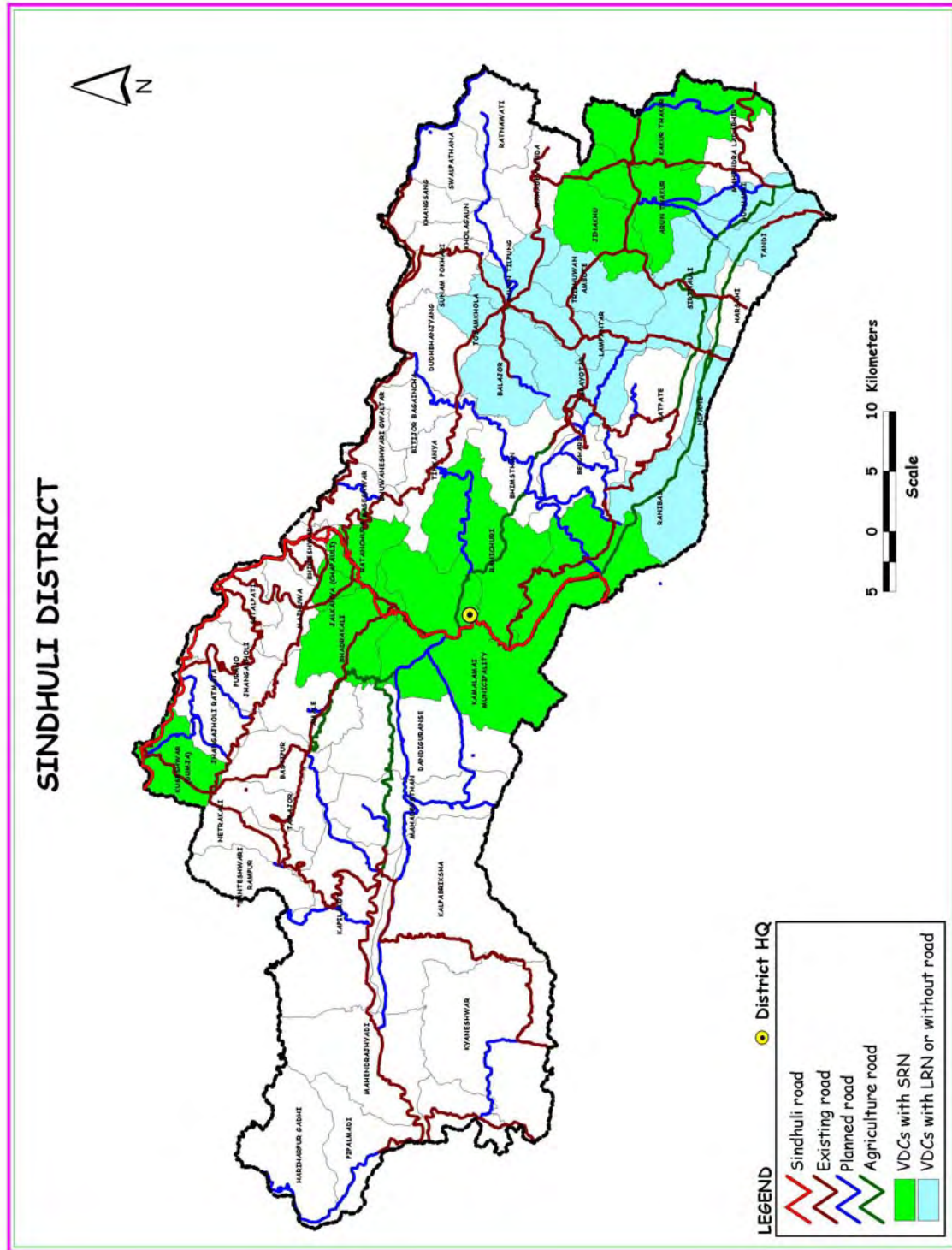
Map of Nepal Showing Survey Districts



Source: NARMA Inception Report



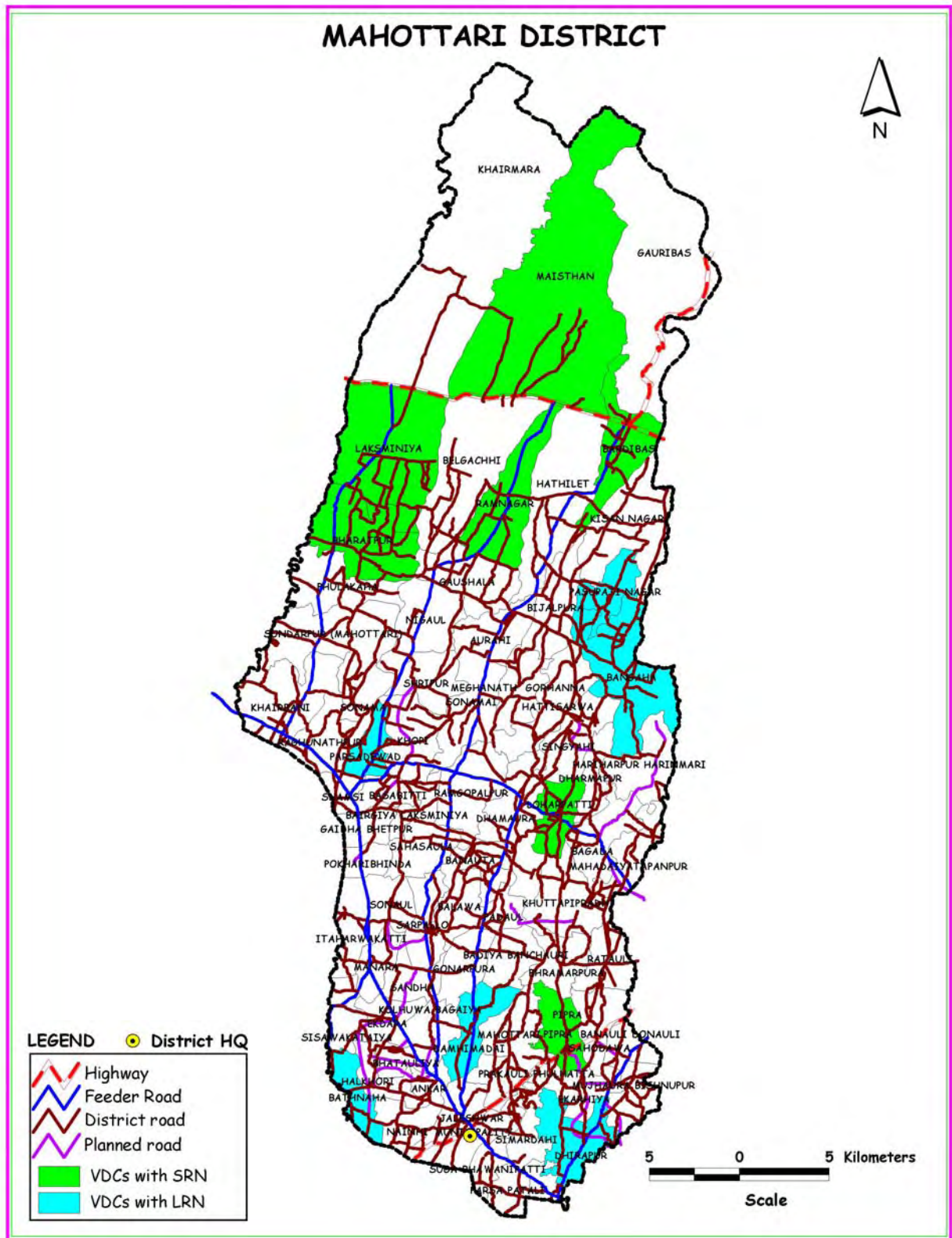
Map of Sindhuli District Showing the Proposed VDCs for Survey



Source: NARMA Inception Report

Annex 3.4

Map of Mahottari District Showing the Proposed VDCs for Survey



Source: NARMA Inception Report

