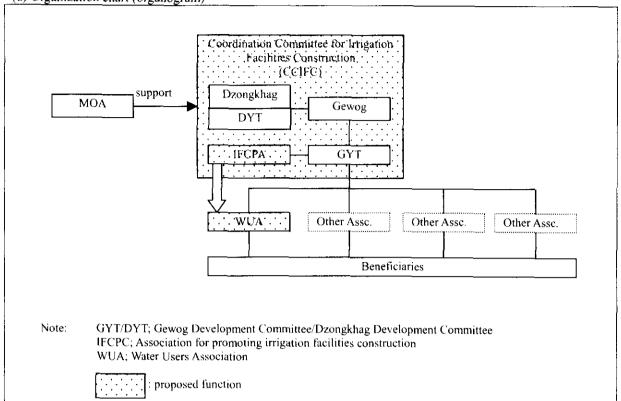
1.3.2 Bachari Scheme (New)

I. General			Sheet No	). AP-15				
Program	Program for Foo	d Crop Production Increas	se / Drepong / Mong					
Sub-program		nent Sub Program (Proposed, E						
	Level	Organization / Name	Conta	act Person				
	National	MOA	Mr. Kaylzang Tshering					
	rutional			(SE. DRDS, 02-322228)				
Stakeholders	Dzongkhag	Mongar	Mr. Penden Norgey (DE, 04-641206)					
	Dzongknag		Mr. Tandin Dorji (DA	O, 04-641181)				
	Gewog	GYT	Mr. Pema Tshewang	(Gup)				
L	Beneficiaries	Tentative WUA (15HH)	Mr. (GYT Member)					

II. Program/Sub-program	
Target	To increase food crop production, proposed canal length = 1.0 km
	Survey, Design and Cost estimation
	Construction of irrigation facilities
Activities	Maintenance by Water Users Association
	Procurement of construction materials and tools
	Financial arrangement
	Establishment of organization
	Surveyor ( Dzongkhag)
	<ul> <li>Irrigation Engineer for Design (Dzongkhag)</li> </ul>
	<ul> <li>Irrigation Engineer for Supervision (Dzongkhag)</li> </ul>
Input	Construction Materials (DRDS, MOA)
<b>r</b>	Skilled Labor (Mason, Carpenter etc.)
	Unskilled Labor (WUA)
	Project Cost Nu. 0.300 mil.
	Maintenance by Water Users Association
Output	Irrigation facilities are constructed to attain the food crop production increase. (Irrigated
	area=6.1ha)
	• Survey and Design 2003.7~2004.6
Period(Tentative)	• Construction 2004.7~2007.6
	Operation & Maintenance 2007.7~
	<ul> <li>Program for Food Crop Production Increase/Food Security SP, Paddy-rice</li> </ul>
D 1 . 1D	Production SP, Post-harvest Technology Training SP(They will be executed together
Related Program /	with Irrigation Development SP)
Sub-program (How)	Extension Strengthening Program/Extension Strengthening for Food Crop  One of the
	SP(Extension will be executed to the beneficiaries of rehabilitated irrigation
	facilities)
	Environment: IEE was conducted in the Master Plan. As this is construction of canal by formers themselves it will be account to the property of the prope
	by farmers themselves, it will be enough to assess by only the routine environmental
	checking by NEC to be executed before the commencement of construction and an authorization issuance of NEC will be applied by Dzongkhag.
	Efficiency: Reasonable range of construction cost of canal per km is about 300,000
Project Justification	Nu estimated in 9th FYP in the maximum limitation.
•	<ul> <li>Consistency with upper plan/program: This is based on the program of MOA.</li> <li>Sustainability: The participation of beneficiaries, maintenance fund contribution and</li> </ul>
	so on should be confirmed on the basis of the national irrigation policy procedural
	manual prepared by MOA
	manda propared by Mich

## III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Si	takeholder	General Role and Responsibility					
National	DRDS, MOA	Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders.					
Dzongkhag	Engineering Office/ Agriculture Office	Actually supervises WUA from its establishment to the construction and maintenance by WUA including accounting of the program.					
Gewog	GYT	Formulate the Gewog development plan and evaluate the program in the plan, and based on this, made the official request letter and submit it to Dzongkhag.					
Beneficiaries	WUA	Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.					

1 4. 4	Action Plan (sequent)	T 2						
	Required Action (WHAT) Responsible Stakeholder (WHO)		Detailed Activities (HOW)					
1	Establishment of institution for irrigation facilities construction	Gewog/GYT	An association for promoting irrigation facilities construction (IFCPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.					
2	Consensus in GYT	GYT	The request of irrigation facilities construction from IFCPA will be discussed in GYT, and with the consensus will be proceeded to Dzongkhag.					
3	Official request (IRRIFORM.01) for implementation	GYT	The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzongkhag with necessary information for evaluation (source of water, route, length, contribution by Gewogs or beneficiaries, etc.)					
4	Preliminary Investigations (Module 1)	Dzongkhag / IRCPA	The preliminary Investigations will be executed to find out whether the proposed request meets the basic requirements for government assistance. Project identification report (IRRIFORM.02) will be made for further procedure.					
5	Consensus in DYT	Dzongkhag / DYT	The request will be discussed based on the project identification report, and with the consensus and Dzongda's approval will be					

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities
		(WHO)	(HOW) proceeded to either MOA or MOF for further procedure for budget allocation.
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	The budget for Multi-disciplinary Feasibility Study will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.
7	Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	Multi-disciplinary Feasibility Study will be executed to determine whether the proposed request is viable or not and how it can be implemented. Therefore not only engineering survey but also interview survey for agriculture and social aspects have to be done with Gup, GYT member and water users. The feasibility study report (IRRFORM.03) with a detailed implementation plan, tentative designs and estimation of the project cost will be made.
8	Environmental study	Dzongkhag / NEC	Based on the feasibility study report, if environmental study is required, EIA will be executed.
9	Budget allocation for construction	Dzongkhag	The budget for construction of irrigation facilities will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.
10	Pre-construction Meeting 1 (Module 3)	Dzongkhag	Explanation of the need of group/cooperative for construction and maintenance of irrigation facilities and Water Users Association Committee (WUACommittee named in Module 3) to IFCPA will be executed. Formation of Water Uses Association (IRRIFORM.04) and Letter of Undertaking (IRRIFORM.05) will be prepared and reviewed.
11	Pre-construction Meeting 2 (Module 4)	WUA/ GYT	Water Users Association (WUA) is established and committee members (IRRIFORM.04) will be selected from WUA. Signing of agreements on labor contribution for construction, maintenance fund contribution and compensation of water guard in the letter of understanding (IRRIRFORM.05) will be executed between WUA and the representative of Dzongkhag in the meeting.
12	Land acquisition	WUA	Land acquisition and expropriation along the canal will be carried out under the instruction of Dzongkhag.
13	Procurement of materials and tools	Dzongkhag	Supplying materials and tools including technical backstopping from Dzongkhag for construction of irrigation facilities will be arranged based on the requisition of Dzongkhag in Implementation.
14	Overall management of construction	Dzongkhag	The construction of irrigation facilities will be carried out under the management of Dzongkhag in Implementation.
15	Arrangement of unskilled labor	WUA	WUA shall provide free unskilled labor in accordance with the arrangement of the site in-charge.
16	Development of WUA constitution and bylaws (Module 5)	WUA	Water users improve the organization and management of their irrigation system through establishing suitable constitution and bylaws. WUA Constitution and Bylaws (IRRIFORM.06) will be made.
17	Banking and bookkeeping training (Module 6)	Dzongkhag	Irrigation staff of Dzongkhag should support WUA to open a bank account for the maintenance fund and train them how to operate it.
18	Scheme management training (Module 7)	Dzongkhag	The training is held for the water users to know the types of support that the RGOB can give to the WUA for operation and maintenance. Project Completion Report (IRRIFORM.07)and Certificate of Satisfactory Completion (IRRIFORM.08) will be prepared.
19	Completion and Handing over	Dzongkhag/ WUA	The irrigation facilities shall be handed over to WUA after signing the Project Completion Report (IRRIFORM.07) and the Certificate of Satisfactory Completion (IRRIFORM.08).
20	Reserving fund for maintenance works	WUA	For the following maintenance, the fund will be reserved in the system of WUA.

	Required Action (WHAT)  Responsible Stakeholder (WHO)		Detailed Activities (HOW)
21	Routine maintenance	WUA	Routine maintenance like canal cleaning, weeding will be periodically and timely carried out under the guidance of the site in-charge.
22	Periodical maintenance	WUA	Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of the site in-charge.
23	Periodical repair works	MOA/ WUA	Major repair will be executed using construction machinery to be arranged by CMU/MOA and Dzongkhag every five year, if necessary.
24	Establishment period inspection visit (Module 8)	Dzongkhag	Inspection and evaluation of the irrigation system will be executed to monitor and evaluate the condition of the irrigation system, functioning WUA, crop productivity and assess the need for further Dzongkhag support in every 5 years.
25	Dzongkhag water users' association conference (Module 9)	Dzongkhag	This provides a forum where representatives of different WUAs can present and discuss progress, programs and problems.  During the conference measures to overcome certain problems facing the WUAs can be framed jointly by the concerned WUA and the Dzongkhag irrigation sector.

Note: FORM and Module are procedure regulated for irrigation facilities development by MOA.

V	Sc	hed	ule
7.	131	пçч	uit

	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
l	Establishment of institution for irrigation facilities construction	2003.4								:			
2	Consensus in GYT	2003.4		0									:
3	Official request (IRRIFORM.01) for implementation	2003.4		0									
4	Preliminary Investigations (Module 1)	2003.5		0									
5	Consensus in DYT	2003.5		0		:			:				:
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	2003.6											
7	Multi-disciplinary Feasibility Study (Module 2)	2003.7 - 2004.5										:	
8	Environmental study	2004.5			· []		:						
9	Budget allocation for construction	2004.5						:	:			-	-
10	Pre-construction Meeting 1 (Module 3)	2004.6					·			-			
11	Pre-construction Meeting 2 (Module 4)	2004.6			D			<u> </u>					:

	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
12	Land acquisition	2004.4 - 2007.6				_							
13	Procurement of materials and tools	2004.4 <i>-</i> 2004.6					:						
14	Overall management of construction	2004.7 - 2007.6		· · · · · · · · · · · · · · · · · · ·			· · · · · · · · · · · · · · · · · · ·			:	_		
15	Arrangement of unskilled labor	2004.7 - 2007.6								:			
16	Development of WUA constitution and bylaws (Module 5)	2004.7			0			-					
17	Banking and bookkeeping training (Module 6)	2004.7			0								
18	Scheme management training (Module 7)	2007.6											
19	Completion and Handing over	2007.6		<del> </del>									
20	Reserving fund for maintenance works	2007.1 -								:			
21	Routine maintenance	2007.7 -			:								
22	Periodical maintenance	2008.7 -							0	0	0	0	
23	Periodical repair works	2012.6 -											
24	Establishment period inspection visit (Module 8)	2007.11 -						0			0	0	
25	Dzongkhag water users' association conference (Module 9)	2008.1 -				:			] [	] [	] [	] [	<u></u>

VI. Implementation and Monitoring System

Action Action	<u> </u>	Plan					
	WHO	DE/DAO, Mongar Dzongkhag					
Drogram Management of A/D	WHEN	Monthly basis					
Progress Management of A/P	WHERE	Mongar Dzongkhag Engineering/Agriculture Office					
	HOW	Monthly Report prepared by Site Engineer of Dzongkhag					
	WHO	Superintending Engineer, DRDS, MOA					
Budget Management at	WHEN	Every Financial Year					
Preparatory Stage	WHERE	MOA Office, Thimphu					
	HOW	As per Financial Manual of Royal Government of Bhutan					
	WHO	DAO, Mongar Dzongkhag					
Budget Management at	WHEN	Monthly basis					
Implementation Stage	WHERE	Mongar Dzongkhag Agriculture Office					
	HOW	As per Financial Manual of Royal Government of Bhutan					
	WHO	Chairperson, WUA					
Budget Management at O&M Stage	WHEN	Monthly basis					
	WHERE	Accountant, WUA					
	HOW	Constitution/Bylaws enacted in WUA					
	WHO	Budget arrangement: Superintending engineer, DRDS, MOA at preparatory stage/ DAO, Dzongkhag at implementation stage/ Chairperson, WUA at O&M stage. Technical problems: DE, Dzongkhag Accident, Participation, Dispute: Chairperson, WUA Manpower: Superintending engineer, DRDS, MOA					
	WHEN	As the problems happened.					
Problem Solving	WHERE	Budget arrangement: DRDS, MOA at preparatory stage/ Agriculture Office, Dzongkhag at implementation stage/ WUA Office at O&M stage. Technical problems: Dzongkhag Engineering Office Accident, Participation, Dispute: WUA Office Manpower: DRDS, MOA					
	ном	Budget arrangement: DRDS, MOA discusses with MOF at preparatory stage and implementation stage/ WUA discusses among the beneficiaries at O&M stage.  Technical problems: Dzongkhag Engineering Office discusses with the beneficiaries.  Accident, Participation, Dispute: WUA Office discusses among the beneficiaries and third party.  Manpower: DRDS, MOA discusses with the organization concerned.					

2.1 Backyard Animal Husbandry SP ~ Gangzur, Lhuntse

I. General			Sheet No.	AP-16
Program	(RADP P1) Progr	am for Food Crop Produc	tion Increase	
Sub-program	(SP-4) Backyard A	nimal Husbandry SP		
	Level	Organization / Name	Contact Per	rson
	National	PPBC	Regional Manager of PPBC	-Lingmithang
Stakeholders	Dzongkhag	Lhuntse Dzongkhag	DAHO, Veterinary hospital,	
	Gewog	Gangzur Gewog		oup *
	Beneficiaries	Farmers in the Gewog	anization / Name PPBC Regional Manager of PPBC untse Dzongkhag DAHO, Veterinary hospital, Livestock - EA of Gewog Gangzur Gewog Gup, Livestock Working Gr	

<sup>\*</sup> Livestock Working Group:

The working groups for subjects such as Livestock, Cash crop, and Food crop, will be established in GYT of Gewog aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The groups carry out the action plan under the responsibility of Gup.

	participate to co	ommunity a	activities by	resident	s, and a	ssist EA's	activities.	The groups			
II. Program/Sub-progra	carry out the act	ion pian ur	ider the res	ponsibility	of Gup.						
r rogi announ-progra		e househo	ld income th	rough ba	ckvard a	nimal hush	andry				
	10	0 110 400110	Target of I				anury.				
			Pig			·	y (Chicken	}			
Activities		a *	b *	C *		a *	b *	c *			
Target	Present (A)	464	48%	>	1.0 1	960	85%	4.2			
	2012 (B)	2012 (B) 705 60% 1.2 3500 90% 6.3									
	Note: Assumin	g that house	holds increa	se to 1289	during 10	0 years (45	9→580)				
	a*: Nos. of anii										
			of animal h				als to anim	al feed.			
	-		ard animal h		•						
			stock Work								
	input distri		yard anima	ווטוווטוו	on pian	including	extension s	service and			
Activities			location for	distributio	in of eulo	nia bosibio	lot and chic	·k			
			and chicks		// O/ 3ub3	sidized pig	iet and criic	л,			
			rmers Field		FES)* du	ring 2 vear	e and				
	Implement	ation of De	emonstratio	n Farm**	(each 2	househole	ds for pig a	and chicker			
	during 8 ye				(		Jo Tot pig t	and omone			
	Distribution of subsidized backyard animals (cash and carrying):										
Input		10 farmers, 2 piglets per farmer, during 8 years,									
	• 30 farme	rs, 10 chick	s per farme	er, during	8 years.						
	Backyard animal husbandry is activated in Gewog,										
	Income of	mornio or raini nodobirota morodoba,									
		Average income per household by backyard animals									
			Pig		Chicken			Total			
	Dragant (A)	a *	b *	C *	a*	b *	C *	(Nu./hh)			
	Present (A) 2012 (B)	1.0	4500 6400	4500 7680	4.2	200	840	5340			
	(B) / (A)	120%	142%	171%	6.3 150%	250 125%	1575	9255			
Output							188%	173%			
	c*: production	a*: average nos. of animals, b*: production value (Nu./animal/year) c*: production value (Nu./hh)									
	1										
	Good FYM is provided using animal dung,										
	Surplus m.	Surplus maize is used value-adding production through animal husbandry,									
	Livestock	Livestock productivity and animal health are improved through improvement of									
	feeding and animal shed, and										
	<ul> <li>Livestock Working Group is encouraged through joint working with EA, and farmers</li> </ul>										
	are involve	ed in exten	sion activitie	es.							
	Training of	t EAs and p	planning of	on Backya	ard Anima						
Period			DIA FOT D	N-1-at 12 1			03 – 12, 20	03			
	• FFS, Dem	FFS, Demonstration Plot, FST, Piglet/chick distribution     7 2004 2012									
Related Program /						7.20	04 - 2012				
resided Flogram /					_						

Sub-program (How)	
Project Justification	<ul> <li>Environment: It should be paid attention to water pollution by excretions of animals. The excretions should be used to preparation of FYM.</li> <li>Financial variability:</li> <li>Capacity building of EA and Food Crop Working Group, farmers participation to extension activities.</li> </ul>

\* Farmers Field School (FFS):

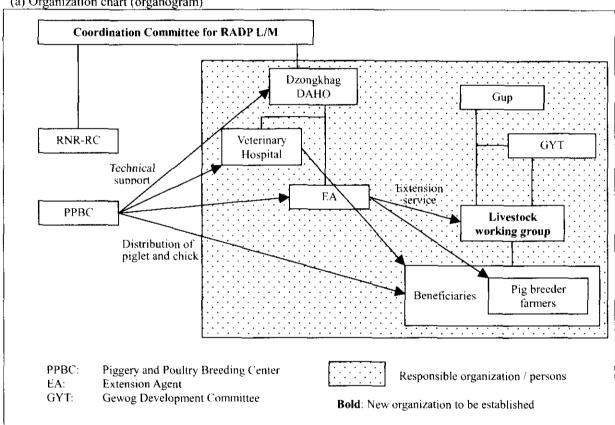
FFS aims to encourage and train leader farmers for dissemination of improved backyard animal husbandry through their voluntary extension activities after the school. Around 15 - 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month at Demonstration Farm, community school and other facilities. EA provides technical guidance to participants.

\*\* Demonstration Farm:

Demonstration Farm is set up at farm household with backyard animals in order to demonstrate improved animal husbandry. The location will be moved every 2 years for opportunity beneficiaries. EA periodically visits to the farm for technical guidance. Subsidized animals will be supplied to the farmer.

### III. Implementing Organization

(a) Organization chart (organogram)



(h) General Role and Responsibility of Stakeholders

	Stakeholder	General Role and Responsibility						
National	PPBC-East	<ul> <li>Breeding of pig and poultry for distribution,</li> <li>Technical support for EA training and farmers.</li> </ul>						
	DAHO	Overall coordination and support of extension service, training of EAs.						
Dzongkhag	Veterinary hospital	Animal health service,						
Dzoligknag	Livestock EA	<ul> <li>Technical guidance and extension service to farmers; Involving farmers in FFS, Demonstration farm.</li> </ul>						
Gewog	Gup / Livestock Working Group	<ul> <li>Cooperation and participation to extension activities of EA, and organizing farmers group activities.</li> </ul>						
Beneficiaries		Participation to extension activities of EA.						

17,8	Action Plan (sequent)  Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)						
ı	Preparation of training program	DAHO	<ul> <li>DAHO prepares the training program. The training program will be scheduled with 2 times sessions (one week for a session) including seminar / workshop and field investigation / trials, and study tour. Major subjects of training will consist of:         <ul> <li>improvement of animal husbandry included animal shed improvement,</li> <li>pig breeding,</li> <li>improvement of animal health control,</li> <li>preparation of FYM using animal dung,</li> <li>improvement of extension system (Farmers Field School, Demonstration farm, farmers participation to extension activities, activities of livestock working group of GYT, etc.),</li> <li>preparation of backyard animal promotion plan.</li> </ul> </li> </ul>						
2	Training of EAs on backyard animal husbandry	DAHO	DAHO provides EA training on animal husbandry supported by PPBC according to above program.						
3	Organizing of livestock working group	Gup / GYT	Gup and GYT in cooperation with EA should organize Livestock Working Groups in GYT. The working group coordinates and supports EA's activity in Gewog.						
4	Preparation of backyard animal promotion plan	Livestock Working Group	Livestock working group in cooperation with EA prepares the promotion plan including animal distribution plan.						
5	Request of budget allocation for animal distribution	Gup	Gup requests to DAHO the required budget for subsidized animal distribution after the approval of GYT.						
6	Breeding plan of piglet and chick	DAHO	<ul> <li>DAHO discusses with PPBC on breeding/distribution plan of animals based on the Gewog plan.</li> </ul>						
7	Allocation of budget	DAHO	<ul> <li>DAHO reviews budget plan submitted from Gewogs, and request to MOA the budget plan for subsidized animal distribution with action plan after the approval of DYT.</li> </ul>						
8	Distribution of subsidized piglet and chick	Gup / Livestock Working Group	<ul> <li>Gup request distribution to PPBC through animal distribution according to the approved budget plan, Livestock Working Group distributes them to beneficiaries.</li> </ul>						
9	Implementation of Demonstration Livestock Farm	EA and Livestock Working Group	<ul> <li>Livestock Working Group selects Demonstration Farm for backyard animal husbandry consisting of each 2 households</li> </ul>						
10	Implementation of Farmers Field School (FFS)	EA and Livestock Working Group	EA and livestock working group organize 10 to 20 participants to FFS for animal husbandry. EA give technical guidance to participants in FFS held at Demonstration farm and other facility. The participants work voluntarily to disseminate improved livestock husbandry to villagers in the Gewog.						
<u>V. S</u>	Chedule  Required Action	D T							
L	Required Action (WHAT)	Period (WHEN)	20     <						
1	Preparation of training program	7. 2003 – 8. 2003							
2	Training of EAs on backyard animal husbandry	8. 2003, 1. 2004							
3	Organizing of livestock working group	8. 2003 – 9. 2003							

	Required Action (WHAT)	Period (WHEN)	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
4	Preparation of backyard animal promotion plan	10.2003 – 12. 2003									:		
5	Request of budget allocation for animal distribution	12. 2003											
6	Breeding plan of piglet and chick	12. 2003											
7	Allocation of budget	12.2003 <b>-</b> 6. 2004		[									
8	Distribution of subsidized piglet and chick	2005 -											
9	Implementation of Demonstration Livestock Farm	2005 -											
10	Implementation of Farmers Field School (FFS)	1. 2007 – 6. 2008											

VI. Implementation and Moni	toring Syste	
Action		Plan
	WHO	DAHO for Dzongkhag, Gup for Gewog
	WHEN	Every 3 months during 2003 – 2005, and annually from 2006
Progress Management of A/P	WHERE	Dzongkhag
	HOW	<ul> <li>DAHO reviews quarterly the progress based on the report of progress and monitoring from Gup.</li> </ul>
	WHO	Gup for Gewog, DAHO for Dzongkhag
Budget Management et	WHEN	From 12. 2003 to 6. 2004
Budget Management at Preparatory Stage	WHERE	Gewog to DAHO, and Dzongkhag to MOA
Treparatory stage	HOW	Gup should request the budget to DAHO, and Dzongkhag presents it MOA after approval by DYT
	WHO	DAHO
Budget Management at	WHEN	Every year
Implementation Stage	WHERE	Dzongkhag
Thip is the stage	HOW	Budget for FYP and annual will be approved by DYT. Approved budget will be managed by DAO
	WHO	
Budget Management at O&M	WHEN	
Stage	WHERE	
-	HOW	
	WHO	DAHO
	WHEN	Annual meeting and when problem occurs
Problem Solving	WHERE	Dzongkhag
	HOW	DAHO, EAs and personnel concerned have a meeting for discussion of the problem and countermeasures

2.2 Backyard Animal Husbandry SP ~ Chaskhar, Mongar

		Sheet No.	AP-17			
(RADP P1) Progr	ram for Food Crop Product		7.11 17			
Level	Organization / Name	Contact Per	son			
National	PPBC	Regional Manager of PPBC-Lingmithang				
Dzongkhag	Mongar Dzongkhag	DAHO, Veterinary hospital,				
Gewog	Chaskhar Gewog	Gup, Livestock Working Group *				
Beneficiaries	Farmers in the Gewog					
	(SP-4) Backyard A. Level National Dzongkhag Gewog	(SP-4) Backyard Animal Husbandry SP  Level Organization / Name  National PPBC  Dzongkhag Mongar Dzongkhag  Gewog Chaskhar Gewog  Beneficiaries Farmers in the Gewog	(RADP P1) Program for Food Crop Production Increase  (SP-4) Backyard Animal Husbandry SP  Level Organization / Name Contact Per National PPBC Regional Manager of PPBC  Dzongkhag Mongar Dzongkhag DAHO, Veterinary hospital, Livestock - EA of Gewog  Gewog Chaskhar Gewog Gup, Livestock Working Gro Beneficiaries Farmers in the Gewog			

Livestock Working Group:

The working groups for subjects such as Livestock, Cash crop, and Food crop, will be established in GYT of Gewog aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The groups

	participate to co					ssist EA's	activities.	The groups				
II. Program/Sub-progra	m				· ·	<u> </u>						
	lo increas	To increase household income through backyard animal husbandry  Tarret of Nos. of backyard animals.  Tarret of Nos. of backyard animals.										
		Target of Nos. of backyard animals  Pig Poultry (Chicken)										
	i	a *	b *	<u> </u>	1) C *							
Target	Present (A)	350	52%	c*		a * 290	b * 75%	3.2				
	2012 (B)	620	60%			050	85%	6.0				
	Note: Assumin	g that house	holds increa	se to 128%	6 during 10	years (40	1 →510)					
	a*: Nos. of anii	nals, b*: Rat	io of rearing	farmers, c	: Average	nos, of rea	ring animal	s				
			of animal h				als to anim	ial feed				
			rd animal h									
			stock Work									
	Preparatio	n of backy	ard animal	promoti	on plan i	ncluding	extension	service and				
Activities	input distri		acation for	وندر والموالم	معاريم ألم مر	المراجعة المساولة		_1				
Activities		n of piglets	ocation for	uistributio	on or subs	iaizea pig	iet and chi	ck,				
			mers Field	School /	EEC\* duri	ina Auga	n and					
	Implement	ation of De	monstratio	n Farm**	rro) uun (Aach 2	niy z year housebok	s, and de for pia	and chicker				
	during 8 ye		mondialio	11 7 (1111)	(each 2	i ious <del>e</del> i ioii	us for pig	and chicker				
Input						mers buv)						
	<ul> <li>5 farmers, 2 piglets per farmer, during 8 years (farmers buy)</li> <li>5 farmers, 10 chicks per farmer, during 8 years (farmers buy)</li> </ul>											
	Backyard animal husbandry is activated in Gewog.											
	Income of farm household increase,											
		Average income per household by backyard animals										
			Pig	<u>.</u>	Chicken			Total				
	D	a*	b *	C *	a*	b *	c *	(Nu./hh)				
	Present (A)	0.8	4500	3600	3.2	200	640	4240				
	2012 (B) (B) / (A)	1.2 150%	6400 142%	<b>7680</b> 213%	6.0 188%	250	1500	9180				
Output						125%	234%	217%				
•	c*: production	a*: average nos. of animals, b*: production value (Nu./animal/year) c*: production value (Nu./hh)										
	Rural people are improved in notorious condition,											
	Good FYM is provided using animal dung,											
	Surplus maize is used value-adding production through animal husbandry,											
	<ul> <li>Livestock productivity and animal health are improved through improvement of</li> </ul>											
	feeding and animal shed, and											
	<ul> <li>Livestock Working Group is encouraged through joint working with EA, and farmers are involved in extension activities.</li> </ul>											
						<del></del>	<u> </u>					
	Iraining of	r ⊨As and p	lanning of d	on Backy	ard Anima			000				
Period	• FFS Dem	8. 2003 – 12. 2003										
	113,0811	FFS, Demonstration Plot, FST, Piglet/chick distribution     7. 2004 - 2012										
Related Program /						1.20	V+ - EVIZ					
	·											

Sub-program (How)	
	<ul> <li>Environment: It should be paid attention to water pollution by excretions of animals.</li> <li>The excretions should be used to preparation of FYM.</li> </ul>
Project Justification	Financial variability:
	<ul> <li>Capacity building of EA and Food Crop Working Group, farmers participation to extension activities.</li> </ul>

\* Farmers Field School (FFS):

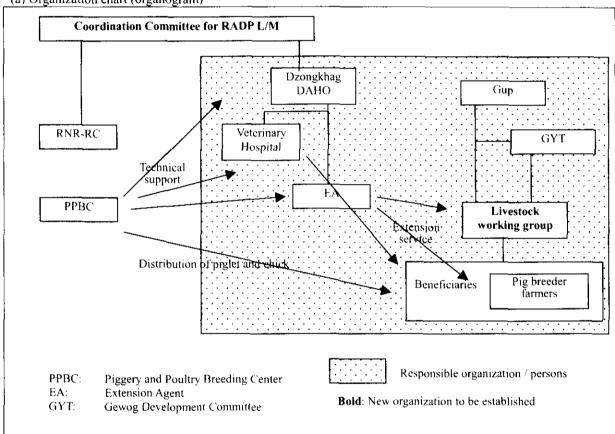
FFS aims to encourage and train leader farmers for dissemination of improved backyard animal husbandry through their voluntary extension activities after the school. Around 15 - 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month at Demonstration Farm, community school and other facilities. EA provides technical guidance to participants.

\*\* Demonstration Farm:

Demonstration Farm is set up at farm household with backyard animals in order to demonstrate improved animal husbandry. The location will be moved every 2 years for opportunity beneficiaries. EA periodically visits to the farm for technical guidance. Subsidized animals will be supplied to the farmer.

## III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

	Stakeholder	General Role and Responsibility					
National	<ul> <li>PPBC-East</li> <li>Breeding of pig and poultry for distribution,</li> <li>Technical support for EA training and farmers</li> </ul>						
	DAHO	Overall coordination and support of extension service, training of EAs					
Dzongkhag	Veterinary hospital	Animal health service,					
	Livestock EA	Technical guidance and extension service to farmers; Involving farmers in FFS, Demonstration farm					
Gewog	Gup / Livestock Working Group	<ul> <li>Cooperation and participation to extension activities of EA, and organizing farmers group activities</li> </ul>					
Beneficiaries		Participation to extension activities of EA					

1V. P	Action Plan (sequent)  Required Action (WHAT)	Responsible Stakeholder	Detailed Activities							
1	Preparation of training program	DAHO	<ul> <li>DAHO prepares the training program. The training program will be scheduled with 2 times sessions (one week for a session) including seminar / workshop and field investigation / trials, and study tour. Major subjects of training will consist of:         <ul> <li>improvement of animal husbandry included animal shed improvement,</li> <li>pig breeding,</li> <li>improvement of animal health control,</li> <li>preparation of FYM using animal dung</li> <li>improvement of extension system (Farmers Field School, Demonstration farm, farmers participation to extension activities, activities of livestock working group of GYT, etc.),</li> <li>preparation of backyard animal promotion plan.</li> </ul> </li> </ul>							
2	Training of EAs on backyard animal husbandry	DAHO	DAHO provides EA training on animal husbandry supported by PPBC according to above program.							
3	Organizing of livestock working group	Gup / GYT	<ul> <li>Gup and GYT in cooperation with EA should organize Livestock Working Groups in GYT. The working group coordinates and supports EA's activity in Gewog.</li> </ul>							
4	Preparation of backyard animal promotion plan	Livestock Working Group	Livestock working group in cooperation with EA prepares the promotion plan including animal distribution plan.							
5	Request of budget allocation for animal distribution	Gup	Gup requests to DAHO the required budget for subsidized animal distribution after the approval of GYT.							
6	Breeding plan of piglet and chick	DAHO	<ul> <li>DAHO discusses with PPBC on breeding/distribution plan animals based on the Gewog plan.</li> </ul>							
7	Allocation of budget	DAHO	<ul> <li>DAHO reviews budget plan submitted from Gewogs, and request to MOA the budget plan for subsidized animal distribution with action plan after the approval of DYT.</li> </ul>							
8	Distribution of subsidized piglet and chick	Gup / Livestock Working Group	<ul> <li>Gup request distribution to PPBC through animal distribution according to the approved budget plan, Livestock Working Group distributes them to beneficiaries.</li> </ul>							
9	Implementation of Demonstration Livestock Farm	EA and Livestock Working Group	<ul> <li>Livestock Working Group select Demonstration Farm for backyard animal husbandry consisting of each 2 households for pig and poultry. The demonstration farm will be shift to</li> </ul>							
10	Implementation of Farmers Field School (FFS)	EA and Livestock Working Group	portiononto in EEC hold at Damanatical face and aller							
V. S	chedule									
	Required Action (WHAT)	Period (WHEN)	20         10         11         12         12							
1	Preparation of training program	7. 2003 8. 2003								
2	Training of EAs on backyard animal husbandry	8. 2003, 1. 2004								
3	Organizing of livestock working group	8. 2003 – 9. 2003								

	Required Action (WHAT)	Period (WHEN)	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
4	Preparation of backyard animal promotion plan	10.2003 – 12. 2003				:		-					
5	Request of budget allocation for animal distribution	12. 2003					:						
6	Breeding plan of piglet and chick	12. 2003											
7	Allocation of budget	12.2003 – 6. 2004											
8	Distribution of subsidized piglet and chick	2005 -											
9	Implementation of Demonstration Livestock Farm	2005 -											
10	Implementation of Farmers Field School (FFS)	1. 2007 – 6. 2008								·			

VI. Implementation and Monitoring System of Action Plan

Action		Plan
	WHO	DAHO for Dzongkhag, Gup for Gewog
	WHEN	Every 3 months during 2003 – 2005, and annually from 2006
Progress Management of A/P	WHERE	Dzongkhag
	HOW	<ul> <li>DAHO reviews quarterly the progress based on the report of progress and monitoring from Gup.</li> </ul>
	WHO	Gup for Gewog, DAHO for Dzongkhag
Budget Management at	WHEN	• From 12. 2003 to 6. 2004
Preparatory Stage	WHERE	Gewog to DAHO, and Dzongkhag to MOA
r reparatory stage	HOW	Gup should request the budget to DAHO, and Dzongkhag presents it MOA after approval by DYT
	WHO	• DAHO
Budget Management at	WHEN	Every year
Implementation Stage	WHERE	Dzongkhag
	HOW	<ul> <li>Budget for FYP and annual will be approved by DYT. Approved budget will be managed by DAO</li> </ul>
	WHO	
Budget Management at O&M	WHEN	
Stage	WHERE	
	HOW_	
	WHO	DAHO
Problem Solving	WHEN	Annual meeting and when problem occurs
	WHERE	Dzongkhag
	HOW	DAHO, EAs and personnel concerned have a meeting for discussion of the problem and countermeasures

2.3 Backyard Animal Husbandry SP ~ Drepong, Mongar

I. General		•	Sheet No.	AP-18			
Program	(RADP P1) Prog	ram for Food Crop Produc					
Sub-program							
	Level	Organization / Name	Contact Per	Contact Person			
	National	PPBC	Regional Manager of PPBC-Lingmithang				
Stakeholders	Dzongkhag	Mongar Dzongkhag	DAHO, Veterinary hospital,				
Starcholders	Dzoligkilag	Mongai bzongknay	Livestock - EA of Gewog				
	Gewog	Drepong Gewog	Gup, Livestock Working Gre	oup *			
	Beneficiaries	Farmers in the Gewog					

<sup>\*</sup> Livestock Working Group:

Related Program /

The working groups for subjects such as Livestock, Cash crop, and Food crop, will be established in GYT of Gewog aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The groups carry out the action plan under the responsibility of Gup.

carry out the action plan under the responsibility of Gup. II. Program/Sub-program To increase household income through backyard animal husbandry Target of Nos. of backyard animals Pig Poultry (Chicken) a \* b \* b \* c \* Target Present (A) 130 45% 0.6 470 61% 2.2 2012 (B) 330 60% 1.2 1650 85% 6.0 Note: Assuming that households increase to 128% during 10 years (217-280) a\*: Nos. of animals, b\*: Ratio of rearing farmers, c\*: Average nos. of rearing animals To improve efficiency of animal husbandry using surplus cereals to animal feed EA training on backyard animal husbandry promotion. Establishment of Livestock Working Group in Gewog, Preparation of backyard animal promotion plan including extension service and input distribution. Activities Request of budget allocation for distribution of subsidized piglet and chick, Distribution of piglets and chicks, Implementation of Farmers Field School (FFS)\* during 2 years, and Implementation of Demonstration Farm\*\* (each 2 households for pig and chicken during 8 years) Distribution of subsidized backyard animals (cash and carrying): Input 5 farmers, 2 piglets per farmer, during 8 years. 5 farmers, 10 chicks per farmer, during 8 years. Backyard animal husbandry is activated in Gewog. Income of farm household increase, Average income per household by backyard animals Pig Chicken Total (Nu./hh) a ' b a \* b \* Present (A) 0.6 4500 2700 2.2 200 440 3140 2012 (B) 1.2 6400 7680 6.0 250 1500 9180 (B) / (A) 200% 142% 291% 273% 125% 234% 341% Output a\*: average nos. of animals, b\*: production value (Nu./animal/year) c\*: production value (Nu./nh) Rural people are improved in notorious condition. Good FYM is provided using animal dung. Surplus maize is used value-adding production through animal husbandry. Livestock productivity and animal health are improved through improvement of feeding and animal shed, and Livestock Working Group is encouraged through joint working with EA, and farmers are involved in extension activities. Training of EAs and planning of on Backyard Animal husbandry 8.2003 - 12.2003Period • FFS. Demonstration Plot, FST, Piglet/chick distribution 7. 2004 - 2012

Sub-program (How)	
Project Justification	<ul> <li>Environment: It should be paid attention to water pollution by excretions of animals. The excretions should be used to preparation of FYM.</li> <li>Financial variability:</li> <li>Capacity building of EA and Food Crop Working Group, farmers participation to extension activities.</li> </ul>

\* Farmers Field School (FFS):

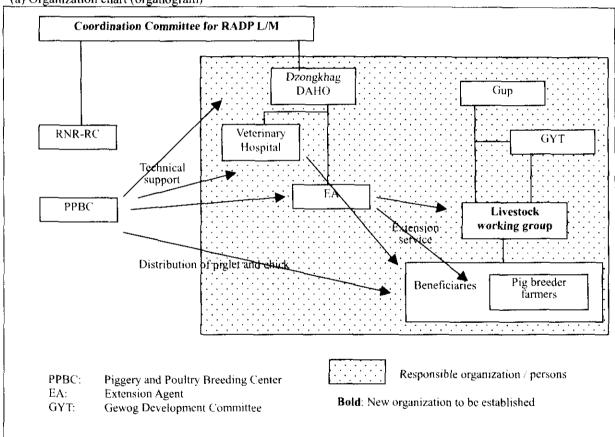
FFS aims to encourage and train leader farmers for dissemination of improved backyard animal husbandry through their voluntary extension activities after the school. Around 15 - 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month at Demonstration Farm, community school and other facilities. EA provides technical guidance to participants.

\*\* Demonstration Farm:

Demonstration Farm is set up at farm household with backyard animals in order to demonstrate improved animal husbandry. The location will be moved every 2 years for opportunity beneficiaries. EA periodically visits to the farm for technical guidance. Subsidized animals will be supplied to the farmer.

## III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility		
National PPBC-East		<ul> <li>Breeding of pig and poultry for distribution,</li> <li>Technical support for EA training and farmers</li> </ul>		
	DAHO	Overall coordination and support of extension service, training of EAs		
Dzongkhag	Veterinary hospital	Animal health service,		
Dzongknag	Livestock EA	Technical guidance and extension service to farmers; Involving farmers in FFS, Demonstration farm		
Gewog	Gup / Livestock Working Group	<ul> <li>Cooperation and participation to extension activities of EA, and organizing farmers group activities</li> </ul>		
Beneficiaries		Participation to extension activities of EA		

IV. A	Action Plan (sequent)							
	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)					
1	Preparation of training program	DAHO	<ul> <li>DAHO prepares the training program. The training program will be scheduled with 2 times sessions (one week for a session) including seminar / workshop and field investigation / trials, and study tour. Major subjects of training will consist of:         <ul> <li>improvement of animal husbandry included animal shed improvement,</li> <li>pig breeding,</li> <li>improvement of animal health control,</li> <li>preparation of FYM using animal dung</li> <li>improvement of extension system (Farmers Field School, Demonstration farm, farmers participation to extension activities, activities of livestock working group of GYT, etc.),</li> <li>preparation of backyard animal promotion plan.</li> </ul> </li> </ul>					
2	Training of EAs on backyard animal husbandry	DAHO	DAHO provides EA training on animal husbandry supported by PPBC according to above program.					
3	Organizing of livestock working group	Gup / GYT	Gup and GYT in cooperation with EA should organize Livestock Working Groups in GYT. The working group coordinates and supports EA's activity in Gewog.					
4	Preparation of backyard animal promotion plan	Livestock Working Group	Livestock working group in cooperation with EA prepares the promotion plan including animal distribution plan.					
5	Request of budget allocation for animal distribution	Gup	Gup requests to DAHO the required budget for subsidized animal distribution after the approval of GYT.					
6	Breeding plan of piglet and chick	DAHO	DAHO discusses with PPBC on breeding/distribution plan of animals based on the Gewog plan.					
7	Allocation of budget	DAHO	<ul> <li>DAHO reviews budget plan submitted from Gewogs, and request to MOA the budget plan for subsidized animal distribution with action plan after the approval of DYT.</li> </ul>					
8	Distribution of subsidized piglet and chick	Gup / Livestock Working Group	<ul> <li>Gup request distribution to PPBC through animal distribution according to the approved budget plan, Livestock Working Group distributes them to beneficiaries.</li> </ul>					
9	Implementation of Demonstration Livestock Farm	EA and Livestock Working Group	<ul> <li>Livestock Working Group selects Demonstration Farm for backyard animal husbandry consisting of each 2 households for pig and poultry. The demonstration farm will be shift to other farm households at every 2 years. EA regularly (every month) visit the farm and give technical guidance to the farmer.</li> </ul>					
10	Implementation of Farmers Field School (FFS)	EA and Livestock Working Group	<ul> <li>EA and livestock working group organize 10 to 20 participants to FFS for animal husbandry. EA give technical guidance to participants in FFS held at Demonstration farm and other facility. The participants work voluntarily to disseminate improved livestock husbandry to villagers in the Gewog.</li> </ul>					
V. S	chedule  Required Action	Period	20 20 20 20 20 20 20 20 20 20 20 20					
	(WHAT)		20     10     11     12					
1	Preparation of training program	7. 2003 – 8. 2003						
2	Training of EAs on backyard animal husbandry	8. 2003, 1. 2004						
3	Organizing of livestock working group	8. 2003 – 9. 2003						

	Required Action (WHAT)	Period (WHEN)	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
4	Preparation of backyard animal promotion plan	10.2003 – 12. 2003											
5	Request of budget allocation for animal distribution	12. 2003						·					
6	Breeding plan of piglet and chick	12. 2003		: . []			-						
7	Allocation of budget	12.2003 - 6. 2004											
8	Distribution of subsidized piglet and chick	2005 -			Г								
9	Implementation of Demonstration Livestock Farm	2005 -											
10	Implementation of Farmers Field School (FFS)	1. 2007 – 6. 2008											

VI. Implementation and Moni	toring Syste	
Action		Plan Plan
	WHO	DAHO for Dzongkhag, Gup for Gewog
	WHEN	Every 3 months during 2003 – 2005, and annually from 2006
Progress Management of A/P	WHERE	Dzongkhag
	HOW	<ul> <li>DAHO reviews quarterly the progress based on the report of progress and monitoring from Gup.</li> </ul>
	WHO	Gup for Gewog, DAHO for Dzongkhag
Dudget Monor and at	WHEN	• From 12. 2003 to 6. 2004
Budget Management at Preparatory Stage	WHERE	Gewog to DAHO, and Dzongkhag to MOA
Treparatory Stage	HOW	Gup should request the budget to DAHO, and Dzongkhag presents it MOA after approval by DYT
	WHO	• DAHO
Budget Management at	WHEN	Every year
Implementation Stage	WHERE	Dzongkhag
implementation stage	HOW	Budget for FYP and annual will be approved by DYT. Approved budget will be managed by DAO
	WHO	
Budget Management at O&M	WHEN	
Stage	WHERE	
·	HOW	
	WHO	DAHO
	WHEN	Annual meeting and when problem occurs
Problem Solving	WHERE	Dzongkhag
	HOW	DAHO, EAs and personnel concerned have a meeting for discussion of the problem and countermeasures

3.1 Market System Development Program ~ Gangzur, Lhuntse

I. General			Sheet No. AP-19	
Program	Market System D	evelopment Program		
Sub-program		(SP2) / Group Assembling and	Marketing (SP3)	
	Level	Organization / Name	Contact Person	
	National	AMS/PPD, MOA	Tel: 324898 (AMS)	
Stakeholders	Dzongkhag	Lhuntse	Tel: 545127 (DAO), EAs	
	Gewog	Gangzur	GAP and Marketing Working Group	_
	Beneficiaries	Farmers	Leaders of group activity for marketing	

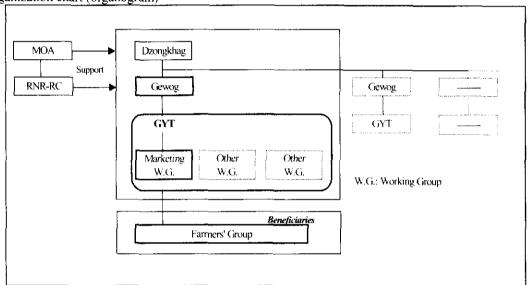
\* Marketing Working Group:

The marketing working group will be established in GYT aiming to strengthen administrative functions of Gewog, organizing farmers group, promotion of group activities and assist EA's activities. The group will carry out the Action Plan under the responsibility of Gup.

	activities and assist EA's activities. The group will carry out the Action Plan under the
II. Program/Sub-program	responsibility of Gup.
11. 1 tograni/980-program	To increase opportunity for farmers to meet buyers.
	To increase opportunity for rafflers to meet buyers.     To increase farmer's income and stability of sales.
Target	Participatory number of households in Gewog: about 280 (by 2008),
	<ul> <li>Sale amount: About Nu. 2,800,000 of 670 tons (2012)</li> </ul>
	Organizing marketing working group in GYT.
	Organizing trianeling working group in GT i.      Organizing farmers group.
	<ul> <li>Sunday market facility, which will be constructed near future, will be used for</li> </ul>
	assembling place of products and for collection place for buyers.
	SP2
	Forming the leaders among organized farmers group.
•	Bringing the products to the depot by each member farmer.
	Promotion of the better condition for selling products such as grading and repacking
	by the leaders.
Activities	Carrying out the transaction between buyers and farmers in the market.
	SP3
	Strengthening ability of the leaders above (SP2) to carry out the group assembling
	activities
	Collection and analysis of market information
	Planning of assembling schedule among members
	Grading and repacking of products at the depot.
	Transporting and selling at local markets or at the auction yard in Samdrup
	Jongkhar.
	Storing some products once and shipping later watching market condition.
	Lhuntse Municipality Office has the plan of Sunday market construction in 2003.  The facility of the plan of Sunday market construction in 2003.  The facility of the plan of Sunday market construction in 2003.  The facility of the plan of Sunday market construction in 2003.
	The facility will be used for collection depot for this Program. SP2
	Provision of trainers of
	Group activity
	Fostering leaders
	Business management
Input	Marketing, and
	Quality control
	SP3
	Provision of market information of Mongar market by the DOA and of the auction
	yard in Samdrup Jongkhar by FCB
	Provision of Trainers of
i	Management and marketing, and
	Information collection and analysis to the management members
	More buyers will come to buy the products.
	Farmers will have more opportunity to sell their products.
Output	Generating bargaining power to market.
Carpui	Creation of stable marketing condition.
	Possibilities of expanding activities to the fields of agro-processing activity for
	adding value of products

Period	<ul> <li>Participatory number of households in Gewog: about 280 (by 2008)</li> <li>Handling quantity of planed marketable cash crop production in Gewog: 670 tons</li> <li>Weekly market construction: by 2003</li> </ul>
Related Program /	For SP2-3: 2004     Sunday market will be constructed based on Construction Plan by the Lhuntse Municipality Office.
Sub-program (How)	<ul> <li>The market is also effective collection point of "Marketing Support Program by FCB (SB-4)".</li> </ul>
	<ul> <li>The depot or the existing shed market will be used for 280 of households and 670 ton of sale of marketable products. It is justifiable in view of publicity and expected marketing benefit.</li> </ul>
Project Justification	<ul> <li>To ensure income increase of farmers as the upper goal, these sub-programs are indispensable following and supporting to improvement of cash crop production.</li> </ul>
	<ul> <li>To create the market-oriented mindset among farmers especially leaders through training and activities in the programs is important for sustainability of marketing activities carried out by them.</li> </ul>

# III. Implementing Organization (a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Sta	ıkeholder	General Role and Responsibility			
National	MOA, RNR-RC	<ul> <li>MOA and RNR-RC will provide experts for training by the request from Lhuntse Dzongkhag.</li> </ul>			
Dzongkhag	DAO, EAs	<ul> <li>Dzongkhag and Municipality Office will allow the farmers group to use Weekly Market facility.</li> <li>DAO and EAs will promote farmers' group activities and provide the support for training and market information.</li> </ul>			
Gewog	GYT	<ul> <li>Administrative implementation body.</li> <li>Marketing Working Group in GYT will promote farmers' group activity for marketing and the group will be actual implementing body for the programs.</li> </ul>			
Beneficiaries	Farmers	Participation to group activity.			

	Required Action (WHAT)	Sub- Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Organizing of Marketing Working Group	2,3	Gewog (GYT)	GYT of Gewog will organize Marketing Working Group under GYT.
2	Training of EAs and members of marketing working group of GYT	2	MOA, RNR-RC	<ul> <li>MOA will provide the training to EAs and members of marketing working group of GYT concerning promotion of group activities and organizing farmers.</li> </ul>

	Required Action (WHAT)	Sub- Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
3	Promotion of organizing farmers	2	Gewog (GYT)	GYT will promote and organize farmers in collaboration with EAs.
4	Fostering leaders	2	Gewog (GYT)	<ul> <li>GYT will foster leaders and organize leaders group in collaboration with EAs.</li> </ul>
5	Training of leaders (1)	2	MOA, RNR-RC	MOA will provide the training to leaders concerning management of group activities and marketing.
6	Sales promotion	2	Farmers group	<ul> <li>Leaders of the group will promote buyers' coming to a depot.</li> <li>DAO, EAs and staffs of marketing section of GYT will cooperate them.</li> </ul>
7	Group shipment	2	Farmers group	<ul> <li>The farmers group will start the group shipment.</li> <li>They will start from small quantity and less time of shipment, and increase gradually.</li> <li>DAO, EAs and staffs of marketing section of GYT will support and cooperate their activity.</li> </ul>
8	Training of leaders (2)	2, 3	MOA, RNR-RC	<ul> <li>MOA will provide the training to leaders concerning, market information collection and processing, grading and quality control, and support to formulate the rules and procedure for grading activity.</li> </ul>
9	Grading activity	2,3	Farmers group	<ul> <li>Leaders of the group will promote and start the grading activity in the depot.</li> <li>They will start from small quantity and increase gradually.</li> <li>DAO, EAs and staffs of marketing section of GYT will cooperate them.</li> </ul>
10	Provision of market information	3	DAO	DAO will provide market information including Mongar market and the auction yard in Samdrup Jongkhar.
11	Direct sale activity	3	Farmers group	<ul> <li>Leaders of the group will promote and start the direct sale activity of assembled products in local markets and the auction yard of Samdrup Jongkhar by hiring truck.</li> </ul>

V. Schedule

	Required Action (WHAT)	Period	03	04	05	06	07	08	09	10	11	12
1	Organizing of Marketing Working Group	Ву Мау						: ' ' ' ' '				
2	Training of EAs and members of marketing working group of GYT	1 day		0	:							
3	Promotion of organizing farmers	By end of 2007				<u> </u>				:		
4	Fostering leaders	By end of 2005				:	<del></del> -	-				_
5	Training of leaders (1)	2 days		0	:		:					
6	Sales promotion	By end of 2005					-	-	:	-	·	
7	Group shipment	Aug. of 2004 -							:			

	Required Action (WHAT)	Period	03	04	05	06	07	08	09	10	11	12
8	Training of leaders (2)	3 days		0								
9	Grading activity	Dec. of 2004		·		:						
10	Provision of market information	2005 -					· · · · · · · · · · · · · · · · · · ·					
11	Direct sale activity	2006 -		:	1							

VI. Implementation and Monitoring System

VI. Implementation and Moni Action		Plan
	WHO	<ul> <li>In the initial stage of a few years by when the group will manage their activity properly by them, DAO in Lhuntse Dzongkhag will supervise and manage the progress of the programs. Afterwards, GYT will take over.</li> </ul>
Progress Management of A/P	WHEN	Monthly basis in the preparatory period and the sales season
	WHERE	DAO office of Lhuntse Dzongkhag / GYT Office
	HOW	Monthly report prepared by GYT / by leaders of the group will be submitted.
	WHO	
Budget Management at	WHEN	
Preparatory Stage	WHERE	
	HOW	
	WHO	DAO, Lhuntse Dzongkhag
Budget Management at	WHEN	Monthly basis in the 2nd year only.
Implementation Stage	WHERE	DAO office
	HOW	As per financial regulation.
	WHO	Leaders of the farmers group
Budget Management at O&M	WHEN	Monthly basis
Stage	WHERE	Any place authorized by the group.
	HOW	As per management regulation of the group.
		Budget arrangement: MOA
	WHO	Initial stage: Lhuntse Dzongkhag
		Afterwards: GYT (Marketing Section)
	WHEN	When the problems will occur.
		Budget arrangement: None
Problem Solving	WHERE	Initial stage: DAO office, Lhuntse Dzongkhag
		Afterwards: GYT office
	HOW	<ul> <li>Budget arrangement: MOA will be consultation with MOF.</li> <li>Initial stage: DAO will discuss with EAs, member of GYT and leaders of the group.</li> <li>Afterwards: GYT will discuss with leaders of the group.</li> </ul>

3.2 Market System Development Program ~ Chaskhar, Mongar

		• •			-8		
I. General				Sheet No.	AP-20		
Program	Marketing Syste	m Development Program					
Sub-program	Collection Depot Marketing (SP3)	Construction (SP1) / Group A	ssembling	(SP2) / Group	Assembling and		
	Level	Organization / Name		Contact Pe	rson		
	National	AMS/PPD, MOA	Tel: 324	Tel: 324898 (AMS)			
Stakeholders	Dzongkhag	Mongar	Tel: 641	181 (DAO), EAs			
	Gewog	Chaskhar	GUP and Marketing Working Group				
	Beneficiaries	Farmers		of group activity for			

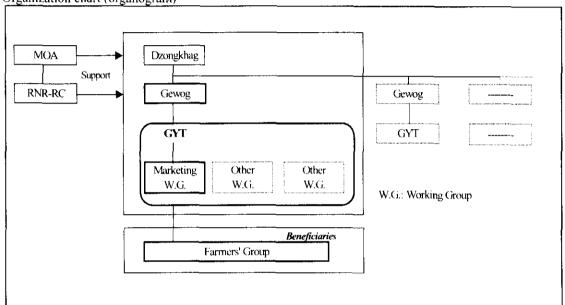
\* Marketing Working Group:

The marketing working group will be established in GYT aiming to strengthen administrative functions of Gewog, organizing farmers group, promotion of group activities and assist EA's activities. The group will carry out the Action Plan under the responsibility of Gup.

	responsibility of Gup.
II. Program/Su	b-program
	To increase opportunity for farmers to meet buyers.
Target	To increase farmer's income and stability of sales.
raiget	Participatory number of households in Gewog: about 160 households (by 2007)
	Sales amount: About Nu. 2,200,000 of 490 tons (2012)
	<u>SP1</u>
	Organizing marketing working group in GYT.
	Organizing farmers group.
	<ul> <li>Construction of a depot beside the existing feeder road, which will be used for assembling place of products and for collection place for buyers.</li> </ul>
	SP2
	Forming the leaders among organized farmers group.  Principal the great test to the deapt two seeks to the feethers.
	Bringing the products to the depot by each member farmer.  Promotion of the hatten and titles for all the second sec
Activities	<ul> <li>Promotion of the better condition for selling products such as grading and repacking by the leaders.</li> </ul>
	<ul> <li>Carrying out the transaction between buyers and farmers at the depot.</li> <li>SP3</li> </ul>
	Strengthening ability of the leaders above (SP2) to carry out the group assembling activities
	Collection and analysis of market information
	Planning of assembling schedule among members
	Grading and repacking of products at the depot.
	<ul> <li>Transporting and selling at local markets or at the auction yard in Samdrup Jongkhar.</li> </ul>
	Storing some products once and shipping later watching market condition.
	SP1
	<ul> <li>Provision of construction materials for a depot (Nu. 80,000).</li> </ul>
	<ul> <li>Capacity: handling for 8tons of products. (30L x 10W x 3Hm)</li> </ul>
	Construction site: Sangban village
	<u>SP2</u>
	Provision of trainers of
	Group activity
	Fostering leaders
Input	Business management
	Marketing, and
	Quality control
	<u>SP3</u>
	<ul> <li>Provision of market information of Mongar market by the DOA and of the auction yard in</li> </ul>
	Samdrup Jongkhar by FCB
	Provision of Trainers of
	Management and marketing, and
	<ul> <li>Information collection and analysis to the management members</li> </ul>
Output	Participatory number of households in Gewog: about 160 households
	<ul> <li>Handling quantity of planed marketable cash crop production in Gewog: 490 tons</li> </ul>
Period	Depot construction: 2004

	• For SP2-3: 2004-
Related Program / Sub-program (How)	<ul> <li>Depot will be constructed after completion of farm road construction work in the Gewog.</li> <li>The depot is also effective collection point of "Marketing Support Program by FCB (SP-4)".</li> </ul>
Project Justification	<ul> <li>The depot or the existing shed market will be used for 160 of households and 490 ton of sale of marketable products. The investment for a depot construction is justifiable in view of publicity and expected marketing benefit.</li> <li>To ensure income increase of farmers as the upper goal, these sub-programs are indispensable following and supporting to improvement of cash crop production.</li> <li>To create the market-oriented mindset among farmers especially leaders through training and activities in the programs is important for sustainability of marketing activities carried out by them.</li> </ul>

III. Implementing Organization
(a) Organization chart (organogram)



Sta	akeholder	General Role and Responsibility
National	MOA, RNR-RC	<ul> <li>MOA will provide the budget for purchasing of collection depot materials.</li> <li>MOA and RNR-RC will provide experts for training by the request from Mongar Dzongkhag.</li> </ul>
Dzongkhag	DAO, EAs	<ul> <li>DAO and EAs will promote farmers' group activities and provide the support for training and market information.</li> </ul>
Gewog	GYT	<ul> <li>Administrative implementation body.</li> <li>Marketing Working Group in GYT will promote farmers' group activity for marketing and the group will be actual implementing body for the programs.</li> </ul>
Beneficiaries	Farmers	Participation to group activity.

	retion I fan (sequent)			
	Required Action (WHAT)	Sub- Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Organizing of Marketing Working Group	1,2,3	Gewog (GYT)	GYT of Gewog will organize Marketing Working Group under GYT.
2	Request of depot construction material	1	Gewog (GYT)	GYT of Gewog will prepare the request letter for provision of depot construction material in consultation with DAO.
3	Budget allocation	1	MOA	MOA will take procedure upon receipt of the request letter from Dzongkhag and allocate the budget to Dzongkhag for purchasing construction material for a

	(WHAT) Sub- Program Stakeho		Responsib Stakeholde (WHO)	er Activities (HOW)					
				depot.					
4	Training of EAs and members of marketing working group of GYT	1,2	MOA, RNR-RC	<ul> <li>MOA will provide the training to EAs and members of marketing working group of GYT concerning promotion of group activities and organizing farmers.</li> </ul>					
5	Promotion of organizing farmers	1,2	Gewog (GY	e GVT will promote and argenize formers in cellaboration					
6	Fostering leaders	1,2	Gewog (GY	GYT will foster leaders and organize leaders group in collaboration with EAs.					
7	Decision of construction place of depot	1	Farmers gro	Organized farmers group will consider and decide the appropriate place of a depot in Sangban village among members under supervision by GYT and EAs.					
8	Provision of construction material	1	Dzongkha	a Drongking will purchase and provide the construction					
9	Construction of a depot	1	Farmers gro	<ul> <li>Members of the group will participate and carry out the depot construction work under supervision by GYT and EAs.</li> </ul>					
10	Training of leaders (1)	2	MOA, RNR-RC	MOA will provide the training to leaders concerning management of group activities and marketing.					
11	Sales promotion	2	Farmers gro	Leaders of the group will promote buyers' coming to a denot.					
12	Group shipment	2	Farmers gro	<ul> <li>The farmers group will start the group shipment.</li> <li>They will start from small quantity and less time of shipment, and increase gradually.</li> <li>DAO, EAs and staffs of marketing section of GYT will</li> </ul>					
13	Training of leaders (2)	2,3	MOA, RNR-RC	<ul> <li>support and cooperate their activity.</li> <li>MOA will provide the training to leaders concerning, market information collection and processing, grading and quality control, and support to formulate the rules and procedure for grading activity.</li> </ul>					
14	Grading activity	2,3	Farmers gro	Leaders of the group will promote and start the grading activity in the depot.  Those will start from amolt quantity and increase.					
15	Provision of market information	3	DAO	DAO will provide market information including Mongar					
16	Direct sale activity	3	Farmers gro	<ul> <li>market and the auction yard in Samdrup Jongkhar.</li> <li>Leaders of the group will promote and start the direct sale activity of assembled products in Mongar market and the auction yard of Samdrup Jongkhar by hiring truck.</li> </ul>					
V. S	chedule	l		a don.					
	Required Action (WHAT)	Pe	eriod 03	3 04 05 06 07 08 09 10 11 12					
1	Organizing of Marketir Working Group	ng By	May 🔲						
2	Request of dep construction material	ot By	Jun.						
3	Budget allocation	Ву	Jun.						

	Required Action (WHAT)	Period	03	04	05	06	07	08	09	10	11	12
4	Training of EAs and members of marketing working group of GYT	1 day		0	:							
5	Promotion of organizing farmers	By end of 2007										
6	Fostering leaders	By end of 2005								-	:	
7	Decision of construction place of depot	7 days		1								
8	Provision of construction material	By Jun.								:		
9	Construction of a depot	3 days		D			-			:	:	
10	Training of leaders (1)	2 days										
11	Sales promotion	By end of 2005										
12	Group shipment	Aug. of 2004 $\sim$										
13	Training of leaders (2)	3 days								:	!	
14	Grading activity	Dec. of 2004 ~										
15	Provision of market information	2005 ~		:				-				
16	Direct sale activity	2006 ~		:	[							

VI. Implementation and Monitoring System

Action	Plan					
	WHO	<ul> <li>In the initial stage of a few years by when the group will manage their activity properly by them, DAO in Dzongkhag will supervise and manage the progress of the programs. Afterwards, GYT will take over.</li> </ul>				
Progress Management of A/P	WHEN	Monthly basis in the preparatory period and the sales season				
	WHERE	DAO office of Mongar Dzongkhag / GYT Office				
	HOW	Monthly report prepared by GYT / by leaders of the group will be submitted.				
	WHO	PPD, MOA				
Budget Management at	WHEN	Previous year for budget allocation.				
Preparatory Stage	WHERE	MOA, Thimphu				
Treparatory Stage	HOW	As per financial regulation after receipt of the request letter from Mongar Dzongkhag.				
	WHO	DAO, Dzongkhag				
Budget Management at	WHEN	Monthly basis in the 2nd year only.				
Implementation Stage	WHERE	DAO office				
	HOW	As per financial regulation.				
Budget Management at O&M	WHO	Leaders of the farmers group				

Stage	WHEN	Monthly basis
	WHERE	Any place authorized by the group.
	HOW	As per management regulation of the group.
		Budget arrangement: MOA
	WHO	Initial stage: Mongar Dzongkhag
		Afterwards: GYT (Marketing Section)
	WHEN	When the problems will occur.
		Budget arrangement: MOA office
Problem Solving	WHERE	Initial stage: DAO office, Mongar Dzongkhag
		Afterwards: GYT office
		Budget arrangement: MOA will be consultation with MOF.
	ном	Initial stage: DAO will discuss with EAs, member of GYT and leaders of the group.
		Afterwards: GYT will discuss with leaders of the group.

3.3 Market System Development Program ~ Drepong, Mongar

I. General		<u> </u>	Sheet No. AP-21			
Program	Market System C	evelopment Program				
Sub-program	Collection Depot C	onstruction (SP1) / Group Asse	embling (SP2)			
	Level	Organization / Name	Contact Person			
	National	AMS/PPD, MOA	Tel: 324898 (AMS)			
Stakeholders	Dzongkhag	Mongar	Tel: 641181 (DAO), EAs			
	Gewog	Drepong	GUP and Marketing Working Group			
	Beneficiaries	Farmers	Leaders of group activity for marketing			

\* Marketing Working Group:

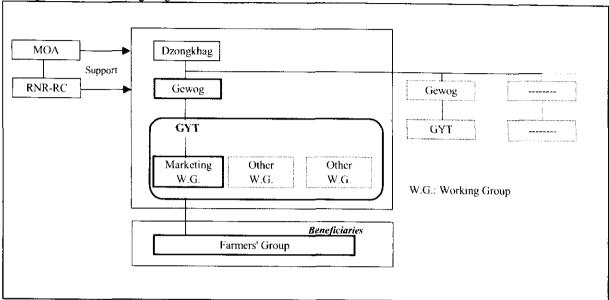
The marketing working group will be established in GYT aiming to strengthen administrative functions of Gewog, organizing farmers group, promotion of group activities and assist EA's activities. The group will carry out the Action Plan under the responsibility of Gup.

II. Program/Sub-program	l
	To increase opportunity for farmers to meet buyers.
_	To increase farmer's income and stability of sales.
Target	Participatory number of households in Gewog: about 175 (by 2010)
	Sales amount: About NU. 1,500,000 of 350 tons (2012)
	SP1
	Organizing marketing working group in GYT.
	Organizing farmers group.
	Construction of a depot beside the farm road, which will be used for assembling
	place of products and for collection place for buyers.
Activities	SP2
	Forming the leaders among organized farmers group.
	Bringing the products to the depot by each member farmer.
	<ul> <li>Promotion of the better condition for selling products such as grading and repacking</li> </ul>
	by the leaders.
	<ul> <li>Carrying out the transaction between buyers and farmers at the depot.</li> </ul>
	<u>SP1</u>
	<ul> <li>Provision of construction materials for a depot (Nu.80,000).</li> </ul>
	Capacity: handling for 8tons of products. (30Lx10Wx3Hm)
	Construction site: Drepong village
	<u>SP2</u>
Input	Provision of trainers of
	Group activity
	Fostering leaders
•	Business management
	Marketing, and
	Quality control
	More buyers will come to buy the products.
	Farmers will have more opportunity to sell their products.
Output	Generating bargaining power to market.
	Creation of stable marketing condition.
	<ul> <li>Participatory rate of households in Gewog: 80% (by 2010), about 175 households</li> </ul>
	Handling rate of planed marketable cash crop production in Gewog: 80% (by 2010)
Period	Depot construction: 2007
	• For SP2: 2007-
	Depot will be constructed after completion of farm road by "Farm Road"
Related Program /	Construction Program".
Sub-program (How)	The depot is also effective collection point of "Marketing Support Program by FCB      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also effective collection point of "Marketing Support Program by FCB"      The depot is also
	(SP-4)".
	The depot will be used for 175 of households and 350 ton of sale of marketable  and the The investment for a depot seem to the first transfer of the black o
Duniont Luntiff ti	products. The investment for a depot construction is justifiable in view of publicity
Project Justification	and expected marketing benefit.
	<ul> <li>To ensure income increase of farmers as the upper goal, these sub-programs are indispensable following and supporting to improvement of cash crop production.</li> </ul>
	I indispensable following and supporting to improvement of cash crop production.

 To create the market-oriented mindset among farmers especially leaders through training and activities in the programs is important for sustainability of marketing activities carried out by them.

# III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Sta	ıkeholder	General Role and Responsibility				
National	MOA, RNR-RC	<ul> <li>MOA will provide the budget for purchasing of collection depot materials.</li> <li>MOA and RNR-RC will provide experts for training by the request from Mongar Dzongkhag.</li> </ul>				
Dzongkhag	DAO, EAs	DAO and EAs will promote farmers' group activities and provide the support for training.				
Gewog	GYT	<ul> <li>Administrative implementation body.</li> <li>Marketing Working Group in GYT will promote farmers' group activity for marketing and the group will be actual implementing body for the programs.</li> </ul>				
Beneficiaries	Farmers	Participation to group activity.				

	retion i tan (sequent)			
	Required Action (WHAT)	Sub- Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Organizing of Marketing Working Group	1,2	Gewog (GYT)	GYT of Gewog will organize Marketing Working Group under GYT.
2	Request of depot construction material	1	Gewog (GYT)	GYT of Gewog will prepare the request letter for provision of depot construction material in consultation with DAO.
3	Budget allocation	1	МОА	MOA will take procedure upon receipt of the request letter from Mongar Dzongkhag and allocate the budget to Mongar Dzongkhag for purchasing construction material for a depot.
4	Training of EAs and members of marketing working group of GYT	1,2	MOA, RNR-RC	<ul> <li>MOA will provide the training to EAs and members of marketing working group of GYT concerning promotion of group activities and organizing farmers.</li> </ul>
5	Promotion of organizing farmers	1,2	Gewog (GYT)	GYT will promote and organize farmers in collaboration with EAs.
6	Fostering leaders	1,2	Gewog (GYT)	GYT will foster leaders and organize leaders group in collaboration with EAs.

	Required Action (WHAT)	Sub- Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
7	Decision of construction place of depot	1	Farmers group	<ul> <li>Organized farmers group will consider and decide the appropriate place of a depot in Drepong village among members under supervision by GYT land EAs.</li> </ul>
8	Provision of construction material	1	Dzongkhag	Mongar Dzongkhag will purchase and provide the construction material for depot to Gewog.
9	Construction of a depot	1	Farmers group	Members of the group will participate and carry out the depot construction work under supervision by GYT and EAs.
10	Training of leaders (1)	2	MOA, RNR-RC	<ul> <li>MOA will provide the training to leaders concerning management of group activities and marketing.</li> </ul>
11	Sales promotion	2	Farmers group	<ul> <li>Leaders of the group will promote buyers' coming to a depot.</li> <li>DAO, EAs and staffs of marketing section of GYT will cooperate them.</li> </ul>
12	Group shipment	2	Farmers group	<ul> <li>The farmers group will start the group shipment.</li> <li>They will start from small quantity and less time of shipment, and increase gradually.</li> <li>DAO, EAs and staffs of marketing section of GYT will support and cooperate their activity.</li> </ul>
13	Training of leaders (2)	2,3	MOA	<ul> <li>MOA will provide the training to leaders concerning, market information collection and processing, grading and quality control, and support to formulate the rules and procedure for grading activity.</li> </ul>
14	Grading activity	2,3	Farmers group	<ul> <li>Leaders of the group will promote and start the grading activity in the depot.</li> <li>They will start from small quantity and increase gradually.</li> <li>DAO, EAs and staffs of marketing section of GYT will cooperate them.</li> </ul>

V. Schedule

	Required Action (WHAT)	Period	03	04	05	06	07	08	09	10	11	12
I	Organizing of Marketing Working Group	Ву Мау										
2	Request of depot construction material	By Jun.							:			
3	Budget allocation	By Jun.										
4	Training of EAs and members of marketing working group of GYT	1 day				:						
5	Promotion of organizing farmers	By end of 2007						:				
6	Fostering leaders	By end of 2005		:	:					:		
7	Decision of construction place of depot	7 days									:	:
8	Provision of construction material	By Jun.		:	:	:				:	:	

·	Required Action (WHAT)	Period	03	04	05	06	07	08	09	10	11	12
9	Construction of a depot	3 days										
10	Training of leaders (1)	2 days			-		C					
11	Sales promotion	By end of 2005										
12	Group shipment	Aug. of 2004 -										
13	Training of leaders (2)	3 days							-	-		
14	Grading activity	Dec. of 2004 -				_ <del></del>						

VI. Implementation and Monitoring System

VI. Implementation and Moni		Plan
	WHO	In the initial stage of a few years by when the group will manage their activity properly by them, DAO in Mongar Dzongkhag will supervise and manage the progress of the programs. Afterwards, GYT will take over.
Progress Management of A/P	WHEN	Monthly basis in the preparatory period and the sales season
	WHERE	DAO office of Mongar Dzongkhag / GYT Office
	HOW	Monthly report prepared by GYT / by leaders of the group will be submitted.
	WHO	PPD, MOA
Budget Management at	WHEN	Previous year for budget allocation.
Preparatory Stage	WHERE	MOA, Thimphu
	HOW	As per financial regulation after receipt of the request letter from Mongar Dzongkhag.
	WHO	DAO, Dzongkhag
Budget Management at	WHEN	Monthly basis in the 2nd year only.
Implementation Stage	WHERE	DAO office
	HOW	As per financial regulation.
	WHO	Leaders of the farmers group
Budget Management at O&M	WHEN	Monthly basis
Stage	WHERE	Any place authorized by the group.
	HOW	As per management regulation of the group.
		Budget arrangement: MOA
	WHO	Initial stage: Mongar Dzongkhag
		Afterwards: GYT (Marketing Section)
	WHEN	When the problems will occur.
Problem Solving	IIIII ED E	Budget arrangement: MOA office
Froblem Solving	WHERE	Initial stage: DAO office, Mongar Dzongkhag
		Afterwards: GYT office
		<ul> <li>Budget arrangement: MOA will be consultation with MOF.</li> <li>Initial stage: DAO will discuss with EAs, member of GYT and leaders</li> </ul>
	HOW	of the group.
		Afterwards: GYT will discuss with leaders of the group.

4.1.1 Extension Strengthening for Food Crop SP~ Gangzur, Lhuntse

	- Zatension	Strongenening for room crop	P	Saile Francis	HILBU	
I. General				Sheet No.	AP-22	
Program	(RADP-P4) Exter	nsion Strengthening Program	-			
Sub-program	(SP-1) Extension S	strengthening for Food Crop SP				
	Level	Organization / Name	· · · · · · ·	Contact Per	son	
		RNR-RC	PD & E	D & EPO of RNR-RC East		
	National	DSC	DSC-East			
Stakeholders		BDFC	Mangei	langer of BDFC-Lhuntse		
	Dzongkhag	Lhuntse Dzongkhag	DAO, Agriculture-EA			
	Gewog	Gangzur Gewog G		Sup, Food Crop Working Group *		
	Beneficiaries	Farmers in Gewog		<b>_</b>		

<sup>\*</sup> Food Crop Working Group:

The working groups for subjects such as Food crop, Cash crop, and Livestock, will be established in GYT aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The group carries out the Action Plan under the responsibility of Gup.

II. Program/Sub-pro	To disseminate improved farming system in order to maintain food sufficiency in						
	Gewog and encourage farmers through participation to extension activities Gewog.						
Target	Target of Cereal Production						
Target	Paddy: 822 ton						
	Maize: 839 ton						
	Other cereals: 36 ton						
	Per capita milled grain: 267 kg						
	Establishment of Food Crop Working Group,						
	<ul> <li>Survey of present situation and potential of food production,</li> </ul>						
	<ul> <li>Preparation of food production plan,</li> </ul>						
	<ul> <li>Implementation of Farmers Field School (FFS)* for guidance to leader farmers</li> </ul>						
	improved farming system, post-harvesting, etc.,						
Activities	<ul> <li>Implementation of Demonstration Plots** in farmers field to demonstrate and version</li> </ul>						
	improved / high yielding varieties and improved crop management,						
	<ul> <li>Implementation of Farmers Study Tour (FST)*** to advanced areas, research</li> </ul>						
	center, etc.						
	Distribution of required inputs (seeds, fertilizer) to farmers,						
	Group purchase of inputs using micro-finance by BDFC,						
	Seed multiplication inspected by DSC.						
	Distribution of subsidized seeds for demonstration plots and promotion of resistance (seeds for demonstration).						
	varieties (cash and carrying).						
Innut	Paddy seed: 1,400 kg/year, during 9 years     Maize seed: 520 kg/year during 9 years						
Input	Maize seed: 520 kg/year, during 9 year     M/heat (Seedlike): 100 kg/year during 9 year						
	<ul> <li>Wheat (Sonalika): 100 kg/year, during 9 year</li> <li>Demonstration plots (seed and chemicals)</li> </ul>						
	6 plots / year, during 9 year, input cost Nu.500/plot, total cost Nu.27,000						
	Improvement of food crop farming system,						
	Production increase of food crops,						
	Discount of a of a strict habitation of						
	<ul> <li>Dissemination of sustainable land use and improved farm management,</li> <li>Encouragement of leader farmers in Gewog for dissemination of improved farming</li> </ul>						
	Land Use and Production Plan						
	Present Land Use (ha)						
	Wet land Dry land Tseri Total						
Output	Registered *1 (A) 167 238 151 546						
-	Estimated *2 (B) 330 430 360 1120						
	(B) / (A) 198% 181% 238% 205°						
	*1: Registered land, *2: Estimated by Study Team based on Land Cover Map						
	, , , ,						

		Cerea	al Production (tor	1)					
		Paddy	Maize	Others	Total				
	Present *1 (A)	606	695	25	1326				
	2012 *2 (B)	822	839	36	1697				
	(B) / (A)	136%	121%	144%	128%				
	<ul> <li>Yield increase:</li> <li>Production increase of crost increase</li> <li>Yield increase</li> <li>Production increase</li> <li>Other cereals (\)</li> </ul>	2000, *2: Proposed pr	wet land: dry land and Tsei ):	15 % (275 ha → 18 % (2.2 ton/ha 115 % x 118 % = ri: 5 % (347 ha − 15 % (2.0 on/ha 105 % x 115 % =	. → 2.6 ton/ha) : 136 % → 365 ha) → 2.3 ton/ha) : 121 %				
	Yield increase:     Production inci			15 % (1.0 ton/ha	→ 1.15 ton/ha				
	Production increase 130 % x 115 % = 144 %     Milled Grain (ton)								
		Rice	Maize	Others	Total				
	Present (A)	364	555	20	939				
	2012(B)	493	671	29	1193				
	(B) / (A)	135%	121%	121% 145% 128					
	Milling rate: Paddy: 6	Source: RNR Statistics 2000 Milling rate: Paddy: 60%, Maize and Others: 80% Per capita milled grain							
	Milled grain	Milled grain (ton)	Popula		capita (kg)				
	Present (A)	939	34		269				
	2012 (B)	1193	44		267				
	(B) / (A)	128%		128% 99%					
	Demonstration	food production pla plot	9. 2003 –1 7. 2004 -	2. 2003					
D. ' )	Farmers Field 8		2006 - 200	98					
Period	Subsidized see		7. 2004 -						
	Farmers Study		2006, 2009	9					
	Group Purchas	•	2007 -						
	Seed multiplica		2007 -						
Related Program /	are implemente	ecurity sub-progra d by this sub-prog	ram)						
Sub-program (How)	implemented to	gether with this su	b-program)						
	<ul> <li>P4-SP2 Sub-program of Extension strengthening for cash crop (FFS and FST are implemented together with this sub-program)</li> <li>Consistency with Upper Program: Food sufficiency will be maintained by the sub-program</li> </ul>								
Project Justification	Sustainability:	This sub-program mers participation	aims to capac	ity building of fa	armers / leade				

FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15 – 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month during cropping season at Demonstration plots, community school and other facilities. EA provides technical guidance to the participants.

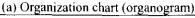
## \*\* Demonstration Plot:

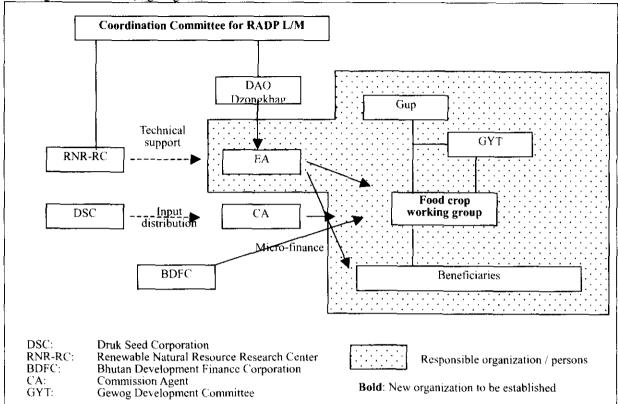
Demonstration plot is set up in farmers field in order to demonstrate and verify improved / high yielding varieties and improved crop management. The location will be moved every year for access of beneficiaries to the plots. EA periodically visits to technical guidance of improved farming. Farming practices are carried out farmers-selves. Promoting seed and chemicals will be supply free of charge to the farmers.

\*\*\* Farmers Study Tour (FST):

FST aims to train farmers through investigation and discussion in progress areas and concerning organizations. Gewog or Dzongkhag provides FST schedule.

## III. Implementing Organization





(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility				
RNR-RC		Technical support to EA activity				
National	DSC	Input supply to farmers,				
Ivational		Technical guidance and inspection to seed grower farmers				
BDFC	BDFC	Micro-finance service for group purchase of inputs				
Dzongkhag	DAO	Technical support and coordination to EAs' activity				
	Agriculture - EA	<ul> <li>Extension activity in Gewog: Involving farmers in FFS, Demonstration plot and FST</li> </ul>				
Gewog	Gup and Food Crop Working Groups	<ul> <li>Cooperation and participation to extension activities of EA, and organizing farmers group activities</li> </ul>				
Beneficiaries		Participation to extension activities of EA				

IV. Action Plan (sequent) Responsible Detailed Required Action Stakeholder Activities (WHAT) (WHO) (HOW) Gup and GYT in cooperation with EA should organize Working Organizing of Food Crop Groups for food crop in GYT. The working group is Gup / GYT Working Group of GYT responsibility of implementation of development plan under Gup supported by EA. Food Crop Working Group and EA should survey on present Agricultural survey and EA and Food situation of production and development potential of food 2 Preparation of food Crop Working crops, and preparation of production plan including input production plan of Gewog Group Request of budget Gup should request to Dzongkhag the required budget with 3 Gup allocation action plan after the approval of GYT. Food Crop Working Group distributes to beneficiaries Food Crop subsidized seeds of improved varieties of Paddy (IR 64, Bajo 4 Seed distribution Working Group Kaap, Bajo Maap), Maize (Yangtsipa, Palmera, Suwan) and Wheat (Sonalika).

(WHAT) Stakeh		Responsible Stakeholder (WHO)	Detailed Activities (HOW)				
5	Implementation of Demonstration Plots	EA and Food Crop Working Group	<ul> <li>Demonstration plots are set up in selected farmers' field for promotion seeds and improved crop management (each 2 plots for paddy and maize, each 1 plot for wheat and mustard beans). EA should regularly (every month) visit the plots and give technical guidance to the farmers.</li> </ul>				
6	Implementation of Farmers Field School (FFS) *	EA and Food Crop Working Group	<ul> <li>FFS will be participated with around 15 - 20 of progress farmers selected by Food Crop Working Group. EA should give technical guidance to participants in the field school held at Demonstration plots and other facility. The guidance will include from sowing to harvesting and post-harvesting. The participants will work voluntarily to disseminate improved crop management to villagers in Gewog.</li> </ul>				
7	Farmers Study Tour (FST)*	Food Crop Working Group	<ul> <li>Dzongkhag and EA prepare a plan of FST to advanced areas and research center. Food Crop Working Group selects participant to FST.</li> </ul>				
8	Group purchase of inputs *	GYT / Micro-finance group	Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.				
9	Seed multiplication	Food Crop Working Group	<ul> <li>Food Crop Working Group organize seed producer group.</li> <li>DSC give technical guidance for the group, and inspect produced seeds.</li> </ul>				

Note \*: FFS, FST and group purchase of input provided together with Extension Strengthening for cash crop.

V. Schedule

Required Action		Period	20	20	20	20	20	20	20	20	20	20	20
	(WHAT)	(WHEN)	02	03	04	05	06	07	08	09	10	11	12
1	Organizing of Food Crop Working Group of GYT	8. 2003 – 9. 2003	 										
2	Agricultural survey and Preparation of food production plan of Gewog	9.2003 – 12.2003							:				
3	Request of budget allocation	12.2003											
4	Seed distribution	2004 2012											
5	Implementation of Demonstration Plots	7. 2005 – 2012											
6	Implementation of Farmers Field School (FFS) *	7. 2006 – 12. 2008										<del></del>	
7	Farmers Study Tour (FST) *	2006, 2009			:								
8	Group purchase of inputs *	2007 -											
9	Seed multiplication	2007 -			:								

Note \*: FFS, FST and group purchase of input provided together with Extension Strengthening for cash crop.

VI. Implementation and Monitoring System of Action Plan

VI. Implementation and Mon	itoring Syste						
Action	Plan						
	WHO	Gup					
	WHEN	Every three months and annually					
	WHERE	RNR center / Gup office					
Progress Management of A/P	ноw	<ul> <li>Quarterly meeting of Gup, Food Crop Working Group and EA,</li> <li>Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.</li> </ul>					
	WHO	Gup should request to DAO the budget plan with action plan.					
Budget Monagement of	WHEN	• 12. 2003					
Budget Management at Preparatory Stage	WHERE	Gewog					
Treparatory Stage	HOW	Gup should request to DAO the budget plan with action plan after approval by GYT					
	WHO	Gup					
Dudost Management of	WHEN	Before of every cropping season for seed distribution					
Budget Management at Implementation Stage	WHERE	Gewog					
implementation stage	HOW	Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag					
	WHO						
Budget Management at O&M	WHEN						
Stage	WHERE						
	HOW						
	WHO	Gup					
	WHEN	Annual meeting and when problem occurs					
Problem Solving	WHERE	Gewog					
	HOW	Gup, Food Crop Working Group, EA and personnel concerned have a meeting for discussion of the problem and countermeasures.					

4.1.2 Extension Strengthening for Food Crop SP~ Chaskhar, Mongar

	6 6								
I. General				Sheet No.	AP-23				
Program	(RADP-P4) Exter	sion Strengthening Progr	am	<del></del>					
Sub-program	(SP-1) Extension Strengthening for Food Crop SP								
Stakeholders	Level	Organization / Name	Contact Person						
		RNR-RC	PD &	D & EPO of RNR-RC East					
	National	DSC	DSC-	DSC-East					
		BDFC	Mano	anger of BDFC-Mongar					
	Dzongkhag	Mongar Dzongkhag	DAO	DAO, Agriculture-EA					
	Gewog	Chaskhar Gewog	Gup,	Gup, Food Crop Working Group *					
	Beneficiaries	Farmers in Gewog							

<sup>\*</sup> Food Crop Working Group:

The working groups for subjects such as Food crop, Cash crop, and Livestock, will be established in GYT aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The group carries out the Action Plan under the responsibility of Gup.

II. Program/Sub-program	community activities t Action Plan under the	by residents, and responsibility of (	l assist EA's activ Gup.	ities. The group	carries out the		
Target	To disseminate in Gewog and end Gewog. Target of Cereal Paddy: Maize: Other cereals: Per capita miller	courage farmers Production 199 to 1,299 86 ton	ton	maintain food su ation to extension	ifficiency in the in activities in		
Activities	<ul> <li>Establishment of Food Crop Working Group,</li> <li>Survey of present situation and potential of food production,</li> <li>Preparation of food production plan,</li> <li>Implementation of Farmers Field School (FFS)* for guidance to leader farmers on improved farming system, post-harvesting, etc.,</li> <li>Implementation of Demonstration Plots** in farmers field to demonstrate and verify improved / high yielding varieties and improved crop management,</li> <li>Carrying out of Farmers Study Tour (FST)*** to advanced areas, research center etc.</li> <li>Distribution of required inputs (seeds, fertilizer) to farmers,</li> <li>Group purchase of inputs using micro-finance by BDFC,</li> <li>Seed multiplication inspected by DSC.</li> </ul>						
Input	<ul> <li>Distribution of s varieties (cash a</li> <li>Paddy seed: 35</li> <li>Maize seed: 77</li> <li>Wheat: 230 kg</li> <li>Demonstration p</li> </ul>	ubsidized seeds nd carrying). 0 kg/year, during 0 kg/year, during /year, during 9 ye lots (seed and ch	for demonstration 9 years 9 year ar emicals)				
Output	<ul> <li>Demonstration plots (seed and chemicals)</li> <li>6 plots / year, during 9 year, input cost Nu.500/plot, total cost Nu.27,000</li> <li>Improvement of food crop farming system,</li> <li>Production increase of food crops,</li> <li>Dissemination of sustainable land use and improved farm management,</li> <li>Encouragement of leader farmers in Gewog for dissemination of improved farming</li> <li>Land Use and Production Plan         Present Land Use (ha)     </li> <li>Wet land</li> <li>Dry land</li> <li>Tseri</li> <li>Total</li> <li>Registered *1 (A)</li> <li>44</li> <li>195</li> <li>67</li> <li>306</li> <li>Estimated *2 (B)</li> <li>77</li> <li>443</li> <li>230</li> <li>750</li> <li>(B) / (A)</li> <li>175%</li> <li>267%</li> <li>194%</li> <li>238%</li> <li>*1: Registered land,</li> <li>*2: Estimated by Study Team based on Land Cover Map</li> </ul>						

		Cereal Production (ton)							
		Paddy	Maize	Others	Total				
	Present *1 (A)	153	1027	58	1238				
	2012 *2 (B)	199	1299	86	1584				
	(B) / (A)	130%	126%	148%	128%				
		tistics 2000							
	1	*1: RNR Statistics 2000, *2: Proposed production plan assumed at:							
	<ul> <li>Paddy producti</li> </ul>								
		opping intensity in	wet land:	10% (70 ha→ 7	'7 ha)				
	<ul> <li>Yield increase</li> </ul>			18% (2.2 ton/ha	$\rightarrow$ 2.6 ton/ha)				
		• Production increase: 110% x 118% = 130%							
		<ul> <li>Maize production:</li> <li>Increase of cropping intensity to dry land and Tseri: 10% (514 ha → 565 h</li> </ul>							
	<ul> <li>Increase of cro</li> </ul>								
	Yield increase 15% (2.0 ton/ha → 2.3 to								
	<ul> <li>Production inc</li> </ul>	• Production increase 110% x 115% = 126%							
	Other cereals (	Wheat, Barley, etc.	.):						
	<ul> <li>Increase of plant</li> </ul>	anted area by doub	ole cropping: 3	$30\% (58 \text{ ha} \rightarrow 75)$	ha)				
	<ul> <li>Yield increase</li> </ul>	<u>.</u>	•	15% (1.0 ton/ha -	→ 1.15 ton/ha)				
	<ul> <li>Production inc</li> </ul>	rease	•	130% x 115% = 1	48%				
		Rice	Maize	Others	Total				
	Present (A)	92	823	46	961				
	2012(B)	119	1039	69	1227				
	(B) / (A)	130%	126%	150%	128%				
	Source: RNR Statist	iics 2000 60%, Maize and Oth	oro: 900/						
	walking rate, raddy.		1						
	Milled grain	Milled grain (ton)	capita milled grain Popula		r capita (kg)				
	Present (A)	961	30		311				
	2012 (B)	1227	39		310				
	(B) / (A)	128%		128% 100%					
		was estimated by ass							
		food production pl							
	Demonstration		7. 2004 -						
	Farmers Field	•	2006 - 2008						
Period	Subsidized see	ed distribution	7. 2004 -						
	Farmers Study	Tour	2006, 2009						
	Group Purchas	se of inputs	2007 -						
	<ul> <li>Seed multiplica</li> </ul>	ation	2007 -						
		security sub-progra	am (EA training a	and activities of I	Dzongkhag leve				
Related Program /		ed by this sub-prog			J 175				
Sub-program (How)		ogram of Extensio		for cash crop (F	FS and FST are				
	implemented to	gether with this su	b-program)						
		rith Upper Progra		ency will be ma	intained by the				
Project Justification	sub-program	0		,	,				
Project Justification	Sustainability:	This sub-program	aims to capac	ity building of f	armers / leader				
		irmers participation							
Farmers Field School (FFS)									

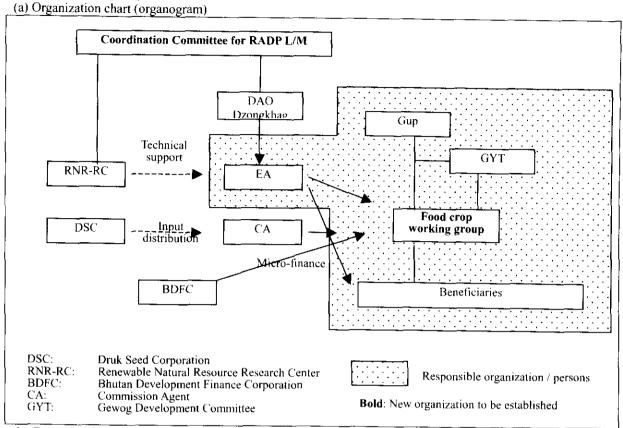
\* Farmers Field School (FFS):

\*\* Demonstration Plot:

FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15 – 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month during cropping season at Demonstration plots, community school and other facilities. EA provides technical guidance to the participants. Demonstration plot is set up in farmers field in order to demonstrate and verify improved / high yielding varieties and improved crop management. The location will be moved every year for access of beneficiaries to the plots. EA periodically visits to technical guidance of improved farming. Farming practices are carried out farmers-selves. Promoting seed and chemicals will be supply free of charge to the farmers.

\*\*\* Farmers Study Tour (FST):

FST aims to train farmers through investigation and discussion in progress areas and concerning organizations. Gewog or Dzongkhag provides FST schedule.



(b) General Role and Responsibility of Stakeholders

S	takeholder	General Role and Responsibility				
RNR-RC		Technical support to EA activity				
National	DSC	Input supply to farmers,				
		<ul> <li>Technical guidance and inspection to seed grower farmers</li> </ul>				
	BDFC	Micro-finance service for group purchase of inputs				
<u></u>	DAO	Technical support and coordination to EAs' activity				
Dzongkhag	Agriculture - EA	<ul> <li>Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST</li> </ul>				
Gewog	Gup and Food Crop Working Groups	<ul> <li>Cooperation and participation to extension activities of EA, and organizing farmers group activities</li> </ul>				
Beneficiaries		Participation to extension activities of EA				

IV. Action Plan (sequent)

	Action Fran (sequent)		
	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Organizing of Food Crop Working Group of GYT	Gup / GYT	<ul> <li>Gup and GYT in cooperation with EA should organize Working Groups for food crop in GYT. The working group is responsibility of implementation of development plan under Gup supported by EA.</li> </ul>
2	Agricultural survey and Preparation of food production plan of Gewog	EA and Food Crop Working Group	<ul> <li>Food Crop Working Group and EA should survey on present situation of production and development potential of food crops, and preparation of production plan including input supply.</li> </ul>
3	Request of budget allocation	Gup	Gup should request to Dzongkhag the required budget with action plan after the approval of GYT.
4	Seed distribution	Food Crop Working Group	<ul> <li>Food Crop Working Group distributes to beneficiaries subsidized seeds of improved varieties of Paddy (IR 64, Bajo Kaap, Bajo Maap), Maize (Yangtsipa, Palmera, Suwan) and Wheat (Sonalika).</li> </ul>

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
5	Implementation of Demonstration Plots	EA and Food Crop Working Group	<ul> <li>Demonstration plots are set up in selected farmers' field for promotion seeds and improved crop management (each 2 plots for paddy and maize, each 1 plot for wheat and mustard seed). EA should regularly (every month) visit the plots and give technical guidance to the farmers.</li> </ul>
6	Implementation of Farmers Field School (FFS) *	EA and Food Crop Working Group	<ul> <li>FFS will be participated with around 15 - 20 of progress farmers selected by Food Crop Working Group. EA should give technical guidance to participants in the field school held at Demonstration plots and other facility. The guidance will include from sowing to harvesting and post-harvesting. The participants will work voluntarily to disseminate improved crop management to villagers in Gewog.</li> </ul>
7	Farmers Study Tour (FST) *	Food Crop Working Group	<ul> <li>Dzongkhag and EA prepare a plan of FST to advanced areas and research center. Food Crop Working Group selects participant to FST.</li> </ul>
8	Group purchase of inputs *	GYT / Micro-finance group	Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.
9	Seed multiplication	Food Crop Working Group	<ul> <li>Food Crop Working Group organize seed producer group.</li> <li>DSC give technical guidance for the group, and inspect produced seeds.</li> </ul>

Note \*: FFS, FST and group purchase of input provided together with Extension Strengthening for cash crop.

V. Schedule	V.	Sch	edu	le
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<u> </u>	cneaute										_		
	Required Action (WHAT)	Period (WHEN)	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
1	Organizing of Food Crop Working Group of GYT	8. 2003 – 9. 2003						Ŧ					
2	Agricultural survey and Preparation of food production plan of Gewog	9.2003 – 12.2003											
3	Request of budget allocation	12.2003	į						:				:
4	Seed distribution	2004 – 2012											
5	Implementation of Demonstration Plots	7. 2005 – 2012					) []						
6	Implementation of Farmers Field School (FFS) *	7. 2006 – 12. 2008											
7	Farmers Study Tour (FST) *	2006, 2009						:	:				
8	Group purchase of inputs *	2007 -											
9	Seed multiplication	2007 -											

Note \*: FFS, FST and group purchase of input provided together with Extension Strengthening for cash crop.

VI. Implementation and Monitoring System of Action Plan

Action	1	Plan
	WHO	• Gup
	WHEN	Every three months and annually
	WHERE	RNR center / Gup office
Progress Management of A/P	нош	<ul> <li>Quarterly meeting of Gup, Food Crop Working Group and EA,</li> <li>Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.</li> </ul>
	WHO	Gup should request to DAO the budget plan with action plan.
Budget Management at	WHEN	• 12. 2003
Preparatory Stage	WHERE	Gewog
Treparatory Stage	HOW	Gup should request to DAO the budget plan with action plan after approval by GYT
· · · · · · · · · · · · · · · · · · ·	WHO	Gup
Budget Management at	WHEN	Before of every cropping season for seed distribution
Implementation Stage	WHERE	Gewog
Implementation stage	HOW	Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag
	WHO	
Budget Management at O&M	WHEN	
Stage	WHERE	
	HOW	
	WHO	• Gup
	WHEN	Annual meeting and when problem occurs
Problem Solving	WHERE	Gewog
	HOW	<ul> <li>Gup, Food Crop Working Group, EA and personnel concerned have a meeting for discussion of the problem and countermeasures.</li> </ul>

4.1.3 Extension Strengthening for Food Crop SP~Drepong, Mongar

I. General			Sheet No. AP-24				
Program	(RADP-P4) Exter	am					
Sub-program	b-program (SP-1) Extension Strengthening for Food Crop SP						
	Level	Organization / Name	Contact Person				
		RNR-RC	PD & EPO of RNR-RC East				
	National -	DSC	DSC-East				
Stakeholders		BDFC	Manger of BDFC-Mongar				
	Dzongkhag	Mongar Dzongkhag	DAO, Agriculture-EA				
	Gewog	Drepong Gewog	Gup, Food Crop Working Group *				
	Beneficiaries	Farmers in Gewog					

<sup>\*</sup> Food Crop Working Group:

The working groups for subjects such as Food crop, Cash crop, and Livestock, will be established in GYT aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The group carries out the Action Plan under the responsibility of Gup

	community activities t			vities. The group	carries out the	
II. Program/Sub-program	Action Plan under the	responsibility of t	Бир.			
Target		courage farmers Production 52 ton 466 to 129 to	n n			
Activities	<ul> <li>Establishment of Food Crop Working Group,</li> <li>Survey of present situation and potential of food production,</li> <li>Preparation of food production plan,</li> <li>Implementation of Farmers Field School (FFS)* for guidance to leader farmers on improved farming system, post-harvesting, etc.,</li> <li>Implementation of Demonstration Plots** in farmers field to demonstrate and verify improved / high yielding varieties and improved crop management,</li> <li>Implementation of Farmers Study Tour (FST)*** to advanced areas, research center, etc.</li> <li>Distribution of required inputs (seeds, fertilizer) to farmers,</li> <li>Group purchase of inputs using micro-finance by BDFC.</li> </ul>					
Input	<ul> <li>Distribution of subsidized seeds for demonstration plots and promotion of varieties (cash and carrying).</li> <li>Paddy seed: 100 kg/year, during 9 years</li> <li>Maize seed: 300 kg/year, during 9 year</li> <li>Wheat: 50 kg/year, during 9 year</li> <li>Demonstration plots (seed and chemicals)</li> </ul>					
Output	į .					

		Cerea	al Production (tor	1)			
		Paddy	Maize	Others	Total		
	Present *1 (A)	38	352	93	483		
	2012 *2 (B)	52	466	129	647		
	(B) / (A)	136%	132%	138%	134%		
	<ul> <li>Paddy production</li> </ul>	000, *2: Proposed pro on:					
	<ul><li>Increase of cro</li><li>Yield increase</li><li>Production inc</li></ul>	15% (17 ha $\rightarrow$ 20 18% (2.2 ton/ha - 115% x 118% = 1	→ 2.6 ton/ha)				
	Maize production     Increase of cro     Yield increase	on: opping intensity in c	dry land and Tser	i: 15% (176 ha -	→ 202 ha)		
	Production inci     Other cereals ()		15% (2.0 ton/ha - 115% x 115% = 1	32%			
	<ul><li>Increase of pla</li><li>Yield increase:</li><li>Production inc</li></ul>	rease	and double cropp led Grain (ton)	oing: 20% (93 h; 15% (1.0 ton/ha - 120% x 115% = 1	→ 1.15 ton/ha)		
		Rice	Maize	Others	Total		
	Present (A)	23	282	74	379		
	2012(B)	31	372	103	506		
	(B) / (A)	135%	132%	138%	134%		
		60%, Maize and Othe Per c	apita milled grain				
	Milled grain	Milled grain (ton)	Populat		capita (kg)		
	Present (A)	379	173		218		
	2012 (B)	506	222	20	228		
	(B) / (A)	134%		128% 105%			
	<ul> <li>Preparation of</li> </ul>	vas estimated by ass food production pla	ın 9. 2003 –1.				
Period	<ul> <li>Demonstration plot</li> <li>Farmers Field School</li> <li>7. 2004 -</li> <li>2006 - 2008</li> </ul>						
	į.	1.2004					
	Farmers Study Tour 2007, 2010						
	Group Purchase of inputs     2008 -						
Related Program /	are implemente	ecurity sub-progra d by this sub-progr	ram)				
Sub-program (How)	implemented to	ogram of Extensio gether with this sub	o-program)				
Project Justification	sub-program <ul><li>Sustainability:</li></ul>	ith Upper Program This subprogram rmers participation	aims to capaci	ty building of far	-		
* Farmers Field School (FFS):	FFS aims to encoura	age and train lead	er farmers for di	ssemination of im			

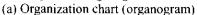
FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15 – 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month during cropping season at Demonstration plots, community school and other facilities. EA provides technical guidance to the participants.

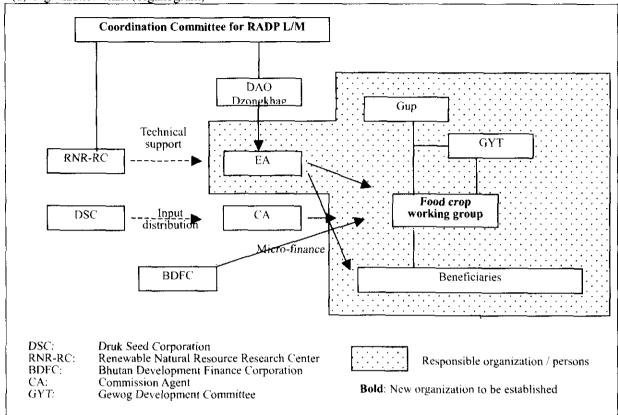
\*\* Demonstration Plot:

Demonstration plot is set up in farmers field in order to demonstrate and verify improved / high yielding varieties and improved crop management. The location will be moved every year for access of beneficiaries to the plots. EA periodically visits to technical guidance of improved farming. Farming practices are carried out farmers-selves. Promoting seed and chemicals will be supply free of charge to the farmers.

\*\*\* Farmers Study Tour (FST):

FST aims to train farmers through investigation and discussion in progress areas and concerning organizations. Gewog or Dzongkhag provides FST schedule.





(b) General Role and Responsibility of Stakeholders

S	takeholder	General Role and Responsibility						
	RNR-RC	Technical support to EA activity						
National	DSC	Input supply to farmers						
	BDFC	Micro-finance service for group purchase of inputs						
	DAO	Technical support and coordination to EAs' activity						
Dzongkhag	Agriculture - EA	<ul> <li>Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST</li> </ul>						
Gewog	Gup and Food Crop Working Groups	<ul> <li>Cooperation and participation to extension activities of EA, and organizing farmers group activities</li> </ul>						
Beneficiaries		Participation to extension activities of EA						

IV. Action Plan (sequent) Responsible Detailed Required Action Stakeholder Activities (WHAT) (WHO) (HOW) Gup and GYT in cooperation with EA should organize Working Organizing of Food Crop Groups for food crop in GYT. The working group is 1 Gup / GYT Working Group of GYT responsibility of implementation of development plan under Gup supported by EA. Food Crop Working Group and EA should survey on present Agricultural survey and EA and Food situation of production and development potential of food 2 Preparation of food Crop Working crops, and preparation of production plan including input production plan of Gewog Group supply. Request of budget Gup should request to Dzongkhag the required budget with 3 Gup allocation action plan after the approval of GYT. Food Crop Working Group distributes to beneficiaries Food Crop subsidized seeds of improved varieties of Paddy (IR 64, Bajo 4 Seed distribution Working Group Kaap, Bajo Maap), Maize (Yangtsipa, Palmera, Suwan) and Wheat (Sonalika). Implementation of EA and Food 5 Demonstration plots are set up in selected farmers' field for

	Required Action (WHAT)  Responsible Stakeholder (WHO)		Detailed Activities (HOW)
	Demonstration Plots	Crop Working Group	promotion seeds and improved crop management (each 2 plots for paddy and maize, each 1 plot for wheat and mustard beans). EA should regularly (every month) visit the plots and give technical guidance to the farmers.
6	Implementation of Farmers Field School (FFS) *	EA and Food Crop Working Group	<ul> <li>FFS will be participated with around 15 - 20 of progress farmers selected by Food Crop Working Group. EA should give technical guidance to participants in the field school held at Demonstration plots and other facility. The guidance will include from sowing to harvesting and post-harvesting. The participants will work voluntarily to disseminate improved crop management to villagers in Gewog.</li> </ul>
7	Farmers Study Tour (FST)*	Food Crop Working Group	<ul> <li>Dzongkhag and EA prepare a plan of FST to advanced areas and research center. Food Crop Working Group selects participant to FST.</li> </ul>
8	Group purchase of inputs *	GYT / Micro-finance group	<ul> <li>Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.</li> </ul>

Note \*: FFS, FST and group purchase of input provided together with Extension Strengthening for cash crop.

V. Schedule

	Required Action (WHAT)	Period (WHEN)	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
1	Organizing of Food Crop Working Group of GYT	8. 2003 – 9. 2003											
2	Agricultural survey and Preparation of food production plan of Gewog	9.2003 12.2003											
3	Request of budget allocation	12.2003											
4	Seed distribution	2004 - 2012											
5	Implementation of Demonstration Plots	7. 2005 – 2012											
6	Implementation of Farmers Field School (FFS) *	7. 2007 – 12. 2009											
7	Farmers Study Tour (FST) *	2007, 2010											:
8	Group purchase of inputs *	2008 -											

Note \*: FFS, FST and group purchase of input provided together with Extension Strengthening for cash crop.

VI. Implementation and Monitoring System of Action Plan

VI. Implementation and Mon	itoring Syste	
Action		Plan
	WHO_	Gup
	WHEN	Every three months and annually
	WHERE	RNR center / Gup office
Progress Management of A/P	HOW	<ul> <li>Quarterly meeting of Gup, Food Crop Working Group and EA,</li> <li>Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.</li> </ul>
	WHO	Gup should request to DAO the budget plan with action plan.
Budget Management et	WHEN	• 12. 2003
Budget Management at Preparatory Stage	WHERE	Gewog
Treparatory Stage	HOW	Gup should request to DAO the budget plan with action plan after approval by GYT
	WHO	Gup
Duda - M	WHEN	Before of every cropping season for seed distribution
Budget Management at Implementation Stage	WHERE	Gewog
implementation stage	HOW	Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag
	WHO	
Budget Management at O&M	WHEN	
Stage	WHERE	
	HOW	
	WHO	Gup
	WHEN	Annual meeting and when problem occurs
Problem Solving	WHERE	Gewog
	HOW	Gup, Food Crop Working Group, EA and personnel concerned have a meeting for discussion of the problem and countermeasures.

4.2.1 Extension Strengthening for Cash Crop SP~ Gangzur, Lhuntse

		0		-			
I. General			Sheet No.	AP-25			
Program	(RADP P-4 SP2) E	xtension Strengthening Prog					
Sub-program	(SP 2) Extension St						
-	Level	Organization / Name	Contact Person				
		RNR-RC	Program Director	Program Director			
	National	DSC	DSC-East				
Stakeholders		BDFC	Manager of BDFC-Lhuntse				
	Dzongkhag	Lhuntse Dzongkhag	DAO, Agriculture - EA				
1	Gewog	Gangzur Gewog	Gup, Cash Crop Working Group				
	Beneficiaries	Farmers in Gewog					

\* Cash Crop Working Group:

The working groups for subjects such as Cash crop, Food crop, Livestock, will be established in GYT aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The group carries out the Action Plan under the responsibility of Gup.

Action Plan under the responsibility of Gup. II. Program/Sub-program To disseminate improved cash crop management for increase of household income Vegetable production: 826 ton Target Fruits production: 470 ton Average income from cash crops: Nu. 6,410 / household. Selection of priority cash crops in Gewog and identification of priority area to be promoted the crops. Preparation of cash crop production plan. Setting up of demonstration plots\* in farmers field to disseminate cash crop production technology to farmers. Farmers Field School (FFS)\*\* for guidance on farming and post-harvesting of cash Activities crops. Farmers Study Tour (FST)\*\*\* to advanced areas, researches, auction yard, and so Distribution of required inputs (seeds, seedlings, fertilizer, agro-chemicals) to Group purchase of inputs using micro-finance of BDFC, Seed / seedling production by farmers inspected by DSC. Distribution of subsidized seeds / seedlings (cash and carrying) Vegetable seed: 450 kg / 9 years Fruits Seedling: 4,500 trees / 7 years Input Input for Demonstration plots (free of charge): Vegetables: 4 plots/year, 9years, Nu. 500/plot, total Nu. 18,000 Fruits: Total 24 plots, Nu.800/plot, Total Nu.19,200 Improvement of cash crop technology in farmers field. Environmental conservation through orchard development in Tseri. Increase of cash crop production. Quality improvement of products. Income increase of farmers. Formulation of major production area of priority crops. Encouragement of leader farmers in Gewog for dissemination of improved farming through activities of cash crop working group and FFS. Vegetables Output Production plan of Vegetables Planted area Yield (ton/ha) Production Marketing \*3 (ha) (ton) (ton) Present \*1 (A) 8 12.5 100 2012 \*2 (B) 55 15 826 689 (B) / (A) 687% 120% 826% \*1: Estimated based on RNR Statistics 2000, Yield and production are estimated by potato

 $0.017 \rightarrow 0.094$ 

production for all vegetables.

Planted area (ha/household)

\*2: Proposed production plan assumed at:

	Non of harrachald	ls: 459 →				<del></del> · ···					
	Nos. of household										
	28% increase (ave										
		Yield increase (ton/ha) 12.5 → 15.0 (20% increase)  *3: Marketable products  Assumed that producers household consumes 300 kg of the product per year  • Fruits									
	• Truits		Draduation pla	n of finite							
			Production pla		D. L.	Marketing					
•	} }										
	Present *1 (A)	trees	trees	(kg/tree)	(ton)	*3 (ton)					
	<u> </u>	2070	926	50	46						
	2012 *2 (B)	9443	5876	80	470	424					
	(B) / (A)	331%	629%	160%	1000%	19100%					
•	*1: Estimated bas										
	*2: Proposed prod	uction are estima		or all truits.							
		trees/household									
	Yield increase		50 → 80								
	*3: Marketable pro		30 00								
		producers hous	ehold consume	s 100 kg of the	product per vea	r					
Period	<ul> <li>Selection of priority crops and cash crop development plan 7.200312.2003</li> <li>Extension activity of fruits 7.2004 -</li> </ul>										
		Extension activity of Vegetables     7.2005 -									
		ing of Extension		orogram /EAc							
Related Program /	in RNR-RC E		on Agent sub-	program (EAS	are trained by	y uns program					
Sub-program (How)		,	anina for food	crop (EES as	nd EQT will be	implemented					
Sub-program (110w)				crop (FF5 ar	IC L21 Mill De	: impiementea					
	together with this sub-program)										
	Environment: Some of Tseri area are changed to orchard,     Contain hilling Paraficients										
	Sustainability: Beneficiaries are trained on cash crop production through     are trained on cash crop production through										
	participation to extension activities.										
	Income Increase per household										
		Production	Vegetal Marketing	Price	Draduction	Value sold					
		1	•		Production (Na.)						
	Present (A)	(kg/hh)	(kg/hh)	(Nu./kg)	value (Nu.)	(Nu.)					
		218	1105	3.5	763	263					
Project Justification		1405	1105	3.5	4918	3885					
	(B) / (A)	644%		100%	644%	1477%					
	l	Department :	Fruit		0	1/-l (1					
		Production (1cg/lph)	Marketing	Price	Production						
	Dross-4 (4)	(kg/hh)	*3 (kg/hh)	(Nu./kg)	value (Nu.)	(Nu.)					
	Present (A)	100	0	3.5	350						
	2012 (B)	799	699	3.5	2447	2520					
	(B) / (A)	799%	<u>-</u>	100%	699%						

\* Farmers Field School (FFS):

FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15-20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month at Demonstration plots, community school and other facilities. EA provides technical guidance to participants.

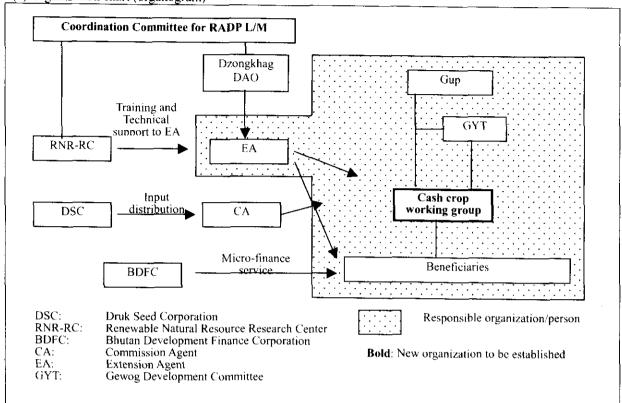
\*\* Demonstration Plot:

Demonstration plot is set up in farmers field in order to demonstrate and verify new crops / varieties and improved crop management. The location will be moved every year for opportunity beneficiaries. EA periodically visits to technical guidance of improved farming. Farming practices carried out farmers-selves. Promoting seed and chemicals will be supply free of charge to the farmers.

\*\*\* Farmers Study Tour (FST):

FST aims to train farmers through investigation and discussion in progress areas and concerning organizations. Gewog or Dzongkhag provides FST schedule.

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

	Stakeholder	General Role and Responsibility						
	RNR-RC	Technical support to EA activity						
National	DSC	Input supply to farmers,						
rational	D30	Technical guidance and inspection to seed / seedling growers						
	BDFC	Micro-finance service for group purchase of inputs						
	DAO	Coordination of Dzongkhag level and support to EAs						
Dzongkhag	Agriculture - EA	<ul> <li>Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST.</li> </ul>						
Gewog	Gup and cash crop micro-finance group in GYT	Cooperation and participation to extension activities of EA, and organizing farmers group activities,						
Beneficiaries		Participation to extension activities of EA.						

IV. Action Plan (sequent)

	Required Action	Responsible Stakeholder	Detailed Activities
	(WHAT) Stakeholder (WHO)		(HOW)
1	Organizing of Cash Crop, Working Groups in GYT	Gup / GYT	<ul> <li>Gup and GYT in cooperation with EA organize Working Groups in GYT for cash crop. The working group is responsibility of implementation of development plan under Gup supported by EA.</li> </ul>
2	Selection of priority crops and identification of area to be promoted for the crops	EA and Cash Crop Working Group	<ul> <li>Priority crops and area to be promoted should be selected through examination of natural condition, present situation of production and farmers, marketing potential and so on. DAO and RNR-RC give technical support t o the selection.</li> </ul>
3	Preparation of cash crop development plan of Gewog	EA and Cash Crop Working Group	Cash Crop Working Group and EA should prepare cash crop development plan based on the above examination.
4	Request of budget allocation for seed / seedling supply	Gup	Gup should request to Dzongkhag the required budget for subsidized seed / seedling supply with action plan after the approval of GYT.
5	Seed and seedling	Cash Crop	Subsidized seed and seedling distribution of horticulture crops:

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
	distribution	Working Group	vegetable seeds, and seedlings of mango, mandarin orange and walnut.
6	Implementation of Demonstration Plot for cash crops	EA and Cash Crop Working Group	<ul> <li>Demonstration plots are set up in farmers field for promotion seeds and improved crop management (each 2 plots for potato and other vegetables, each 1 plot for orange, mango and walnut). EA should regularly (every month) visit the plots and give technical guidance to the farmers.</li> </ul>
7	Implementation of Farmers Field School (FFS) *	EA and Cash Crop Working Group	<ul> <li>FFS will be participated with 15 to 20 participants of progress farmers. EA should give technical guidance to participants in the field school held at Demonstration plot, field and other facilities. The guidance will include from sowing to harvesting and post-harvesting. The participants will work voluntarily to disseminate crop management to farmers in Gewog.</li> </ul>
8	Farmers Study Tour (FST) *	Cash Crop Working Group	Dzongkhag and EA will prepare plan of FST to advanced areas, research center, auction yard, consumers market and so on. Gewog will raise participants of the tour
9	Group purchase of inputs *	GYT / Micro-finance group	Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.
10	Seed and seedling multiplication	Cash Crop Working Group	<ul> <li>Cash Crop Working Group will organize growers group of vegetable seeds and seedling of fruits. DSC will give technical guidance for the group, and inspect seed/seedling.</li> </ul>

\* FFS, FST and group purchase of input will be implemented together with Extension strengthening for food crop.

V. Schedule

	Required Action (WHAT)	Period (WHEN)	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
1	Organizing of Cash Crop, Working Groups in GYT	8, 2003 – 9, 2003						:	:				
2	Selection of priority crops and identification of area to be promoted for the crops	9. 2003 – 12.2003					:		:				
3	Preparation of cash crop development plan	9.2003 – 12.2003											
4	Request of budget allocation for seed / seedling supply	12.2003		Е	] 	:	:						
5	Seed and seedling distribution	7.2004 -							:	· 			
6-1	Implementation of Demonstration plot for Vegetables	2004 -											
6-2	Implementation of Demonstration Plot for Tree crops	2006 -			:								
7	Farmers Field School (FFS) *	2006 - 2008			:				:				
8	Farmers Study Tour (FST) *	2006, 2009				:		]					
9	Group purchase of inputs *	2007 -											

	Required Action	Period	20	20	20	20	20	20	20	20	20	20	20
	(WHAT)	(WHEN)	02	03	04	05	06	07	08	09	10	11	12
10	Seed and seedling multiplication	2007 -											

\* FFS, FST and group purchase of input will be implemented together with Extension strengthening for food crop.

VI. Implementation and Monitoring System of Action Plan.

VI. Implementation and Moni	toring System	m of Action Plan
Action	L	Plan
	WHO	Gup
	WHEN	Every three months and annually
	WHERE	RNR center / Gup office
Progress Management of A/P	HOW	<ul> <li>Quarterly meeting of Gup, Cash Crop Working Group and EA,</li> <li>Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.</li> </ul>
	WHO	<ul> <li>Gup should request to DAO the budget plan with action plan.</li> </ul>
Pudvat Managament at	WHEN	• 12. 2003
Budget Management at Preparatory Stage	WHERE	Gewog
- Teparatory Stage	HOW	Gup should request to DAO the budget plan with action plan after approval by GYT
-	WHO	• Gup
Budget Management at	WHEN	Before of every cropping season for seed distribution
Implementation Stage	WHERE	Gewog
Implementation stage	HOW	Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag
	WHO	
Budget Management at O&M	WHEN	
Stage	WHERE	
	HOW	
	WHO	• Gup
	WHEN	Annual meeting and when problem occurs
Problem Solving	WHERE	Gewog
	HOW	Gup, Csh Crop Working Group, EA and personnel concerned have a meeting for discussion of the problem and countermeasures.

4.2.2 Extension Strengthening for Cash Crop SP~ Chaskhar, Mongar

	·		01 011111111111111111111111111111111111			
I. General		·	Sheet No.	AP-26		
Program	(RADP P-4 SP2)	Extension Strengthening Program				
Sub-program	(SP 2) Extension S	trengthening for Cash Crop SP				
-	Level	Organization / Name	Contact Per	rson		
		RNR-RC F	Program Director			
	National	DSC	DSC-East			
Stakeholders		BDFC	Manager of BDFC-Mongar			
	Dzongkhag	Mongar Dzongkhag [	DAO, Agriculture - EA			
	Gewog	Chaskhar Gewog (	Gup, Cash Crop Working Group			
	Beneficiaries	Farmers in Gewog				

<sup>\*</sup> Cash Crop Working Group:

The working groups for subjects such as Cash crop, Food crop, Livestock, will be established in GYT aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The group carries out the Action Plan under the responsibility of Gup.

II. Program/Sub-program	
Target	To disseminate improved cash crop management for increase of household income     Vegetable production: 960 ton     Fruits production: 422 ton
Activities	<ul> <li>Average income from cash crops: Nu. 8,030 / household.</li> <li>Selection of priority cash crops in Gewog and identification of priority area to be promoted the crops.</li> <li>Preparation of cash crop production plan,</li> <li>Setting up of demonstration plots* in farmers field to disseminate cash crop production technology to farmers,</li> <li>Farmers Field School (FFS)** for guidance on farming and post-harvesting of cash crops,</li> <li>Farmers Study Tour (FST)*** to advanced areas, researches, auction yard, and so on,</li> <li>Distribution of required inputs (seeds, seedlings, fertilizer, agro-chemicals) to farmers,</li> <li>Group purchase of inputs using micro-finance of BDFC,</li> </ul>
	Seed / seedling production by farmers inspected by DSC.
Input	<ul> <li>Distribution of subsidized seeds / seedlings (cash and carrying)</li> <li>Vegetable seed: 400 kg / 9 years</li> <li>Fruits Seedling: 4,000 trees / 7 years</li> <li>Input for Demonstration plots (free of charge):</li> <li>Vegetables: 4 plots/year, 9years, Nu. 500/plot, total Nu.18,000</li> <li>Fruits: Total 20 plots, Nu.800/plot, Total Nu.16,000</li> </ul>
Output	<ul> <li>Improvement of cash crop technology in farmers field,</li> <li>Environmental conservation through orchard development in Tseri,</li> <li>Increase of cash crop production,</li> <li>Quality improvement of products,</li> <li>Income increase of farmers,</li> <li>Formulation of major production area of priority crops,</li> <li>Encouragement of leader farmers in Gewog for dissemination of improved farming through activities of cash crop working group and FFS.</li> <li>Vegetable         <ul> <li>Production plan of Vegetables</li> </ul> </li> <li>Planted area Yield (ton/ha) Production Marketing *3 (ha) (ton) (ton)</li> <li>Present *1 (A) 12 12.5 150 30</li> <li>2012 *2 (B) 64 15 960 842</li> <li>(B) / (A) 533% 120% 640% 2807%</li> <li>*1: Estimated based on RNR Statistics 2000, Yield and production are estimated by potato production for all vegetables.</li> <li>*2: Proposed production plan assumed at: Planted area (ha/household) 0.030 — 0.125</li> </ul>

	···-								
	Nos. of housel	nolds: 401 → 5	513						
		(average annual							
		Yield increase (ton/ha) 12.5 → 15.0 (20% increase)							
	*3: Marketable pro								
		producers house	ehold consumes	300 kg of the	product per year	·			
	<ul> <li>Fruits</li> </ul>								
:			Production pla						
į		Nos. of	Bearing	Yield	Production	Marketing			
		trees	trees	(kg/tree)	(ton)	*3 (ton)			
	Present *1 (A)	2490	840	50	42	2			
	2012 *2 (B)	8250	5280	80	422	382			
	(B) / (A)	331%	629%	160%	1000%	19100%			
	*1: Estimated base								
	Yield and production			all fruits.					
	*2: Proposed prod								
	Nos. of trees (trees		6 → 20						
	Yield increase (kg		)						
	*3: Marketable pro Assumed that prod		d aansumaa 100	) ka of the prod	luck par uppe				
		priority crops a				12.2003			
Period	·		na cash crop u	revelopment p					
renod	Extension act	•	blos		7.2004 -				
		tivity of Vegeta			7.2005				
P. Laul P /		ing of Extension	on Agent sub-p	orogram (EAs	are trained by	this program			
Related Program /	in RNR-RC E	,		· (EEO	LEOT W.L.				
Sub-program (How)		nsion strength		crop (FFS ar	nd FST will be	mplemented			
		this sub-progra				<u>.</u>			
		Some of Tseri		•					
				d on cash	crop produc	ction through			
		o extension ac							
	Income Incre	ase per housel							
	ļ <del></del>		Vegetak		T =				
		Production	Marketing	Price	Production	Value sold			
	5 . (1)	(kg/hh)	(kg/hh)	(Nu./kg)	value (Nu.)	(Nu.)			
	Present (A)	374	75	3.5	1309	263			
Project Justification	2012 (B)	1875	1575	3.5	6563	5513			
i rojest sustricution	(B) / (A)	501%	2100%	100%	501%	2096%			
		<del>,</del>	Fruits						
		Production	Marketing	Price	Production	Value sold			
·		(kg/hh)	*3 (kg/hh)	(Nu./kg)	value (Nu.)	(Nu.)			
	Present (A)	104	4	3.5	364	14			
	2012 (B)	820	720	3.5	2870	2520			
	(B) / (A)	788%	18000%	100%	788%	18000%			

\* Farmers Field School (FFS):

FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15-20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month at Demonstration plots, community school and other facilities. EA provides technical guidance to participants.

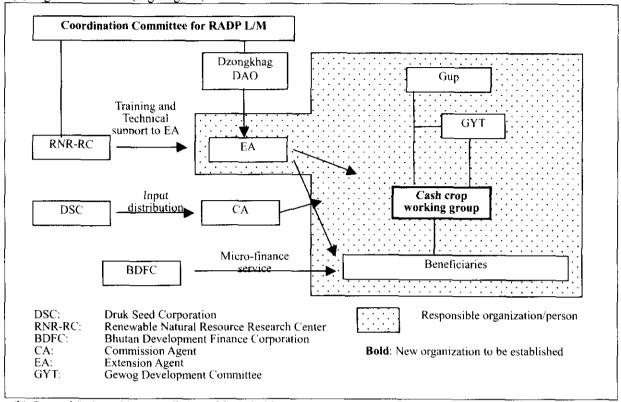
### \*\* Demonstration Plot:

Demonstration plot is set up in farmers field in order to demonstrate and verify new crops / varieties and improved crop management. The location will be moved every year for opportunity beneficiaries. EA periodically visits to technical guidance of improved farming. Farming practices carried out farmers-selves. Promoting seed and chemicals will be supply free of charge to the farmers.

\*\*\* Farmers Study Tour (FST):

FST aims to train farmers through investigation and discussion in progress areas and concerning organizations. Gewog or Dzongkhag provides FST schedule.

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

	Stakeholder	General Role and Responsibility				
	RNR-RC	Technical support to EA activity				
National	DSC	Input supply to farmers,				
National	Technical guidance and inspection to seed / seedling growers					
BDFC		Micro-finance service for group purchase of inputs				
Dzongkhag  Dzongkhag  Agriculture - EA  Gewog  Gup and cash crop micro-finance group in GYT		Coordination of Dzongkhag level and support to EAs				
		<ul> <li>Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST.</li> </ul>				
		<ul> <li>Cooperation and participation to extension activities of EA, and organizing farmers group activities,</li> </ul>				
Beneficiaries		Participation to extension activities of EA.				

IV. Action Plan (sequent)

	Action Flan (Sequent)		
	Required Action (WHAT) Responsible Stakeholder (WHO)		Detailed Activities (HOW)
1	Organizing of Cash Crop, Working Groups in GYT	Gup / GYT	<ul> <li>Gup and GYT in cooperation with EA organize Working Groups in GYT for cash crop. The working group is responsibility of implementation of development plan under Gup supported by EA.</li> </ul>
2	Selection of priority crops and identification of area to be promoted for the crops	EA and Cash Crop Working Group	<ul> <li>Priority crops and area to be promoted should be selected through examination of natural condition, present situation of production and farmers, marketing potential and so on. DAC and RNR-RC give technical support to the selection.</li> </ul>
3	Preparation of cash crop development plan of Gewog	EA and Cash Crop Working Group	Cash Crop Working Group and EA should prepare cash crop development plan based on the above examination.
4	Request of budget allocation for seed / seedling supply	Gup	<ul> <li>Gup should request to Dzongkhag the required budget for subsidized seed / seedling supply with action plan after the approval of GYT.</li> </ul>

	Required Action (WHAT)	Responsible Stakeholder (WHO)						Detai Activi (HO)	ities				
5	Seed and seedling distribution	Cash Crop Working Group	1	Subsidized seed and seedling divegetable seeds, and seedlings and walnut.				distribu	istribution of horticulture crops:				
6	Implementation of Demonstration Plot for cash crops	EA and Cash Crop Working Group		Demonstration plots are set up in farmers field for prom seeds and improved crop management (each 2 plot potato and other vegetables, each 1 plot for orange, m and walnut). EA should regularly (every month) visit the and give technical guidance to the farmers.				s for lango plots					
7	Implementation of Farmers Field School (FFS) activity	EA and Cash Crop Working Group		<ul> <li>FFS will be participated with 15 to 20 participants of progre- farmers. EA should give technical guidance to participants the field school held at Demonstration plot, field and oth facilities. The guidance will include from sowing to harvesting and post-harvesting. The participants will work voluntarily disseminate crop management to farmers in Gewog.</li> </ul>					nts in other				
8	Farmers Study Tour (FST)	Cash Crop Working Group	Dzongkhag and EA will prepare plan of FST to a				adva marke	nced t and					
9	Group purchase of inputs	GYT / Micro-finance group	Micro-finance group of BDFC organized by GYT coordi group parches of inputs.				nates						
10	Seed and seedling multiplication	Cash Crop Working Group		vege	table	o Work seeds a or the g	and sec	edling	of fruits	s. D\$0	will gi	rs grou ve tech	up of inical
V. S	chedule												
	Required Action (WHAT)	Period (WHEN)	20 02		20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
1	Organizing of Cash Crop, Working Groups in GYT	8. 2003 – 9. 2003			:						:		:
2	Selection of priority crops and identification of area to be promoted for the crops	9. 2003 – 12.2003								:		:	
3	Preparation of cash crop development plan	9.2003 – 12.2003											
4	Request of budget allocation for seed / seedling supply	12.2003									:		
5	Seed and seedling distribution	7.2004 -											
6-1	Setting up of Demonstration plot for Vegetables	2004 -											
6-2	Setting up of Demonstration Plot for Tree crops	2006 -											
7	Farmers Field School (FFS) activity	2006 - 2008									:	:	
8	Farmers Study Tour (FST)	2006, 2009										<u> </u>	
9	Group purchase of inputs	2007 -							1				

	Required Action	Period	20	20	20	20	20	20	20	20	20	20	20
	(WHAT)	(WHEN)	02	03	04	05	06	07	08	09	10	11	12
10	Seed and seedling multiplication	2007 -											

VI. Implementation and Monitoring System of Action Plan

V1. Implementation and Moni	toring Syste	Plan
Action	WILLO	
	WHO	• Gup
	WHEN	Every three months and annually
	WHERE	RNR center / Gup office
Progress Management of A/P	HOW	<ul> <li>Quarterly meeting of Gup, Cash Crop Working Group and EA,</li> <li>Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.</li> </ul>
	WHO	Gup should request to DAO the budget plan with action plan.
Budget Management at	WHEN	• 12. 2003
Preparatory Stage	WHERE	Gewog
Treparatory Stage	HOW	Gup should request to DAO the budget plan with action plan after approval by GYT
	WHO	Gup
Dudget Management et	WHEN	Before of every cropping season for seed distribution
Budget Management at Implementation Stage	WHERE	Gewog
implementation stage	HOW	Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag.
	WHO	
Budget Management at O&M	WHEN	
Stage	WHERE	
	HOW	
	WHO	Gup
	WHEN	Annual meeting and when problem occurs
Problem Solving	WHERE	Gewog
	HOW	Gup, Cash Crop Working Group, EA and personnel concerned have a meeting for discussion of the problem and countermeasures.

4.2.3 Extension Strengthening for Cash Crop SP~ Drepong, Mongar

		9				
I. General				Sheet No.	AP-27	
Program	(RADP P-4 SP2)	Extension Strengthening Pro	gram			
Sub-program	(SP 2) Extension	Strengthening for Cash Crop S	P			
	Level	Organization / Name		Contact Per	son	
		RNR-RC	RNR-RC Program Director			
	National	DSC	DSC-East			
Stakeholders		BDFC	Manager of BDFC-Mongar			
	Dzongkhag	Mongar Dzongkhag	DAO, Agriculture - EA			
:	Gewog	Drepong Gewog		Gup, Cash Crop Working Group		
	Beneficiaries	Farmers in Gewog	<u> </u>		,t ,	

<sup>\*</sup> Cash Crop Working Group:

The working groups for subjects such as Cash crop, Food crop, Livestock, will be established in GYT aiming to strengthen administrative functions of Gewog, participate to community activities by residents, and assist EA's activities. The group carries out the Action Plan under the responsibility of Gup.

		ler the responsibi	lity of Gup.							
II. Program/Sub-p	- <del></del>									
		To disseminate improved cash crop management for increase of household income								
Target	Vegetable production: 326 ton									
ranger		• Fruits production: 201 ton								
<del></del>			ps: Nu. 4,960 / h							
Activities	promoted the Preparation o Setting up of technology to	crops, f cash crop produ demonstration plo farmers,	ction plan, ots* in farmers fiel	d to disseminate	of priority area to be cash crop production					
Farmers Field School (FFS)** for guidance on farming and post-harve crops,     Farmers Study Tour (FST)*** to advanced areas, researches, auction yard     Distribution of required inputs (seeds, seedlings, fertilizer, agro-chemicals)     Group purchase of inputs using micro-finance of BDFC.										
Input	<ul><li>Vegetable se</li><li>Fruits Seedli</li><li>Input for Dem</li><li>Vegetables:</li></ul>	<ul> <li>Distribution of subsidized seeds / seedlings (cash and carrying)</li> <li>Vegetable seed: 150 kg during 9 years</li> <li>Fruits Seedling: 3,500 trees during 9 years</li> <li>Input for Demonstration plots (free of charge):</li> <li>Vegetables: 3 plots/year, 9years, Nu. 500/plot, total Nu.13,500</li> </ul>								
	<ul> <li>Environmenta</li> <li>Increase of ca</li> <li>Quality improvince</li> <li>Income increase</li> <li>Formulation of Encouragementa</li> </ul>	al conservation the ash crop production wement of production ase of farmers, of major production ent of leader farm ties of cash crop to	ts. n area of priority c	elopment in Tser rops, or dissemination I FFS.	i, of improved farming					
Output		Planted area	Yield (ton/ha)	Production	Marketing *3					
o u.pw		(ha)	(30,2,1,2,1)	(ton)	(ton)					
	Present *1 (A)	4	12.5	50	0					
	2012 *2 (B)	22	15	326	260					
	(B) / (A)	550%	120%	652%						
*1: Estimated based on RNR Statistics 2000, Yield and production are estimated by potato production for all vegetables. *2: Proposed production plan assumed at: Planted area (ha/household) 0.030 → 0.078 Nos. of households: 217 → 278 28% increase (average annual increase rate 2.5%)										
	Yield increase		12.5 → 15.0 (20%	increase)						

	*3: Marketable pro		a la a la l	. 000 les - 4 lle -					
		producers hous se by vegetable			product per year				
	Vegetables	se by vegetable	s per nousenoiu						
	Vegetables	Production	Marketing	Price	Production	Value sold			
	11	(kg/hh)	*3 (kg/hh)	(Nu./kg)	value (Nu.)	(Nu.)			
	Present (A)	230	O (Ng/1111)	(14d./kg) 3.5	805	(14u.)			
	2012 (B)	1173	873	3.5	4105	3056			
	<u> </u>	510%	6/3	100%	510%	3030			
	(B) / (A)	1 310/6		100%	310%				
	• Fruits		Production (	alan of fruits					
	Γ	Nos. of	Bearing		Desclustion	A da alcadia a			
		I .	, ,	Yield (kg/tree)	Production (top)	Marketing			
	Propert *1 /A)	trees	trees		(ton)	*3 (ton)			
	Present *1 (A) 2012 *2 (B)	1310 4450	544 2520	50	27 201	6			
		340%	463%	80		179			
	(B) / (A) *1: Estimated bas			160%	744%	2983%			
		luction are estim		for all fruite					
	*2: Proposed prod			ioi air iigits.					
		(trees/househol							
	Yield increas		50 → 80						
	*3: Marketable pro								
	Assumed tha	t producers hous	sehold consume	s 100 kg of the	product per yea	r			
	<ul> <li>Selection of p</li> </ul>	priority crops a	nd cash crop d	levelopment p	lan 7.20	03 - 12.2003			
Period	<ul> <li>Extension ac</li> </ul>	Zationistic and the same of th							
	<ul> <li>Extension ac</li> </ul>	tivity of Vegeta	bles	7.2006 -					
	<ul> <li>P2-SP3 Trair</li> </ul>	ning of Extensi	on Agent sub-	program (EAs	s are trained b	y this program			
Related Program /	RNR-RC Eas		_						
Sub-program (How)	<ul> <li>P4-SP1 External</li> </ul>	nsion strength	nening for foo	d crop (FFS	and FST will	be implemente			
	together with	this sub-progr	am)						
	<ul> <li>Environment</li> </ul>	Some of Tser	i area are char	nged to orchar	d,				
	<ul> <li>Sustainability</li> </ul>	: Beneficiaries	are trained or	cash crop pro	oduction throu	gh participation			
	extension act	tivities.							
	<ul> <li>Income Incre</li> </ul>	ase per house	hold						
	<ul> <li>Vegetables</li> </ul>								
		Production	Marketing	Price	Production	Value sold			
		(kg/hh)	(kg/hh)	(Nu./kg)	value (Nu.)	(Nu.)			
Desirat Luctification	Present (A)	230	-	3.5	805	-			
Project Justification	2012 (B)	1173	873	3.5	4105	3056			
	(B) / (A)	510%	-	100%	510%	-			
	• Fruits				•				
		Production	Marketing	Price	Production	Value sold			
		(kg/hh)	(kg/hh)	(Nu./kg)	value (Nu.)	(Nu.)			
	Present (A)	124	24	3.5	434	84			
	2012 (B)	644	544	3.5	2254	1904			
	(B) / (A)	519%	2267%	100%	788%	2267%			
Farmers Field School (FFS									

Farmers Field School (FFS): FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15-20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month at Demonstration plots, community school and other facilities. EA provides technical guidance to participants.

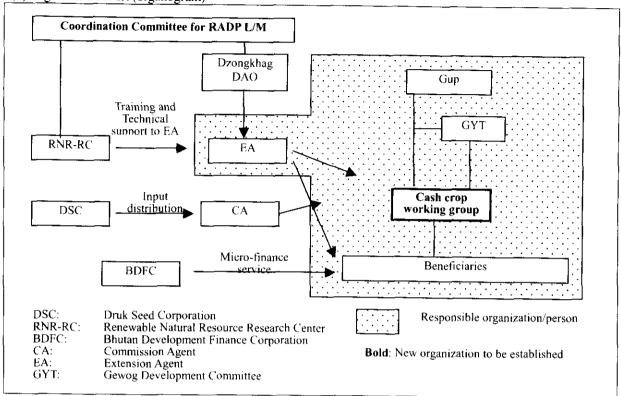
#### \*\* Demonstration Plot:

Demonstration plot is set up in farmers field in order to demonstrate and verify new crops / varieties and improved crop management. The location will be moved every year for opportunity beneficiaries. EA periodically visits to technical guidance of improved farming. Farming practices carried out farmers-selves. Promoting seed and chemicals will be supply free of charge to the farmers.

\*\*\* Farmers Study Tour (FST):

FST aims to train farmers through investigation and discussion in progress areas and concerning organizations. Gewog or Dzongkhag provides FST schedule.

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

	Stakeholder	General Role and Responsibility				
	RNR-RC	Technical support to EA activity				
National	DSC	Input supply to farmers,				
National	<ul> <li>Technical guidance and inspection to seed / seedling growers</li> </ul>					
BDFC		Micro-finance service for group purchase of inputs				
	DAO	Coordination of Dzongkhag level and support to EAs				
Dzongkhag	Agriculture - EA	<ul> <li>Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST.</li> </ul>				
Gewog Gup and cash crop micro-finance group in GYT		<ul> <li>Cooperation and participation to extension activities of EA, and organizing farmers group activities,</li> </ul>				
Beneficiaries		Participation to extension activities of FA				

IV. Action Plan (sequent) Responsible Detailed Required Action Stakeholder Activities (WHAT) (WHO) (HOW) Gup and GYT in cooperation with EA organize Working Organizing of Cash Crop. Groups in GYT for cash crop. The working group is 1 Gup / GYT Working Groups in GYT responsibility of implementation of development plan under Gup supported by EA. Priority crops and area to be promoted should be selected Selection of priority crops EA and Cash through examination of natural condition, present situation of 2 and identification of area to Crop Working production and farmers, marketing potential and so on. DAO be promoted for the crops Group and RNR-RC give technical support to the selection. Preparation of cash crop EA and Cash Cash Crop Working Group and EA should prepare cash crop 3 development plan of Crop Working development plan based on the above examination. Gewog Group Request of budget Gup should request to Dzongkhag the required budget for allocation for seed / 4 Gup subsidized seed / seedling supply with action plan after the seedling supply approval of GYT. Seed and seedling Cash Crop Subsidized seed and seedling distribution of horticulture crops: 5 distribution Working Group

vegetable seeds, and seedlings of mango, mandarin orange

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
6	Implementation of Demonstration Plot for cash crops	EA and Cash Crop Working Group	<ul> <li>Demonstration plots are set up in farmers field for promotion seeds and improved crop management (each 2 plots for potato and other vegetables, each 1 plot for orange, mango and walnut). EA should regularly (every month) visit the plots and give technical guidance to the farmers.</li> </ul>
7	Implementation of Farmers Field School (FFS) *	EA and Cash Crop Working Group	<ul> <li>FFS will be participated with 15 to 20 participants of progress farmers. EA should give technical guidance to participants in the field school held at Demonstration plot, field and other facilities. The guidance will include from sowing to harvesting and post-harvesting. The participants will work voluntarily to disseminate crop management to farmers in Gewog.</li> </ul>
8	Farmers Study Tour (FST)*	Cash Crop Working Group	<ul> <li>Dzongkhag and EA will prepare plan of FST to advanced areas, research center, auction yard, consumers market and so on. Gewog will raise participants of the tour</li> </ul>
9	Group purchase of inputs *	GYT / Micro-finance group	Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.

\* FFS, FST and group purchase of input will be implemented together with Extension strengthening for food crop.

# V. Schedule

	Required Action (WHAT)	Period (WHEN)	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
1	Organizing of Cash Crop, Working Groups in GYT	8. 2003 – 9. 2003											
2	Selection of priority crops and identification of area to be promoted for the crops	9. 2003 – 12.2003				:							
3	Preparation of cash crop development plan	9.2003 — 12.2003											
4	Request of budget allocation for seed / seedling supply	12.2003											
5	Seed and seedling distribution	7.2004 -				_		- 					
6-1	Implementation of Demonstration plot for Vegetables	2004 -											
6-2	Implementation of Demonstration Plot for Tree crops	2006 -											
7	Farmers Field School (FFS) *	2006 - 2008									1		
8	Farmers Study Tour (FST) *	2007, 2010											-
9	Group purchase of inputs *	2008 -							<u> </u>				

<sup>\*</sup> FFS, FST and group purchase of input will be implemented together with Extension strengthening for food crop.

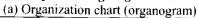
VI. Implementation and Monitoring System of Action Plan

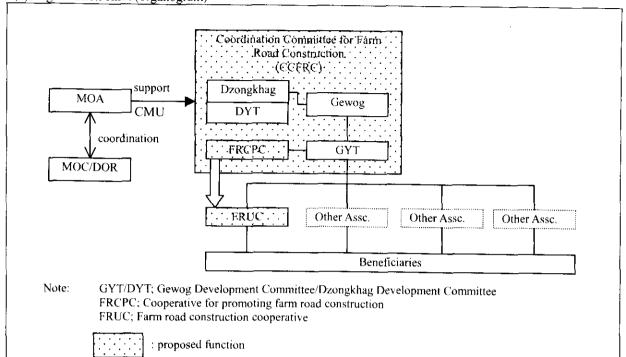
Action Action		Plan
	WHO	Gup
	WHEN	Every three months and annually
	WHERE	RNR center / Gup office
Progress Management of A/P	HOW	<ul> <li>Quarterly meeting of Gup, Cash Crop Working Group and EA,</li> <li>Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.</li> </ul>
	WHO	Gup should request to DAO the budget plan with action plan.
Budget Management at	WHEN	• 12. 2003
Preparatory Stage	WHERE	Gewog
	HOW	Gup should request to DAO the budget plan with action plan after approval by GYT
	WHO	• Gup
Budget Management at	WHEN	Before of every cropping season for seed distribution
Implementation Stage	WHERE	Gewog
implementation stage	HOW	Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag
	WHO	
Budget Management at O&M	WHEN	
Stage	WHERE	
	HOW	
	WHO	Gup
	WHEN	Annual meeting and when problem occurs
Problem Solving	WHERE	Gewog
	HOW	Gup, Cash Crop Working Group, EA and personnel concerned have a meeting for discussion of the problem and countermeasures.

5.1.1 Farm Road Construction Program (Thimyul ~ Jangcholing)~ Gangzur, Lhuntse

I. General				Sheet No.	AP-28				
Program	Farm Road Co	onstruction Program / Gangzu	r / Lhunts	se (Thimyul to	Jangcholing)				
Sub-program									
	Level	Organization / Name		Contact Pe	erson				
	National	MOA	Mr. Kaylzang Tshering (SE. DRDS, 02-322228						
Stakeholders	Dzongkhag	Lhuntse	1		1-545128) 4-545127)				
	Gewog	GYT	Mr.	(Gup)					
	Beneficiaries	Tentative Cooperative(46HH)	Mr.	(GYT	member)				
II. Program/S	ub-program			,					
		To improve rural access to motor	road acno	scially activating acc	sace to the center of				

	Gewog	GYT	Mr.	(Gup)						
	Beneficiaries	Tentative Cooperative(46HH)	Mr.	(GYT member)						
II. Program/Su	ub-program									
Target				lly activating access to the center of						
<del></del>		Gangzur, benefited household =								
		<ul> <li>Survey, Design and Cost Estima</li> </ul>	tion							
		Construction of farm road								
		Maintenance by Farm Road Users Cooperative								
		Procurement of construction materials and tools								
Activities		Procurement of construction machinery								
11041414100		<ul> <li>Environmental study</li> </ul>								
		<ul> <li>Financial arrangement</li> </ul>								
		<ul> <li>Establishment of organization</li> </ul>								
		<ul> <li>Training for beneficiaries</li> </ul>								
		<ul> <li>Training for road engineer</li> </ul>								
		<ul> <li>Surveyor (MOA and Dzongkhag)</li> </ul>								
		<ul> <li>Civil Engineer for Design (MOA a</li> </ul>	ind Dzongkhag)	1						
		<ul> <li>Civil Engineer for Supervision (D</li> </ul>	zongkhag)							
	1	<ul> <li>Construction Machinery with Open</li> </ul>	erator (CMU, MC	OA)						
Input		Construction Materials and Tools (MOA)								
		Skilled Labor (Mason, Blaster, etc., MOA)								
		Unskilled labor (Gewog Beneficiaries)								
		Project Cost Nu. 28.6 mil. (including indirect cost).								
		<ul> <li>Maintenance by Farm Road Use</li> </ul>	rs Cooperative							
		<ul> <li>The farm road is constructed (</li> </ul>	length = 5.2 kn	n) and from this thing the road is						
Output				ough the feeder road. Through this						
		construction worker with skill will								
		<ul> <li>Survey and Design 20</li> </ul>	03.7 ~ 2004.6							
Period			04.7 ~ 2004.11							
			04.12 ~							
				Construction machinery for the						
Related Program		construction works will be provid	•	. • ,						
Sub-program (I	How)			ion depot will be constructed along						
		the farm road and group assemb								
	!			Plan and EIA will be executed at the						
		stage of survey and design in co								
		Efficiency: Reasonable range of construction cost per km is about 5,500,000								
		including labor cost in the maximum limitation. A minimum of ten households of 7								
Project Justific	ation			ison should not be less tan 30acres						
· ·		per km stipulated in guidelines to		•						
		Consistency with upper plan/pro								
				, maintenance fund contribution and						
			ne basis of the	farm roads construction procedural						
<del></del>	<del></del>	manual prepared by MOA.								





(b) General Role and Responsibility of Stakeholders

S	takeholder	General Role and Responsibility
National	DRDS, MOA	<ul> <li>Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders and organizations especially DOR.</li> </ul>
Dzongkhag	Engineering Office/ Agriculture Office	<ul> <li>Actually supervises FRUA from its establishment to the construction and maintenance by FRUC including accounting of the program.</li> </ul>
Gewog	GYT	<ul> <li>Formulate the Gewog development plan and evaluate the program in the plan, and based on this, made the official request letter and submit it to Dzongkhag.</li> </ul>
Beneficiaries	FRUC	<ul> <li>Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.</li> </ul>

IV. Action Plan (sequent)

<u> 1V. /</u>	Action Plan (sequent)		
	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Establishment of institution for farm road construction	Gewog/GYT	<ul> <li>A cooperative for promoting farm road construction (FRCPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.</li> </ul>
2	Consensus in GYT	GYT	<ul> <li>The request of farm road construction from FRCPC will be discussed in GYT and with the consensus will be proceeded to Dzongkhag.</li> </ul>
3	Official request (FRFORM.01) for implementation	GYT	<ul> <li>The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzongkhag with necessary information for evaluation (distance, route, contribution by Gewogs or beneficiaries, etc.)</li> </ul>
4	Preliminary Investigation (Module 1)	Dzongkhag / FRCPC	<ul> <li>The preliminary Investigation will be executed to find out whether the proposed request meets the basic requirements for government assistance. Project identification report (FRFORM.02) and IEE must be prepared for further procedure.</li> </ul>
5	Consensus in DYT	Dzongkhag / DYT	The request will be discussed based on the project identification report and with the consensus and Dzongda's

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
		(WHO)	approval will be proceeded to MOA and MOF for further procedure for budget aflocation.
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	The budget for Multi-disciplinary Feasibility Study will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.
7	Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	<ul> <li>Multi-disciplinary Feasibility Study will be executed to determine whether the proposed request is viable or not and how it can be implemented. Therefore actual survey of the alignment has to be done using survey equipment. The feasibility study report (FRFORM.03, FORM's format is not fixed in particular.) with a detailed implementation plan, tentative designs and estimation of the project cost will be prepared.</li> </ul>
8	Environmental study	Dzongkhag / NEC	<ul> <li>Based on the feasibility study report, if environmental study is required, EIA will be executed.</li> </ul>
9	Budget allocation for construction	Dzongkhag	<ul> <li>The budget for construction of farm road will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.</li> </ul>
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul> <li>Explanation of the need of group/cooperative for construction and maintenance of farm road and Farm Road Users Committee (FRM-Committee named in Module 3) to FRCPC will be executed.</li> </ul>
11	Establishment of Farm Road Users Cooperative (FRUC)	FRUC/ GYT	<ul> <li>FRUC will be established and FRM-committee members (FRFORM.04) will be selected from FRUC. Signing of agreements on labor contribution for construction (FRFORM.06), maintenance fund contribution (Annex I) in the letter of understanding (FRFORM.05) will be executed between FRUC and the representative of Dzongkhag in the above meeting.</li> </ul>
12	Capacity building for FRUA	Dzongkhag	<ul> <li>Training and through OJT, beneficiaries' construction and maintenance skill will be improved.</li> </ul>
13	Land acquisition	Beneficiaries	Land acquisition and expropriation along the alignment will be carried out under the instruction of Dzongkhag.
14	Technical Training for Site Engineer and Site In-charge	Dzongkhag	<ul> <li>Technical training for site engineer of Dzongkhag and site in-charge of FRUC using total station and so on will be carried out by an experienced road engineer.</li> </ul>
15	Overall management of construction	Dzongkhag	<ul> <li>The construction of farm road will be carried out under the management of Dzongkhag in Implementation (Module 4).</li> </ul>
16	Construction machinery and equipment	MOA	<ul> <li>Supplying machinery and equipment including technical backstopping from MOA for construction of farm road will be arranged based on the requisition of Dzongkhag in Implementation (Module 4).</li> </ul>
17	Arrangement of unskilled labor	Beneficiaries	Beneficiaries shall provide free unskilled labor in accordance with the arrangement of the site in-charge.
18	Completion and Handing over (Module 5)	Dzongkhag/ Beneficiaries	<ul> <li>The farm road shall be handed over to the beneficiaries after signing the Project Completion Report (FRFORM.07) and the Certificate of Satisfactory Completion (FRFORM.08).</li> </ul>
19	Reserving fund for maintenance works	FRUC	For the following maintenance, fund will be reserved in the system of FRUC.
20	Routine maintenance	FRUC	Routine maintenance like side ditch cleaning will be periodically and timely carried out under the guidance of the site in-charge.
21	Periodical maintenance	FRUC	<ul> <li>Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of the site in-charge.</li> </ul>

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
22	Periodical repair works	MOA/ FRUC	Major repair will be executed using construction machinery to be arranged by CMU/MOA and Dzongkhag every five years.

Note: FORM and Module are procedure regulated for farm road development by MOA.

V. S	Sched	ule
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	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
l —	Establishment of institution for farm road construction	2003.4		0									
2	Consensus in GYT	2003.4		0									:
3	Official request (FRFORM.01) for implementation	2003.4		0									-
4	Preliminary Investigation (Module 1)	2003.5		: 0									
5	Consensus in DYT	2003.5		0									
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	2003.6		0							:		
7	Multi-disciplinary Feasibility Study (Module 2)	2003.7 - 200311					:						
8	Environmental study	2003.11											
9	Budget allocation for construction	2003.12				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						-	
10	Pre-construction Meeting (Module 3)	2003.12									:	-	:
11	Establishment of Farm Road Users Cooperative (FRUC)	2003.12										<del></del>	
12	Land acquisition	2004.1 - 2004.11					-			-			
13	Technical Training for Site Engineer and Site In-charge	2004.1 <i>-</i> 2004.6											:
14	Overall management of construction	2004.7 - 2004.11								:			
15	Construction machinery and equipment	2004.7 - 2004.11		:								-	
16	Arrangement of unskilled labor	2004.7 <i>-</i> 2004.11											
17	Completion and Handing over (Module 5)	2004.11			0								

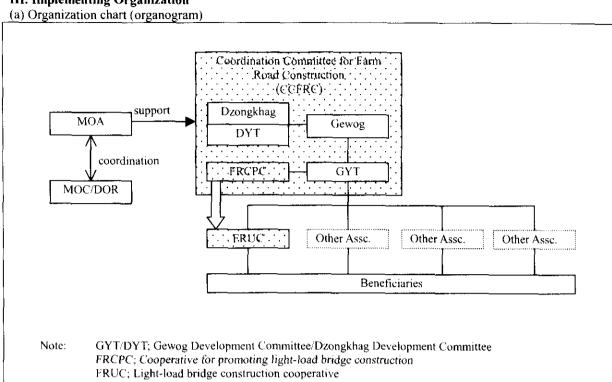
	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
18	Reserving fund for maintenance works	2004.7 -				:							
19	Routine maintenance	2004.12 -				: 			i				
20	Annual maintenance	2005.12		:			] [			<u> </u>	0		
21	Periodical repair works	2009.11			İ								

VI. Implementation and Monitoring System of Action Plan						
Action		Plan				
	WHO	DE/DAO, Lhuntse Dzongkhag				
Progress Management of A/P	WHEN	Monthly basis				
1 Togress Management of A/1	WHERE	Lhuntse Dzongkhag Engineering/Agriculture Office				
	HOW	Monthly Report prepared by Site Engineer of Dzongkhag				
	WHO	Superintending Engineer, DRDS, MOA				
Budget Management at	WHEN	Every Financial Year				
Preparatory Stage	WHERE	MOA Office, Thimphu				
	HOW	As per Financial Manual of Royal Government of Bhutan				
	WHO	DAO, Lhuntse Dzongkhag				
Budget Management at	WHEN	Monthly basis				
Implementation Stage	WHERE	Lhuntse Dzongkhag Agriculture Office				
	HOW	As per Financial Manual of Royal Government of Bhutan				
	WHO	Chairperson, FRUC				
Budget Management at O&M	WHEN	Monthly basis				
Stage	WHERE	Accountant, FRUC				
	HOW	Constitution/Bylaws enacted in FRUC				
	WHO	<ul> <li>Budget arrangement: Superintending engineer, DRDS, MOA at preparatory stage/ DAO, Dzongkhag at implementation stage/ Chairperson, FRUC at O&amp;M stage.</li> <li>Technical problems: DE, Dzongkhag</li> <li>Accident, Participation, Dispute: Chairperson, FRUC</li> <li>Manpower: Superintending engineer, DRDS, MOA</li> </ul>				
	WHEN	As the problems happened.				
Problem Solving	WHERE	<ul> <li>Budget arrangement: DRDS, MOA at preparatory stage/ Agricultural Office, Dzongkhag at implementation stage/ FRUC Office at O&amp;M stage.</li> <li>Technical problems: Dzongkhag Engineering Office</li> <li>Accident, Participation, Dispute: FRUC Office</li> <li>Manpower: DRDS, MOA</li> </ul>				
	HOW	<ul> <li>Budget arrangement: DRDS, MOA discusses with MOF at preparatory stage and implementation stage/ FRUC discusses among the beneficiaries at O&amp;M stage.</li> <li>Technical problems: Dzongkhag Engineering Office discusses with the beneficiaries.</li> <li>Accident, Participation, Dispute: FRUC Office discusses among the beneficiaries and third party.</li> <li>Manpower: DRDS, MOA discusses with the organization concerned.</li> </ul>				

5.1.2 Farm Road Construction Program (Lingabee ~ Ney), Gangzur, Lhuntse

I. General			Sheet No. AP-29					
Program	Farm Road C	onstruction Program / Gangz	ur / Lhuntse (Lingabee to Ney)					
Sub-program								
	Level	Organization / Name	Contact Person					
	National	MOA	Mr. Kaylzang Tshering (SE, DRDS, 02-32222					
Stakeholders	Dzongkhag	Lhuntse	Mr. Om Nath Giri (DE, 04-545128) Mr. Deepak Rai (DAO, 04-545127)					
	Gewog	GYT	Mr. Yeshi Dorji (Gup)					
	Beneficiaries	Tentative Cooperative(92HH)	Mr. Tsheten Dorji (Ex. Mangmi)					

Beneficiaries	Tentative Cooperative(92HH)	Mr. Tsheten Dorji (Ex. Mangmi)					
II. Program/Sub-program	remative cooperative(32111)	IVII. TSHETEH DONI (Ex. Manghi)					
Target	To improve rural access to motor ro	To improve rural access to motor road, especially activating access to the center of					
- anget		angzur, benefited household = 12.4 HH/km					
	Survey, Design and Cost Estimation	1					
	Construction of farm road						
	Maintenance by Farm Road Users (	· •					
Activities	<ul> <li>Procurement of construction material</li> </ul>						
	<ul> <li>Procurement of construction machin</li> </ul>	nery					
	Environmental study						
	Financial arrangement						
	Establishment of organization						
	Surveyor (MOA and Dzongkhag)						
	Civil Engineer for Design (MOA and						
	Civil Engineer for Supervision (Dzor	V V/					
	Construction Machinery with Operation						
Input	Construction Materials and Tools (M	IOA)					
	Skilled Labor (Mason, Blaster, etc.)						
	Unskilled labor (Gewog Beneficiaries)						
		tolog of the original will be of the control of the					
	Maintenance by Farm Road Users (     The farm road is apparent wheel (last)						
Output	The farm road is constructed (len connected with center of Govern (f.)	me idim read to contacted honger - 5.5 king and none till tilly the load is					
Cutput	construction worker with skill will be	connected with center of Gewog (Gangzur) through the feeder road. Through this construction worker with skill will be increased.					
		7 ~ 2004.6					
Period	, ,	7 ~ 2007.3					
		Program (Construction machinery for the					
Related Program /	construction works will be provided	through this program)					
Sub-program (How)		ram (Collection depot will be constructed along					
	the farm road and group assembling	g will be conducted by farmers group)					
		the Mater Plan and EIA will be executed at the					
		stage of survey and design in consideration of the instruction of NEC.					
	Efficiency: Reasonable range of c	• Efficiency: Reasonable range of construction cost per km is about 5,500,000Nu					
	including labor cost in the maximur	n limitation. A minimum of ten households of 70					
Project Justification	people per km and total cultivated	area per season should not be less tan 30acres					
1	per km stipulated in guidelines for fa	arm roads development of MOA.					
	Consistency with upper plan/progra	m: This is based on the program of MOA.					
	Sustainability: The participation of the second should be confirmed and the second secon	peneficiaries, maintenance fund contribution and					
		basis of the farm roads construction procedural					
	manual prepared by MOA.						



(b) General Role and Responsibility of Stakeholders

proposed function

St	akeholder	General Role and Responsibility					
National	DRDS, MOA	<ul> <li>Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders and organizations especially DOR.</li> </ul>					
Dzongkhag	Engineering Office/ Agriculture Office	<ul> <li>Actually supervises FRUA from its establishment to the construction and maintenance by FRUC including accounting of the program.</li> </ul>					
Gewog	GYT	<ul> <li>Formulate the Gewog development plan and evaluate the program in the plan, and based on this, made the official request letter and submit it to Dzongkhag.</li> </ul>					
Beneficiaries	FRUC	<ul> <li>Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.</li> </ul>					

IV. Action Plan (sequent)

	Action Fian (sequent)	Responsible	Detailed
	Required Action (WHAT)	Stakeholder (WHO)	Activities (HOW)
I	Establishment of institution for farm road construction	Gewog/GYT	<ul> <li>A cooperative for promoting farm road construction (FRCPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.</li> </ul>
2	Consensus in GYT	GYT	The request of farm road construction from FRCPC will be discussed in GYT and with the consensus will be proceeded to Dzongkhag.
3	Official request (FRFORM.01) for implementation	GYT	<ul> <li>The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzongkhag with necessary information for evaluation (distance, route, contribution by Gewogs or beneficiaries, etc.)</li> </ul>
4	Preliminary Investigation (Module 1)	Dzongkhag / FRCPC	<ul> <li>The preliminary Investigation will be executed to find out whether the proposed request meets the basic requirements for government assistance. Project identification report (FRFORM.02) and IEE must be prepared for further</li> </ul>

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
			procedure.
5	Consensus in DYT	Dzongkhag / DYT	<ul> <li>The request will be discussed based on the project identification report and with the consensus and Dzongda's approval will be proceeded to MOA and MOF for further procedure for budget allocation.</li> </ul>
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	The budget for Multi-disciplinary Feasibility Study will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.
7	Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	<ul> <li>Multi-disciplinary Feasibility Study will be executed to determine whether the proposed request is viable or not and how it can be implemented. Therefore actual survey of the alignment has to be done using survey equipment. The feasibility study report (FRFORM.03, FORM's format is not fixed in particular.) with a detailed implementation plan, tentative designs and estimation of the project cost will be prepared.</li> </ul>
8	Environmental study	Dzongkhag / NEC	<ul> <li>Based on the feasibility study report, if environmental study is required, EIA will be executed.</li> </ul>
9	Budget allocation for construction	Dzongkhag	<ul> <li>The budget for construction of farm road will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.</li> </ul>
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul> <li>Explanation of the need of group/cooperative for construction and maintenance of farm road and Farm Road Users Committee (FRM-Committee named in Module 3) to FRCPC will be executed.</li> </ul>
11	Establishment of Farm Road Users Cooperative (FRUC)	FRUC/ GYT	<ul> <li>FRUC will be established and FRM-committee members (FRFORM.04) will be selected from FRUC. Signing of agreements on labor contribution for construction (FRFORM.06), maintenance fund contribution (Annex I) in the letter of understanding (FRFORM.05) will be executed between FRUC and the representative of Dzongkhag in the above meeting.</li> </ul>
12	Land acquisition	Beneficiaries	<ul> <li>Land acquisition and expropriation along the alignment will be carried out under the instruction of Dzongkhag.</li> </ul>
13	Technical Training for Site Engineer and Site In-charge	Dzongkhag	<ul> <li>Technical training for site engineer of Dzongkhag and site in-charge of FRUC using total station and so on will be carried out by an experienced road engineer.</li> </ul>
14	Overall management of construction	Dzongkhag	The construction of farm road will be carried out under the management of Dzongkhag in Implementation (Module 4).
15	Construction machinery and equipment	MOA	<ul> <li>Supplying machinery and equipment including technical backstopping from MOA for construction of farm road will be arranged based on the requisition of Dzongkhag in Implementation (Module 4).</li> </ul>
16	Arrangement of unskilled labor	Beneficiaries	Beneficiaries shall provide free unskilled labor in accordance with the arrangement of the site in-charge.
17	Completion and Handing over (Module 5)	Dzongkhag/ Beneficiaries	<ul> <li>The farm road shall be handed over to the beneficiaries after signing the Project Completion Report (FRFORM.07) and the Certificate of Satisfactory Completion (FRFORM.08).</li> </ul>
18	Reserving fund for maintenance works	FRUC	<ul> <li>For the following maintenance, fund will be reserved in the system of FRUC.</li> </ul>
19	Routine maintenance	FRUC	<ul> <li>Routine maintenance like side ditch cleaning will be periodically and timely carried out under the guidance of the site in-charge.</li> </ul>
20	Periodical maintenance	FRUC	<ul> <li>Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of</li> </ul>

	Required Action (WHAT)	Responsible Stakeholder (WHO)		Detailed Activities (HOW)
				the site in-charge.
21	Periodical repair works	MOA/ FRUC	•	Major repair will be executed using construction machinery to be arranged by CMU/MOA and Dzongkhag every five years.

Note: FORM and Module are procedure regulated for farm road development by MOA.

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	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
j	Establishment of institution for farm road construction	2003.4											
2	Consensus in GYT	2003.4							-				
3	Official request (FRFORM.01) for implementation	2003.4				<u> </u>							
4	Preliminary Investigation (Module 1)	2003.5											
5	Consensus in DYT	2003.5		0									
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	2003.6			:								
7	Multi-disciplinary Feasibility Study (Module 2)	2003.7 - 2004.6				:							i
8	Environmental study	2004.6		:	. 0		:		:		:		:
9	Budget allocation for construction	2005.12		:					:				:
10	Pre-construction Meeting (Module 3)	2005.12							:	:			
11	Establishment of Farm Road Users Cooperative (FRUC)	2005.12			:	{	]			:			
12	Land acquisition	2006.1 - 2007.3				:		ב			:		
13	Technical Training for Site Engineer and Site In-charge	2006.1 - 2006.6			:			:	: :		:	:	<u> </u>
14	Overall management of construction	2006.7 - 2007.3							:	:			: —
15	Construction machinery and equipment	2006.7 - 2007.3										:	
16	Arrangement of unskilled labor	2006.7 - 2007.3			:					:	:		
17	Completion and Handing over (Module 5)	2007.3			:	<u> </u>				:		:	:

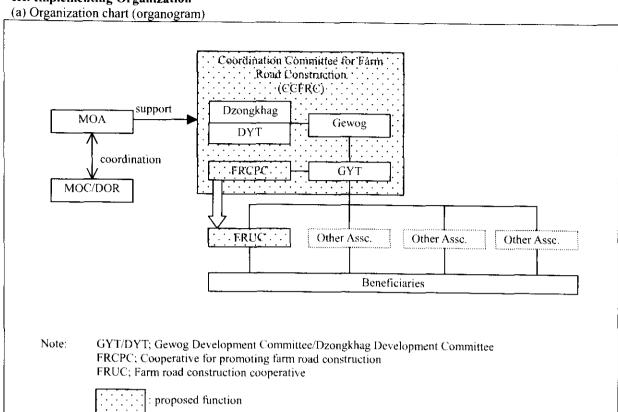
	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20
18	Reserving fund for maintenance works	2006.10 -			:								
19	Routine maintenance	2007.4 -											
20	Annual maintenance	2008.4 -						-			0	O	
21	Periodical repair works	20012.3 -			:					:			П

VI. Implementation and Monitoring System of Action Plan						
Action		Plan				
	WHO	DE/DAO, Lhuntse Dzongkhag				
Progress Management of A/P	WHEN	Monthly basis				
1 Togress Wallagement of As I	WHERE	Lhuntse Dzongkhag Engineering/Agriculture Office				
	HOW	Monthly Report prepared by Site Engineer of Dzongkhag				
	WHO	Superintending Engineer, DRDS, MOA				
Budget Management at	WHEN	Every Financial Year				
Preparatory Stage	WHERE	MOA Office, Thimphu				
	HOW	As per Financial Manual of Royal Government of Bhutan				
	WHO	DAO, Lhuntse Dzongkhag				
Budget Management at	WHEN	Monthly basis				
Implementation Stage	WHERE	Lhuntse Dzongkhag Agriculture Office				
	HOW	As per Financial Manual of Royal Government of Bhutan				
	WHO	Chairperson, FRUC				
Budget Management at O&M	WHEN	Monthly basis				
Stage	WHERE	Accountant, FRUC				
	HOW	Constitution/Bylaws enacted in FRUC				
	<ul> <li>Budget arrangement: Superintending engineer, DRDS, MOD preparatory stage/ DAO, Dzongkhag at implementation st Chairperson, FRUC at O&amp;M stage.</li> <li>Technical problems: DE, Dzongkhag</li> <li>Accident, Participation, Dispute: Chairperson, FRUC</li> <li>Manpower: Superintending engineer, DRDS, MOA</li> </ul>					
	WHEN	As the problems happened.				
Problem Solving	WHERE	<ul> <li>Budget arrangement: DRDS, MOA at preparatory stage/ Agricultural Office, Dzongkhag at implementation stage/ FRUC Office at O&amp;M stage.</li> <li>Technical problems: Dzongkhag Engineering Office</li> <li>Accident, Participation, Dispute: FRUC Office</li> <li>Manpower: DRDS, MOA</li> </ul>				
	HOW	<ul> <li>Budget arrangement: DRDS, MOA discusses with MOF at preparatory stage and implementation stage/ FRUC discusses among the beneficiaries at O&amp;M stage.</li> <li>Technical problems: Dzongkhag Engineering Office discusses with the beneficiaries.</li> <li>Accident, Participation, Dispute: FRUC Office discusses among the beneficiaries and third party.</li> <li>Manpower: DRDS, MOA discusses with the organization concerned.</li> </ul>				

5.2 Farm Road Construction Program, Drepong, Mongar

I. General	Sheet No. AP-30							
Program	Farm Road Co	arm Road Construction Program / Drepong / Mongar (Gyelposhing to Laptsa						
Sub-program								
	Level	Organization / Name	Contact Person					
	National	MOA	Mr. Kaylzang Tshering (SE. DRDS, 02-322228)					
Stakeholders	Dzongkhag	Mongar	Mr. Penden Norgey (DE, 04-641206) Mr. Tandin Dorji (DAO, 04-641181)					
	Gewog	GYT	Mr. Pema Tshewang(Gup)					
	Beneficiaries	Tentative Cooperative (206 HH)	Mr. Trashi (Mangmi)					
II. Program/S	Sub-program							
Target		Kurichhu Hydropower and planned length = 23.5 km	r road which is developed for the project of to extend up to Nganglam, Samdrup Jongkhar,					
Activities		<ul> <li>Survey, Design and Cost Estimation</li> <li>Construction of farm road</li> <li>Maintenance by Farm Road Users 0</li> <li>Procurement of construction materia</li> <li>Procurement of construction machine</li> <li>Environmental study</li> <li>Financial arrangement</li> <li>Establishment of organization</li> </ul>	Cooperative als and tools					
Input		<ul> <li>Surveyor (MOA and Dzongkhag)</li> <li>Civil Engineer for Design (MOA and Dzongkhag)</li> <li>Civil Engineer for Supervision (Dzongkhag)</li> <li>Construction Machinery with Operator (CMU, MOA)</li> <li>Construction Materials and Tools (MOA)</li> <li>Skilled Labor (Mason, Blaster, etc., MOA)</li> <li>Unskilled labor (Gewog Beneficiaries)</li> <li>Project Cost Nu. 129.2 mil. (Including indirect cost).</li> <li>Maintenance by Farm Road Users Cooperative</li> </ul>						
Output			haul road to Kurichhu Hydro-Power Project is					
Period		, ,	Construction 2005.7 ~ 2007.6					
Related Program (		<ul> <li>Construction Machinery Center Program (Construction machinery for the construction works will be provided through this program)</li> <li>Market System Development Program (Collection depot will be constructed along the farm road and group assembling will be conducted by farmers group)</li> </ul>						
Project Justific	cation	<ul> <li>Environment: IEE was conducted in the Mater Plan and EIA will be executed at the stage of survey and design in consideration of the instruction of NEC.</li> <li>Efficiency: Reasonable range of construction cost per km is about 5,500,000Nu including labor cost in the maximum limitation. A minimum of ten households of 70 people per km and total cultivated area per season should not be less tan 30acres per km stipulated in guidelines for farm roads development of MOA.</li> <li>Consistency with upper plan/program: This is based on the program of MOA.</li> <li>Sustainability: The participation of beneficiaries, maintenance fund contribution and so on should be confirmed on the basis of the farm roads construction procedural manual prepared by MOA.</li> </ul>						

## III. Implementing Organization



(b) General Role	and Responsibility of Sta	keholders
	Stakeholder	General Role and Responsibility
National	DRDS, MOA	<ul> <li>Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders and organizations especially DOR.</li> </ul>
Dzongkhag	Engineering Office/ Agriculture Office	<ul> <li>Actually supervises FRUA from its establishment to the construction and maintenance by FRUC including accounting of the program.</li> </ul>
Gewog	GYT	<ul> <li>Formulate the Gewog development plan and evaluate the program in the plan, and based on this, made the official request letter and submit it to Dzongkhag.</li> </ul>
Beneficiaries	FRUC	<ul> <li>Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.</li> </ul>

<u>IV.</u>	Action Plan (sequent)		·· <del>·</del>
	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Establishment of institution for farm road construction	Gewog/GYT	<ul> <li>A cooperative for promoting farm road construction (FRCPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.</li> </ul>
2	Consensus in GYT	GYT	The request of farm road construction from FRCPC will be discussed in GYT and with the consensus will be proceeded to Dzongkhag.
3	Official request (FRFORM.01) for implementation	GYT	The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzongkhag with necessary information for evaluation (distance, route, contribution by Gewogs or beneficiaries, etc.)
4	Preliminary Investigation (Module 1)	Dzongkhag / FRCPC	<ul> <li>The preliminary Investigation will be executed to find out whether the proposed request meets the basic requirements for government assistance. Project identification report (FRFORM.02) and IEE must be prepared for further</li> </ul>

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW) procedure.
5	Consensus in DYT	Dzongkhag / DYT	<ul> <li>The request will be discussed based on the project identification report and with the consensus and Dzongda's approval will be proceeded to MOA and MOF for further procedure for budget allocation.</li> </ul>
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	<ul> <li>The budget for Multi-disciplinary Feasibility Study will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.</li> </ul>
7	Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag ,	<ul> <li>Multi-disciplinary Feasibility Study will be executed to determine whether the proposed request is viable or not and how it can be implemented. Therefore actual survey of the alignment has to be done using survey equipment. The feasibility study report (FRFORM.03, FORM's format is not fixed in particular.) with a detailed implementation plan, tentative designs and estimation of the project cost will be prepared.</li> </ul>
8	Environmental study	Dzongkhag / NEC	Based on the feasibility study report, if environmental study is required, EIA will be executed.
9	Budget allocation for construction	Dzongkhag	<ul> <li>The budget for construction of farm road will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.</li> </ul>
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul> <li>Explanation of the need of group/cooperative for construction and maintenance of farm road and Farm Road Users Committee (FRM-Committee named in Module 3) to FRCPC will be executed.</li> </ul>
11	Establishment of Farm Road Users Cooperative (FRUC)	FRUC/ GYT	<ul> <li>FRUC will be established and FRM-committee members (FRFORM.04) will be selected from FRUC. Signing of agreements on labor contribution for construction (FRFORM.06), maintenance fund contribution (Annex I) in the letter of understanding (FRFORM.05) will be executed between FRUC and the representative of Dzongkhag in the above meeting.</li> </ul>
12	Land acquisition	Beneficiaries	<ul> <li>Land acquisition and expropriation along the alignment will be carried out under the instruction of Dzongkhag.</li> </ul>
13	Technical Training for Site Engineer and Site In-charge	Dzongkhag	<ul> <li>Technical training for site engineer of Dzongkhag and site in-charge of FRUC using total station and so on will be carried out by an experienced road engineer.</li> </ul>
14	Overall management of construction	Dzongkhag	The construction of farm road will be carried out under the management of Dzongkhag in Implementation (Module 4).
15	Construction machinery and equipment	MOA	<ul> <li>Supplying machinery and equipment including technical backstopping from MOA for construction of farm road will be arranged based on the requisition of Dzongkhag in Implementation (Module 4).</li> </ul>
16	Arrangement of unskilled labor	Beneficiaries	<ul> <li>Beneficiaries shall provide free unskilled labor in accordance with the arrangement of the site in-charge.</li> </ul>
17	Completion and Handing over (Module 5)	Dzongkhag/ Beneficiaries	<ul> <li>The farm road shall be handed over to the beneficiaries after signing the Project Completion Report (FRFORM.07) and the Certificate of Satisfactory Completion (FRFORM.08).</li> </ul>
18	Reserving fund for maintenance works	FRUC	<ul> <li>For the following maintenance, fund will be reserved in the system of FRUC.</li> </ul>
19	Routine maintenance	FRUC	<ul> <li>Routine maintenance like side ditch cleaning will be periodically and timely carried out under the guidance of the site in-charge.</li> </ul>
20	Periodical maintenance	FRUC	<ul> <li>Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of</li> </ul>

	Required Action (WHAT)  Responsible Stakeholder (WHO)		Detailed Activities (HOW)			
			the site in-charge.			
21	Periodical repair works	MOA/ FRUC	Major repair will be executed using construction machinery to be arranged by CMU/MOA and Dzongkhag every five years.			

Note: FORM and Module are procedure regulated for farm road development by MOA.

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<u>V. S</u>	chedule					•		-					
	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
 	Establishment of institution for farm road construction	2004.4					-						
2	Consensus in GYT	2004.4				-							
3	Official request (FRFORM.01) for implementation	2004.4			0						-		
4	Preliminary Investigation (Module 1)	2004.5			. 0								
5	Consensus in DYT	2004.5			D								
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	2004.6			0								
7	Multi-disciplinary Feasibility Study (Module 2)	2004.7 - 200411											
8	Environmental study	2004.11											
9	Budget allocation for construction	2004.12											
10	Pre-construction Meeting (Module 3)	2004.12			0		:						<del></del>
11	Establishment of Farm Road Users Cooperative (FRUC)	2004.12			0	-		-					
12	Land acquisition	2005.1 - 2007.6											
13	Technical Training for Site Engineer and Site In-charge	2005.1 - 2005.6			: <del></del>				:	·			
14	Overall management of construction	2005.7 - 2007.6									-		
15	Construction machinery and equipment	2005.7 - 2007.6			-	C_						:	
16	Arrangement of unskilled labor	2005.7 - 2007.6								:			:
17	Completion and Handing over (Module 5)	2007.6				:		0		:		-	

	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
18	Reserving fund for maintenance works	2007.1 -											
19	Routine maintenance	2007.7 -			- - - - - - - - - - - -								
20	Annual maintenance	2008.7		:		:			0	0	0	0	0
21	Periodical repair works	2012.6		:									0

VI. Implementation and Monitoring System of Action Plan

Action		Plan
	WHO	DE/DAO, Mongar Dzongkhag
Droomaga Munauamant of A/D	WHEN	Monthly basis
Progress Management of A/P	WHERE	Mongar Dzongkhag Engineering/Agriculture Office
	HOW	Monthly Report prepared by Site Engineer of Dzongkhag
	WHO	Superintending Engineer, DRDS, MOA
Budget Management at	WHEN	Every Financial Year
Preparatory Stage	WHERE	MOA Office, Thimphu
	HOW	As per Financial Manual of Royal Government of Bhutan
	WHO	DAO, Mongar Dzongkhag
Budget Management at	WHEN	Monthly basis
Implementation Stage	WHERE	Mongar Dzongkhag Agriculture Office
	HOW	As per Financial Manual of Royal Government of Bhutan
	WHO	Chairperson, FRUC
Budget Management at O&M	WHEN	Monthly basis
Stage	WHERE	Accountant, FRUC
	HOW	Constitution/Bylaws enacted in FRUC
	WHO	<ul> <li>Budget arrangement: Superintending engineer, DRDS, MOA at preparatory stage/ DAO, Dzongkhag at implementation stage/ Chairperson, FRUC at O&amp;M stage.</li> <li>Technical problems: DE, Dzongkhag</li> <li>Accident, Participation, Dispute: Chairperson, FRUC</li> <li>Manpower: Superintending engineer, DRDS, MOA</li> </ul>
	WHEN	As the problems happened.
Problem Solving	WHERE	<ul> <li>Budget arrangement: DRDS, MOA at preparatory stage/ Agricultural Office, Dzongkhag at implementation stage/ FRUC Office at O&amp;M stage.</li> <li>Technical problems: Dzongkhag Engineering Office</li> <li>Accident, Participation, Dispute: FRUC Office</li> <li>Manpower: DRDS, MOA</li> </ul>
	ноw	<ul> <li>Budget arrangement: DRDS, MOA discusses with MOF at preparatory stage and implementation stage/ FRUC discusses among the beneficiaries at O&amp;M stage.</li> <li>Technical problems: Dzongkhag Engineering Office discusses with the beneficiaries.</li> <li>Accident, Participation, Dispute: FRUC Office discusses among the beneficiaries and third party.</li> <li>Manpower: DRDS, MOA discusses with the organization concerned.</li> </ul>

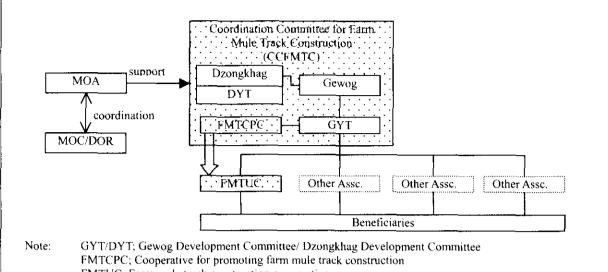
6.1 Farm Mule Track Construction Program, Khoma, Lhuntse

			, , , , , , , , , , , , , , , , , , , ,	,		
I. General			Sheet	No. AP-31		
Program	Farm Mule Trac	ck Construction Program / Kh	oma / Lhuntse			
Sub-program						
	Level Organization / Name		Contact Person			
	National	MOA	Mr. Kaylzang Tshering			
Stakeholders	Dzongkhag	Lhuntse	Mr. Om Nath Giri	(SE. DRDS, 02-322228) (DE, 04-545128)		
	Dzongknag		Mr. Deepak Rai			
	Gewog	GYT	Mr. Khandu	(Gup)		
	Beneficiaries	Tentative Cooperative (258 HH)	Mr. Chado	(Mangmi)		

Beneficiaries	Tentative Cooperative (258 HH) Mr. Chado (Mangmi)						
II. Program/Sub-program							
Target	<ul> <li>To improve rural access to motor road with the center of Gewog Khoma, length = 6.3 km.</li> </ul>						
	Survey, Design and Cost Estimation						
	Construction of farm mule track						
Activities	Maintenance by Farm Mule Track Users Cooperative						
Activities	Procurement of construction materials and tools						
	Financial arrangement						
	Establishment of organization						
	Surveyor (Dzongkhag)						
	Civil Engineer for Design (Dzongkhag)						
	Civil Engineer for Supervision (Dzongkhag)						
Input	<ul> <li>Construction Materials and Tools (MOA)</li> </ul>						
Tuput	Skilled Labor (Mason, Blaster, etc., MOA)						
	Unskilled labor (Gewog Beneficiaries)						
	Project Cost Nu. 1.3 mil. (Including Indirect cost).						
	Maintenance by Farm Mule Track Users Cooperative						
Output	• The center of Gewog (Khoma) is connected with Dzongkhag Road in Lhuntse,						
	length = 6.3 km						
Period	• Survey and Design 2002.9 ~ 2005.6						
Period	• Construction 2002.9 ~ 2006.10 (including trial construction)						
Related Program /	• Maintenance 2006.11 ~						
Sub-program (How)	Market System Development Program (Collection depot will be constructed along the form road and group accompliance).						
Sub-program (110w)	the farm road and group assembling will be conducted by farmers group)  • Environment: The routine environmental checking by NEC was executed prior to						
	<ul> <li>Environment: The routine environmental checking by NEC was executed prior to the commencement of trial construction and an authorization issuance of NEC has</li> </ul>						
	being applied by Dzongkhag.						
	<ul> <li>Efficiency: Reasonable range of construction cost per km is about 220,000 Nu</li> </ul>						
	including labor cost in the maximum limitation. A minimum of ten households of 70						
	people per km and total cultivated area per season should not be less tan 30acres						
Project Justification	per km stipulated in guidelines for farm roads development of MOA as this might be						
	upgraded to farm road in future.						
	<ul> <li>Consistency with upper plan/program: This is based on the program of MOA.</li> </ul>						
	• Sustainability: The participation of beneficiaries was assessed through the trial						
	construction, there was not much trouble at the farmer's slack season. The						
	construction and its maintenance can be possible by only beneficiaries themselves						
	if they have skilled labors and the construction materials and tools are supplied.						

## HI. Implementing Organization

(a) Organization chart (organogram)



FMTUC; Farm mule track construction cooperative

: proposed function

(b) General Role and Responsibility of Stakeholders

Sı	takeholder	General Role and Responsibility				
National	DRDS, MOA	<ul> <li>Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders.</li> </ul>				
Dzongkhag	Engineering Office/ Agriculture Office	<ul> <li>Actually supervises FMTUC from its establishment to the construction and maintenance by FMTUC including accounting of the program.</li> </ul>				
Gewog	GYT	<ul> <li>Formulate the Gewog development plan and evaluate the program in the plan, and based on this, made the official request letter and submit it to Dzongkhag.</li> </ul>				
Beneficiaries	FMTUC	<ul> <li>Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.</li> </ul>				

IV. Action Plan (sequent)

# V. A	Action Plan (sequent)		
	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Establishment of institution for farm mule track construction	Gewog/GYT	<ul> <li>A cooperative for promoting farm mule track construction (FMTCPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.</li> </ul>
2	Consensus in GYT	GYT	<ul> <li>The request of farm mule track construction from FMTCPC will be discussed in GYT and with the consensus will be proceeded to Dzongkhag.</li> </ul>
3	Official request (FRFORM.01) for implementation	GYT	<ul> <li>The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzongkhag with necessary information for evaluation (distance, route, contribution by Gewogs or beneficiaries, etc.)</li> </ul>
4	Preliminary Investigation (Module 1)	Dzongkhag / FMTCPC	<ul> <li>The preliminary Investigation will be executed to find out whether the proposed request meets the basic requirements for government assistance. Project identification report (FRFORM.02) and IEE must be prepared for further procedure.</li> </ul>
5	Consensus in DYT	Dzongkhag / DYT	<ul> <li>The request will be discussed based on the project identification report, and with the consensus and Dzongda's approval will be proceeded to MOA and MOF for further procedure for budget allocation.</li> </ul>
6	Budget allocation for	Dzongkhag	The budget for Multi-disciplinary Feasibility Study will be

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
	Multi-disciplinary Feasibility Study (Module 2)	()	arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.
7	Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	<ul> <li>Multi-disciplinary Feasibility Study will be executed to determine whether the proposed request is viable or not and how it can be implemented. Therefore actual survey of the alignment has to be done using survey equipment. The feasibility study report (FRFORM.03, FORM's format is not fixed in particular.) with a detailed implementation plan, tentative designs and estimation of the project cost will be prepared.</li> </ul>
8	Environmental study	Dzongkhag / NEC	Based on the feasibility study report, if environmental study is required, EIA will be executed.
9	Budget allocation for construction	Dzongkhag	<ul> <li>The budget for construction of farm mule track will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.</li> </ul>
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul> <li>Explanation of the need of group/cooperative for construction and maintenance of farm mule track and Farm Mule Track Users Committee (FRM-Committee named in Module 3) to FMTCPC will be executed.</li> </ul>
11	Establishment of Farm Mule Track Users Cooperative (FMTUC)	FMTUA/ GYT	<ul> <li>FMTUC will be established and FMTUC-committee members (FRFORM.04) will be selected from FMTUC. Signing of agreements on labor contribution for construction (FRFORM.06), maintenance fund contribution (Annex I) in the letter of understanding (FRFORM.05) will be executed between FMTUC and the representative of MOA in the above meeting.</li> </ul>
12	Land acquisition	Beneficiaries	Land acquisition and expropriation along the alignment will be carried out under the instruction of Dzongkhag.
13	Technical Training for Site Engineer and Site In-charge	Dzongkhag	Technical training for site engineer of Dzongkhag and site in-charge of FMTUC using total station and so on will be carried out by an experienced road engineer.
14	Overall management of construction	Dzongkhag	The construction of farm mule track will be carried out under the management of Dzongkhag in Implementation (Module 4).
15	Procurement of construction materials and tools	MOA	<ul> <li>Supplying materials and tools including technical backstopping from MOA for construction of farm mule track will be arranged based on the requisition of Dzongkhag in Implementation (Module 4).</li> </ul>
16	Arrangement of unskilled labor	Beneficiaries	Beneficiaries shall provide free unskilled labor in accordance with the arrangement of the site in-charge.
17	Completion and Handing over (Module 5)	Dzongkhag/ Beneficiaries	<ul> <li>The farm mule track shall be handed over to the beneficiaries after signing the Project Completion Report (FRFORM.07) and the Certificate of Satisfactory Completion (FRFORM.08).</li> </ul>
18	Reserving fund for maintenance works	FMTUC	For the following maintenance, fund will be reserved in the system of FMTUC.
19	Routine maintenance	FMTUC	<ul> <li>Routine maintenance like removing debris to be an obstacle will be periodically and timely carried out under the guidance of the site in-charge.</li> </ul>
20	Periodical maintenance	FMTUC	<ul> <li>Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of the site in-charge.</li> </ul>
21	Periodical repair works	MOA/ FMTUC	<ul> <li>Major repair will be executed using construction machinery to be arranged by CMU/MOA and Dzongkhag every five years.</li> </ul>

Note: FORM and Module are procedure regulated for farm road development by MOA, the farm mule track construction program will follow this procedure as well.

V. Schedule

_ <u>V. Sc</u>	chedule		·										
	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
1	Establishment of institution for farm mule track construction	2004.4			0	· · · · · ·				:			-
2	Consensus in GYT	2004.4			0							:	
3	Official request (FRFORM.01) for implementation	2004.4											
4	Preliminary Investigation (Module 1)	2004.5											
5	Consensus in DYT	2004.5		:	0						:		
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	2004.6			0						:		
7	Multi-disciplinary Feasibility Study (Module 2)	2004.7 - 2004.11					:						
8	Environmental study	2004.11			0	:					:		
9	Budget allocation for construction	2004.12		:	]			:	:	-			
10	Pre-construction Meeting (Module 3)	2004.12		:						:			-
11	Establishment of Farm Mule Track Users Cooperative (FMTUC)	2004.12		:	0		:						
12	Land acquisition	2005.1 - 2006.10		:	:								
13	Technical Training for Site Engineer and Site In-charge	2005.1 - 2005.6		:									
14	Overall management of construction	2005.7 - 2006.10	(Tri	al)	:		:	:					
15	Procurement of construction materials and tools	2005.5 - 2005.6		:		0							
16	Arrangement of unskilled labor	2005.7 - 2006.10											:
17	Completion and Handing over (Module 5)	2006.10		:				:			:	!	
18	Reserving fund for maintenance works	2006.7 -		:	:			**					
19	Routine maintenance	2006.11 -			:		; 	:					

	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
20	Periodical maintenance	2007.11 -							6				ם
21	Periodical repair works(5years interval)	2011.10				-			-				

VI. Implementation and Monitoring System of Action Plan Action Plan WHO DE/DAO, Lhuntse Dzongkhag WHEN Monthly basis Progress Management of A/P WHERE Lhuntse Dzongkhag Engineering/Agriculture Office HOW Monthly Report prepared by Site Engineer of Dzongkhag WHO Superintending Engineer, DRDS, MOA Budget Management at WHEN Every Financial Year Preparatory Stage WHERE MOA Office, Thimphu HOW As per Financial Manual of Royal Government of Bhutan WHO DAO, Lhuntse Dzongkhag Budget Management at WHEN Monthly basis Implementation Stage WHERE Lhuntse Dzongkhag Agriculture Office HOW As per Financial Manual of Royal Government of Bhutan WHO Chairperson, FRUC WHEN Budget Management at O&M Monthly basis Stage WHERE Accountant, FRUC HOW Constitution/Bylaws enacted in FRUC Budget arrangement: Superintending engineer, DRDS, MOA at preparatory stage/ DAO, Dzongkhag at implementation stage/ Chairperson, FRUC at O&M stage. WHO Technical problems: DE, Dzongkhag Accident, Participation, Dispute: Chairperson, FRUC Manpower: Superintending engineer, DRDS, MOA WHEN As the problems happened. Budget arrangement: DRDS, MOA at preparatory stage/ Agricultural Office, Dzonokhag at implementation stage/ FRUC Office at O&M WHERE Problem Solving Technical problems: Dzongkhag Engineering Office Accident, Participation, Dispute: FRUC Office Manpower: DRDS, MOA Budget arrangement: DRDS, MOA discusses with MOF at preparatory stage and implementation stage/ FRUC discusses among the beneficiaries at O&M stage. Technical problems: Dzongkhag Engineering Office discusses with HOW the beneficiaries. Accident, Participation, Dispute: FRUC Office discusses among the beneficiaries and third party.

Manpower: DRDS, MOA discusses with the organization concerned.

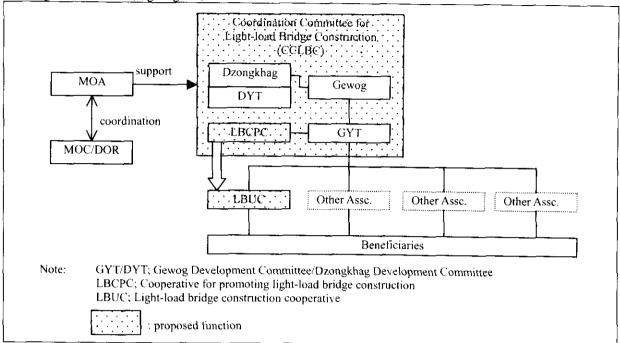
7.1 Light-Load Bridge Construction Program, Khoma, Lhuntse

I. General	_		_	Sheet No.	AP-32				
Program	Light-load Bridg	e Construction Program /	Khoma / L	huntse					
Sub-program					<del></del>				
	Level	Organization / Name		Contact P	erson				
	National MOA  Dzongkhag Lhuntse  Gewog GYT		Mr. Kay	Izang Tshering (SE	shering (SE. DRDS, 02-322228				
Stakeholders			Mr. Om Nath Giri (DE, 04-545128) Mr. Deepak Rai (DAO, 04-545127)						
			Mr. Kha	Mr. Khandu (Gup)					
	Beneficiaries	All Gewog	Mr. Cha	ido (Ma	ngmi)				

ì	Gewog	<u>GTI</u>	wir. Knandu	(Gup)						
	Beneficiaries	All Gewog	Mr. Chado	(Mangmi)						
II. Program/S	ub-program		<u></u>							
Target				road with the center of Gewog						
		Khoma, span = 90 m, tolerance of power tiller with trailer passing								
		<ul> <li>Survey, Design and Cost</li> </ul>								
		<ul> <li>Construction of Light-load</li> </ul>								
Activities			d Bridge Users Cooperative	r						
ricavines		<ul> <li>Procurement of construct</li> </ul>	on materials and tools							
		<ul> <li>Financial arrangement</li> </ul>	•							
		<ul> <li>Establishment of organiza</li> </ul>								
		<ul> <li>Surveyor (DOR and Dzor</li> </ul>								
	ľ	<ul> <li>Civil Engineer for Design</li> </ul>	•							
		<ul> <li>Civil Engineer for Supervi</li> </ul>								
Input		<ul> <li>Construction Materials an</li> </ul>								
		Skilled Labor (Mason, Blaster, etc.)								
		Unskilled labor (Gewog Beneficiaries)								
		<ul> <li>Project Cost Nu. 6.4 mil. (</li> </ul>	,							
			d Bridge Users Cooperative							
Output		<ul> <li>The light-load bridge is concluded in Lhuntse.</li> </ul>	Road in Lhuntse.							
		<ul> <li>Survey and Design</li> </ul>	2002.10 ~ 2002.12							
Period		<ul> <li>Construction</li> </ul>	2003.7 ~ 2005.6							
		Maintenance	2005.7							
Related Progra				epot will be constructed along						
Sub-program (	How)		assembling will be conducte							
Project Justific	cation	<ul> <li>Environment: As this is actually a replacement of the existing suspended bridge, it will be enough to assess by only the routine environmental checking by NEC to be executed before the commencement of construction and an authorization issuance of NEC will be applied by Dzongkhag.</li> <li>Efficiency: Reasonable range of construction cost per bridge is about 3,300,000 Nu in the maximum limitation, and construction cost must be less than that of detour to cross Kurichhu.</li> <li>Consistency with upper plan/program: This is based on the program of MOA.</li> <li>Sustainability: The participation of beneficiaries was assessed through the trial construction of the Farm Mule Track, there was not much trouble at the farmer's slack season. The construction and its maintenance can be possible by only beneficiaries themselves if they have skilled labors and the construction materials and tools are supplied.</li> </ul>								

## III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

S	takeholder	General Role and Responsibility
National	DRDS, MOA	<ul> <li>Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders and organizations especially DOR.</li> </ul>
Dzongkhag	Engineering Office/ Agriculture Office	Actually supervises LBUC from its establishment to the construction and maintenance by LBUC including accounting of the program.
Gewog	GYT	<ul> <li>Formulate the Gewog development plan and evaluate the program in the plan, and based on this, made the official request letter and submit it to Dzongkhag.</li> </ul>
Beneficiaries	LBUC	<ul> <li>Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.</li> </ul>

IV. Action Plan (sequent)

1 7.	Action Plan (sequent)		
	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Establishment of institution for light-load bridge construction	Gewog/GYT	<ul> <li>A cooperative for promoting light-load bridge construction (LBCPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.</li> </ul>
2	Consensus in GYT	GYT	<ul> <li>The request of light-load bridge construction from LBCPC will be discussed in GYT and with the consensus will be proceeded to Dzongkhag.</li> </ul>
3	Official request (FRFORM.01) for implementation	GYT	<ul> <li>The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzongkhag with necessary information for evaluation (distance, location, contribution by Gewogs or beneficiaries, etc.)</li> </ul>
4	Preliminary Investigation (Module 1)	Dzongkhag / FMTCPC	<ul> <li>The preliminary Investigation will be executed to find out whether the proposed request meets the basic requirements for government assistance. Project identification report (FRFORM.02) and IEE must be prepared for further procedure.</li> </ul>
5	Consensus in DYT	Dzongkhag / DYT	<ul> <li>The request will be discussed based on the project identification report and with the consensus and Dzongda's</li> </ul>

	Required Action (WHAT)	Responsible Stakeholder	Detailed Activities
		(WHO)	(HOW) approval will be proceeded to MOA and MOF for further procedure for budget allocation.
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	<ul> <li>The budget for Multi-disciplinary Feasibility Study will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.</li> </ul>
7	Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	• Multi-disciplinary Feasibility Study will be executed to determine whether the proposed request is viable or not and how it can be implemented. Then actual survey of the site has to be done using survey equipment for designing and cost estimation by DOR under the coordination of Dzongkhag. The feasibility study report (FRFORM.03, FORM's format is not fixed in particular.) with a detailed implementation plan, tentative designs and estimation of the project cost prepared by DOR will be compiled by Dzongkhag.
8	Environmental study	Dzongkhag/ NEC	<ul> <li>Based on the feasibility study report, if environmental study is required, EIA will be executed.</li> </ul>
9	Budget allocation for construction	Dzongkhag	<ul> <li>The budget for construction of light-load bridge will be arranged in MOF after scrutinizing the request from Dzongkhag by MOA and distributed to Dzongkhag directly.</li> </ul>
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul> <li>Explanation of the need of group/cooperative for construction of light-load bridge and maintenance and Light-load Bridge Users Committee (FRM-Committee named in Module 3) to LBCPC will be executed.</li> </ul>
11 :	Establishment of Light-load Bridge Users Cooperative (LBUC)	ŁBUC/ GYT	<ul> <li>LBUC will be established and LBUC-committee members (FRFORM.04) will be selected from LBUC. Signing of agreements on labor contribution for construction (FRFORM.06), maintenance fund contribution (Annex I) in the letter of understanding (FRFORM.05) will be executed between LBUC and the representative of Dzongkhag in the above meeting.</li> </ul>
12	Land acquisition	Beneficiaries	<ul> <li>Land acquisition and expropriation surrounding abutment and anchor block will be carried out under the instruction of Dzongkhag.</li> </ul>
13	Technical Training for Site Engineer and Site In-charge	Dzongkhag	<ul> <li>Technical training for site engineer of Dzongkhag and site in-charge of LBUC will be carried out by an experienced suspension bridge engineer, if necessary.</li> </ul>
14	Overall management of construction	Dzongkhag	<ul> <li>The construction of light-load bridge will be carried out under the management of Dzongkhag in Implementation (Module 4).</li> </ul>
15	Procurement of construction materials and tools	Dzongkhag	<ul> <li>Supplying materials and tools including technical backstopping from MOA/DOR for construction of light-load bridge will be arranged based on the requisition of Dzongkhag in Implementation (Module4).</li> </ul>
16	Arrangement of unskilled labor	Beneficiaries	<ul> <li>Beneficiaries shall provide free unskilled labor in accordance with the arrangement of the site in-charge.</li> </ul>
17	Completion and Handing over (Module 5)	Dzongkhag/ Beneficiaries	<ul> <li>The light-load bridge shall be handed over to the beneficiaries after signing the Project Completion Report (FRFORM.07) and the Certificate of Satisfactory Completion (FRFORM.08).</li> </ul>
18	Reserving fund for maintenance works	LBUC	<ul> <li>For the following maintenance, fund will be reserved in the system of LBUC.</li> </ul>
19	Routine maintenance	LBUC	<ul> <li>Routine maintenance like cleaning of deck will be periodically and timely carried out under the guidance of the site in-charge.</li> </ul>
20	Periodical maintenance	LBUC	<ul> <li>Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of the site in-charge.</li> </ul>
21	Periodical repair works	Dzongkhag/	Major repair will be executed by LBUC in accordance with the

Required Action (WHAT)	Responsible	Detailed				
	Stakeholder	Activities				
(WIAI)	(WHO)	(HOW)				
	LBUC	instruction of Dzongkhag every five years.				

Note: FORM and Module are procedure regulated for farm road development by MOA, the light-load bridge construction program will follow this procedure as well.

V. Schedule

	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
ı	Establishment of institution for light-load bridge construction	2002.10	0										
2	Consensus in GYT	2002.10	0										:
3	Official request (FRFORM.01) for implementation	2002.10	0										:
4	Preliminary Investigation (Module 1)	2002.10	0		:			:			:	: : :	
5	Consensus in DYT	2002.10	а		:					:			<del></del>
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	2002.10	0			-					<u> </u>		
7	Multi-disciplinary Feasibility Study (Module 2)	2002.10 - 2003.2		<u> </u>	<u>:_</u>					:	:		
8	Environmental study	2003.2		0						:	:		:
9	Budget allocation for construction	2003.3			:	:					·	- -	:
10	Pre-construction Meeting (Module 3)	2003.3				:				:		:	:
11	Establishment of Light-load Bridge Users Cooperative (LBUC)	2003.3		0		-	:	-		:			
12	Land acquisition	2003.4 - 2003.6											:
13	Technical Training for Site Engineer and Site In-charge	2003.4 - 2003.6									-		
14	Overall management of construction	2003.7 - 2005.6						:					
15	Procurement of construction materials and tools	2003.4 - 2003.6							:			<u> </u>	
16	Arrangement of unskilled labor	2003.7 - 2005.6											
17	Completion and Handing over (Module 5)	2005.6			:	D	· · · · · · · · · · · · · · · · · · ·						<del></del>

	Required Action (WHAT)	Period	20 02	20 03	20 04	20 05	20 06	20 07	20 08	20 09	20 10	20 11	20 12
18	Reserving fund for maintenance works	2005.4 -			· : :								
19	Routine maintenance	2005.7 -		:	:								
20	Periodical maintenance	2006.7 -						0	0		0	1	0
21	Periodical repair works	20010.6											

VI. Implementation and Moni	toring Syste	m
Action		Plan
	WHO	DE/DAO, Lhuntse Dzongkhag
Progress Management of A/P	WHEN	Monthly basis
Trogress Management of A/1	WHERE	Lhuntse Dzongkhag Engineering/Agriculture Office
	HOW	Monthly Report prepared by Site Engineer of Dzongkhag
	WHO	Superintending Engineer, DRDS, MOA
Budget Management at	WHEN	Every Financial Year
Preparatory Stage	WHERE	MOA Office, Thimphu
	HOW	As per Financial Manual of Royal Government of Bhutan
	WHO	DAO, Lhuntse Dzongkhag
Budget Management at	WHEN	Monthly basis
Implementation Stage	WHERE	Lhuntse Dzongkhag Agriculture Office
	HOW	As per Financial Manual of Royal Government of Bhutan
	WHO	Chairperson, FRUC
Budget Management at O&M	WHEN	Monthly basis
Stage	WHERE	Accountant, FRUC
	HOW	Constitution/Bylaws enacted in FRUC
	WHO	<ul> <li>Budget arrangement: Superintending engineer, DRDS, MOA at preparatory stage/ DAO, Dzongkhag at implementation stage/ Chairperson, FRUC at O&amp;M stage.</li> <li>Technical problems: DE, Dzongkhag</li> <li>Accident, Participation, Dispute: Chairperson, FRUC</li> <li>Manpower: Superintending engineer, DRDS, MOA</li> </ul>
	WHEN	As the problems happened.
Problem Solving	WHERE	<ul> <li>Budget arrangement: DRDS, MOA at preparatory stage/ Agricultural Office, Dzongkhag at implementation stage/ FRUC Office at O&amp;M stage.</li> <li>Technical problems: Dzongkhag Engineering Office</li> <li>Accident, Participation, Dispute: FRUC Office</li> <li>Manpower: DRDS, MOA</li> </ul>
	HOW	<ul> <li>Budget arrangement: DRDS, MOA discusses with MOF at preparatory stage and implementation stage/ FRUC discusses among the beneficiaries at O&amp;M stage.</li> <li>Technical problems: Dzongkhag Engineering Office discusses with the beneficiaries.</li> <li>Accident, Participation, Dispute: FRUC Office discusses among the beneficiaries and third party.</li> <li>Manpower: DRDS, MOA discusses with the organization concerned.</li> </ul>