

1.3.2 Bachari Scheme (New)

I. General

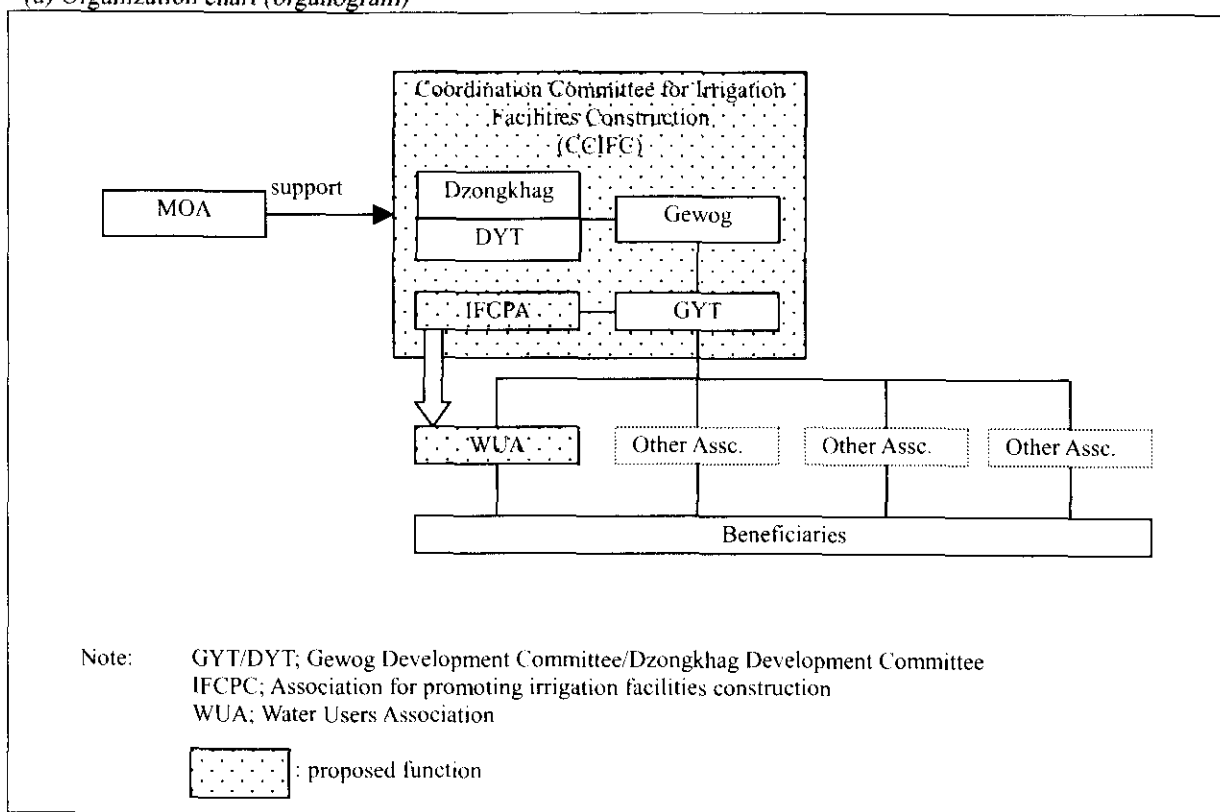
Program		Sheet No.		AP-15
Program for Food Crop Production Increase / Drepong / Mongar				
Sub-program				
Irrigation Development Sub Program (Proposed, Bachheri)				
Stakeholders	Level	Organization / Name		Contact Person
	National	MOA		Mr. Kaylzung Tshering (SE, DRDS, 02-322228)
	Dzongkhag	Mongar		Mr. Penden Norgay (DE, 04-641206) Mr. Tandin Dorji (DAO, 04-641181)
	Gewog	GYT		Mr. Pema Tshewang (Gup)
	Beneficiaries	Tentative WUA (15HH)		Mr. (GYT Member)

II. Program/Sub-program

Target	To increase food crop production, proposed canal length = 1.0 km
Activities	<ul style="list-style-type: none"> • Survey, Design and Cost estimation • Construction of irrigation facilities • Maintenance by Water Users Association • Procurement of construction materials and tools • Financial arrangement • Establishment of organization
Input	<ul style="list-style-type: none"> • Surveyor (Dzongkhag) • Irrigation Engineer for Design (Dzongkhag) • Irrigation Engineer for Supervision (Dzongkhag) • Construction Materials (DRDS, MOA) • 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)
Period(Tentative)	<ul style="list-style-type: none"> • Survey and Design 2003.7~2004.6 • Construction 2004.7~2007.6 • Operation & Maintenance 2007.7~
Related Program / Sub-program (How)	<ul style="list-style-type: none"> • Program for Food Crop Production Increase/Food Security SP, Paddy-rice Production SP, Post-harvest Technology Training SP(They will be executed together with Irrigation Development SP) • Extension Strengthening Program/Extension Strengthening for Food Crop SP(Extension will be executed to the beneficiaries of rehabilitated irrigation facilities)
Project Justification	<ul style="list-style-type: none"> • Environment: IEE was conducted in the Master Plan. As this is construction of canal 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 Nu estimated in 9th FYP in the maximum limitation. • Consistency with upper plan/program: This is based on the program of MOA. • Sustainability: The participation of beneficiaries, maintenance fund contribution and so on should be confirmed on the basis of the national irrigation policy procedural manual prepared by MOA

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	DRDS, MOA	Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders.
Dzungkhag	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 Dzungkhag.
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.

IV. Action Plan (sequent)

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 (IFCPA) 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 Dzungkhag.
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 Dzungkhag with necessary information for evaluation (source of water, route, length, contribution by Gewogs or beneficiaries, etc.)
4	Preliminary Investigations (Module 1)	Dzungkhag / 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	Dzungkhag / DYT	The request will be discussed based on the project identification report, and with the consensus and Dzungda's approval will be

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (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 (IRRIFORM.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 (WUAC) 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 (IRRIFORM.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. Schedule

Required Action (WHAT)		Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Establishment of institution for irrigation facilities construction	2003.4		□									
2	Consensus in GYT	2003.4		□									
3	Official request (IRRIFORM.01) for implementation	2003.4		□									
4	Preliminary Investigations (Module 1)	2003.5		□									
5	Consensus in DYT	2003.5		□									
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			□								

Required Action (WHAT)		Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
12	Land acquisition	2004.4 - 2007.6			[]								
13	Procurement of materials and tools	2004.4 - 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		[]									
17	Banking and bookkeeping training (Module 6)	2004.7		[]									
18	Scheme management training (Module 7)	2007.6						[]					
19	Completion and Handing over	2007.6						[]					
20	Reserving fund for maintenance works	2007.1 -						[]					
21	Routine maintenance	2007.7 -						[]					
22	Periodical maintenance	2008.7 -						[]	[]	[]	[]	[]	
23	Periodical repair works	2012.6 -											[]
24	Establishment period inspection visit (Module 8)	2007.11 -						[]	[]	[]	[]	[]	
25	Dzongkhag water users' association conference (Module 9)	2008.1 -						[]	[]	[]	[]	[]	

VI. Implementation and Monitoring System

Action	Plan	
Progress Management of A/P	WHO	DE/DAO, Mongar Dzongkhag
	WHEN	Monthly basis
	WHERE	Mongar Dzongkhag Engineering/Agriculture Office
	HOW	Monthly Report prepared by Site Engineer of Dzongkhag
Budget Management at Preparatory Stage	WHO	Superintending Engineer, DRDS, MOA
	WHEN	Every Financial Year
	WHERE	MOA Office, Thimphu
	HOW	As per Financial Manual of Royal Government of Bhutan
Budget Management at Implementation Stage	WHO	DAO, Mongar Dzongkhag
	WHEN	Monthly basis
	WHERE	Mongar Dzongkhag Agriculture Office
	HOW	As per Financial Manual of Royal Government of Bhutan
Budget Management at O&M Stage	WHO	Chairperson, WUA
	WHEN	Monthly basis
	WHERE	Accountant, WUA
	HOW	Constitution/Bylaws enacted in WUA
Problem Solving	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.
	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
	HOW	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) Program for Food Crop Production Increase		
Sub-program	(SP-4) Backyard Animal Husbandry SP		
Stakeholders	Level	Organization / Name	Contact Person
	National	PPBC	Regional Manager of PPBC-Lingmithang
	Dzongkhag	Lhuntse Dzongkhag	DAHO, Veterinary hospital, Livestock - EA of Gewog
	Gewog	Gangzur Gewog	Gup, Livestock Working Group *
	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 carry out the action plan under the responsibility of Gup.

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To increase household income through backyard animal husbandry. <p style="text-align: center;">Target of Nos. of backyard animals</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Pig</th> <th colspan="3">Poultry (Chicken)</th> </tr> <tr> <th>a *</th> <th>b *</th> <th>c *</th> <th>a *</th> <th>b *</th> <th>c *</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td style="text-align: center;">464</td> <td style="text-align: center;">48%</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">1960</td> <td style="text-align: center;">85%</td> <td style="text-align: center;">4.2</td> </tr> <tr> <td>2012 (B)</td> <td style="text-align: center;">705</td> <td style="text-align: center;">60%</td> <td style="text-align: center;">1.2</td> <td style="text-align: center;">3500</td> <td style="text-align: center;">90%</td> <td style="text-align: center;">6.3</td> </tr> </tbody> </table> <p><small>Note: Assuming that households increase to 128% during 10 years (459→580) a*: Nos. of animals, b*: Ratio of rearing farmers, c*: Average nos. of rearing animals</small></p> <ul style="list-style-type: none"> To improve efficiency of animal husbandry using surplus cereals to animal feed. 		Pig			Poultry (Chicken)			a *	b *	c *	a *	b *	c *	Present (A)	464	48%	1.0	1960	85%	4.2	2012 (B)	705	60%	1.2	3500	90%	6.3											
	Pig			Poultry (Chicken)																																			
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Present (A)	464	48%	1.0	1960	85%	4.2																																	
2012 (B)	705	60%	1.2	3500	90%	6.3																																	
Activities	<ul style="list-style-type: none"> 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, 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). 																																						
Input	<ul style="list-style-type: none"> Distribution of subsidized backyard animals (cash and carrying): 10 farmers, 2 piglets per farmer, during 8 years, 30 farmers, 10 chicks per farmer, during 8 years. 																																						
Output	<ul style="list-style-type: none"> Backyard animal husbandry is activated in Gewog, Income of farm household increase, <p style="text-align: center;">Average income per household by backyard animals</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Pig</th> <th colspan="3">Chicken</th> <th rowspan="2">Total (Nu./hh)</th> </tr> <tr> <th>a *</th> <th>b *</th> <th>c *</th> <th>a *</th> <th>b *</th> <th>c *</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td style="text-align: center;">1.0</td> <td style="text-align: center;">4500</td> <td style="text-align: center;">4500</td> <td style="text-align: center;">4.2</td> <td style="text-align: center;">200</td> <td style="text-align: center;">840</td> <td style="text-align: center;">5340</td> </tr> <tr> <td>2012 (B)</td> <td style="text-align: center;">1.2</td> <td style="text-align: center;">6400</td> <td style="text-align: center;">7680</td> <td style="text-align: center;">6.3</td> <td style="text-align: center;">250</td> <td style="text-align: center;">1575</td> <td style="text-align: center;">9255</td> </tr> <tr> <td>(B) / (A)</td> <td style="text-align: center;">120%</td> <td style="text-align: center;">142%</td> <td style="text-align: center;">171%</td> <td style="text-align: center;">150%</td> <td style="text-align: center;">125%</td> <td style="text-align: center;">188%</td> <td style="text-align: center;">173%</td> </tr> </tbody> </table> <p><small>a*: average nos. of animals, b*: production value (Nu./animal/year) c*: production value (Nu./hh)</small></p> <ul style="list-style-type: none"> 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. 		Pig			Chicken			Total (Nu./hh)	a *	b *	c *	a *	b *	c *	Present (A)	1.0	4500	4500	4.2	200	840	5340	2012 (B)	1.2	6400	7680	6.3	250	1575	9255	(B) / (A)	120%	142%	171%	150%	125%	188%	173%
	Pig			Chicken			Total (Nu./hh)																																
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(B) / (A)	120%	142%	171%	150%	125%	188%	173%																																
Period	<ul style="list-style-type: none"> Training of EAs and planning of on Backyard Animal husbandry 8. 2003 – 12. 2003 FFS, Demonstration Plot, FST, Piglet/chick distribution 7. 2004 - 2012 																																						
Related Program /																																							

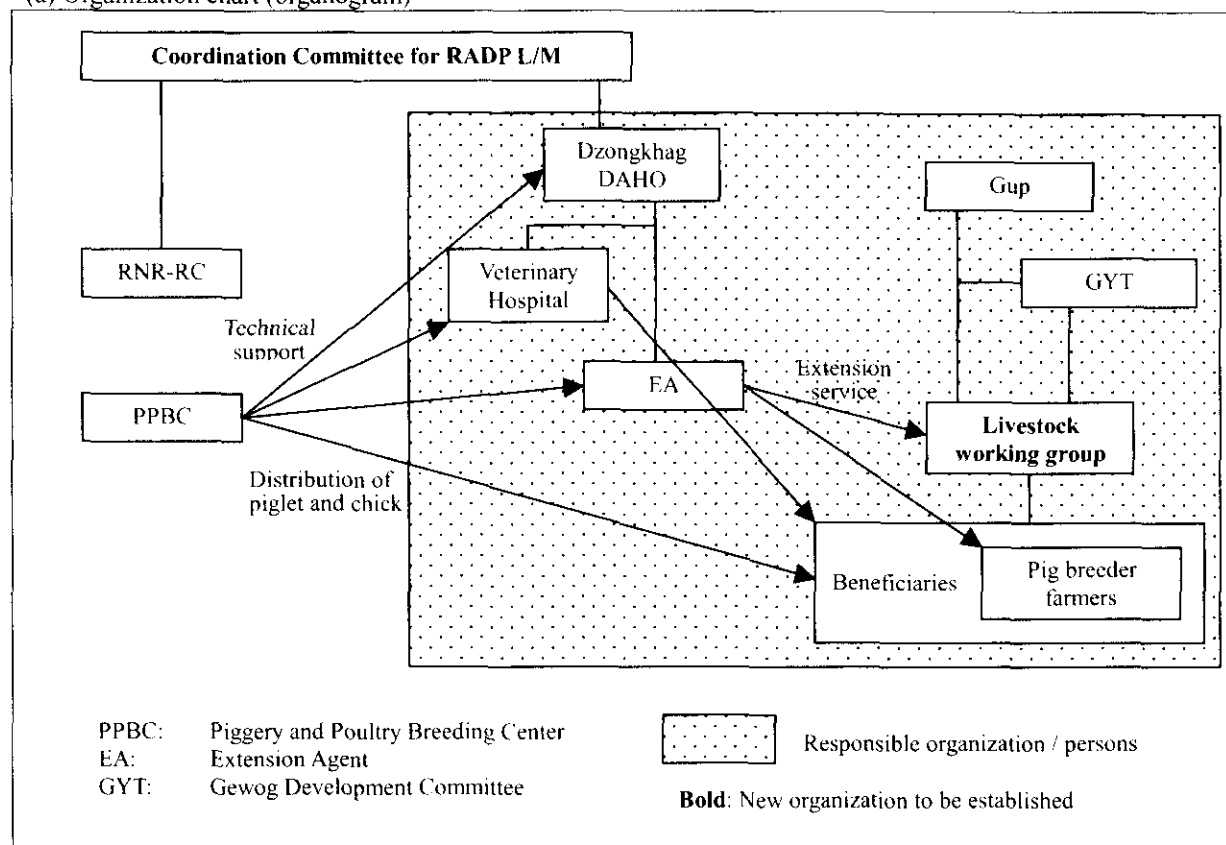
Sub-program (How)	
Project Justification	<ul style="list-style-type: none"> • Environment: It should be paid attention to water pollution by excretions of animals. The excretions should be used to preparation of FYM. • Financial variability: • Capacity building of EA and Food Crop Working Group, farmers participation to extension activities.

* **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 style="list-style-type: none"> • Breeding of pig and poultry for distribution, • Technical support for EA training and farmers.
Dzungkhag	DAHO	• Overall coordination and support of extension service, training of EAs.
	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	• 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 (WHAT)		Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Preparation of training program	DAHO	<ul style="list-style-type: none"> 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 style="list-style-type: none"> improvement of animal husbandry included animal shed improvement, pig breeding, improvement of animal health control, preparation of FYM using animal dung, improvement of extension system (Farmers Field School, Demonstration farm, farmers participation to extension activities, activities of livestock working group of GYT, etc.), preparation of backyard animal promotion plan.
2	Training of EAs on backyard animal husbandry	DAHO	<ul style="list-style-type: none"> DAHO provides EA training on animal husbandry supported by PPBC according to above program.
3	Organizing of livestock working group	Gup / GYT	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Livestock working group in cooperation with EA prepares the promotion plan including animal distribution plan.
5	Request of budget allocation for animal distribution	Gup	<ul style="list-style-type: none"> 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 style="list-style-type: none"> DAHO discusses with PPBC on breeding/distribution plan of animals based on the Gewog plan.
7	Allocation of budget	DAHO	<ul style="list-style-type: none"> 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.
8	Distribution of subsidized piglet and chick	Gup / Livestock Working Group	<ul style="list-style-type: none"> Gup request distribution to PPBC through animal distribution according to the approved budget plan, Livestock Working Group distributes them to beneficiaries.
9	Implementation of Demonstration Livestock Farm	EA and Livestock Working Group	<ul style="list-style-type: none"> 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.
10	Implementation of Farmers Field School (FFS)	EA and Livestock Working Group	<ul style="list-style-type: none"> 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.

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	Preparation of training program	7. 2003 – 8. 2003		<input type="checkbox"/>									
2	Training of EAs on backyard animal husbandry	8. 2003, 1. 2004		<input type="checkbox"/>									
3	Organizing of livestock working group	8. 2003 – 9. 2003		<input type="checkbox"/>									

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
4	Preparation of backyard animal promotion plan	10.2003 – 12. 2003		<input type="checkbox"/>									
5	Request of budget allocation for animal distribution	12. 2003		<input type="checkbox"/>									
6	Breeding plan of piglet and chick	12. 2003		<input type="checkbox"/>									
7	Allocation of budget	12.2003 – 6. 2004		<input type="checkbox"/>									
8	Distribution of subsidized piglet and chick	2005 -			<input type="checkbox"/>								
9	Implementation of Demonstration Livestock Farm	2005 -			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10	Implementation of Farmers Field School (FFS)	1. 2007 – 6. 2008			<input type="checkbox"/>								

VI. Implementation and Monitoring System of Action Plan

Action	Plan
Progress Management of A/P	WHO • DAHO for Dzongkhag, Gup for Gewog
	WHEN • Every 3 months during 2003 – 2005, and annually from 2006
	WHERE • Dzongkhag
	HOW • DAHO reviews quarterly the progress based on the report of progress and monitoring from Gup.
Budget Management at Preparatory Stage	WHO • Gup for Gewog, DAHO for Dzongkhag
	WHEN • From 12. 2003 to 6. 2004
	WHERE • Gewog to DAHO, and Dzongkhag to MOA
	HOW • Gup should request the budget to DAHO, and Dzongkhag presents it MOA after approval by DYT
Budget Management at Implementation Stage	WHO • DAHO
	WHEN • Every year
	WHERE • Dzongkhag
	HOW • Budget for FYP and annual will be approved by DYT. Approved budget will be managed by DAO
Budget Management at O&M Stage	WHO
	WHEN
	WHERE
	HOW
Problem Solving	WHO • DAHO
	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

2.2 Backyard Animal Husbandry SP ~ Chaskhar, Mongar

I. General

Sheet No. AP-17

Program	(RADP P1) Program for Food Crop Production Increase		
Sub-program	(SP-4) Backyard Animal Husbandry SP		
Stakeholders	Level	Organization / Name	Contact Person
	National	PPBC	Regional Manager of PPBC-Lingmithang
	Dzongkhag	Mongar Dzongkhag	DAHO, Veterinary hospital, Livestock - EA of Gewog
	Gewog	Chaskhar Gewog	Gup, Livestock Working Group *
	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 carry out the action plan under the responsibility of Gup.

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To increase household income through backyard animal husbandry <p style="text-align: center;">Target of Nos. of backyard animals</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Pig</th> <th colspan="3">Poultry (Chicken)</th> </tr> <tr> <th>a *</th> <th>b *</th> <th>c *</th> <th>a *</th> <th>b *</th> <th>c *</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td style="text-align: center;">350</td> <td style="text-align: center;">52%</td> <td style="text-align: center;">0.8</td> <td style="text-align: center;">1290</td> <td style="text-align: center;">75%</td> <td style="text-align: center;">3.2</td> </tr> <tr> <td>2012 (B)</td> <td style="text-align: center;">620</td> <td style="text-align: center;">60%</td> <td style="text-align: center;">1.2</td> <td style="text-align: center;">3050</td> <td style="text-align: center;">85%</td> <td style="text-align: center;">6.0</td> </tr> </tbody> </table> <p>Note: Assuming that households increase to 128% during 10 years (401 → 510) a*: Nos. of animals, b*: Ratio of rearing farmers, c*: Average nos. of rearing animals</p> <ul style="list-style-type: none"> To improve efficiency of animal husbandry using surplus cereals to animal feed 		Pig			Poultry (Chicken)			a *	b *	c *	a *	b *	c *	Present (A)	350	52%	0.8	1290	75%	3.2	2012 (B)	620	60%	1.2	3050	85%	6.0											
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Input	<ul style="list-style-type: none"> Distribution of subsidized backyard animals: <ul style="list-style-type: none"> 5 farmers, 2 piglets per farmer, during 8 years (farmers buy) 5 farmers, 10 chicks per farmer, during 8 years (farmers buy) 																																						
Output	<ul style="list-style-type: none"> Backyard animal husbandry is activated in Gewog, Income of farm household increase, <p style="text-align: center;">Average income per household by backyard animals</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 5px;"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Pig</th> <th colspan="3">Chicken</th> <th rowspan="2">Total (Nu./hh)</th> </tr> <tr> <th>a *</th> <th>b *</th> <th>c *</th> <th>a *</th> <th>b *</th> <th>c *</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td style="text-align: center;">0.8</td> <td style="text-align: center;">4500</td> <td style="text-align: center;">3600</td> <td style="text-align: center;">3.2</td> <td style="text-align: center;">200</td> <td style="text-align: center;">640</td> <td style="text-align: center;">4240</td> </tr> <tr> <td>2012 (B)</td> <td style="text-align: center;">1.2</td> <td style="text-align: center;">6400</td> <td style="text-align: center;">7680</td> <td style="text-align: center;">6.0</td> <td style="text-align: center;">250</td> <td style="text-align: center;">1500</td> <td style="text-align: center;">9180</td> </tr> <tr> <td>(B) / (A)</td> <td style="text-align: center;">150%</td> <td style="text-align: center;">142%</td> <td style="text-align: center;">213%</td> <td style="text-align: center;">188%</td> <td style="text-align: center;">125%</td> <td style="text-align: center;">234%</td> <td style="text-align: center;">217%</td> </tr> </tbody> </table> <p>a*: average nos. of animals, b*: production value (Nu./animal/year) c*: production value (Nu./hh)</p> <ul style="list-style-type: none"> 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. 		Pig			Chicken			Total (Nu./hh)	a *	b *	c *	a *	b *	c *	Present (A)	0.8	4500	3600	3.2	200	640	4240	2012 (B)	1.2	6400	7680	6.0	250	1500	9180	(B) / (A)	150%	142%	213%	188%	125%	234%	217%
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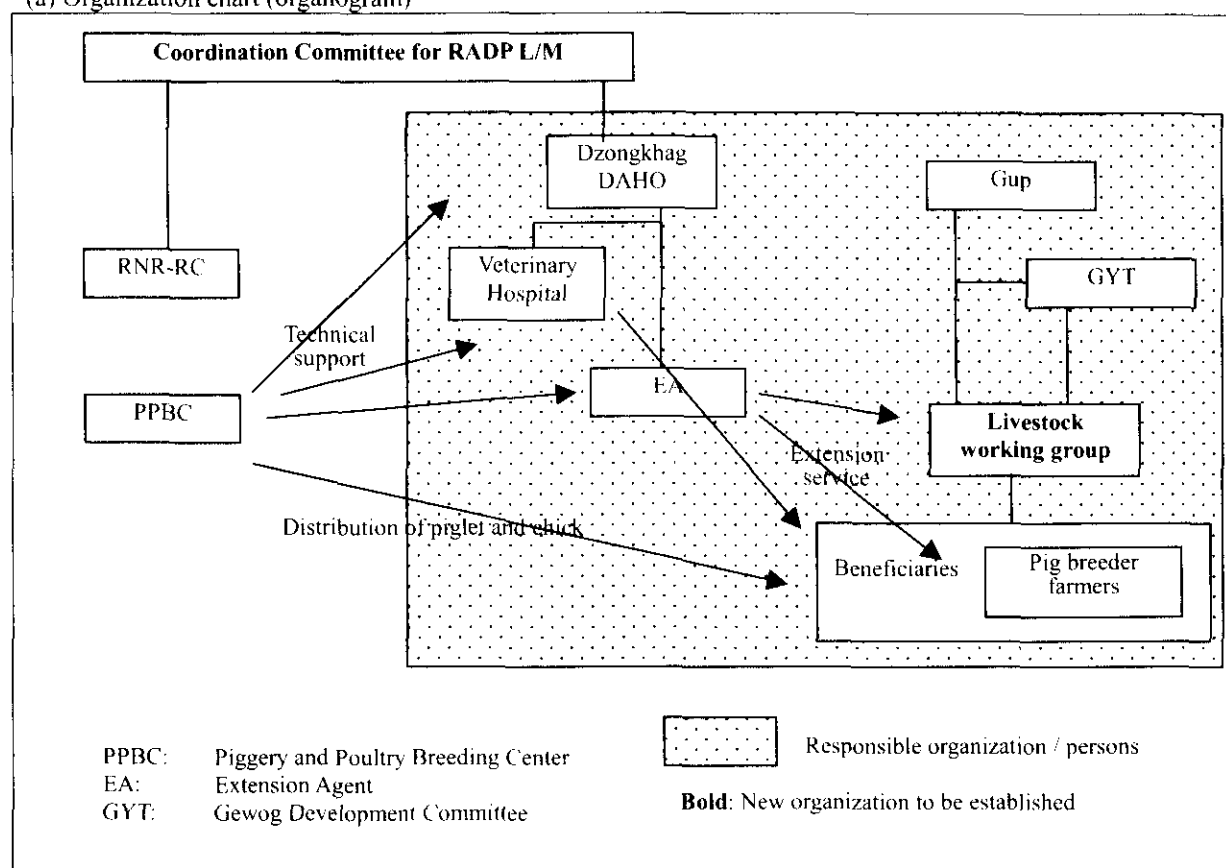
Sub-program (How)	
Project Justification	<ul style="list-style-type: none"> Environment: It should be paid attention to water pollution by excretions of animals. The excretions should be used to preparation of FYM. Financial variability: Capacity building of EA and Food Crop Working Group, farmers participation to extension activities.

* **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 style="list-style-type: none"> Breeding of pig and poultry for distribution, Technical support for EA training and farmers
Dzongkhag	DAHO	<ul style="list-style-type: none"> Overall coordination and support of extension service, training of EAs
	Veterinary hospital	<ul style="list-style-type: none"> Animal health service,
	Livestock EA	<ul style="list-style-type: none"> Technical guidance and extension service to farmers; Involving farmers in FFS, Demonstration farm
Gewog	Gup / Livestock Working Group	<ul style="list-style-type: none"> Cooperation and participation to extension activities of EA, and organizing farmers group activities
Beneficiaries		<ul style="list-style-type: none"> Participation to extension activities of EA

IV. Action Plan (sequent)

Required Action (WHAT)		Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Preparation of training program	DAHO	<ul style="list-style-type: none"> 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 style="list-style-type: none"> improvement of animal husbandry included animal shed improvement, pig breeding, improvement of animal health control, preparation of FYM using animal dung improvement of extension system (Farmers Field School, Demonstration farm, farmers participation to extension activities, activities of livestock working group of GYT, etc.), preparation of backyard animal promotion plan.
2	Training of EAs on backyard animal husbandry	DAHO	<ul style="list-style-type: none"> DAHO provides EA training on animal husbandry supported by PPBC according to above program.
3	Organizing of livestock working group	Gup / GYT	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Livestock working group in cooperation with EA prepares the promotion plan including animal distribution plan.
5	Request of budget allocation for animal distribution	Gup	<ul style="list-style-type: none"> 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 style="list-style-type: none"> DAHO discusses with PPBC on breeding/distribution plan of animals based on the Gewog plan.
7	Allocation of budget	DAHO	<ul style="list-style-type: none"> 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.
8	Distribution of subsidized piglet and chick	Gup / Livestock Working Group	<ul style="list-style-type: none"> Gup request distribution to PPBC through animal distribution according to the approved budget plan, Livestock Working Group distributes them to beneficiaries.
9	Implementation of Demonstration Livestock Farm	EA and Livestock Working Group	<ul style="list-style-type: none"> 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 other farm households at every 2 years. EA regularly (every month) visit the farm and give technical guidance to the farmer.
10	Implementation of Farmers Field School (FFS)	EA and Livestock Working Group	<ul style="list-style-type: none"> 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.

V. Schedule

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Preparation of training program	7. 2003 – 8. 2003		<input type="checkbox"/>									
2	Training of EAs on backyard animal husbandry	8. 2003, 1. 2004		<input type="checkbox"/>									
3	Organizing of livestock working group	8. 2003 – 9. 2003		<input type="checkbox"/>									

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
4	Preparation of backyard animal promotion plan	10.2003 – 12. 2003		<input type="checkbox"/>									
5	Request of budget allocation for animal distribution	12. 2003		<input type="checkbox"/>									
6	Breeding plan of piglet and chick	12. 2003		<input type="checkbox"/>									
7	Allocation of budget	12.2003 – 6. 2004		<input type="checkbox"/>									
8	Distribution of subsidized piglet and chick	2005 -			<input type="checkbox"/>								
9	Implementation of Demonstration Livestock Farm	2005 -			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10	Implementation of Farmers Field School (FFS)	1. 2007 – 6. 2008			<input type="checkbox"/>								

VI. Implementation and Monitoring System of Action Plan

Action	Plan	
Progress Management of A/P	WHO	• DAHO for Dzongkhag, Gup for Gewog
	WHEN	• Every 3 months during 2003 – 2005, and annually from 2006
	WHERE	• Dzongkhag
	HOW	• DAHO reviews quarterly the progress based on the report of progress and monitoring from Gup.
Budget Management at Preparatory Stage	WHO	• Gup for Gewog, DAHO for Dzongkhag
	WHEN	• From 12. 2003 to 6. 2004
	WHERE	• Gewog to DAHO, and Dzongkhag to MOA
	HOW	• Gup should request the budget to DAHO, and Dzongkhag presents it MOA after approval by DYT
Budget Management at Implementation Stage	WHO	• DAHO
	WHEN	• Every year
	WHERE	• Dzongkhag
	HOW	• Budget for FYP and annual will be approved by DYT. Approved budget will be managed by DAO
Budget Management at O&M Stage	WHO	
	WHEN	
	WHERE	
	HOW	
Problem Solving	WHO	• DAHO
	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) Program for Food Crop Production Increase		
Sub-program	(SP-4) Backyard Animal Husbandry SP		
Stakeholders	Level	Organization / Name	Contact Person
	National	PPBC	Regional Manager of PPBC-Lingmithang
	Dzongkhag	Mongar Dzongkhag	DAHO, Veterinary hospital, Livestock - EA of Gewog
	Gewog	Drepong Gewog	Gup, Livestock Working Group *
	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 carry out the action plan under the responsibility of Gup.

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To increase household income through backyard animal husbandry <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="7" style="text-align: center;">Target of Nos. of backyard animals</th> </tr> <tr> <th></th> <th colspan="3" style="text-align: center;">Pig</th> <th colspan="3" style="text-align: center;">Poultry (Chicken)</th> </tr> <tr> <th></th> <th style="text-align: center;">a *</th> <th style="text-align: center;">b *</th> <th style="text-align: center;">c *</th> <th style="text-align: center;">a *</th> <th style="text-align: center;">b *</th> <th style="text-align: center;">c *</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Present (A)</td> <td style="text-align: center;">130</td> <td style="text-align: center;">45%</td> <td style="text-align: center;">0.6</td> <td style="text-align: center;">470</td> <td style="text-align: center;">61%</td> <td style="text-align: center;">2.2</td> </tr> <tr> <td style="text-align: center;">2012 (B)</td> <td style="text-align: center;">330</td> <td style="text-align: center;">60%</td> <td style="text-align: center;">1.2</td> <td style="text-align: center;">1650</td> <td style="text-align: center;">85%</td> <td style="text-align: center;">6.0</td> </tr> </tbody> </table> <p style="font-size: small;">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</p>	Target of Nos. of backyard animals								Pig			Poultry (Chicken)				a *	b *	c *	a *	b *	c *	Present (A)	130	45%	0.6	470	61%	2.2	2012 (B)	330	60%	1.2	1650	85%	6.0												
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Output	<ul style="list-style-type: none"> Backyard animal husbandry is activated in Gewog, Income of farm household increase, <table border="1" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th colspan="8" style="text-align: center;">Average income per household by backyard animals</th> </tr> <tr> <th></th> <th colspan="3" style="text-align: center;">Pig</th> <th colspan="3" style="text-align: center;">Chicken</th> <th rowspan="2" style="text-align: center;">Total (Nu./hh)</th> </tr> <tr> <th></th> <th style="text-align: center;">a *</th> <th style="text-align: center;">b *</th> <th style="text-align: center;">c *</th> <th style="text-align: center;">a *</th> <th style="text-align: center;">b *</th> <th style="text-align: center;">c *</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Present (A)</td> <td style="text-align: center;">0.6</td> <td style="text-align: center;">4500</td> <td style="text-align: center;">2700</td> <td style="text-align: center;">2.2</td> <td style="text-align: center;">200</td> <td style="text-align: center;">440</td> <td style="text-align: center;">3140</td> </tr> <tr> <td style="text-align: center;">2012 (B)</td> <td style="text-align: center;">1.2</td> <td style="text-align: center;">6400</td> <td style="text-align: center;">7680</td> <td style="text-align: center;">6.0</td> <td style="text-align: center;">250</td> <td style="text-align: center;">1500</td> <td style="text-align: center;">9180</td> </tr> <tr> <td style="text-align: center;">(B) / (A)</td> <td style="text-align: center;">200%</td> <td style="text-align: center;">142%</td> <td style="text-align: center;">291%</td> <td style="text-align: center;">273%</td> <td style="text-align: center;">125%</td> <td style="text-align: center;">234%</td> <td style="text-align: center;">341%</td> </tr> </tbody> </table> <p style="font-size: small;">a*: average nos. of animals, b*: production value (Nu./animal/year) c*: production value (Nu./hh)</p> <ul style="list-style-type: none"> 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. 	Average income per household by backyard animals									Pig			Chicken			Total (Nu./hh)		a *	b *	c *	a *	b *	c *	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%
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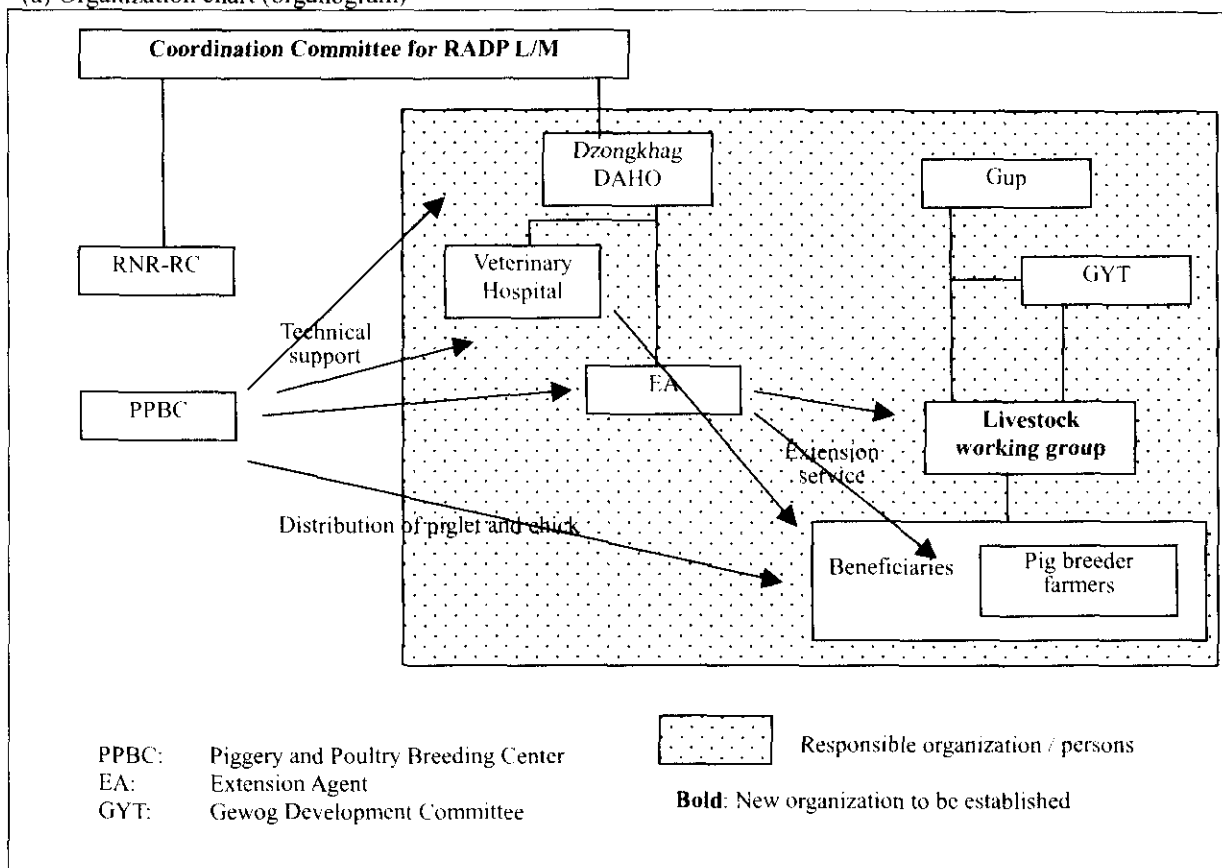
Sub-program (How)	
Project Justification	<ul style="list-style-type: none"> • Environment: It should be paid attention to water pollution by excretions of animals. The excretions should be used to preparation of FYM. • Financial variability: • Capacity building of EA and Food Crop Working Group, farmers participation to extension activities.

* **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 style="list-style-type: none"> • Breeding of pig and poultry for distribution, • Technical support for EA training and farmers
Dzongkhag	DAHO	<ul style="list-style-type: none"> • Overall coordination and support of extension service, training of EAs
	Veterinary hospital	<ul style="list-style-type: none"> • Animal health service,
	Livestock EA	<ul style="list-style-type: none"> • Technical guidance and extension service to farmers; Involving farmers in FFS, Demonstration farm
Gewog	Gup / Livestock Working Group	<ul style="list-style-type: none"> • Cooperation and participation to extension activities of EA, and organizing farmers group activities
Beneficiaries		<ul style="list-style-type: none"> • Participation to extension activities of EA

IV. Action Plan (sequent)

Required Action (WHAT)		Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Preparation of training program	DAHO	<ul style="list-style-type: none"> 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 style="list-style-type: none"> improvement of animal husbandry included animal shed improvement, pig breeding, improvement of animal health control, preparation of FYM using animal dung improvement of extension system (Farmers Field School, Demonstration farm, farmers participation to extension activities, activities of livestock working group of GYT, etc.), preparation of backyard animal promotion plan.
2	Training of EAs on backyard animal husbandry	DAHO	<ul style="list-style-type: none"> DAHO provides EA training on animal husbandry supported by PPBC according to above program.
3	Organizing of livestock working group	Gup / GYT	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Livestock working group in cooperation with EA prepares the promotion plan including animal distribution plan.
5	Request of budget allocation for animal distribution	Gup	<ul style="list-style-type: none"> 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 style="list-style-type: none"> DAHO discusses with PPBC on breeding/distribution plan of animals based on the Gewog plan.
7	Allocation of budget	DAHO	<ul style="list-style-type: none"> 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.
8	Distribution of subsidized piglet and chick	Gup / Livestock Working Group	<ul style="list-style-type: none"> Gup request distribution to PPBC through animal distribution according to the approved budget plan, Livestock Working Group distributes them to beneficiaries.
9	Implementation of Demonstration Livestock Farm	EA and Livestock Working Group	<ul style="list-style-type: none"> 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.
10	Implementation of Farmers Field School (FFS)	EA and Livestock Working Group	<ul style="list-style-type: none"> 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.

V. Schedule

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Preparation of training program	7. 2003 – 8. 2003		<input type="checkbox"/>									
2	Training of EAs on backyard animal husbandry	8. 2003, 1. 2004		<input type="checkbox"/>									
3	Organizing of livestock working group	8. 2003 – 9. 2003		<input type="checkbox"/>									

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
4	Preparation of backyard animal promotion plan	10.2003 – 12. 2003		<input type="checkbox"/>									
5	Request of budget allocation for animal distribution	12. 2003		<input type="checkbox"/>									
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9	Implementation of Demonstration Livestock Farm	2005 -			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>					
10	Implementation of Farmers Field School (FFS)	1. 2007 – 6. 2008			<input type="checkbox"/>								

VI. Implementation and Monitoring System of Action Plan

Action	Plan	
Progress Management of A/P	WHO	• DAHO for Dzongkhag, Gup for Gewog
	WHEN	• Every 3 months during 2003 – 2005, and annually from 2006
	WHERE	• Dzongkhag
	HOW	• DAHO reviews quarterly the progress based on the report of progress and monitoring from Gup.
Budget Management at Preparatory Stage	WHO	• Gup for Gewog, DAHO for Dzongkhag
	WHEN	• From 12. 2003 to 6. 2004
	WHERE	• Gewog to DAHO, and Dzongkhag to MOA
	HOW	• Gup should request the budget to DAHO, and Dzongkhag presents it MOA after approval by DYT
Budget Management at Implementation Stage	WHO	• DAHO
	WHEN	• Every year
	WHERE	• Dzongkhag
	HOW	• Budget for FYP and annual will be approved by DYT. Approved budget will be managed by DAO
Budget Management at O&M Stage	WHO	
	WHEN	
	WHERE	
	HOW	
Problem Solving	WHO	• DAHO
	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

3.1 Market System Development Program ~ Gangzur, Lhuntse

I. General

Program		Market System Development Program		Sheet No.	AP-19
Sub-program		Group Assembling (SP2) / Group Assembling and Marketing (SP3)			
Stakeholders	Level	Organization / Name		Contact Person	
	National	AMS/PPD, MOA		Tel: 324898 (AMS)	
	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.

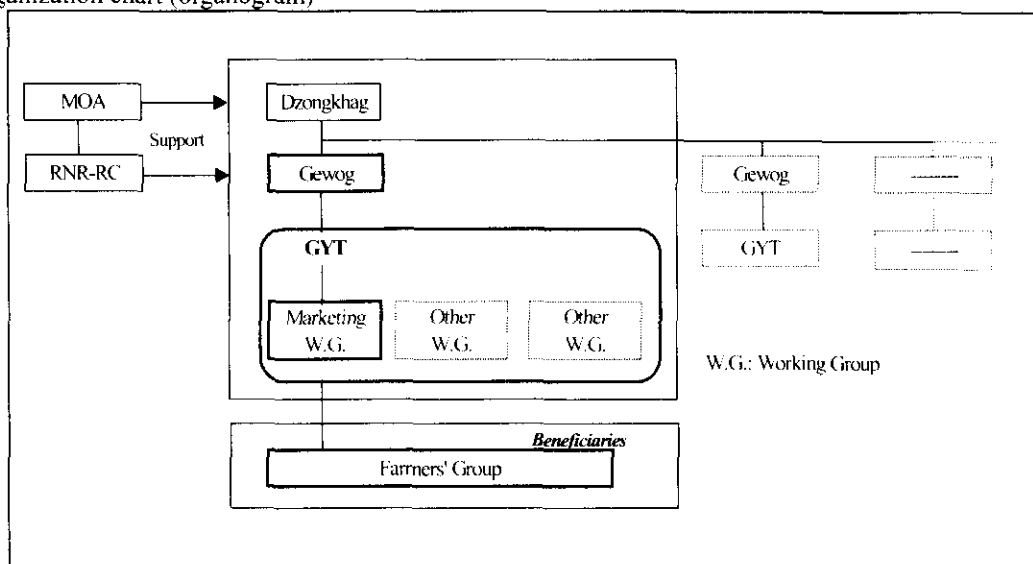
II. Program/Sub-program

Target	<ul style="list-style-type: none"> To increase opportunity for farmers to meet buyers. To increase farmer's income and stability of sales. Participatory number of households in Gewog: about 280 (by 2008), Sale amount: About Nu. 2,800,000 of 670 tons (2012)
Activities	<ul style="list-style-type: none"> Organizing marketing working group in GYT. Organizing farmers group. Sunday market facility, which will be constructed near future, will be used for assembling place of products and for collection place for buyers. <p><u>SP2</u></p> <ul style="list-style-type: none"> 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. Carrying out the transaction between buyers and farmers in the market. <p><u>SP3</u></p> <ul style="list-style-type: none"> 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.
Input	<ul style="list-style-type: none"> Lhuntse Municipality Office has the plan of Sunday market construction in 2003. The facility will be used for collection depot for this Program. <p><u>SP2</u></p> <ul style="list-style-type: none"> Provision of trainers of <ul style="list-style-type: none"> Group activity Fostering leaders Business management Marketing, and Quality control <p><u>SP3</u></p> <ul style="list-style-type: none"> Provision of market information of Mongar market by the DOA and of the auction yard in Samdrup Jongkhar by FCB Provision of Trainers of <ul style="list-style-type: none"> Management and marketing, and Information collection and analysis to the management members
Output	<ul style="list-style-type: none"> More buyers will come to buy the products. Farmers will have more opportunity to sell their products. Generating bargaining power to market. Creation of stable marketing condition. Possibilities of expanding activities to the fields of agro-processing activity for adding value of products

	<ul style="list-style-type: none"> Participatory number of households in Gewog: about 280 (by 2008) Handling quantity of planed marketable cash crop production in Gewog: 670 tons
Period	<ul style="list-style-type: none"> Weekly market construction: by 2003 <p style="text-align: right;">For SP2-3: 2004-</p>
Related Program / Sub-program (How)	<ul style="list-style-type: none"> Sunday market will be constructed based on Construction Plan by the Lhuntse Municipality Office. The market is also effective collection point of "Marketing Support Program by FCB (SB-4)".
Project Justification	<ul style="list-style-type: none"> 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. To ensure income increase of farmers as the upper goal, these sub-programs are 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

Stakeholder		General Role and Responsibility
National	MOA, RNR-RC	<ul style="list-style-type: none"> MOA and RNR-RC will provide experts for training by the request from Lhuntse Dzongkhag.
Dzongkhag	DAO, EAs	<ul style="list-style-type: none"> Dzongkhag and Municipality Office will allow the farmers group to use Weekly Market facility. DAO and EAs will promote farmers' group activities and provide the support for training and market information.
Gewog	GYT	<ul style="list-style-type: none"> Administrative implementation body. Marketing Working Group in GYT will promote farmers' group activity for marketing and the group will be actual implementing body for the programs.
Beneficiaries	Farmers	<ul style="list-style-type: none"> Participation to group activity.

IV. Action Plan (sequent)

Required Action (WHAT)	Sub-Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Marketing Working Group	2,3	Gewog (GYT)	<ul style="list-style-type: none"> 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 style="list-style-type: none"> MOA will provide the training to EAs and members of marketing working group of GYT concerning promotion of group activities and organizing farmers.

Required Action (WHAT)		Sub-Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
3	Promotion of organizing farmers	2	Gewog (GYT)	<ul style="list-style-type: none"> GYT will promote and organize farmers in collaboration with EAs.
4	Fostering leaders	2	Gewog (GYT)	<ul style="list-style-type: none"> GYT will foster leaders and organize leaders group in collaboration with EAs.
5	Training of leaders (1)	2	MOA, RNR-RC	<ul style="list-style-type: none"> MOA will provide the training to leaders concerning management of group activities and marketing.
6	Sales promotion	2	Farmers group	<ul style="list-style-type: none"> Leaders of the group will promote buyers' coming to a depot. DAO, EAs and staffs of marketing section of GYT will cooperate them.
7	Group shipment	2	Farmers group	<ul style="list-style-type: none"> The farmers group will start the group shipment. They will start from small quantity and less time of shipment, and increase gradually. DAO, EAs and staffs of marketing section of GYT will support and cooperate their activity.
8	Training of leaders (2)	2, 3	MOA, RNR-RC	<ul style="list-style-type: none"> 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.
9	Grading activity	2,3	Farmers group	<ul style="list-style-type: none"> Leaders of the group will promote and start the grading activity in the depot. They will start from small quantity and increase gradually. DAO, EAs and staffs of marketing section of GYT will cooperate them.
10	Provision of market information	3	DAO	<ul style="list-style-type: none"> DAO will provide market information including Mongar market and the auction yard in Samdrup Jongkhar.
11	Direct sale activity	3	Farmers group	<ul style="list-style-type: none"> 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.

V. Schedule

Required Action (WHAT)		Period	03	04	05	06	07	08	09	10	11	12
1	Organizing of Marketing Working Group	By May		<input type="checkbox"/>								
2	Training of EAs and members of marketing working group of GYT	1 day		<input type="checkbox"/>								
3	Promotion of organizing farmers	By end of 2007		<input type="checkbox"/>								
4	Fostering leaders	By end of 2005		<input type="checkbox"/>								
5	Training of leaders (1)	2 days		<input type="checkbox"/>								
6	Sales promotion	By end of 2005		<input type="checkbox"/>								
7	Group shipment	Aug. of 2004 -		<input type="checkbox"/>								

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

VI. Implementation and Monitoring System

Action	Plan	
Progress Management of A/P	WHO	<ul style="list-style-type: none"> 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.
	WHEN	<ul style="list-style-type: none"> Monthly basis in the preparatory period and the sales season
	WHERE	<ul style="list-style-type: none"> DAO office of Lhuntse Dzongkhag / GYT Office
	HOW	<ul style="list-style-type: none"> Monthly report prepared by GYT / by leaders of the group will be submitted.
Budget Management at Preparatory Stage	WHO	
	WHEN	
	WHERE	
	HOW	
Budget Management at Implementation Stage	WHO	<ul style="list-style-type: none"> DAO, Lhuntse Dzongkhag
	WHEN	<ul style="list-style-type: none"> Monthly basis in the 2nd year only.
	WHERE	<ul style="list-style-type: none"> DAO office
	HOW	<ul style="list-style-type: none"> As per financial regulation.
Budget Management at O&M Stage	WHO	<ul style="list-style-type: none"> Leaders of the farmers group
	WHEN	<ul style="list-style-type: none"> Monthly basis
	WHERE	<ul style="list-style-type: none"> Any place authorized by the group.
	HOW	<ul style="list-style-type: none"> As per management regulation of the group.
Problem Solving	WHO	<ul style="list-style-type: none"> Budget arrangement: MOA Initial stage: Lhuntse Dzongkhag Afterwards: GYT (Marketing Section)
	WHEN	<ul style="list-style-type: none"> When the problems will occur.
	WHERE	<ul style="list-style-type: none"> Budget arrangement: None Initial stage: DAO office, Lhuntse Dzongkhag Afterwards: GYT office
	HOW	<ul style="list-style-type: none"> Budget arrangement: MOA will be consultation with MOF. Initial stage: DAO will discuss with EAs, member of GYT and leaders of the group. Afterwards: GYT will discuss with leaders of the group.

3.2 Market System Development Program ~ Chaskhar, Mongar

I. General

Program		Marketing System Development Program	Sheet No.	AP-20
Sub-program		Collection Depot Construction (SP1) / Group Assembling (SP2) / Group Assembling and Marketing (SP3)		
Stakeholders	Level	Organization / Name	Contact Person	
	National	AMS/PPD, MOA	Tel: 324898 (AMS)	
	Dzongkhag	Mongar	Tel: 641181 (DAO), EAs	
	Gewog	Chaskhar	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.

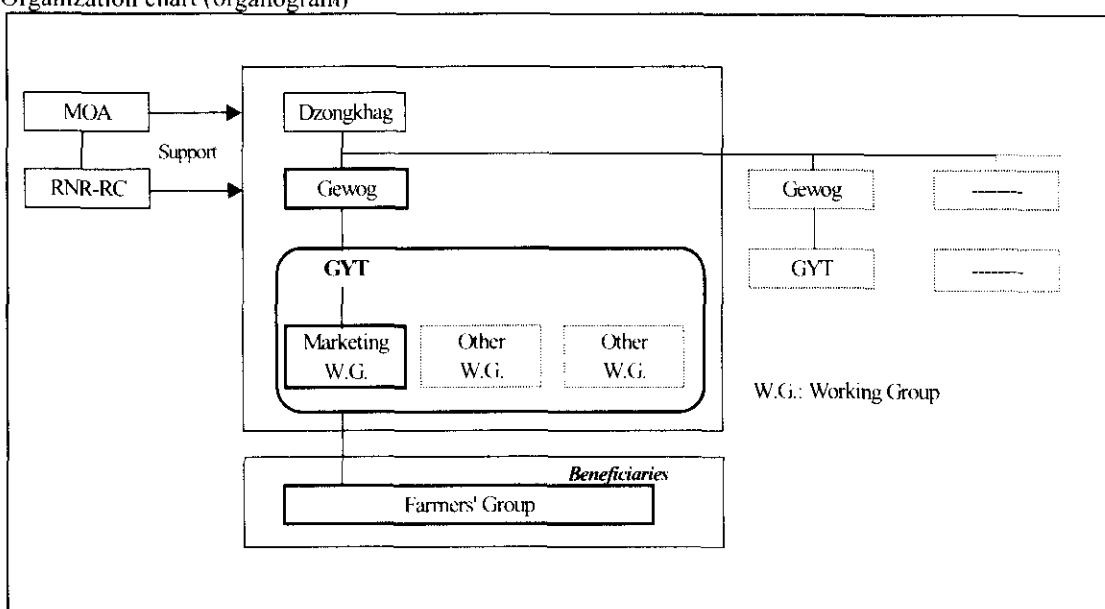
II. Program/Sub-program

Target	<ul style="list-style-type: none"> To increase opportunity for farmers to meet buyers. To increase farmer's income and stability of sales. Participatory number of households in Gewog: about 160 households (by 2007) Sales amount: About Nu. 2,200,000 of 490 tons (2012)
Activities	<p><u>SP1</u></p> <ul style="list-style-type: none"> Organizing marketing working group in GYT. Organizing farmers group. Construction of a depot beside the existing feeder road, which will be used for assembling place of products and for collection place for buyers. <p><u>SP2</u></p> <ul style="list-style-type: none"> 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. Carrying out the transaction between buyers and farmers at the depot. <p><u>SP3</u></p> <ul style="list-style-type: none"> 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.
Input	<p><u>SP1</u></p> <ul style="list-style-type: none"> Provision of construction materials for a depot (Nu. 80,000). Capacity: handling for 8tons of products. (30L x 10W x 3Hm) Construction site: Sangban village <p><u>SP2</u></p> <ul style="list-style-type: none"> Provision of trainers of <ul style="list-style-type: none"> Group activity Fostering leaders Business management Marketing, and Quality control <p><u>SP3</u></p> <ul style="list-style-type: none"> Provision of market information of Mongar market by the DOA and of the auction yard in Samdrup Jongkhar by FCB Provision of Trainers of <ul style="list-style-type: none"> Management and marketing, and Information collection and analysis to the management members
Output	<ul style="list-style-type: none"> Participatory number of households in Gewog: about 160 households Handling quantity of planed marketable cash crop production in Gewog: 490 tons
Period	<ul style="list-style-type: none"> Depot construction: 2004

Related Program / Sub-program (How)	<ul style="list-style-type: none"> For SP2-3: 2004- Depot will be constructed after completion of farm road construction work in the Gewog. The depot is also effective collection point of "Marketing Support Program by FCB (SP-4)".
Project Justification	<ul style="list-style-type: none"> 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. To ensure income increase of farmers as the upper goal, these sub-programs are 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

Stakeholder		General Role and Responsibility
National	MOA, RNR-RC	<ul style="list-style-type: none"> MOA will provide the budget for purchasing of collection depot materials. MOA and RNR-RC will provide experts for training by the request from Mongar Dzongkhag.
Dzongkhag	DAO, EAs	<ul style="list-style-type: none"> DAO and EAs will promote farmers' group activities and provide the support for training and market information.
Gewog	GYT	<ul style="list-style-type: none"> Administrative implementation body. Marketing Working Group in GYT will promote farmers' group activity for marketing and the group will be actual implementing body for the programs.
Beneficiaries	Farmers	<ul style="list-style-type: none"> Participation to group activity.

IV. Action Plan (sequent)

Required Action (WHAT)	Sub-Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Marketing Working Group	1,2,3	Gewog (GYT)	<ul style="list-style-type: none"> GYT of Gewog will organize Marketing Working Group under GYT.
2 Request of depot construction material	1	Gewog (GYT)	<ul style="list-style-type: none"> GYT of Gewog will prepare the request letter for provision of depot construction material in consultation with DAO.
3 Budget allocation	1	MOA	<ul style="list-style-type: none"> MOA will take procedure upon receipt of the request letter from Dzongkhag and allocate the budget to Dzongkhag for purchasing construction material for a

Required Action (WHAT)	Sub-Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
			depot.
4	1,2	MOA, RNR-RC	<ul style="list-style-type: none"> MOA will provide the training to EAs and members of marketing working group of GYT concerning promotion of group activities and organizing farmers.
5	1,2	Gewog (GYT)	<ul style="list-style-type: none"> GYT will promote and organize farmers in collaboration with EAs.
6	1,2	Gewog (GYT)	<ul style="list-style-type: none"> GYT will foster leaders and organize leaders group in collaboration with EAs.
7	1	Farmers group	<ul style="list-style-type: none"> 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	1	Dzongkhag	<ul style="list-style-type: none"> Dzongkhag will purchase and provide the construction material for depot to Gewog.
9	1	Farmers group	<ul style="list-style-type: none"> Members of the group will participate and carry out the depot construction work under supervision by GYT and EAs.
10	2	MOA, RNR-RC	<ul style="list-style-type: none"> MOA will provide the training to leaders concerning management of group activities and marketing.
11	2	Farmers group	<ul style="list-style-type: none"> Leaders of the group will promote buyers' coming to a depot. DAO, EAs and staffs of marketing section of GYT will cooperate them.
12	2	Farmers group	<ul style="list-style-type: none"> The farmers group will start the group shipment. They will start from small quantity and less time of shipment, and increase gradually. DAO, EAs and staffs of marketing section of GYT will support and cooperate their activity.
13	2,3	MOA, RNR-RC	<ul style="list-style-type: none"> 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.
14	2,3	Farmers group	<ul style="list-style-type: none"> Leaders of the group will promote and start the grading activity in the depot. They will start from small quantity and increase gradually. DAO, EAs and staffs of marketing section of GYT will cooperate them.
15	3	DAO	<ul style="list-style-type: none"> DAO will provide market information including Mongar market and the auction yard in Samdrup Jongkhar.
16	3	Farmers group	<ul style="list-style-type: none"> 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.

V. Schedule

Required Action (WHAT)	Period	03	04	05	06	07	08	09	10	11	12
1	Organizing of Marketing Working Group	By May	<input type="checkbox"/>								
2	Request of depot construction material	By Jun.	<input type="checkbox"/>								
3	Budget allocation	By Jun.		<input type="checkbox"/>							

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		□								
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.		□								
9	Construction of a depot	3 days		□								
10	Training of leaders (1)	2 days		□								
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 ~		□								
15	Provision of market information	2005 ~		□								
16	Direct sale activity	2006 ~		□								

VI. Implementation and Monitoring System

Action	Plan	
Progress Management of A/P	WHO	<ul style="list-style-type: none"> 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.
	WHEN	<ul style="list-style-type: none"> Monthly basis in the preparatory period and the sales season
	WHERE	<ul style="list-style-type: none"> DAO office of Mongar Dzongkhag / GYT Office
	HOW	<ul style="list-style-type: none"> Monthly report prepared by GYT / by leaders of the group will be submitted.
Budget Management at Preparatory Stage	WHO	<ul style="list-style-type: none"> PPD, MOA
	WHEN	<ul style="list-style-type: none"> Previous year for budget allocation.
	WHERE	<ul style="list-style-type: none"> MOA, Thimphu
	HOW	<ul style="list-style-type: none"> As per financial regulation after receipt of the request letter from Mongar Dzongkhag.
Budget Management at Implementation Stage	WHO	<ul style="list-style-type: none"> DAO, Dzongkhag
	WHEN	<ul style="list-style-type: none"> Monthly basis in the 2nd year only.
	WHERE	<ul style="list-style-type: none"> DAO office
	HOW	<ul style="list-style-type: none"> As per financial regulation.
Budget Management at O&M	WHO	<ul style="list-style-type: none"> Leaders of the farmers group

Stage	WHEN	<ul style="list-style-type: none"> Monthly basis
	WHERE	<ul style="list-style-type: none"> Any place authorized by the group.
	HOW	<ul style="list-style-type: none"> As per management regulation of the group.
Problem Solving	WHO	<ul style="list-style-type: none"> Budget arrangement: MOA Initial stage: Mongar Dzongkhag Afterwards: GYT (Marketing Section)
	WHEN	<ul style="list-style-type: none"> When the problems will occur.
	WHERE	<ul style="list-style-type: none"> Budget arrangement: MOA office Initial stage: DAO office, Mongar Dzongkhag Afterwards: GYT office
	HOW	<ul style="list-style-type: none"> Budget arrangement: MOA will be consultation with MOF. 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		Sheet No.	AP-21
Program	Market System Development Program		
Sub-program	Collection Depot Construction (SP1) / Group Assembling (SP2)		
Stakeholders	Level	Organization / Name	Contact Person
	National	AMS/PPD, MOA	Tel: 324898 (AMS)
	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.

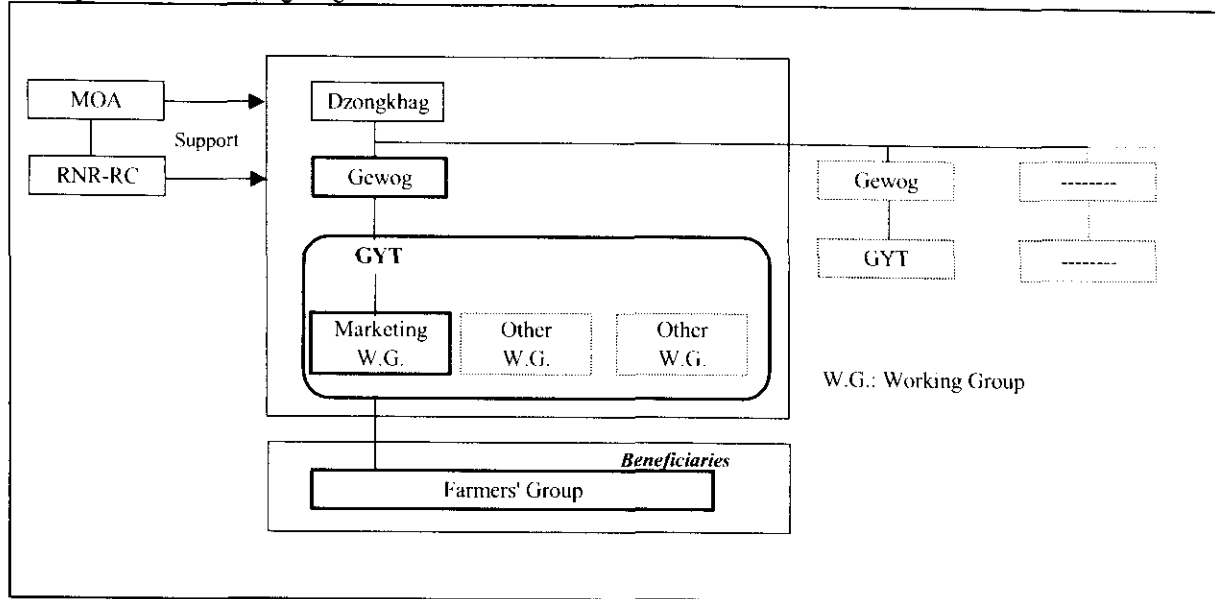
II. Program/Sub-program

Target	<ul style="list-style-type: none"> To increase opportunity for farmers to meet buyers. To increase farmer's income and stability of sales. Participatory number of households in Gewog: about 175 (by 2010) Sales amount: About NU. 1,500,000 of 350 tons (2012)
Activities	<p><u>SP1</u></p> <ul style="list-style-type: none"> 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. <p><u>SP2</u></p> <ul style="list-style-type: none"> 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. Carrying out the transaction between buyers and farmers at the depot.
Input	<p><u>SP1</u></p> <ul style="list-style-type: none"> Provision of construction materials for a depot (Nu.80,000). Capacity: handling for 8tons of products. (30Lx10Wx3Hm) Construction site: Drepong village <p><u>SP2</u></p> <ul style="list-style-type: none"> Provision of trainers of Group activity Fostering leaders Business management Marketing, and Quality control
Output	<ul style="list-style-type: none"> More buyers will come to buy the products. Farmers will have more opportunity to sell their products. Generating bargaining power to market. Creation of stable marketing condition. Participatory rate of households in Gewog: 80% (by 2010), about 175 households Handling rate of planed marketable cash crop production in Gewog: 80% (by 2010)
Period	<ul style="list-style-type: none"> Depot construction: 2007 For SP2: 2007-
Related Program / Sub-program (How)	<ul style="list-style-type: none"> Depot will be constructed after completion of farm road by "Farm Road Construction Program". The depot is also effective collection point of "Marketing Support Program by FCB (SP-4)".
Project Justification	<ul style="list-style-type: none"> The depot will be used for 175 of households and 350 ton of sale of marketable products. The investment for a depot construction is justifiable in view of publicity and expected marketing benefit. To ensure income increase of farmers as the upper goal, these sub-programs are 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

Stakeholder		General Role and Responsibility
National	MOA, RNR-RC	<ul style="list-style-type: none"> MOA will provide the budget for purchasing of collection depot materials. MOA and RNR-RC will provide experts for training by the request from Mongar Dzongkhag.
Dzongkhag	DAO, EAs	<ul style="list-style-type: none"> DAO and EAs will promote farmers' group activities and provide the support for training.
Gewog	GYT	<ul style="list-style-type: none"> Administrative implementation body. Marketing Working Group in GYT will promote farmers' group activity for marketing and the group will be actual implementing body for the programs.
Beneficiaries	Farmers	<ul style="list-style-type: none"> Participation to group activity.

IV. Action Plan (sequent)

Required Action (WHAT)	Sub-Program	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Marketing Working Group	1,2	Gewog (GYT)	<ul style="list-style-type: none"> GYT of Gewog will organize Marketing Working Group under GYT.
2 Request of depot construction material	1	Gewog (GYT)	<ul style="list-style-type: none"> GYT of Gewog will prepare the request letter for provision of depot construction material in consultation with DAO.
3 Budget allocation	1	MOA	<ul style="list-style-type: none"> 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 style="list-style-type: none"> MOA will provide the training to EAs and members of marketing working group of GYT concerning promotion of group activities and organizing farmers.
5 Promotion of organizing farmers	1,2	Gewog (GYT)	<ul style="list-style-type: none"> GYT will promote and organize farmers in collaboration with EAs.
6 Fostering leaders	1,2	Gewog (GYT)	<ul style="list-style-type: none"> 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 style="list-style-type: none"> Organized farmers group will consider and decide the appropriate place of a depot in Drepong village among members under supervision by GYT land EAs.
8	Provision of construction material	1	Dzongkhag	<ul style="list-style-type: none"> Mongar Dzongkhag will purchase and provide the construction material for depot to Gewog.
9	Construction of a depot	1	Farmers group	<ul style="list-style-type: none"> 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 style="list-style-type: none"> MOA will provide the training to leaders concerning management of group activities and marketing.
11	Sales promotion	2	Farmers group	<ul style="list-style-type: none"> Leaders of the group will promote buyers' coming to a depot. DAO, EAs and staffs of marketing section of GYT will cooperate them.
12	Group shipment	2	Farmers group	<ul style="list-style-type: none"> The farmers group will start the group shipment. They will start from small quantity and less time of shipment, and increase gradually. DAO, EAs and staffs of marketing section of GYT will support and cooperate their activity.
13	Training of leaders (2)	2,3	MOA	<ul style="list-style-type: none"> 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.
14	Grading activity	2,3	Farmers group	<ul style="list-style-type: none"> Leaders of the group will promote and start the grading activity in the depot. They will start from small quantity and increase gradually. DAO, EAs and staffs of marketing section of GYT will cooperate them.

V. Schedule

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

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					▣					
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 -						▣				

VI. Implementation and Monitoring System

Action	Plan	
Progress Management of A/P	WHO	<ul style="list-style-type: none"> 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.
	WHEN	<ul style="list-style-type: none"> Monthly basis in the preparatory period and the sales season
	WHERE	<ul style="list-style-type: none"> DAO office of Mongar Dzongkhag / GYT Office
	HOW	<ul style="list-style-type: none"> Monthly report prepared by GYT / by leaders of the group will be submitted.
Budget Management at Preparatory Stage	WHO	<ul style="list-style-type: none"> PPD, MOA
	WHEN	<ul style="list-style-type: none"> Previous year for budget allocation.
	WHERE	<ul style="list-style-type: none"> MOA, Thimphu
	HOW	<ul style="list-style-type: none"> As per financial regulation after receipt of the request letter from Mongar Dzongkhag.
Budget Management at Implementation Stage	WHO	<ul style="list-style-type: none"> DAO, Dzongkhag
	WHEN	<ul style="list-style-type: none"> Monthly basis in the 2nd year only.
	WHERE	<ul style="list-style-type: none"> DAO office
	HOW	<ul style="list-style-type: none"> As per financial regulation.
Budget Management at O&M Stage	WHO	<ul style="list-style-type: none"> Leaders of the farmers group
	WHEN	<ul style="list-style-type: none"> Monthly basis
	WHERE	<ul style="list-style-type: none"> Any place authorized by the group.
	HOW	<ul style="list-style-type: none"> As per management regulation of the group.
Problem Solving	WHO	<ul style="list-style-type: none"> Budget arrangement: MOA Initial stage: Mongar Dzongkhag Afterwards: GYT (Marketing Section)
	WHEN	<ul style="list-style-type: none"> When the problems will occur.
	WHERE	<ul style="list-style-type: none"> Budget arrangement: MOA office Initial stage: DAO office, Mongar Dzongkhag Afterwards: GYT office
	HOW	<ul style="list-style-type: none"> Budget arrangement: MOA will be consultation with MOF. Initial stage: DAO will discuss with EAs, member of GYT and leaders of the group. Afterwards: GYT will discuss with leaders of the group.

4.1.1 Extension Strengthening for Food Crop SP~ Gangzur, Lhuntse

I. General		Sheet No.	AP-22
Program	(RADP-P4) Extension Strengthening Program		
Sub-program	(SP-I) Extension Strengthening for Food Crop SP		
Stakeholders	Level	Organization / Name	Contact Person
	National	RNR-RC	PD & EPO of RNR-RC East
		DSC	DSC-East
		BDFC	Manger of BDFC-Lhuntse
	Dzongkhag	Lhuntse Dzongkhag	DAO, Agriculture-EA
Gewog	Gangzur Gewog	Gup, Food Crop Working Group *	
Beneficiaries	Farmers in Gewog		

* **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

Target	<ul style="list-style-type: none"> To disseminate improved farming system in order to maintain food sufficiency in the Gewog and encourage farmers through participation to extension activities in Gewog. Target of Cereal Production <ul style="list-style-type: none"> Paddy: 822 ton Maize: 839 ton Other cereals: 36 ton Per capita milled grain: 267 kg 																									
Activities	<ul style="list-style-type: none"> Establishment of Food Crop Working Group, Survey of present situation and potential of food production, Preparation of food production plan, Implementation of Farmers Field School (FFS)* for guidance to leader farmers on improved farming system, post-harvesting, etc., Implementation of Demonstration Plots** in farmers field to demonstrate and verify improved / high yielding varieties and improved crop management, Implementation of Farmers Study Tour (FST)*** to advanced areas, research center, etc. Distribution of required inputs (seeds, fertilizer) to farmers, Group purchase of inputs using micro-finance by BDFC, Seed multiplication inspected by DSC. 																									
Input	<ul style="list-style-type: none"> Distribution of subsidized seeds for demonstration plots and promotion of new varieties (cash and carrying). <ul style="list-style-type: none"> Paddy seed: 1,400 kg/year, during 9 years Maize seed: 520 kg/year, during 9 year Wheat (Sonalika): 100 kg/year, during 9 year Demonstration plots (seed and chemicals) <ul style="list-style-type: none"> 6 plots / year, during 9 year, input cost Nu.500/plot, total cost Nu.27,000 																									
Output	<ul style="list-style-type: none"> Improvement of food crop farming system, Production increase of food crops, Dissemination of sustainable land use and improved farm management, Encouragement of leader farmers in Gewog for dissemination of improved farming Land Use and Production Plan <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5">Present Land Use (ha)</th> </tr> <tr> <th></th> <th>Wet land</th> <th>Dry land</th> <th>Tseri</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Registered *1 (A)</td> <td>167</td> <td>238</td> <td>151</td> <td>546</td> </tr> <tr> <td>Estimated *2 (B)</td> <td>330</td> <td>430</td> <td>360</td> <td>1120</td> </tr> <tr> <td>(B) / (A)</td> <td>198%</td> <td>181%</td> <td>238%</td> <td>205%</td> </tr> </tbody> </table> <p>*1: Registered land. *2: Estimated by Study Team based on Land Cover Map</p>	Present Land Use (ha)						Wet land	Dry land	Tseri	Total	Registered *1 (A)	167	238	151	546	Estimated *2 (B)	330	430	360	1120	(B) / (A)	198%	181%	238%	205%
Present Land Use (ha)																										
	Wet land	Dry land	Tseri	Total																						
Registered *1 (A)	167	238	151	546																						
Estimated *2 (B)	330	430	360	1120																						
(B) / (A)	198%	181%	238%	205%																						

Cereal Production (ton)				
	Paddy	Maize	Others	Total
Present *1 (A)	606	695	25	1326
2012 *2 (B)	822	839	36	1697
(B) / (A)	136%	121%	144%	128%

Source: RNR Statistics 2000
*1: RNR Statistics 2000, *2: Proposed production plan assumed at:

- Paddy production:
 - Increase of cropping intensity in wet land: 15 % (275 ha → 317 ha)
 - Yield increase: 18 % (2.2 ton/ha → 2.6 ton/ha)
 - Production increase: 115 % x 118 % = 136 %
- Maize production:
 - Increase of cropping intensity to dry land and Tseri: 5 % (347 ha → 365 ha)
 - Yield increase: 15 % (2.0 on/ha → 2.3 ton/ha)
 - Production increase: 105 % x 115 % = 121 %
- Other cereals (Wheat, Barley, etc.):
 - Increase of planted area by double cropping and in Tseri: 25 % (25 ha → 31 ha)
 - Yield increase: 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%	145%	128%

Source: RNR Statistics 2000
Milling rate: Paddy: 60%, Maize and Others: 80%

Per capita milled grain			
Milled grain	Milled grain (ton)	Population	Per capita (kg)
Present (A)	939	3487	269
2012 (B)	1193	4460	267
(B) / (A)	128%	128%	99%

Population in 2012 was estimated by assuming at 2.5% of annual growth rate.

Period	<ul style="list-style-type: none"> • Preparation of food production plan 9. 2003 -12. 2003 • Demonstration plot 7. 2004 - • Farmers Field School 2006 - 2008 • Subsidized seed distribution 7. 2004 - • Farmers Study Tour 2006, 2009 • Group Purchase of inputs 2007 - • Seed multiplication 2007 -
Related Program / Sub-program (How)	<ul style="list-style-type: none"> • P1-SP1 Food security sub-program (EA training and activities of Dzongkhag level are implemented by this sub-program) • P4-SP2 Sub-program of Extension strengthening for cash crop (FFS and FST are implemented together with this sub-program)
Project Justification	<ul style="list-style-type: none"> • Consistency with Upper Program: Food sufficiency will be maintained by the sub-program • Sustainability: This sub-program aims to capacity building of farmers / leader farmers, and farmers participation to extension activities.

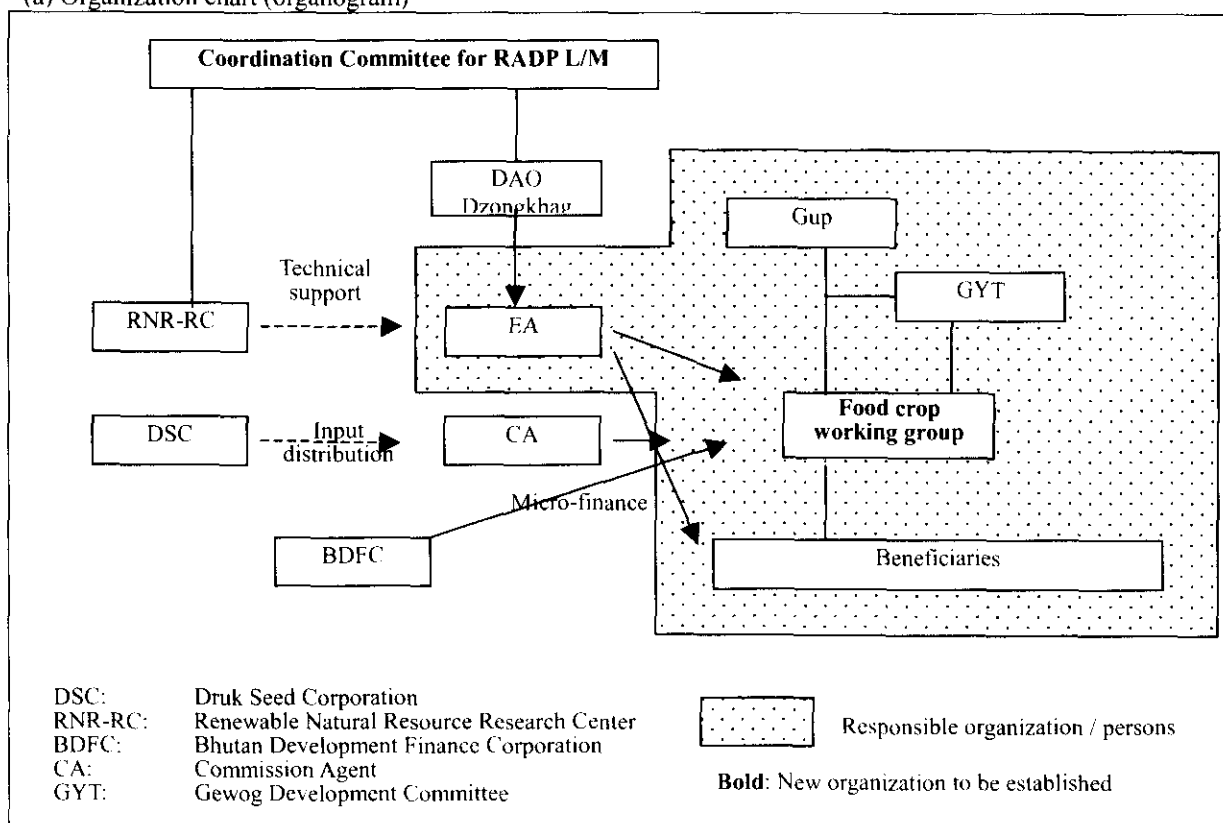
* **Farmers Field School (FFS):** FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15 – 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month 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

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	RNR-RC	<ul style="list-style-type: none"> • Technical support to EA activity
	DSC	<ul style="list-style-type: none"> • Input supply to farmers, • Technical guidance and inspection to seed grower farmers
	BDFC	<ul style="list-style-type: none"> • Micro-finance service for group purchase of inputs
Dzongkhag	DAO	<ul style="list-style-type: none"> • Technical support and coordination to EAs' activity
	Agriculture - EA	<ul style="list-style-type: none"> • Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST
Gewog	Gup and Food Crop Working Groups	<ul style="list-style-type: none"> • Cooperation and participation to extension activities of EA, and organizing farmers group activities
Beneficiaries		<ul style="list-style-type: none"> • Participation to extension activities of EA

IV. Action Plan (sequent)

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Food Crop Working Group of GYT	Gup / GYT	<ul style="list-style-type: none"> • 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.
2 Agricultural survey and Preparation of food production plan of Gewog	EA and Food Crop Working Group	<ul style="list-style-type: none"> • 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.
3 Request of budget allocation	Gup	<ul style="list-style-type: none"> • Gup should request to Dzongkhag the required budget with action plan after the approval of GYT.
4 Seed distribution	Food Crop Working Group	<ul style="list-style-type: none"> • 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).

Required Action (WHAT)		Responsible Stakeholder (WHO)	Detailed Activities (HOW)
5	Implementation of Demonstration Plots	EA and Food Crop Working Group	<ul style="list-style-type: none"> 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.
6	Implementation of Farmers Field School (FFS) *	EA and Food Crop Working Group	<ul style="list-style-type: none"> 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.
7	Farmers Study Tour (FST)*	Food Crop Working Group	<ul style="list-style-type: none"> Dzongkhag and EA prepare a plan of FST to advanced areas and research center. Food Crop Working Group selects participant to FST.
8	Group purchase of inputs *	GYT / Micro-finance group	<ul style="list-style-type: none"> Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.
9	Seed multiplication	Food Crop Working Group	<ul style="list-style-type: none"> Food Crop Working Group organize seed producer group. DSC give technical guidance for the group, and inspect produced seeds.

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

V. Schedule

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Organizing of Food Crop Working Group of GYT	8. 2003 – 9. 2003		<input type="checkbox"/>									
2	Agricultural survey and Preparation of food production plan of Gewog	9.2003 – 12.2003		<input type="checkbox"/>									
3	Request of budget allocation	12.2003		<input type="checkbox"/>									
4	Seed distribution	2004 – 2012											
5	Implementation of Demonstration Plots	7. 2005 – 2012			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Implementation of Farmers Field School (FFS) *	7. 2006 – 12. 2008											
7	Farmers Study Tour (FST) *	2006, 2009					<input type="checkbox"/>			<input type="checkbox"/>			
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	Plan	
Progress Management of A/P	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Every three months and annually
	WHERE	<ul style="list-style-type: none"> RNR center / Gup office
	HOW	<ul style="list-style-type: none"> Quarterly meeting of Gup, Food Crop Working Group and EA, Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.
Budget Management at Preparatory Stage	WHO	<ul style="list-style-type: none"> Gup should request to DAO the budget plan with action plan.
	WHEN	<ul style="list-style-type: none"> 12. 2003
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Gup should request to DAO the budget plan with action plan after approval by GYT
Budget Management at Implementation Stage	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Before of every cropping season for seed distribution
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag
Budget Management at O&M Stage	WHO	
	WHEN	
	WHERE	
	HOW	
Problem Solving	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Annual meeting and when problem occurs
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> 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

I. General

Sheet No. AP-23

Program	(RADP-P4) Extension Strengthening Program		
Sub-program	(SP-1) Extension Strengthening for Food Crop SP		
Stakeholders	Level	Organization / Name	Contact Person
	National	RNR-RC	PD & EPO of RNR-RC East
		DSC	DSC-East
		BDFC	Manger of BDFC-Mongar
	Dzongkhag	Mongar Dzongkhag	DAO, Agriculture-EA
	Gewog	Chaskhar Gewog	Gup, Food Crop Working Group *
Beneficiaries	Farmers in Gewog		

* **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

Target	<ul style="list-style-type: none"> To disseminate improved farming system in order to maintain food sufficiency in the Gewog and encourage farmers through participation to extension activities in Gewog. Target of Cereal Production <ul style="list-style-type: none"> Paddy: 199 ton Maize: 1,299 ton Other cereals: 86 ton Per capita milled grain: 310 kg 																				
Activities	<ul style="list-style-type: none"> Establishment of Food Crop Working Group, Survey of present situation and potential of food production, Preparation of food production plan, Implementation of Farmers Field School (FFS)* for guidance to leader farmers on improved farming system, post-harvesting, etc., Implementation of Demonstration Plots** in farmers field to demonstrate and verify improved / high yielding varieties and improved crop management, Carrying out of Farmers Study Tour (FST)*** to advanced areas, research center, etc. Distribution of required inputs (seeds, fertilizer) to farmers, Group purchase of inputs using micro-finance by BDFC, Seed multiplication inspected by DSC. 																				
Input	<ul style="list-style-type: none"> Distribution of subsidized seeds for demonstration plots and promotion of new varieties (cash and carrying). <ul style="list-style-type: none"> Paddy seed: 350 kg/year, during 9 years Maize seed: 770 kg/year, during 9 year Wheat : 230 kg/year, during 9 year Demonstration plots (seed and chemicals) <ul style="list-style-type: none"> 6 plots / year, during 9 year, input cost Nu.500/plot, total cost Nu.27,000 																				
Output	<ul style="list-style-type: none"> Improvement of food crop farming system, Production increase of food crops, Dissemination of sustainable land use and improved farm management, Encouragement of leader farmers in Gewog for dissemination of improved farming Land Use and Production Plan <p style="text-align: center;">Present Land Use (ha)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Wet land</th> <th>Dry land</th> <th>Tseri</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Registered *1 (A)</td> <td style="text-align: center;">44</td> <td style="text-align: center;">195</td> <td style="text-align: center;">67</td> <td style="text-align: center;">306</td> </tr> <tr> <td>Estimated *2 (B)</td> <td style="text-align: center;">77</td> <td style="text-align: center;">443</td> <td style="text-align: center;">230</td> <td style="text-align: center;">750</td> </tr> <tr> <td>(B) / (A)</td> <td style="text-align: center;">175%</td> <td style="text-align: center;">267%</td> <td style="text-align: center;">194%</td> <td style="text-align: center;">238%</td> </tr> </tbody> </table> <p>*1: Registered land, *2: Estimated by Study Team based on Land Cover Map</p>		Wet land	Dry land	Tseri	Total	Registered *1 (A)	44	195	67	306	Estimated *2 (B)	77	443	230	750	(B) / (A)	175%	267%	194%	238%
	Wet land	Dry land	Tseri	Total																	
Registered *1 (A)	44	195	67	306																	
Estimated *2 (B)	77	443	230	750																	
(B) / (A)	175%	267%	194%	238%																	

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%

Source: RNR Statistics 2000
*1: RNR Statistics 2000, *2: Proposed production plan assumed at:

- Paddy production:
 - Increase of cropping intensity in wet land: 10% (70 ha → 77 ha)
 - Yield increase: 18% (2.2 ton/ha → 2.6 ton/ha)
 - Production increase: 110% x 118% = 130%
- Maize production:
 - Increase of cropping intensity to dry land and Tseri: 10% (514 ha → 565 ha)
 - Yield increase: 15% (2.0 ton/ha → 2.3 ton/ha)
 - Production increase: 110% x 115% = 126%
- Other cereals (Wheat, Barley, etc.):
 - Increase of planted area by double cropping: 30% (58 ha → 75 ha)
 - Yield increase: 15% (1.0 ton/ha → 1.15 ton/ha)
 - Production increase: 130% x 115% = 148%

Milled Grain (ton)				
	Rice	Maize	Others	Total
Present (A)	92	823	46	961
2012(B)	119	1039	69	1227
(B) / (A)	130%	126%	150%	128%

Source: RNR Statistics 2000
Milling rate: Paddy: 60%, Maize and Others: 80%

Per capita milled grain			
Milled grain	Milled grain (ton)	Population	Per capita (kg)
Present (A)	961	3095	311
2012 (B)	1227	3960	310
(B) / (A)	128%	128%	100%

Population in 2012 was estimated by assuming at 2.5% of annual growth rate.

Period	<ul style="list-style-type: none"> • Preparation of food production plan 9. 2003 –12. 2003 • Demonstration plot 7. 2004 - • Farmers Field School 2006 - 2008 • Subsidized seed distribution 7. 2004 - • Farmers Study Tour 2006, 2009 • Group Purchase of inputs 2007 - • Seed multiplication 2007 -
Related Program / Sub-program (How)	<ul style="list-style-type: none"> • P1-SP1 Food security sub-program (EA training and activities of Dzongkhag level are implemented by this sub-program) • P4-SP2 Subprogram of Extension strengthening for cash crop (FFS and FST are implemented together with this sub-program)
Project Justification	<ul style="list-style-type: none"> • Consistency with Upper Program: Food sufficiency will be maintained by the sub-program • Sustainability: This sub-program aims to capacity building of farmers / leader farmers, and farmers participation to extension activities.

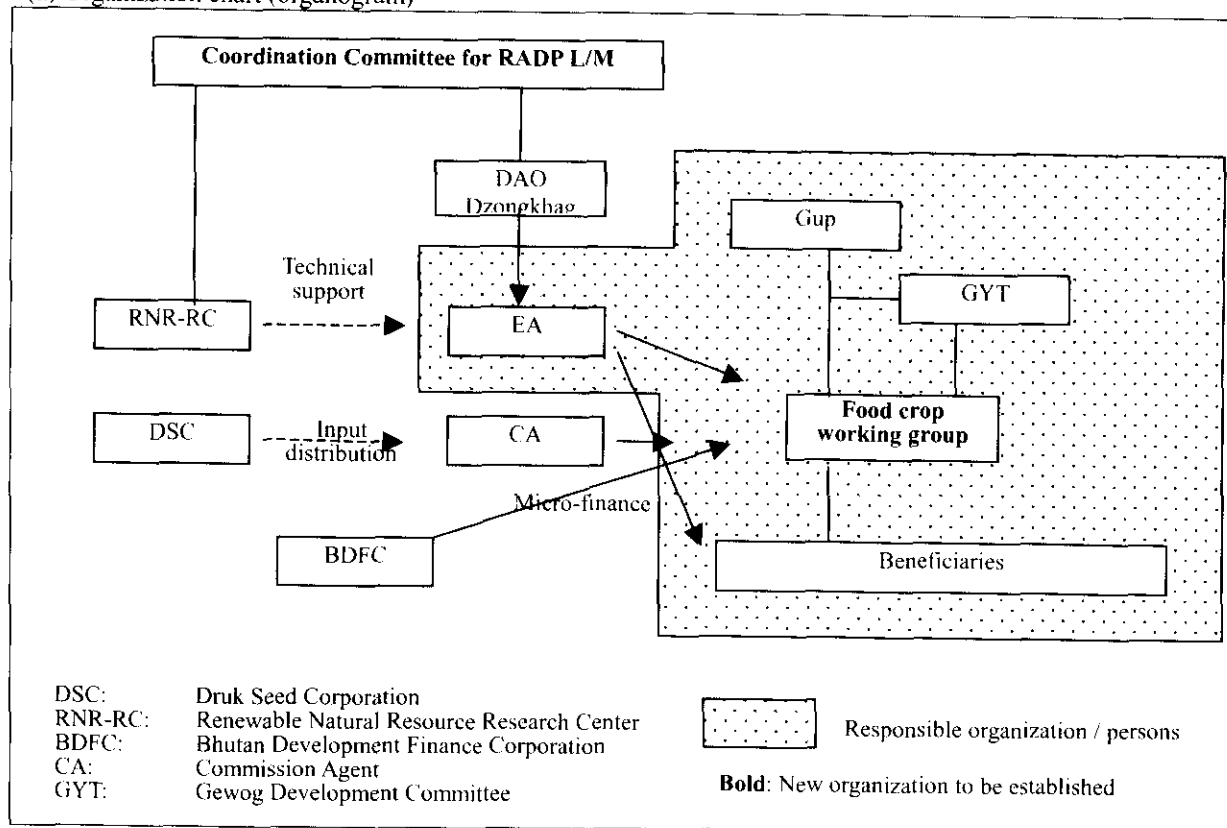
* **Farmers Field School (FFS):** FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15 – 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month 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

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	RNR-RC	<ul style="list-style-type: none"> • Technical support to EA activity
	DSC	<ul style="list-style-type: none"> • Input supply to farmers, • Technical guidance and inspection to seed grower farmers
	BDFC	<ul style="list-style-type: none"> • Micro-finance service for group purchase of inputs
Dzongkhag	DAO	<ul style="list-style-type: none"> • Technical support and coordination to EAs' activity
	Agriculture - EA	<ul style="list-style-type: none"> • Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST
Gewog	Gup and Food Crop Working Groups	<ul style="list-style-type: none"> • Cooperation and participation to extension activities of EA, and organizing farmers group activities
Beneficiaries		<ul style="list-style-type: none"> • Participation to extension activities of EA

IV. Action Plan (sequent)

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Food Crop Working Group of GYT	Gup / GYT	<ul style="list-style-type: none"> • 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.
2 Agricultural survey and Preparation of food production plan of Gewog	EA and Food Crop Working Group	<ul style="list-style-type: none"> • 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.
3 Request of budget allocation	Gup	<ul style="list-style-type: none"> • Gup should request to Dzongkhag the required budget with action plan after the approval of GYT.
4 Seed distribution	Food Crop Working Group	<ul style="list-style-type: none"> • 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).

Required Action (WHAT)		Responsible Stakeholder (WHO)	Detailed Activities (HOW)
5	Implementation of Demonstration Plots	EA and Food Crop Working Group	<ul style="list-style-type: none"> 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.
6	Implementation of Farmers Field School (FFS) *	EA and Food Crop Working Group	<ul style="list-style-type: none"> 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.
7	Farmers Study Tour (FST) *	Food Crop Working Group	<ul style="list-style-type: none"> Dzongkhag and EA prepare a plan of FST to advanced areas and research center. Food Crop Working Group selects participant to FST.
8	Group purchase of inputs *	GYT / Micro-finance group	<ul style="list-style-type: none"> Micro-finance group of BDFC organized by GYT coordinates group purchases of inputs.
9	Seed multiplication	Food Crop Working Group	<ul style="list-style-type: none"> Food Crop Working Group organize seed producer group. DSC give technical guidance for the group, and inspect produced seeds.

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

V. Schedule

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Organizing of Food Crop Working Group of GYT	8. 2003 - 9. 2003		<input type="checkbox"/>									
2	Agricultural survey and Preparation of food production plan of Gewog	9.2003 - 12.2003		<input type="checkbox"/>									
3	Request of budget allocation	12.2003		<input type="checkbox"/>									
4	Seed distribution	2004 - 2012											
5	Implementation of Demonstration Plots	7. 2005 - 2012				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Implementation of Farmers Field School (FFS) *	7. 2006 - 12. 2008											
7	Farmers Study Tour (FST) *	2006, 2009						<input type="checkbox"/>			<input type="checkbox"/>		
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	Plan	
Progress Management of A/P	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Every three months and annually
	WHERE	<ul style="list-style-type: none"> RNR center / Gup office
	HOW	<ul style="list-style-type: none"> Quarterly meeting of Gup, Food Crop Working Group and EA, Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.
Budget Management at Preparatory Stage	WHO	<ul style="list-style-type: none"> Gup should request to DAO the budget plan with action plan.
	WHEN	<ul style="list-style-type: none"> 12. 2003
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Gup should request to DAO the budget plan with action plan after approval by GYT
Budget Management at Implementation Stage	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Before of every cropping season for seed distribution
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag
Budget Management at O&M Stage	WHO	
	WHEN	
	WHERE	
	HOW	
Problem Solving	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Annual meeting and when problem occurs
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Gup, Food Crop Working Group, EA and personnel concerned have a meeting for discussion of the problem and countermeasures.

4.1.3 Extension Strengthening for Food Crop SP~ Drepong, Mongar

I. General

Sheet No.

AP-24

Program	(RADP-P4) Extension Strengthening Program		
Sub-program	(SP-1) Extension Strengthening for Food Crop SP		
Stakeholders	Level	Organization / Name	Contact Person
	National	RNR-RC	PD & EPO of RNR-RC East
		DSC	DSC-East
		BDFC	Manger of BDFC-Mongar
	Dzongkhag	Mongar Dzongkhag	DAO, Agriculture-EA
	Gewog	Drepong Gewog	Gup, Food Crop Working Group *
Beneficiaries	Farmers in Gewog		

* **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

Target	<ul style="list-style-type: none"> To disseminate improved farming system in order to maintain food sufficiency in the Gewog and encourage farmers through participation to extension activities in Gewog. Target of Cereal Production <ul style="list-style-type: none"> Paddy: 52 ton Maize: 466 ton Other cereals: 129 ton Per capita milled grain: 228 kg 																									
Activities	<ul style="list-style-type: none"> Establishment of Food Crop Working Group, Survey of present situation and potential of food production, Preparation of food production plan, Implementation of Farmers Field School (FFS)* for guidance to leader farmers on improved farming system, post-harvesting, etc., Implementation of Demonstration Plots** in farmers field to demonstrate and verify improved / high yielding varieties and improved crop management, Implementation of Farmers Study Tour (FST)*** to advanced areas, research center, etc. Distribution of required inputs (seeds, fertilizer) to farmers, Group purchase of inputs using micro-finance by BDFC. 																									
Input	<ul style="list-style-type: none"> Distribution of subsidized seeds for demonstration plots and promotion of new varieties (cash and carrying). <ul style="list-style-type: none"> Paddy seed: 100 kg/year, during 9 years Maize seed: 300 kg/year, during 9 year Wheat: 50 kg/year, during 9 year Demonstration plots (seed and chemicals) <ul style="list-style-type: none"> 5 plots / year, during 9 year, input cost Nu.500/plot, total cost Nu.22,500 																									
Output	<ul style="list-style-type: none"> Improvement of food crop farming system, Production increase of food crops, Dissemination of sustainable land use and improved farm management, Encouragement of leader farmers in Gewog for dissemination of improved farming Land Use and Production Plan <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th colspan="5">Present Land Use (ha)</th> </tr> <tr> <th></th> <th>Wet land</th> <th>Dry land</th> <th>Tseri</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Registered *1 (A)</td> <td>16</td> <td>122</td> <td>3</td> <td>141</td> </tr> <tr> <td>Estimated *2 (B)</td> <td>20</td> <td>220</td> <td>570</td> <td>810</td> </tr> <tr> <td>(B) / (A)</td> <td>175%</td> <td>267%</td> <td>194%</td> <td>238%</td> </tr> </tbody> </table> <p>*1: Registered land, *2: Estimated by Study Team based on Land Cover Map</p>	Present Land Use (ha)						Wet land	Dry land	Tseri	Total	Registered *1 (A)	16	122	3	141	Estimated *2 (B)	20	220	570	810	(B) / (A)	175%	267%	194%	238%
Present Land Use (ha)																										
	Wet land	Dry land	Tseri	Total																						
Registered *1 (A)	16	122	3	141																						
Estimated *2 (B)	20	220	570	810																						
(B) / (A)	175%	267%	194%	238%																						

Cereal Production (ton)				
	Paddy	Maize	Others	Total
Present *1 (A)	38	352	93	483
2012 *2 (B)	52	466	129	647
(B) / (A)	136%	132%	138%	134%

Source: RNR Statistics 2000
*1: RNR Statistics 2000, *2: Proposed production plan assumed at:

- Paddy production:
 - Increase of cropping intensity in wet land: 15% (17 ha → 20 ha)
 - Yield increase: 18% (2.2 ton/ha → 2.6 ton/ha)
 - Production increase: 115% x 118% = 136%
- Maize production:
 - Increase of cropping intensity in dry land and Tseri: 15% (176 ha → 202 ha)
 - Yield increase: 15% (2.0 ton/ha → 2.3 ton/ha)
 - Production increase: 115% x 115% = 132%
- Other cereals (Wheat, Barley, etc.):
 - Increase of planted area in Tseri and double cropping: 20% (93 ha → 112 ha)
 - Yield increase: 15% (1.0 ton/ha → 1.15 ton/ha)
 - Production increase: 120% x 115% = 138%

Milled Grain (ton)				
	Rice	Maize	Others	Total
Present (A)	23	282	74	379
2012(B)	31	372	103	506
(B) / (A)	135%	132%	138%	134%

Source: RNR Statistics 2000
Milling rate: Paddy: 60%, Maize and Others: 80%

Per capita milled grain			
Milled grain	Milled grain (ton)	Population	Per capita (kg)
Present (A)	379	1733	218
2012 (B)	506	2220	228
(B) / (A)	134%	128%	105%

Population in 2012 was estimated by assuming at 2.5% of annual growth rate.

Period	<ul style="list-style-type: none"> • Preparation of food production plan 9. 2003 –12. 2003 • Demonstration plot 7. 2004 - • Farmers Field School 2006 - 2008 • Subsidized seed distribution 7. 2004 - • Farmers Study Tour 2007, 2010 • Group Purchase of inputs 2008 -
Related Program / Sub-program (How)	<ul style="list-style-type: none"> • P1-SP1 Food security sub-program (EA training and activities of Dzongkhag level are implemented by this sub-program) • P4-SP2 Sub-program of Extension strengthening for cash crop (FFS and FST are implemented together with this sub-program)
Project Justification	<ul style="list-style-type: none"> • Consistency with Upper Program: Food sufficiency will be maintained by the sub-program • Sustainability: This subprogram aims to capacity building of farmers / leader farmers, and farmers participation to extension activities.

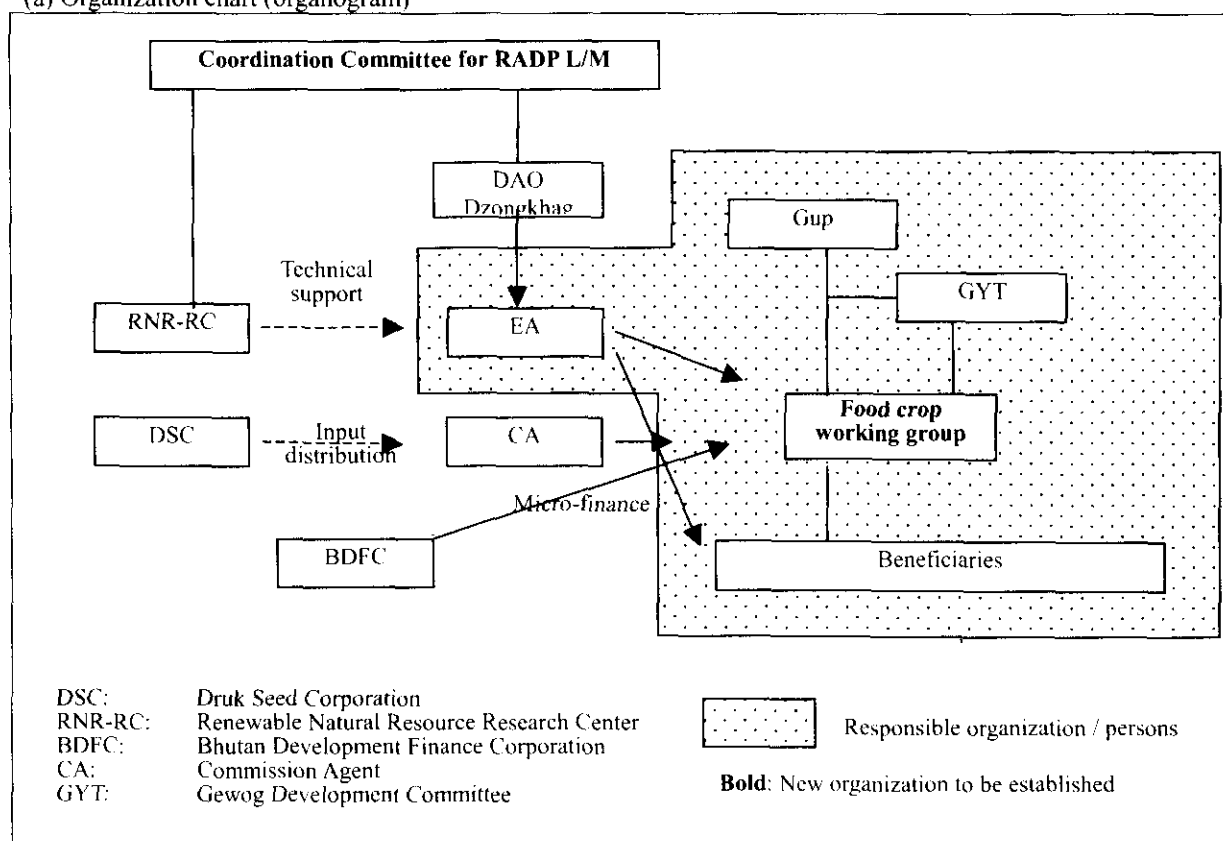
* **Farmers Field School (FFS):** FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15 – 20 progress farmers selected from villagers will participate to FFS. FFS will be held one to two times every month 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

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	RNR-RC	• Technical support to EA activity
	DSC	• Input supply to farmers
	BDFC	• Micro-finance service for group purchase of inputs
Dzongkhag	DAO	• Technical support and coordination to EAs' activity
	Agriculture - EA	• Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST
Gewog	Gup and Food Crop Working Groups	• 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 (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Food Crop Working Group of GYT	Gup / GYT	• 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.
2 Agricultural survey and Preparation of food production plan of Gewog	EA and Food Crop Working Group	• 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.
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	• 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).
5 Implementation of	EA and Food	• 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 style="list-style-type: none"> 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.
7 Farmers Study Tour (FST) *	Food Crop Working Group	<ul style="list-style-type: none"> Dzongkhag and EA prepare a plan of FST to advanced areas and research center. Food Crop Working Group selects participant to FST.
8 Group purchase of inputs *	GYT / Micro-finance group	<ul style="list-style-type: none"> Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.

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

V. Schedule

Required Action (WHAT)	Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1 Organizing of Food Crop Working Group of GYT	8. 2003 – 9. 2003		<input type="checkbox"/>									
2 Agricultural survey and Preparation of food production plan of Gewog	9.2003 – 12.2003		<input type="checkbox"/>									
3 Request of budget allocation	12.2003		<input type="checkbox"/>									
4 Seed distribution	2004 – 2012											
5 Implementation of Demonstration Plots	7. 2005 – 2012			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6 Implementation of Farmers Field School (FFS) *	7. 2007 – 12. 2009											
7 Farmers Study Tour (FST) *	2007, 2010						<input type="checkbox"/>			<input type="checkbox"/>		
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

Action	Plan	
Progress Management of A/P	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Every three months and annually
	WHERE	<ul style="list-style-type: none"> RNR center / Gup office
	HOW	<ul style="list-style-type: none"> Quarterly meeting of Gup, Food Crop Working Group and EA, Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.
Budget Management at Preparatory Stage	WHO	<ul style="list-style-type: none"> Gup should request to DAO the budget plan with action plan.
	WHEN	<ul style="list-style-type: none"> 12. 2003
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Gup should request to DAO the budget plan with action plan after approval by GYT
Budget Management at Implementation Stage	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Before of every cropping season for seed distribution
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag
Budget Management at O&M Stage	WHO	
	WHEN	
	WHERE	
	HOW	
Problem Solving	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Annual meeting and when problem occurs
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> 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

I. General

Program		(RADP P-4 SP2) Extension Strengthening Program	
Sub-program		(SP 2) Extension Strengthening for Cash Crop SP	
Stakeholders	Level	Organization / Name	Contact Person
	National	RNR-RC	Program Director
		DSC	DSC-East
		BDFC	Manager of BDFC-Lhuntse
	Dzongkhag	Lhuntse Dzongkhag	DAO, Agriculture - EA
	Gewog	Gangzur Gewog	Gup, Cash Crop Working Group
Beneficiaries	Farmers in Gewog		

Sheet No.

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*** 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	<ul style="list-style-type: none"> To disseminate improved cash crop management for increase of household income Vegetable production: 826 ton Fruits production: 470 ton Average income from cash crops: Nu. 6,410 / household. 																				
Activities	<ul style="list-style-type: none"> 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 crops, Farmers Study Tour (FST)*** to advanced areas, researches, auction yard, and so on, Distribution of required inputs (seeds, seedlings, fertilizer, agro-chemicals) to farmers, Group purchase of inputs using micro-finance of BDFC, Seed / seedling production by farmers inspected by DSC. 																				
Input	<ul style="list-style-type: none"> Distribution of subsidized seeds / seedlings (cash and carrying) Vegetable seed: 450 kg / 9 years Fruits Seedling: 4,500 trees / 7 years 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 																				
Output	<ul style="list-style-type: none"> 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 <p style="text-align: center;">Production plan of Vegetables</p> <table border="1"> <thead> <tr> <th></th> <th>Planted area (ha)</th> <th>Yield (ton/ha)</th> <th>Production (ton)</th> <th>Marketing *3 (ton)</th> </tr> </thead> <tbody> <tr> <td>Present *1 (A)</td> <td>8</td> <td>12.5</td> <td>100</td> <td>-</td> </tr> <tr> <td>2012 *2 (B)</td> <td>55</td> <td>15</td> <td>826</td> <td>689</td> </tr> <tr> <td>(B) / (A)</td> <td>687%</td> <td>120%</td> <td>826%</td> <td>-</td> </tr> </tbody> </table> <p>*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) 0.017 → 0.094</p>		Planted area (ha)	Yield (ton/ha)	Production (ton)	Marketing *3 (ton)	Present *1 (A)	8	12.5	100	-	2012 *2 (B)	55	15	826	689	(B) / (A)	687%	120%	826%	-
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	<p>Nos. of households: 459 → 588 28% increase (average annual increase rate 2.5%) 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</p> <ul style="list-style-type: none"> Fruits <p style="text-align: center;">Production plan of fruits</p> <table border="1"> <thead> <tr> <th></th> <th>Nos. of trees</th> <th>Bearing trees</th> <th>Yield (kg/tree)</th> <th>Production (ton)</th> <th>Marketing *3 (ton)</th> </tr> </thead> <tbody> <tr> <td>Present *1 (A)</td> <td>2070</td> <td>926</td> <td>50</td> <td>46</td> <td>-</td> </tr> <tr> <td>2012 *2 (B)</td> <td>9443</td> <td>5876</td> <td>80</td> <td>470</td> <td>424</td> </tr> <tr> <td>(B) / (A)</td> <td>331%</td> <td>629%</td> <td>160%</td> <td>1000%</td> <td>19100%</td> </tr> </tbody> </table> <p>*1: Estimated based on RNR Statistics 2000. Yield and production are estimated by orange for all fruits. *2: Proposed production plan assumed at: Nos. of trees (trees/household) 5 → 16 Yield increase (kg/tree) 50 → 80 *3: Marketable products Assumed that producers household consumes 100 kg of the product per year</p>		Nos. of trees	Bearing trees	Yield (kg/tree)	Production (ton)	Marketing *3 (ton)	Present *1 (A)	2070	926	50	46	-	2012 *2 (B)	9443	5876	80	470	424	(B) / (A)	331%	629%	160%	1000%	19100%																								
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Period	<ul style="list-style-type: none"> Selection of priority crops and cash crop development plan 7.2003 -12.2003 Extension activity of fruits 7.2004 - Extension activity of Vegetables 7.2005 - 																																																
Related Program / Sub-program (How)	<ul style="list-style-type: none"> P2-SP3 Training of Extension Agent sub-program (EAs are trained by this program in RNR-RC East) P4-SP1 Extension strengthening for food crop (FFS and FST will be implemented together with this sub-program) 																																																
Project Justification	<ul style="list-style-type: none"> Environment: Some of Tseri area are changed to orchard, Sustainability: Beneficiaries are trained on cash crop production through participation to extension activities. Income Increase per household <p style="text-align: center;">Vegetables</p> <table border="1"> <thead> <tr> <th></th> <th>Production (kg/hh)</th> <th>Marketing (kg/hh)</th> <th>Price (Nu./kg)</th> <th>Production value (Nu.)</th> <th>Value sold (Nu.)</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td>218</td> <td>-</td> <td>3.5</td> <td>763</td> <td>263</td> </tr> <tr> <td>2012 (B)</td> <td>1405</td> <td>1105</td> <td>3.5</td> <td>4918</td> <td>3885</td> </tr> <tr> <td>(B) / (A)</td> <td>644%</td> <td>-</td> <td>100%</td> <td>644%</td> <td>1477%</td> </tr> </tbody> </table> <p style="text-align: center;">Fruits</p> <table border="1"> <thead> <tr> <th></th> <th>Production (kg/hh)</th> <th>Marketing *3 (kg/hh)</th> <th>Price (Nu./kg)</th> <th>Production value (Nu.)</th> <th>Value sold (Nu.)</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td>100</td> <td>0</td> <td>3.5</td> <td>350</td> <td>-</td> </tr> <tr> <td>2012 (B)</td> <td>799</td> <td>699</td> <td>3.5</td> <td>2447</td> <td>2520</td> </tr> <tr> <td>(B) / (A)</td> <td>799%</td> <td>-</td> <td>100%</td> <td>699%</td> <td>-</td> </tr> </tbody> </table>		Production (kg/hh)	Marketing (kg/hh)	Price (Nu./kg)	Production value (Nu.)	Value sold (Nu.)	Present (A)	218	-	3.5	763	263	2012 (B)	1405	1105	3.5	4918	3885	(B) / (A)	644%	-	100%	644%	1477%		Production (kg/hh)	Marketing *3 (kg/hh)	Price (Nu./kg)	Production value (Nu.)	Value sold (Nu.)	Present (A)	100	0	3.5	350	-	2012 (B)	799	699	3.5	2447	2520	(B) / (A)	799%	-	100%	699%	-
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Present (A)	218	-	3.5	763	263																																												
2012 (B)	1405	1105	3.5	4918	3885																																												
(B) / (A)	644%	-	100%	644%	1477%																																												
	Production (kg/hh)	Marketing *3 (kg/hh)	Price (Nu./kg)	Production value (Nu.)	Value sold (Nu.)																																												
Present (A)	100	0	3.5	350	-																																												
2012 (B)	799	699	3.5	2447	2520																																												
(B) / (A)	799%	-	100%	699%	-																																												

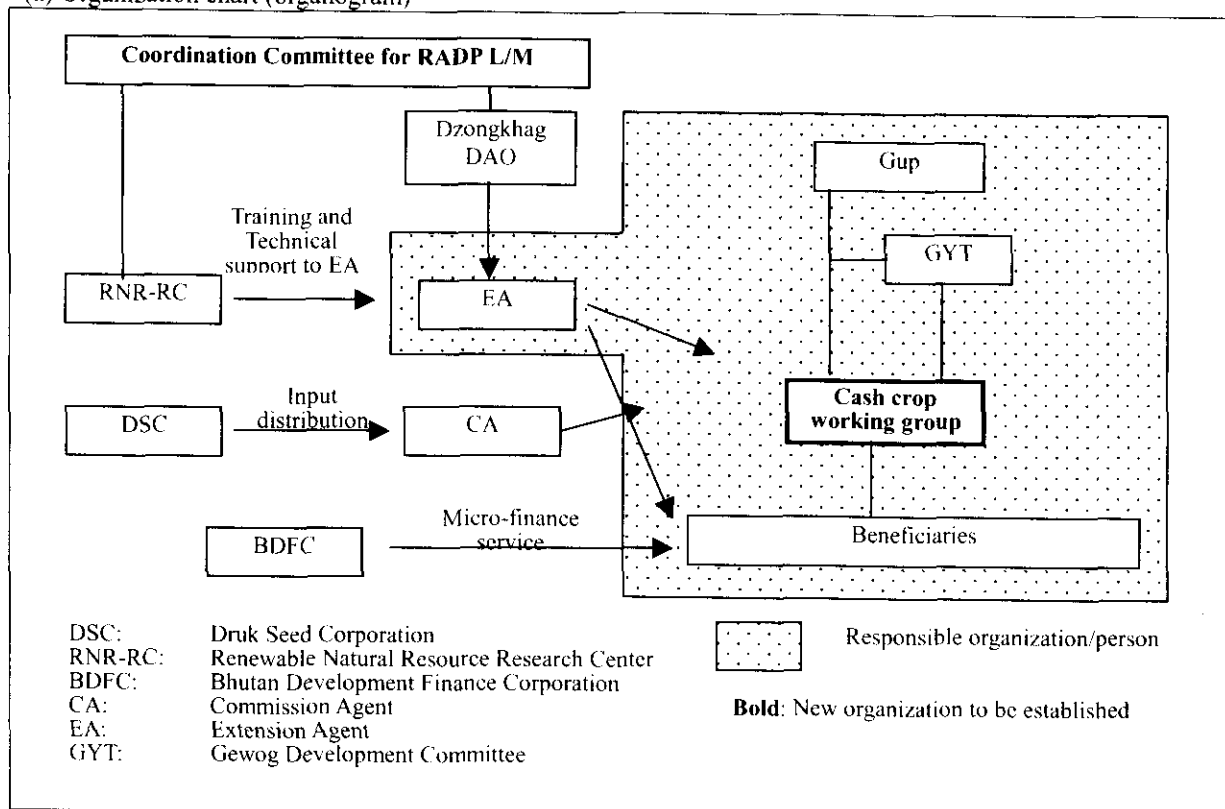
* **Farmers Field School (FFS):** FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15-20 progress farmers selected from villagers will participate to FFS. FFS will 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.

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	RNR-RC	<ul style="list-style-type: none"> • Technical support to EA activity
	DSC	<ul style="list-style-type: none"> • Input supply to farmers, • Technical guidance and inspection to seed / seedling growers
	BDFC	<ul style="list-style-type: none"> • Micro-finance service for group purchase of inputs
Dzongkhag	DAO	<ul style="list-style-type: none"> • Coordination of Dzongkhag level and support to EAs
	Agriculture - EA	<ul style="list-style-type: none"> • Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST.
Gewog	Gup and cash crop micro-finance group in GYT	<ul style="list-style-type: none"> • Cooperation and participation to extension activities of EA, and organizing farmers group activities,
Beneficiaries		<ul style="list-style-type: none"> • Participation to extension activities of EA.

IV. Action Plan (sequent)

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Cash Crop, Working Groups in GYT	Gup / GYT	<ul style="list-style-type: none"> • 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.
2 Selection of priority crops and identification of area to be promoted for the crops	EA and Cash Crop Working Group	<ul style="list-style-type: none"> • 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 to the selection.
3 Preparation of cash crop development plan of Gewog	EA and Cash Crop Working Group	<ul style="list-style-type: none"> • 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 style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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 style="list-style-type: none"> 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.
7 Implementation of Farmers Field School (FFS) *	EA and Cash Crop Working Group	<ul style="list-style-type: none"> 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.
8 Farmers Study Tour (FST) *	Cash Crop Working Group	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.
10 Seed and seedling multiplication	Cash Crop Working Group	<ul style="list-style-type: none"> 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.

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

V. Schedule

Required Action (WHAT)	Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1 Organizing of Cash Crop, Working Groups in GYT	8. 2003 – 9. 2003		<input type="checkbox"/>									
2 Selection of priority crops and identification of area to be promoted for the crops	9. 2003 – 12.2003		<input type="checkbox"/>									
3 Preparation of cash crop development plan	9.2003 – 12.2003		<input type="checkbox"/>									
4 Request of budget allocation for seed / seedling supply	12.2003		<input type="checkbox"/>									
5 Seed and seedling distribution	7.2004 -					<input type="checkbox"/>						
6-1 Implementation of Demonstration plot for Vegetables	2004 -			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6-2 Implementation of Demonstration Plot for Tree crops	2006 -					<input type="checkbox"/>						
7 Farmers Field School (FFS) *	2006 - 2008					<input type="checkbox"/>						
8 Farmers Study Tour (FST) *	2006, 2009					<input type="checkbox"/>			<input type="checkbox"/>			
9 Group purchase of inputs *	2007 -								<input type="checkbox"/>			

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
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

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

I. General

Sheet No. AP-26

Program	(RADP P-4 SP2) Extension Strengthening Program		
Sub-program	(SP 2) Extension Strengthening for Cash Crop SP		
Stakeholders	Level	Organization / Name	Contact Person
	National	RNR-RC	Program Director
		DSC	DSC-East
		BDFC	Manager of BDFC-Mongar
	Dzongkhag	Mongar Dzongkhag	DAO, Agriculture - EA
Gewog	Chaskhar 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.

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To disseminate improved cash crop management for increase of household income Vegetable production: 960 ton Fruits production: 422 ton Average income from cash crops: Nu. 8,030 / household. 																				
Activities	<ul style="list-style-type: none"> 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 crops, Farmers Study Tour (FST)*** to advanced areas, researches, auction yard, and so on, Distribution of required inputs (seeds, seedlings, fertilizer, agro-chemicals) to farmers, Group purchase of inputs using micro-finance of BDFC, Seed / seedling production by farmers inspected by DSC. 																				
Input	<ul style="list-style-type: none"> Distribution of subsidized seeds / seedlings (cash and carrying) Vegetable seed: 400 kg / 9 years Fruits Seedling: 4,000 trees / 7 years Input for Demonstration plots (free of charge): Vegetables: 4 plots/year, 9years, Nu. 500/plot, total Nu.18,000 Fruits: Total 20 plots, Nu.800/plot, Total Nu.16,000 																				
Output	<ul style="list-style-type: none"> 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. Vegetable <p style="text-align: center;">Production plan of Vegetables</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Planted area (ha)</th> <th>Yield (ton/ha)</th> <th>Production (ton)</th> <th>Marketing *3 (ton)</th> </tr> </thead> <tbody> <tr> <td>Present *1 (A)</td> <td>12</td> <td>12.5</td> <td>150</td> <td>30</td> </tr> <tr> <td>2012 *2 (B)</td> <td>64</td> <td>15</td> <td>960</td> <td>842</td> </tr> <tr> <td>(B) / (A)</td> <td>533%</td> <td>120%</td> <td>640%</td> <td>2807%</td> </tr> </tbody> </table> <p>*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 → 0.125</p>		Planted area (ha)	Yield (ton/ha)	Production (ton)	Marketing *3 (ton)	Present *1 (A)	12	12.5	150	30	2012 *2 (B)	64	15	960	842	(B) / (A)	533%	120%	640%	2807%
	Planted area (ha)	Yield (ton/ha)	Production (ton)	Marketing *3 (ton)																	
Present *1 (A)	12	12.5	150	30																	
2012 *2 (B)	64	15	960	842																	
(B) / (A)	533%	120%	640%	2807%																	

	<p>Nos. of households: 401 → 513 28% increase (average annual increase rate 2.5%) Yield increase (ton/ha) 12.5 → 15.0 (20% increase)</p> <p>*3: Marketable products Assumed that producers household consumes 300 kg of the product per year</p> <ul style="list-style-type: none"> Fruits <p style="text-align: center;">Production plan of fruits</p> <table border="1"> <thead> <tr> <th></th> <th>Nos. of trees</th> <th>Bearing trees</th> <th>Yield (kg/tree)</th> <th>Production (ton)</th> <th>Marketing *3 (ton)</th> </tr> </thead> <tbody> <tr> <td>Present *1 (A)</td> <td>2490</td> <td>840</td> <td>50</td> <td>42</td> <td>2</td> </tr> <tr> <td>2012 *2 (B)</td> <td>8250</td> <td>5280</td> <td>80</td> <td>422</td> <td>382</td> </tr> <tr> <td>(B) / (A)</td> <td>331%</td> <td>629%</td> <td>160%</td> <td>1000%</td> <td>19100%</td> </tr> </tbody> </table> <p>*1: Estimated based on RNR Statistics 2000, Yield and production are estimated by orange for all fruits. *2: Proposed production plan assumed at: Nos. of trees (trees/household) 6 → 20 Yield increase (kg/tree) 50 → 80 *3: Marketable products Assumed that producers household consumes 100 kg of the product per year</p>		Nos. of trees	Bearing trees	Yield (kg/tree)	Production (ton)	Marketing *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%																								
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(B) / (A)	331%	629%	160%	1000%	19100%																																												
Period	<ul style="list-style-type: none"> Selection of priority crops and cash crop development plan 7.2003 - 12.2003 Extension activity of fruits 7.2004 - Extension activity of Vegetables 7.2005 - 																																																
Related Program / Sub-program (How)	<ul style="list-style-type: none"> P2-SP3 Training of Extension Agent sub-program (EAs are trained by this program in RNR-RC East) P4-SP1 Extension strengthening for food crop (FFS and FST will be implemented together with this sub-program) 																																																
Project Justification	<ul style="list-style-type: none"> Environment: Some of Tseri area are changed to orchard, Sustainability: Beneficiaries are trained on cash crop production through participation to extension activities. Income Increase per household <p style="text-align: center;">Vegetables</p> <table border="1"> <thead> <tr> <th></th> <th>Production (kg/hh)</th> <th>Marketing (kg/hh)</th> <th>Price (Nu./kg)</th> <th>Production value (Nu.)</th> <th>Value sold (Nu.)</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td>374</td> <td>75</td> <td>3.5</td> <td>1309</td> <td>263</td> </tr> <tr> <td>2012 (B)</td> <td>1875</td> <td>1575</td> <td>3.5</td> <td>6563</td> <td>5513</td> </tr> <tr> <td>(B) / (A)</td> <td>501%</td> <td>2100%</td> <td>100%</td> <td>501%</td> <td>2096%</td> </tr> </tbody> </table> <p style="text-align: center;">Fruits</p> <table border="1"> <thead> <tr> <th></th> <th>Production (kg/hh)</th> <th>Marketing *3 (kg/hh)</th> <th>Price (Nu./kg)</th> <th>Production value (Nu.)</th> <th>Value sold (Nu.)</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td>104</td> <td>4</td> <td>3.5</td> <td>364</td> <td>14</td> </tr> <tr> <td>2012 (B)</td> <td>820</td> <td>720</td> <td>3.5</td> <td>2870</td> <td>2520</td> </tr> <tr> <td>(B) / (A)</td> <td>788%</td> <td>18000%</td> <td>100%</td> <td>788%</td> <td>18000%</td> </tr> </tbody> </table>		Production (kg/hh)	Marketing (kg/hh)	Price (Nu./kg)	Production value (Nu.)	Value sold (Nu.)	Present (A)	374	75	3.5	1309	263	2012 (B)	1875	1575	3.5	6563	5513	(B) / (A)	501%	2100%	100%	501%	2096%		Production (kg/hh)	Marketing *3 (kg/hh)	Price (Nu./kg)	Production value (Nu.)	Value sold (Nu.)	Present (A)	104	4	3.5	364	14	2012 (B)	820	720	3.5	2870	2520	(B) / (A)	788%	18000%	100%	788%	18000%
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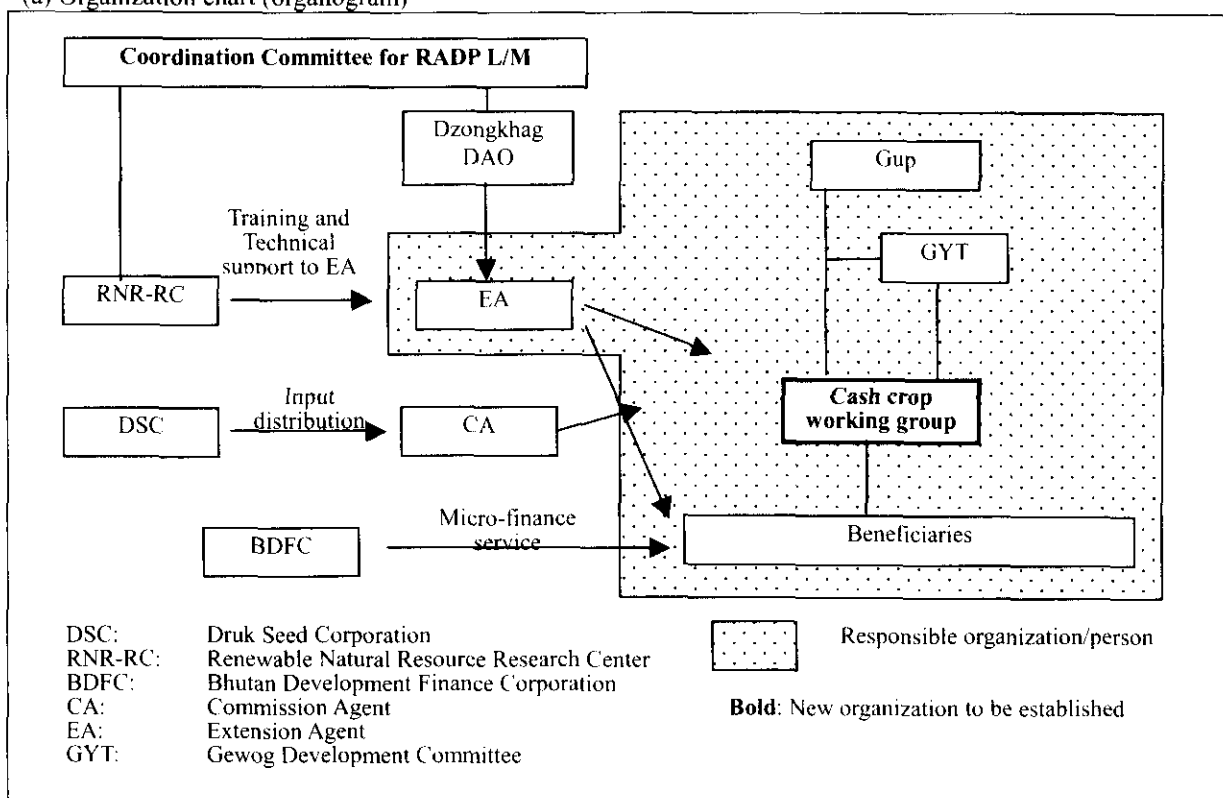
* **Farmers Field School (FFS):** FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15-20 progress farmers selected from villagers will participate to FFS. FFS will 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.

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	RNR-RC	<ul style="list-style-type: none"> • Technical support to EA activity
	DSC	<ul style="list-style-type: none"> • Input supply to farmers, • Technical guidance and inspection to seed / seedling growers
	BDFC	<ul style="list-style-type: none"> • Micro-finance service for group purchase of inputs
Dzongkhag	DAO	<ul style="list-style-type: none"> • Coordination of Dzongkhag level and support to EAs
	Agriculture - EA	<ul style="list-style-type: none"> • Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST.
Gewog	Gup and cash crop micro-finance group in GYT	<ul style="list-style-type: none"> • Cooperation and participation to extension activities of EA, and organizing farmers group activities,
Beneficiaries		<ul style="list-style-type: none"> • Participation to extension activities of EA.

IV. Action Plan (sequent)

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Cash Crop, Working Groups in GYT	Gup / GYT	<ul style="list-style-type: none"> • 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.
2 Selection of priority crops and identification of area to be promoted for the crops	EA and Cash Crop Working Group	<ul style="list-style-type: none"> • 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 to the selection.
3 Preparation of cash crop development plan of Gewog	EA and Cash Crop Working Group	<ul style="list-style-type: none"> • 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 style="list-style-type: none"> • Gup should request to Dzongkhag the required budget for subsidized seed / seedling supply with action plan after the approval of GYT.

Required Action (WHAT)		Responsible Stakeholder (WHO)	Detailed Activities (HOW)
5	Seed and seedling distribution	Cash Crop Working Group	<ul style="list-style-type: none"> Subsidized seed and seedling distribution of horticulture crops: 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 style="list-style-type: none"> 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.
7	Implementation of Farmers Field School (FFS) activity	EA and Cash Crop Working Group	<ul style="list-style-type: none"> 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.
8	Farmers Study Tour (FST)	Cash Crop Working Group	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Micro-finance group of BDFC organized by GYT coordinates group parches of inputs.
10	Seed and seedling multiplication	Cash Crop Working Group	<ul style="list-style-type: none"> 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.

V. Schedule

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Organizing of Cash Crop, Working Groups in GYT	8. 2003 – 9. 2003		<input type="checkbox"/>									
2	Selection of priority crops and identification of area to be promoted for the crops	9. 2003 – 12.2003		<input type="checkbox"/>									
3	Preparation of cash crop development plan	9.2003 – 12.2003		<input type="checkbox"/>									
4	Request of budget allocation for seed / seedling supply	12.2003		<input type="checkbox"/>									
5	Seed and seedling distribution	7.2004 -											
6-1	Setting up of Demonstration plot for Vegetables	2004 -			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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					<input type="checkbox"/>			<input type="checkbox"/>			
9	Group purchase of inputs	2007 -											

Required Action (WHAT)		Period (WHEN)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
10	Seed and seedling multiplication	2007 -											

VI. Implementation and Monitoring System of Action Plan

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

I. General

Sheet No. AP-27

Program	(RADP P-4 SP2) Extension Strengthening Program		
Sub-program	(SP 2) Extension Strengthening for Cash Crop SP		
Stakeholders	Level	Organization / Name	Contact Person
	National	RNR-RC	Program Director
		DSC	DSC-East
		BDFC	Manager of BDFC-Mongar
	Dzongkhag	Mongar Dzongkhag	DAO, Agriculture - EA
	Gewog	Drepong 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.

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To disseminate improved cash crop management for increase of household income Vegetable production: 326 ton Fruits production: 201 ton Average income from cash crops: Nu. 4,960 / household. 																				
Activities	<ul style="list-style-type: none"> 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 crops, Farmers Study Tour (FST)*** to advanced areas, researches, auction yard, and so on, Distribution of required inputs (seeds, seedlings, fertilizer, agro-chemicals) to farmers, Group purchase of inputs using micro-finance of BDFC. 																				
Input	<ul style="list-style-type: none"> Distribution of subsidized seeds / seedlings (cash and carrying) Vegetable seed: 150 kg during 9 years Fruits Seedling: 3,500 trees during 9 years Input for Demonstration plots (free of charge): Vegetables: 3 plots/year, 9years, Nu. 500/plot, total Nu.13,500 Fruits: Total 10 plots, Nu.800/plot, Total Nu.8,000 																				
Output	<ul style="list-style-type: none"> 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. Vegetable <p style="text-align: center;">Production plan of Vegetables</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Planted area (ha)</th> <th>Yield (ton/ha)</th> <th>Production (ton)</th> <th>Marketing *3 (ton)</th> </tr> </thead> <tbody> <tr> <td>Present *1 (A)</td> <td>4</td> <td>12.5</td> <td>50</td> <td>0</td> </tr> <tr> <td>2012 *2 (B)</td> <td>22</td> <td>15</td> <td>326</td> <td>260</td> </tr> <tr> <td>(B) / (A)</td> <td>550%</td> <td>120%</td> <td>652%</td> <td>-</td> </tr> </tbody> </table> <p>*1: Estimated based on RNR Statistics 2000. Yield and production are estimated by potato production for all vegetables.</p> <p>*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 (ton/ha) 12.5 → 15.0 (20% increase)</p>		Planted area (ha)	Yield (ton/ha)	Production (ton)	Marketing *3 (ton)	Present *1 (A)	4	12.5	50	0	2012 *2 (B)	22	15	326	260	(B) / (A)	550%	120%	652%	-
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	<p>*3: Marketable products Assumed that producers household consumes 300 kg of the product per year Income increase by vegetables per household</p> <ul style="list-style-type: none"> Vegetables <table border="1"> <thead> <tr> <th></th> <th>Production (kg/hh)</th> <th>Marketing *3 (kg/hh)</th> <th>Price (Nu./kg)</th> <th>Production value (Nu.)</th> <th>Value sold (Nu.)</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td>230</td> <td>-</td> <td>3.5</td> <td>805</td> <td>-</td> </tr> <tr> <td>2012 (B)</td> <td>1173</td> <td>873</td> <td>3.5</td> <td>4105</td> <td>3056</td> </tr> <tr> <td>(B) / (A)</td> <td>510%</td> <td>-</td> <td>100%</td> <td>510%</td> <td>-</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Fruits <p style="text-align: center;">Production plan of fruits</p> <table border="1"> <thead> <tr> <th></th> <th>Nos. of trees</th> <th>Bearing trees</th> <th>Yield (kg/tree)</th> <th>Production (ton)</th> <th>Marketing *3 (ton)</th> </tr> </thead> <tbody> <tr> <td>Present *1 (A)</td> <td>1310</td> <td>544</td> <td>50</td> <td>27</td> <td>6</td> </tr> <tr> <td>2012 *2 (B)</td> <td>4450</td> <td>2520</td> <td>80</td> <td>201</td> <td>179</td> </tr> <tr> <td>(B) / (A)</td> <td>340%</td> <td>463%</td> <td>160%</td> <td>744%</td> <td>2983%</td> </tr> </tbody> </table> <p>*1: Estimated based on RNR Statistics 2000, Yield and production are estimated by orange for all fruits. *2: Proposed production plan assumed at: Nos. of trees (trees/household) 6 → 16 Yield increase (kg/tree) 50 → 80 *3: Marketable products Assumed that producers household consumes 100 kg of the product per year</p>		Production (kg/hh)	Marketing *3 (kg/hh)	Price (Nu./kg)	Production value (Nu.)	Value sold (Nu.)	Present (A)	230	-	3.5	805	-	2012 (B)	1173	873	3.5	4105	3056	(B) / (A)	510%	-	100%	510%	-		Nos. of trees	Bearing trees	Yield (kg/tree)	Production (ton)	Marketing *3 (ton)	Present *1 (A)	1310	544	50	27	6	2012 *2 (B)	4450	2520	80	201	179	(B) / (A)	340%	463%	160%	744%	2983%
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Period	<ul style="list-style-type: none"> Selection of priority crops and cash crop development plan 7.2003 -12.2003 Extension activity of fruits 7.2005 - Extension activity of Vegetables 7.2006 - 																																																
Related Program / Sub-program (How)	<ul style="list-style-type: none"> P2-SP3 Training of Extension Agent sub-program (EAs are trained by this program in RNR-RC East) P4-SP1 Extension strengthening for food crop (FFS and FST will be implemented together with this sub-program) 																																																
Project Justification	<ul style="list-style-type: none"> Environment: Some of Tseri area are changed to orchard. Sustainability: Beneficiaries are trained on cash crop production through participation to extension activities. Income Increase per household Vegetables <table border="1"> <thead> <tr> <th></th> <th>Production (kg/hh)</th> <th>Marketing (kg/hh)</th> <th>Price (Nu./kg)</th> <th>Production value (Nu.)</th> <th>Value sold (Nu.)</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td>230</td> <td>-</td> <td>3.5</td> <td>805</td> <td>-</td> </tr> <tr> <td>2012 (B)</td> <td>1173</td> <td>873</td> <td>3.5</td> <td>4105</td> <td>3056</td> </tr> <tr> <td>(B) / (A)</td> <td>510%</td> <td>-</td> <td>100%</td> <td>510%</td> <td>-</td> </tr> </tbody> </table> <ul style="list-style-type: none"> Fruits <table border="1"> <thead> <tr> <th></th> <th>Production (kg/hh)</th> <th>Marketing (kg/hh)</th> <th>Price (Nu./kg)</th> <th>Production value (Nu.)</th> <th>Value sold (Nu.)</th> </tr> </thead> <tbody> <tr> <td>Present (A)</td> <td>124</td> <td>24</td> <td>3.5</td> <td>434</td> <td>84</td> </tr> <tr> <td>2012 (B)</td> <td>644</td> <td>544</td> <td>3.5</td> <td>2254</td> <td>1904</td> </tr> <tr> <td>(B) / (A)</td> <td>519%</td> <td>2267%</td> <td>100%</td> <td>788%</td> <td>2267%</td> </tr> </tbody> </table>		Production (kg/hh)	Marketing (kg/hh)	Price (Nu./kg)	Production value (Nu.)	Value sold (Nu.)	Present (A)	230	-	3.5	805	-	2012 (B)	1173	873	3.5	4105	3056	(B) / (A)	510%	-	100%	510%	-		Production (kg/hh)	Marketing (kg/hh)	Price (Nu./kg)	Production value (Nu.)	Value sold (Nu.)	Present (A)	124	24	3.5	434	84	2012 (B)	644	544	3.5	2254	1904	(B) / (A)	519%	2267%	100%	788%	2267%
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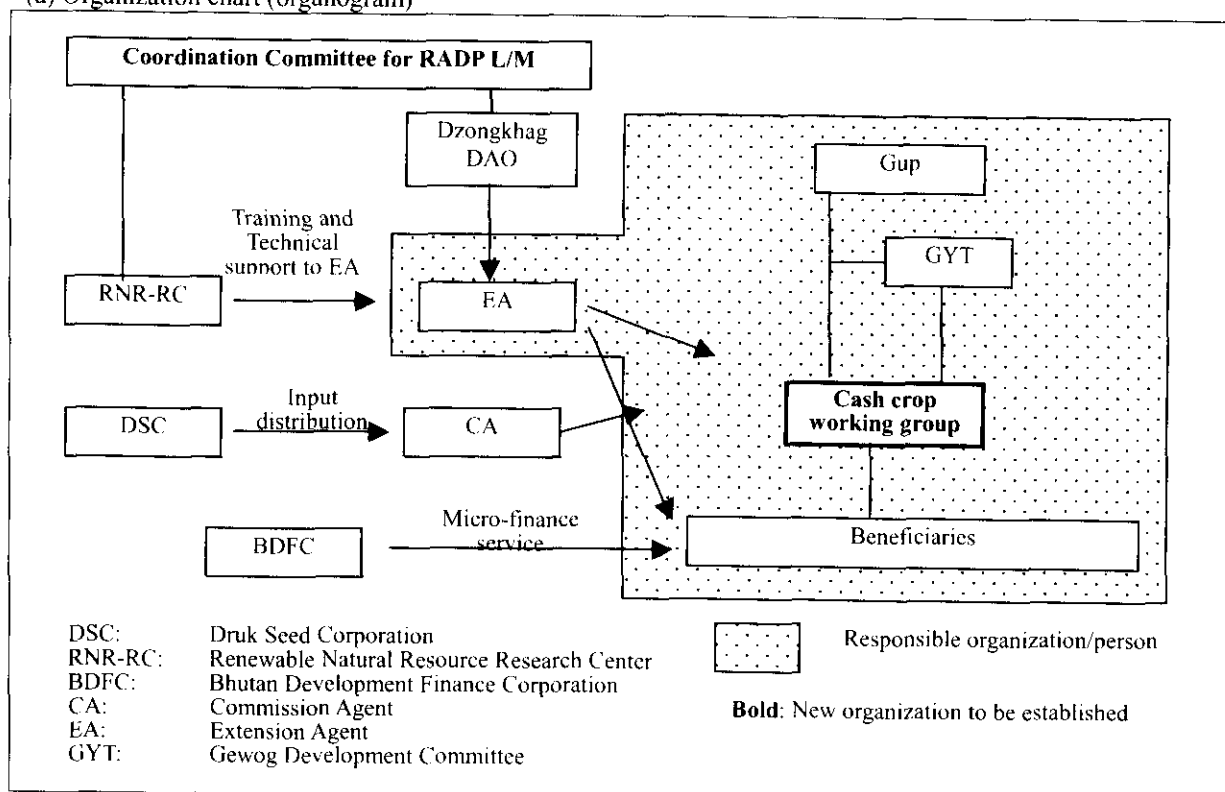
* **Farmers Field School (FFS):** FFS aims to encourage and train leader farmers for dissemination of improved farming technology and post-harvesting through their voluntary extension activities after the school. Around 15-20 progress farmers selected from villagers will participate to FFS. FFS will 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.

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	RNR-RC	<ul style="list-style-type: none"> • Technical support to EA activity
	DSC	<ul style="list-style-type: none"> • Input supply to farmers, • Technical guidance and inspection to seed / seedling growers
	BDFC	<ul style="list-style-type: none"> • Micro-finance service for group purchase of inputs
Dzongkhag	DAO	<ul style="list-style-type: none"> • Coordination of Dzongkhag level and support to EAs
	Agriculture - EA	<ul style="list-style-type: none"> • Extension activity in Gewog; Involving farmers in FFS, Demonstration plot and FST.
Gewog	Gup and cash crop micro-finance group in GYT	<ul style="list-style-type: none"> • Cooperation and participation to extension activities of EA, and organizing farmers group activities,
Beneficiaries		<ul style="list-style-type: none"> • Participation to extension activities of EA.

IV. Action Plan (sequent)

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Organizing of Cash Crop, Working Groups in GYT	Gup / GYT	<ul style="list-style-type: none"> • 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.
2 Selection of priority crops and identification of area to be promoted for the crops	EA and Cash Crop Working Group	<ul style="list-style-type: none"> • 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 to the selection.
3 Preparation of cash crop development plan of Gewog	EA and Cash Crop Working Group	<ul style="list-style-type: none"> • 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 style="list-style-type: none"> • 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 distribution	Cash Crop Working Group	<ul style="list-style-type: none"> • Subsidized seed and seedling distribution of horticulture crops: vegetable seeds, and seedlings of mango, mandarin orange

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
		and walnut.
6 Implementation of Demonstration Plot for cash crops	EA and Cash Crop Working Group	<ul style="list-style-type: none"> 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.
7 Implementation of Farmers Field School (FFS) *	EA and Cash Crop Working Group	<ul style="list-style-type: none"> 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.
8 Farmers Study Tour (FST)*	Cash Crop Working Group	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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)	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1 Organizing of Cash Crop, Working Groups in GYT	8. 2003 – 9. 2003		<input type="checkbox"/>									
2 Selection of priority crops and identification of area to be promoted for the crops	9. 2003 – 12.2003		<input type="checkbox"/>									
3 Preparation of cash crop development plan	9.2003 – 12.2003		<input type="checkbox"/>									
4 Request of budget allocation for seed / seedling supply	12.2003		<input type="checkbox"/>									
5 Seed and seedling distribution	7.2004 -					<input type="checkbox"/>						
6-1 Implementation of Demonstration plot for Vegetables	2004 -				<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6-2 Implementation of Demonstration Plot for Tree crops	2006 -					<input type="checkbox"/>						
7 Farmers Field School (FFS) *	2006 - 2008						<input type="checkbox"/>					
8 Farmers Study Tour (FST) *	2007, 2010						<input type="checkbox"/>			<input type="checkbox"/>		
9 Group purchase of inputs *	2008 -							<input type="checkbox"/>				

* 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	Plan	
Progress Management of A/P	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Every three months and annually
	WHERE	<ul style="list-style-type: none"> RNR center / Gup office
	HOW	<ul style="list-style-type: none"> Quarterly meeting of Gup, Cash Crop Working Group and EA, Crop production (planted area, yield and production) should be analyzed by field survey every cropping season. EA supports technically Gup.
Budget Management at Preparatory Stage	WHO	<ul style="list-style-type: none"> Gup should request to DAO the budget plan with action plan.
	WHEN	<ul style="list-style-type: none"> 12. 2003
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Gup should request to DAO the budget plan with action plan after approval by GYT
Budget Management at Implementation Stage	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Before of every cropping season for seed distribution
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> Budget plan for FYP and annual will be approved by DYT. The budget released by Dzongkhag
Budget Management at O&M Stage	WHO	
	WHEN	
	WHERE	
	HOW	
Problem Solving	WHO	<ul style="list-style-type: none"> Gup
	WHEN	<ul style="list-style-type: none"> Annual meeting and when problem occurs
	WHERE	<ul style="list-style-type: none"> Gewog
	HOW	<ul style="list-style-type: none"> 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

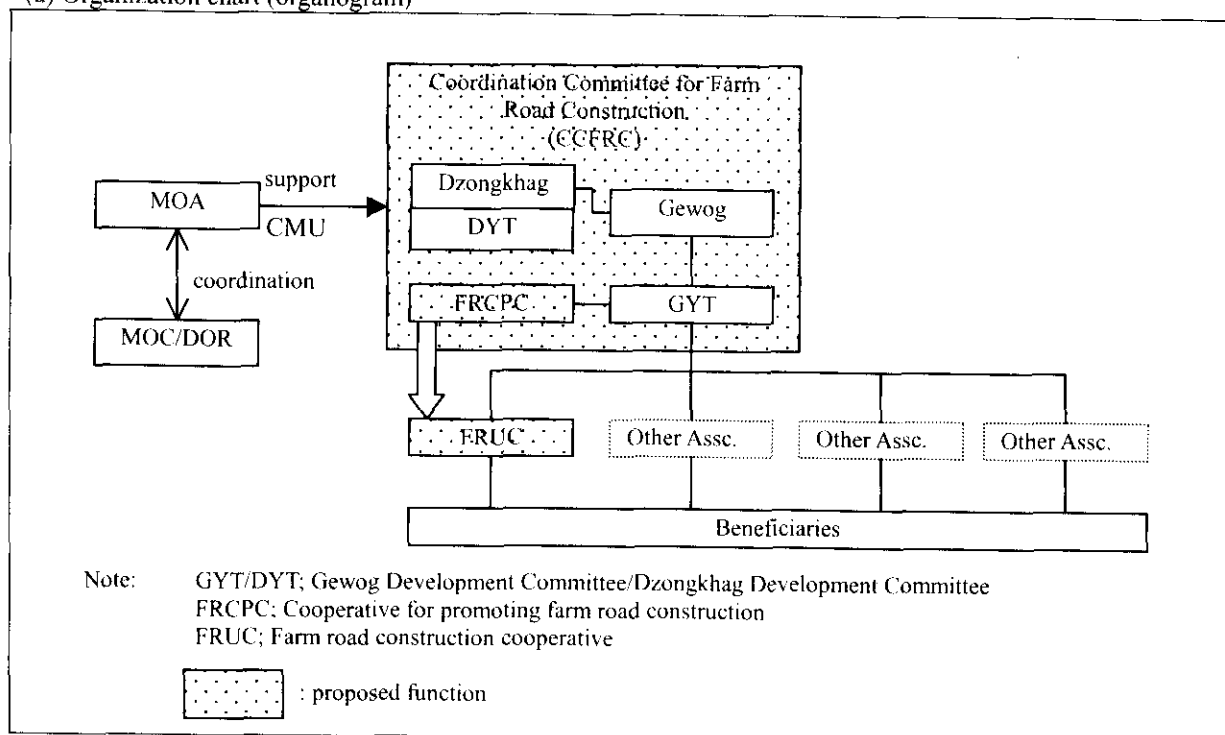
Program	Farm Road Construction Program / Gangzur / Lhuntse (Thimyul to Jangcholing)		
Sub-program			
Stakeholders	Level	Organization / Name	Contact Person
	National	MOA	Mr. Kaylzung Tshering (SE. DRDS, 02-322228)
	Dzongkhag	Lhuntse	Mr. Om Nath Giri (DE, 04-545128) Mr. Deepak Rai (DAO, 04-545127)
	Gewog	GYT	Mr. (Gup)
	Beneficiaries	Tentative Cooperative(46HH)	Mr. (GYT member)

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To improve rural access to motor road, especially activating access to the center of Gangzur, benefited household = 11.3 HH/km
Activities	<ul style="list-style-type: none"> Survey, Design and Cost Estimation Construction of farm road Maintenance by Farm Road Users Cooperative Procurement of construction materials and tools Procurement of construction machinery Environmental study Financial arrangement Establishment of organization Training for beneficiaries Training for road engineer
Input	<ul style="list-style-type: none"> Surveyor (MOA and Dzongkhag) Civil Engineer for Design (MOA and Dzongkhag) Civil Engineer for Supervision (Dzongkhag) Construction Machinery with Operator (CMU, MOA) Construction Materials and Tools (MOA) Skilled Labor (Mason, Blaster, etc., MOA) Unskilled labor (Gewog Beneficiaries) Project Cost Nu. 28.6 mil. (including indirect cost). Maintenance by Farm Road Users Cooperative
Output	<ul style="list-style-type: none"> The farm road is constructed (length = 5.2 km) and from this thing the road is connected with center of Gewog (Gangzur) through the feeder road. Through this construction worker with skill will be increased.
Period	<ul style="list-style-type: none"> Survey and Design 2003.7 ~ 2004.6 Construction 2004.7 ~ 2004.11 Maintenance 2004.12 ~
Related Program / Sub-program (How)	<ul style="list-style-type: none"> Construction Machinery Center Program (Construction machinery for the construction works will be provided through this program) Market System Development Program (Collection depot will be constructed along the farm road and group assembling will be conducted by farmers group)
Project Justification	<ul style="list-style-type: none"> 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. Efficiency: Reasonable range of construction cost per km is about 5,500,000 Nu 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 than 30acres per km stipulated in guidelines for farm roads development of MOA. Consistency with upper plan/program: This is based on the program of MOA. 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.

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	DRDS, MOA	<ul style="list-style-type: none"> Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders and organizations especially DOR.
Dzyongkhag	Engineering Office/ Agriculture Office	<ul style="list-style-type: none"> Actually supervises FRUA from its establishment to the construction and maintenance by FRUC including accounting of the program.
Gewog	GYT	<ul style="list-style-type: none"> 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 Dzyongkhag.
Beneficiaries	FRUC	<ul style="list-style-type: none"> Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.

IV. Action Plan (sequent)

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Establishment of institution for farm road construction	Gewog/GYT	<ul style="list-style-type: none"> A cooperative for promoting farm road construction (FRCPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.
2 Consensus in GYT	GYT	<ul style="list-style-type: none"> The request of farm road construction from FRCPC will be discussed in GYT and with the consensus will be proceeded to Dzyongkhag.
3 Official request (FRFORM.01) for implementation	GYT	<ul style="list-style-type: none"> The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzyongkhag with necessary information for evaluation (distance, route, contribution by Gewogs or beneficiaries, etc.)
4 Preliminary Investigation (Module 1)	Dzyongkhag / FRCPC	<ul style="list-style-type: none"> 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.
5 Consensus in DYT	Dzyongkhag / DYT	<ul style="list-style-type: none"> The request will be discussed based on the project identification report and with the consensus and Dzyongda's

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (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 style="list-style-type: none"> 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 style="list-style-type: none"> 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.
8	Environmental study	Dzongkhag / NEC	<ul style="list-style-type: none"> Based on the feasibility study report, if environmental study is required, EIA will be executed.
9	Budget allocation for construction	Dzongkhag	<ul style="list-style-type: none"> 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.
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul style="list-style-type: none"> 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.
11	Establishment of Farm Road Users Cooperative (FRUC)	FRUC/ GYT	<ul style="list-style-type: none"> 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.
12	Capacity building for FRUA	Dzongkhag	<ul style="list-style-type: none"> Training and through OJT, beneficiaries' construction and maintenance skill will be improved.
13	Land acquisition	Beneficiaries	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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.
15	Overall management of construction	Dzongkhag	<ul style="list-style-type: none"> The construction of farm road will be carried out under the management of Dzongkhag in Implementation (Module 4).
16	Construction machinery and equipment	MOA	<ul style="list-style-type: none"> 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).
17	Arrangement of unskilled labor	Beneficiaries	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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).
19	Reserving fund for maintenance works	FRUC	<ul style="list-style-type: none"> For the following maintenance, fund will be reserved in the system of FRUC.
20	Routine maintenance	FRUC	<ul style="list-style-type: none"> 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 style="list-style-type: none"> Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of the site in-charge.

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
22	MOA/ FRUC	<ul style="list-style-type: none"> 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. Schedule

Required Action (WHAT)	Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Establishment of institution for farm road construction		□									
2	Consensus in GYT		□									
3	Official request (FRFORM.01) for implementation		□									
4	Preliminary Investigation (Module 1)		□									
5	Consensus in DYT		□									
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)		□									
7	Multi-disciplinary Feasibility Study (Module 2)			□								
8	Environmental study		□									
9	Budget allocation for construction		□									
10	Pre-construction Meeting (Module 3)		□									
11	Establishment of Farm Road Users Cooperative (FRUC)		□									
12	Land acquisition			□								
13	Technical Training for Site Engineer and Site In-charge			□								
14	Overall management of construction				□							
15	Construction machinery and equipment				□							
16	Arrangement of unskilled labor				□							
17	Completion and Handing over (Module 5)			□								

Required Action (WHAT)		Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
18	Reserving fund for maintenance works	2004.7 -											
19	Routine maintenance	2004.12 -											
20	Annual maintenance	2005.12				□	□	□	□	□	□	□	□
21	Periodical repair works	2009.11								□			

VI. Implementation and Monitoring System of Action Plan

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

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

I. General

Sheet No.

AP-29

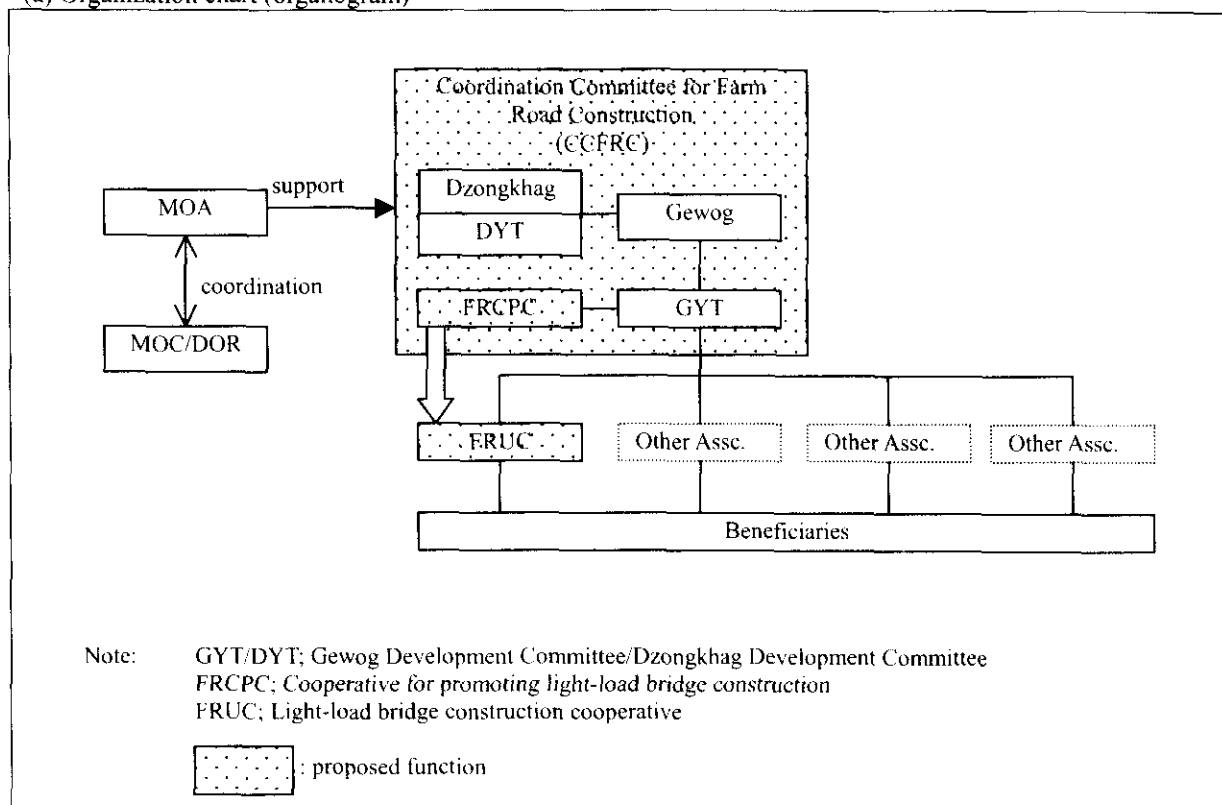
Program	Farm Road Construction Program / Gangzur / Lhuntse (Lingabee to Ney)		
Sub-program			
Stakeholders	Level	Organization / Name	Contact Person
	National	MOA	Mr. Kaylzung Tshering (SE. DRDS, 02-322228)
	Dzongkhag	Lhuntse	Mr. Om Nath Giri (DE, 04-545128) Mr. Deepak Rai (DAO, 04-545127)
	Gewog	GYT	Mr. Yeshi Dorji (Gup)
	Beneficiaries	Tentative Cooperative(92HH)	Mr. Tsheten Dorji (Ex. Mangmi)

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To improve rural access to motor road, especially activating access to the center of Gangzur, benefited household = 12.4 HH/km
Activities	<ul style="list-style-type: none"> Survey, Design and Cost Estimation Construction of farm road Maintenance by Farm Road Users Cooperative Procurement of construction materials and tools Procurement of construction machinery Environmental study Financial arrangement Establishment of organization
Input	<ul style="list-style-type: none"> Surveyor (MOA and Dzongkhag) Civil Engineer for Design (MOA and Dzongkhag) Civil Engineer for Supervision (Dzongkhag) Construction Machinery with Operator (CMU, MOA) Construction Materials and Tools (MOA) Skilled Labor (Mason, Blaster, etc.) Unskilled labor (Gewog Beneficiaries) Project Cost Nu. 52.2 mil. (Including indirect cost). Maintenance by Farm Road Users Cooperative
Output	<ul style="list-style-type: none"> The farm road is constructed (length = 9.5 km) and from this thing the road is connected with center of Gewog (Gangzur) through the feeder road. Through this construction worker with skill will be increased.
Period	<ul style="list-style-type: none"> Survey and Design 2003.7 ~ 2004.6 Construction 2006.7 ~ 2007.3 Maintenance 2007.4 ~
Related Program / Sub-program (How)	<ul style="list-style-type: none"> Construction Machinery Center Program (Construction machinery for the construction works will be provided through this program) Market System Development Program (Collection depot will be constructed along the farm road and group assembling will be conducted by farmers group)
Project Justification	<ul style="list-style-type: none"> 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. 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 than 30acres per km stipulated in guidelines for farm roads development of MOA. Consistency with upper plan/program: This is based on the program of MOA. 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.

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	DRDS, MOA	<ul style="list-style-type: none"> Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders and organizations especially DOR.
Dzungkhag	Engineering Office/ Agriculture Office	<ul style="list-style-type: none"> Actually supervises FRUA from its establishment to the construction and maintenance by FRUC including accounting of the program.
Gewog	GYT	<ul style="list-style-type: none"> 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 Dzungkhag.
Beneficiaries	FRUC	<ul style="list-style-type: none"> Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.

IV. Action Plan (sequent)

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Establishment of institution for farm road construction	Gewog/GYT	<ul style="list-style-type: none"> A cooperative for promoting farm road construction (FRGPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.
2	Consensus in GYT	GYT	<ul style="list-style-type: none"> The request of farm road construction from FRGPC will be discussed in GYT and with the consensus will be proceeded to Dzungkhag.
3	Official request (FRFORM.01) for implementation	GYT	<ul style="list-style-type: none"> The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzungkhag with necessary information for evaluation (distance, route, contribution by Gewogs or beneficiaries, etc.)
4	Preliminary Investigation (Module 1)	Dzungkhag / FRGPC	<ul style="list-style-type: none"> 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

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
			procedure.
5	Consensus in DYT	Dzongkhag / DYT	<ul style="list-style-type: none"> 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.
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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.
8	Environmental study	Dzongkhag / NEC	<ul style="list-style-type: none"> Based on the feasibility study report, if environmental study is required, EIA will be executed.
9	Budget allocation for construction	Dzongkhag	<ul style="list-style-type: none"> 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.
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul style="list-style-type: none"> 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 FRCP will be executed.
11	Establishment of Farm Road Users Cooperative (FRUC)	FRUC/ GYT	<ul style="list-style-type: none"> 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.
12	Land acquisition	Beneficiaries	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.
14	Overall management of construction	Dzongkhag	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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).
16	Arrangement of unskilled labor	Beneficiaries	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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).
18	Reserving fund for maintenance works	FRUC	<ul style="list-style-type: none"> For the following maintenance, fund will be reserved in the system of FRUC.
19	Routine maintenance	FRUC	<ul style="list-style-type: none"> Routine maintenance like side ditch cleaning will be periodically and timely carried out under the guidance of the site in-charge.
20	Periodical maintenance	FRUC	<ul style="list-style-type: none"> Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
		the site in-charge.
21	MOA/ FRUC	<ul style="list-style-type: none"> 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. Schedule

Required Action (WHAT)	Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Establishment of institution for farm road construction		□									
2	Consensus in GYT		□									
3	Official request (FRFORM.01) for implementation		□									
4	Preliminary Investigation (Module 1)		□									
5	Consensus in DYT		□									
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)		□									
7	Multi-disciplinary Feasibility Study (Module 2)			□								
8	Environmental study			□								
9	Budget allocation for construction					□						
10	Pre-construction Meeting (Module 3)					□						
11	Establishment of Farm Road Users Cooperative (FRUC)					□						
12	Land acquisition						□					
13	Technical Training for Site Engineer and Site In-charge						□					
14	Overall management of construction							□				
15	Construction machinery and equipment							□				
16	Arrangement of unskilled labor							□				
17	Completion and Handing over (Module 5)								□			

Required Action (WHAT)		Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
18	Reserving fund for maintenance works	2006.10 -											
19	Routine maintenance	2007.4 -											
20	Annual maintenance	2008.4 -							□	□	□	□	□
21	Periodical repair works	20012.3 -											□

VI. Implementation and Monitoring System of Action Plan

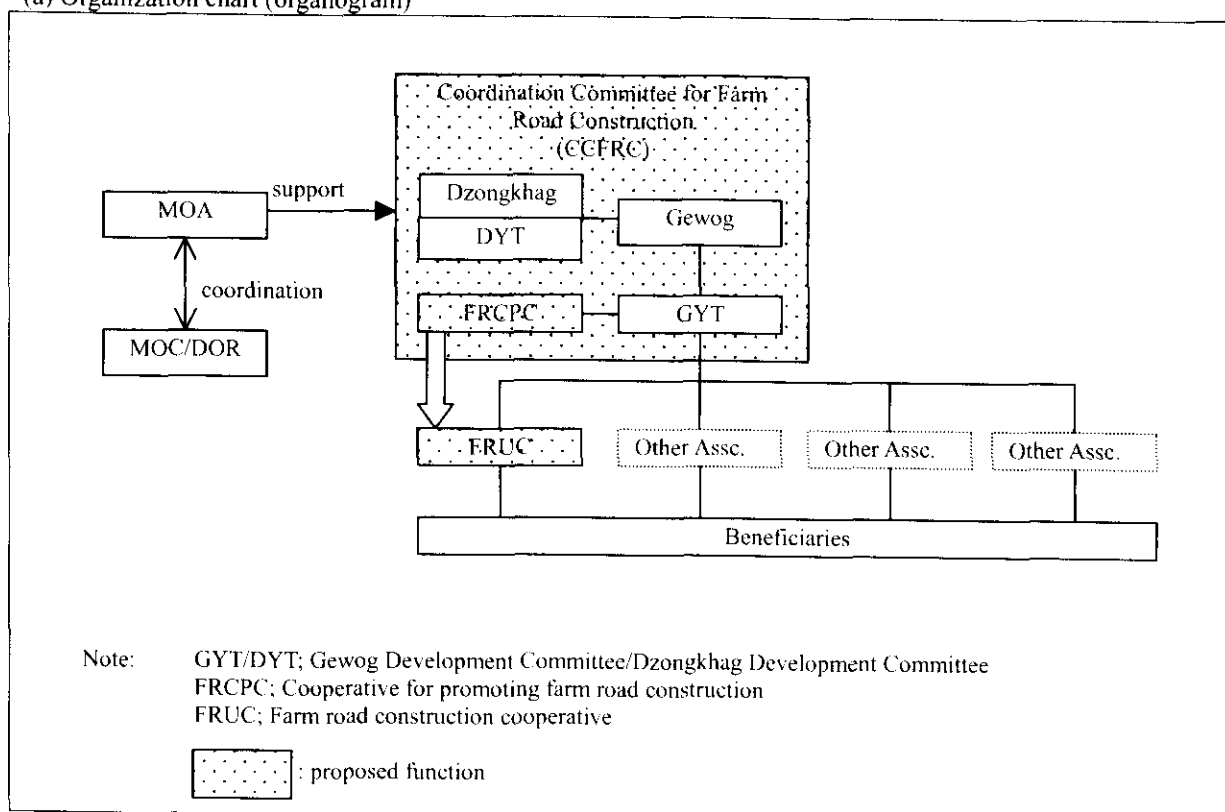
Action	Plan
Progress Management of A/P	WHO • DE/DAO, Lhuntse Dzongkhag
	WHEN • Monthly basis
	WHERE • Lhuntse Dzongkhag Engineering/Agriculture Office
	HOW • Monthly Report prepared by Site Engineer of Dzongkhag
Budget Management at Preparatory Stage	WHO • Superintending Engineer, DRDS, MOA
	WHEN • Every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

5.2 Farm Road Construction Program, Drepong, Mongar

I. General		Sheet No.	AP-30
Program	Farm Road Construction Program / Drepong / Mongar (Gyelposhing to Lapsa)		
Sub-program			
Stakeholders	Level	Organization / Name	Contact Person
	National	MOA	Mr. Kaylzung Tshering (SE. DRDS, 02-322228)
	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/Sub-program			
Target	<ul style="list-style-type: none"> • To improve rural access to motor road which is developed for the project of Kurichhu Hydropower and planned to extend up to Nganglam, Samdrup Jongkhar, length = 23.5 km 		
Activities	<ul style="list-style-type: none"> • Survey, Design and Cost Estimation • Construction of farm road • Maintenance by Farm Road Users Cooperative • Procurement of construction materials and tools • Procurement of construction machinery • Environmental study • Financial arrangement • Establishment of organization 		
Input	<ul style="list-style-type: none"> • Surveyor (MOA and Dzongkhag) • Civil Engineer for Design (MOA and Dzongkhag) • Civil Engineer for Supervision (Dzongkhag) • Construction Machinery with Operator (CMU, MOA) • Construction Materials and Tools (MOA) • Skilled Labor (Mason, Blaster, etc., MOA) • Unskilled labor (Gewog Beneficiaries) • Project Cost Nu. 129.2 mil. (Including indirect cost). • Maintenance by Farm Road Users Cooperative 		
Output	<ul style="list-style-type: none"> • The center (Lapsa) of Gewog and haul road to Kurichhu Hydro-Power Project is connected at Gyelposhing in Mongar. 		
Period	<ul style="list-style-type: none"> • Survey and Design 2003.7 ~ 2005.6 • Construction 2005.7 ~ 2007.6 • Maintenance 2007.7 ~ 		
Related Program / Sub-program (How)	<ul style="list-style-type: none"> • Construction Machinery Center Program (Construction machinery for the construction works will be provided through this program) • Market System Development Program (Collection depot will be constructed along the farm road and group assembling will be conducted by farmers group) 		
Project Justification	<ul style="list-style-type: none"> • 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. • 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. • Consistency with upper plan/program: This is based on the program of MOA. • 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. 		

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	DRDS, MOA	<ul style="list-style-type: none"> Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders and organizations especially DOR.
Dzongkhag	Engineering Office/ Agriculture Office	<ul style="list-style-type: none"> Actually supervises FRUA from its establishment to the construction and maintenance by FRUC including accounting of the program.
Gewog	GYT	<ul style="list-style-type: none"> 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	FRUC	<ul style="list-style-type: none"> Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.

IV. Action Plan (sequent)

Required Action (WHAT)		Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Establishment of institution for farm road construction	Gewog/GYT	<ul style="list-style-type: none"> A cooperative for promoting farm road construction (FRPCPC) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.
2	Consensus in GYT	GYT	<ul style="list-style-type: none"> The request of farm road construction from FRPCPC will be discussed in GYT and with the consensus will be proceeded to Dzongkhag.
3	Official request (FRFORM.01) for implementation	GYT	<ul style="list-style-type: none"> 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 / FRPCPC	<ul style="list-style-type: none"> 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

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
			<i>procedure.</i>
5	Consensus in DYT	Dzongkhag / DYT	<ul style="list-style-type: none"> 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.
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	Dzongkhag	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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.
8	Environmental study	Dzongkhag / NEC	<ul style="list-style-type: none"> Based on the feasibility study report, if environmental study is required, EIA will be executed.
9	Budget allocation for construction	Dzongkhag	<ul style="list-style-type: none"> 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.
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul style="list-style-type: none"> 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 FRCP will be executed.
11	Establishment of Farm Road Users Cooperative (FRUC)	FRUC/ GYT	<ul style="list-style-type: none"> 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.
12	Land acquisition	Beneficiaries	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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.
14	Overall management of construction	Dzongkhag	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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).
16	Arrangement of unskilled labor	Beneficiaries	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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).
18	Reserving fund for maintenance works	FRUC	<ul style="list-style-type: none"> For the following maintenance, fund will be reserved in the system of FRUC.
19	Routine maintenance	FRUC	<ul style="list-style-type: none"> Routine maintenance like side ditch cleaning will be periodically and timely carried out under the guidance of the site in-charge.
20	Periodical maintenance	FRUC	<ul style="list-style-type: none"> Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
		the site in-charge.
21	MOA/ FRUC	<ul style="list-style-type: none"> 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. Schedule

Required Action (WHAT)	Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Establishment of institution for farm road construction			☐								
2	Consensus in GYT			☐								
3	Official request (FRFORM.01) for implementation			☐								
4	Preliminary Investigation (Module 1)			☐								
5	Consensus in DYT			☐								
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)			☐								
7	Multi-disciplinary Feasibility Study (Module 2)	2004.7 - 2004.11		☐								
8	Environmental study	2004.11		☐								
9	Budget allocation for construction	2004.12		☐								
10	Pre-construction Meeting (Module 3)	2004.12		☐								
11	Establishment of Farm Road Users Cooperative (FRUC)	2004.12		☐								
12	Land acquisition	2005.1 - 2007.6				▬						
13	Technical Training for Site Engineer and Site In-charge	2005.1 - 2005.6			☐							
14	Overall management of construction	2005.7 - 2007.6				▬						
15	Construction machinery and equipment	2005.7 - 2007.6				▬						
16	Arrangement of unskilled labor	2005.7 - 2007.6				▬						
17	Completion and Handing over (Module 5)	2007.6					☐					

Required Action (WHAT)		Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
18	Reserving fund for maintenance works	2007.1 -											
19	Routine maintenance	2007.7 -											
20	Annual maintenance	2008.7							□	□	□	□	□
21	Periodical repair works	2012.6											□

VI. Implementation and Monitoring System of Action Plan

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

6.1 Farm Mule Track Construction Program, Khoma, Lhuntse

I. General

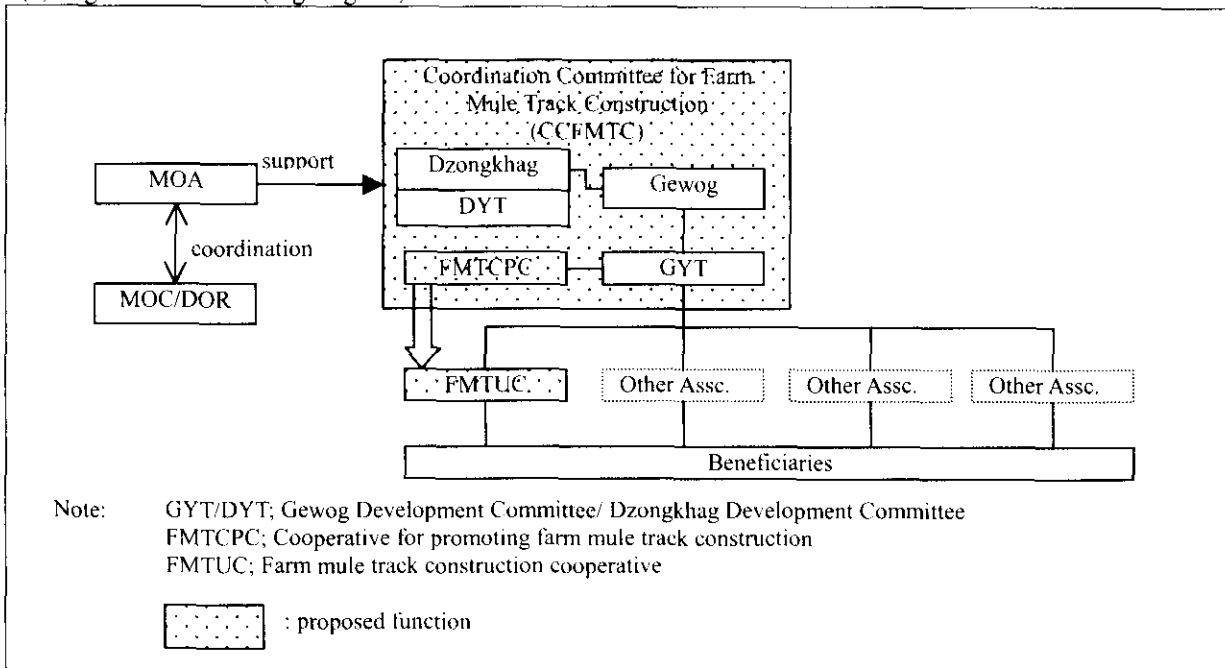
Program		Farm Mule Track Construction Program / Khoma / Lhuntse	
Sub-program			
Stakeholders	Level	Organization / Name	Contact Person
	National	MOA	Mr. Kaylzang Tshering (SE. DRDS, 02-322228)
	Dzongkhag	Lhuntse	Mr. Om Nath Giri (DE, 04-545128) Mr. Deepak Rai (DAO, 04-545127)
	Gewog	GYT	Mr. Khandu (Gup)
	Beneficiaries	Tentative Cooperative (258 HH)	Mr. Chado (Mangmi)

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To improve rural access to motor road with the center of Gewog Khoma, length = 6.3 km.
Activities	<ul style="list-style-type: none"> Survey, Design and Cost Estimation Construction of farm mule track Maintenance by Farm Mule Track Users Cooperative Procurement of construction materials and tools Financial arrangement Establishment of organization
Input	<ul style="list-style-type: none"> Surveyor (Dzongkhag) Civil Engineer for Design (Dzongkhag) Civil Engineer for Supervision (Dzongkhag) Construction Materials and Tools (MOA) 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	<ul style="list-style-type: none"> The center of Gewog (Khoma) is connected with Dzongkhag Road in Lhuntse, length = 6.3 km
Period	<ul style="list-style-type: none"> Survey and Design 2002.9 ~ 2005.6 Construction 2002.9 ~ 2006.10 (including trial construction) Maintenance 2006.11 ~
Related Program / Sub-program (How)	<ul style="list-style-type: none"> Market System Development Program (Collection depot will be constructed along the farm road and group assembling will be conducted by farmers group)
Project Justification	<ul style="list-style-type: none"> Environment: The routine environmental checking by NEC was executed prior to the commencement of trial construction and an authorization issuance of NEC has been applied by Dzongkhag. Efficiency: Reasonable range of construction cost per km is about 220,000 Nu 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 than 30 acres per km stipulated in guidelines for farm roads development of MOA as this might be upgraded to farm road in future. Consistency with upper plan/program: This is based on the program of MOA. 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.

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	DRDS, MOA	<ul style="list-style-type: none"> Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders.
Dzyongkhag	Engineering Office/ Agriculture Office	<ul style="list-style-type: none"> Actually supervises FMTUC from its establishment to the construction and maintenance by FMTUC including accounting of the program.
Gewog	GYT	<ul style="list-style-type: none"> 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 Dzyongkhag.
Beneficiaries	FMTUC	<ul style="list-style-type: none"> Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.

IV. Action Plan (sequent)

	Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1	Establishment of institution for farm mule track construction	Gewog/GYT	<ul style="list-style-type: none"> A cooperative for promoting farm mule track construction (FMTCPG) will be tentatively established based on the petition from EA and beneficiaries under Gup in GYT.
2	Consensus in GYT	GYT	<ul style="list-style-type: none"> The request of farm mule track construction from FMTCPG will be discussed in GYT and with the consensus will be proceeded to Dzyongkhag.
3	Official request (FRFORM.01) for implementation	GYT	<ul style="list-style-type: none"> The GYT member will prepare a request letter and the letter with the signature of Gup will be officially submitted to Dzyongkhag with necessary information for evaluation (distance, route, contribution by Gewogs or beneficiaries, etc.)
4	Preliminary Investigation (Module 1)	Dzyongkhag / FMTCPG	<ul style="list-style-type: none"> 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.
5	Consensus in DYT	Dzyongkhag / DYT	<ul style="list-style-type: none"> The request will be discussed based on the project identification report, and with the consensus and Dzyongda's approval will be proceeded to MOA and MOF for further procedure for budget allocation.
6	Budget allocation for	Dzyongkhag	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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.
8	Environmental study	Dzongkhag / NEC	<ul style="list-style-type: none"> Based on the feasibility study report, if environmental study is required, EIA will be executed.
9	Budget allocation for construction	Dzongkhag	<ul style="list-style-type: none"> 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.
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul style="list-style-type: none"> 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 FMTUC will be executed.
11	Establishment of Farm Mule Track Users Cooperative (FMTUC)	FMTUA/ GYT	<ul style="list-style-type: none"> 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.
12	Land acquisition	Beneficiaries	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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).
16	Arrangement of unskilled labor	Beneficiaries	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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).
18	Reserving fund for maintenance works	FMTUC	<ul style="list-style-type: none"> For the following maintenance, fund will be reserved in the system of FMTUC.
19	Routine maintenance	FMTUC	<ul style="list-style-type: none"> Routine maintenance like removing debris to be an obstacle will be periodically and timely carried out under the guidance of the site in-charge.
20	Periodical maintenance	FMTUC	<ul style="list-style-type: none"> Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of the site in-charge.
21	Periodical repair works	MOA/ FMTUC	<ul style="list-style-type: none"> 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, the farm mule track construction program will follow this procedure as well.

V. Schedule

Required Action (WHAT)		Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1	Establishment of institution for farm mule track construction	2004.4			☐								
2	Consensus in GYT	2004.4			☐								
3	Official request (FRFORM.01) for implementation	2004.4			☐								
4	Preliminary Investigation (Module 1)	2004.5			☐								
5	Consensus in DYT	2004.5			☐								
6	Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	2004.6			☐								
7	Multi-disciplinary Feasibility Study (Module 2)	2004.7 - 2004.11			☐								
8	Environmental study	2004.11			☐								
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			☐								
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	☐ (Trial)										
15	Procurement of construction materials and tools	2005.5 - 2005.6				☐							
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	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
20	Periodical maintenance	2007.11 -							☐	☐	☐	☐	☐
21	Periodical repair works(5years interval)	2011.10											☐

VI. Implementation and Monitoring System of Action Plan

Action	Plan	
Progress Management of A/P	WHO	• DE/DAO, Lhuntse Dzongkhag
	WHEN	• Monthly basis
	WHERE	• Lhuntse Dzongkhag Engineering/Agriculture Office
	HOW	• Monthly Report prepared by Site Engineer of Dzongkhag
Budget Management at Preparatory Stage	WHO	• Superintending Engineer, DRDS, MOA
	WHEN	• Every Financial Year
	WHERE	• MOA Office, Thimphu
	HOW	• As per Financial Manual of Royal Government of Bhutan
Budget Management at Implementation Stage	WHO	• DAO, Lhuntse Dzongkhag
	WHEN	• Monthly basis
	WHERE	• Lhuntse Dzongkhag Agriculture Office
	HOW	• As per Financial Manual of Royal Government of Bhutan
Budget Management at O&M Stage	WHO	• Chairperson, FRUC
	WHEN	• Monthly basis
	WHERE	• Accountant, FRUC
	HOW	• Constitution/Bylaws enacted in FRUC
Problem Solving	WHO	<ul style="list-style-type: none"> • Budget arrangement: Superintending engineer, DRDS, MOA at preparatory stage/ DAO, Dzongkhag at implementation stage/ Chairperson, FRUC at O&M stage. • Technical problems: DE, Dzongkhag • Accident, Participation, Dispute: Chairperson, FRUC • Manpower: Superintending engineer, DRDS, MOA
	WHEN	• As the problems happened.
	WHERE	<ul style="list-style-type: none"> • Budget arrangement: DRDS, MOA at preparatory stage/ Agricultural Office, Dzongkhag at implementation stage/ FRUC Office at O&M stage. • Technical problems: Dzongkhag Engineering Office • Accident, Participation, Dispute: FRUC Office • Manpower: DRDS, MOA
	HOW	<ul style="list-style-type: none"> • 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 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

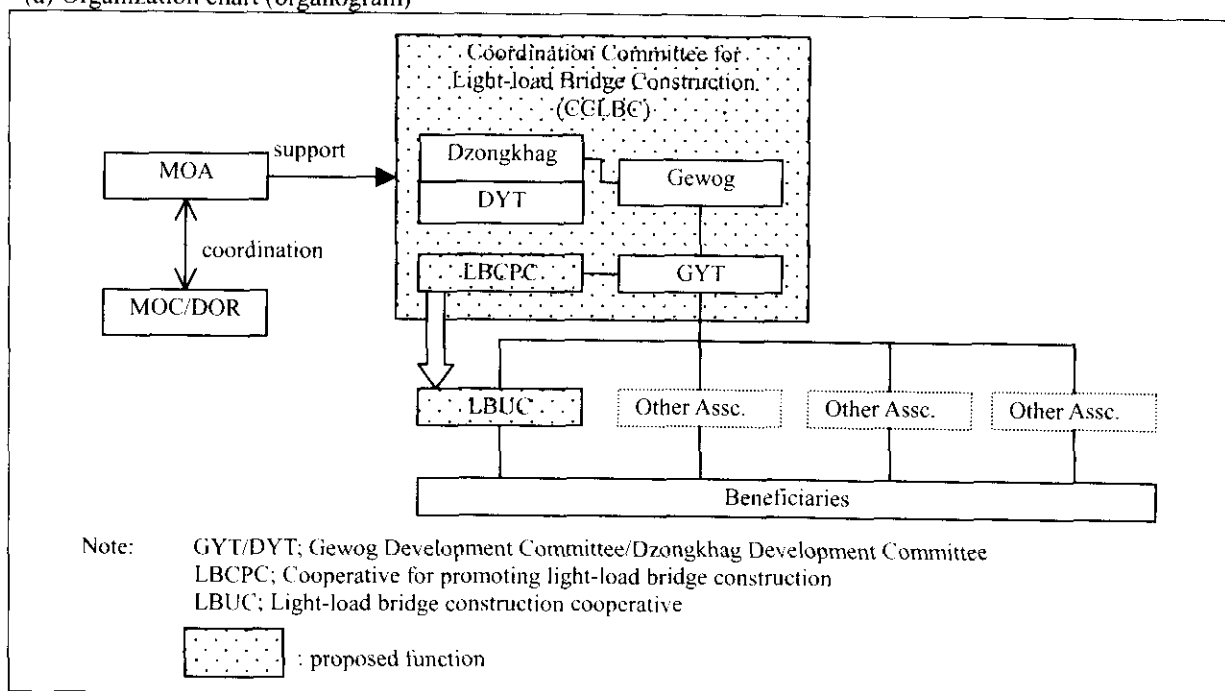
Program	Light-load Bridge Construction Program / Khoma / Lhuntse		
Sub-program			
Stakeholders	Level	Organization / Name	Contact Person
	National	MOA	Mr. Kaylzung Tshering (SE. DRDS, 02-322228)
	Dzongkhag	Lhuntse	Mr. Om Nath Giri (DE, 04-545128) Mr. Deepak Rai (DAO, 04-545127)
	Gewog	GYT	Mr. Khandu (Gup)
	Beneficiaries	All Gewog	Mr. Chado (Mangmi)

II. Program/Sub-program

Target	<ul style="list-style-type: none"> To cross Kurichhu and improve rural access to motor road with the center of Gewog Khoma, span = 90 m, tolerance of power tiller with trailer passing
Activities	<ul style="list-style-type: none"> Survey, Design and Cost estimation Construction of Light-load bridge Maintenance by Light-load Bridge Users Cooperative Procurement of construction materials and tools Financial arrangement Establishment of organization
Input	<ul style="list-style-type: none"> Surveyor (DOR and Dzongkhag) Civil Engineer for Design (DOR) Civil Engineer for Supervision (Dzongkhag) Construction Materials and Tools (Dzongkhag) Skilled Labor (Mason, Blaster, etc.) Unskilled labor (Gewog Beneficiaries) Project Cost Nu. 6.4 mil. (Including indirect cost). Maintenance by Light-load Bridge Users Cooperative
Output	<ul style="list-style-type: none"> The light-load bridge is constructed to cross Kurichhu and connect with Dzongkhag Road in Lhuntse.
Period	<ul style="list-style-type: none"> Survey and Design 2002.10 ~ 2002.12 Construction 2003.7 ~ 2005.6 Maintenance 2005.7
Related Program / Sub-program (How)	<ul style="list-style-type: none"> Market System Development Program (Collection depot will be constructed along the farm road and group assembling will be conducted by farmers group)
Project Justification	<ul style="list-style-type: none"> 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. 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. Consistency with upper plan/program: This is based on the program of MOA. 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.

III. Implementing Organization

(a) Organization chart (organogram)



(b) General Role and Responsibility of Stakeholders

Stakeholder		General Role and Responsibility
National	DRDS, MOA	<ul style="list-style-type: none"> Responsible for the program comprehensively in terms of finance, technical backstopping and coordination with other stakeholders and organizations especially DOR.
Dzongkhag	Engineering Office/ Agriculture Office	<ul style="list-style-type: none"> Actually supervises LBUC from its establishment to the construction and maintenance by LBUC including accounting of the program.
Gewog	GYT	<ul style="list-style-type: none"> 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	LBUC	<ul style="list-style-type: none"> Directly engages in the program and participate the construction and maintenance from at the stage of preliminary survey as unskilled labor free of charge.

IV. Action Plan (sequent)

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (HOW)
1 Establishment of institution for light-load bridge construction	Gewog/GYT	<ul style="list-style-type: none"> 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.
2 Consensus in GYT	GYT	<ul style="list-style-type: none"> The request of light-load bridge construction from LBCPC will be discussed in GYT and with the consensus will be proceeded to Dzongkhag.
3 Official request (FRFORM.01) for implementation	GYT	<ul style="list-style-type: none"> 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.)
4 Preliminary Investigation (Module 1)	Dzongkhag / FMTCP	<ul style="list-style-type: none"> 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.
5 Consensus in DYT	Dzongkhag / DYT	<ul style="list-style-type: none"> 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)
			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 style="list-style-type: none"> 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 style="list-style-type: none"> 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 style="list-style-type: none"> Based on the feasibility study report, if environmental study is required, EIA will be executed.
9	Budget allocation for construction	Dzongkhag	<ul style="list-style-type: none"> 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.
10	Pre-construction Meeting (Module 3)	Dzongkhag	<ul style="list-style-type: none"> 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 LBUC will be executed.
11	Establishment of Light-load Bridge Users Cooperative (LBUC)	LBUC/ GYT	<ul style="list-style-type: none"> 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.
12	Land acquisition	Beneficiaries	<ul style="list-style-type: none"> Land acquisition and expropriation surrounding abutment and anchor block will be carried out under the instruction of Dzongkhag.
13	Technical Training for Site Engineer and Site In-charge	Dzongkhag	<ul style="list-style-type: none"> 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.
14	Overall management of construction	Dzongkhag	<ul style="list-style-type: none"> The construction of light-load bridge will be carried out under the management of Dzongkhag in Implementation (Module 4).
15	Procurement of construction materials and tools	Dzongkhag	<ul style="list-style-type: none"> 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).
16	Arrangement of unskilled labor	Beneficiaries	<ul style="list-style-type: none"> 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 style="list-style-type: none"> 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).
18	Reserving fund for maintenance works	LBUC	<ul style="list-style-type: none"> For the following maintenance, fund will be reserved in the system of LBUC.
19	Routine maintenance	LBUC	<ul style="list-style-type: none"> Routine maintenance like cleaning of deck will be periodically and timely carried out under the guidance of the site in-charge.
20	Periodical maintenance	LBUC	<ul style="list-style-type: none"> Annual maintenance for natural calamity and unexpected disasters will be periodically carried out under the guidance of the site in-charge.
21	Periodical repair works	Dzongkhag/	<ul style="list-style-type: none"> Major repair will be executed by LBUC in accordance with the

Required Action (WHAT)	Responsible Stakeholder (WHO)	Detailed Activities (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	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
1 Establishment of institution for light-load bridge construction	2002.10		☐									
2 Consensus in GYT	2002.10		☐									
3 Official request (FRFORM.01) for implementation	2002.10		☐									
4 Preliminary Investigation (Module 1)	2002.10		☐									
5 Consensus in DYT	2002.10		☐									
6 Budget allocation for Multi-disciplinary Feasibility Study (Module 2)	2002.10		☐									
7 Multi-disciplinary Feasibility Study (Module 2)	2002.10 - 2003.2		☐									
8 Environmental study	2003.2		☐									
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		☐									
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		☐									
16 Arrangement of unskilled labor	2003.7 - 2005.6											
17 Completion and Handing over (Module 5)	2005.6											☐

Required Action (WHAT)		Period	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
18	Reserving fund for maintenance works	2005.4 -											
19	Routine maintenance	2005.7 -											
20	Periodical maintenance	2006.7 -					□	□	□	□	□	□	□
21	Periodical repair works	20010.6									□		

VI. Implementation and Monitoring System

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