

RNR SECTOR TENTH PLAN (2008 – 2013)

Enabling farming communities to overcome poverty



VOLUME II PROGRAM & BUDGET DETAILS

Ministry of Agriculture
October 2009

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Introduction

Volume II of the RNR Sector Tenth Plan contains the details of the programs as mentioned in the RNR Sector Tenth Plan – Main Document. In Volume II, the 29 programs to be implemented during the Tenth Plan have been elaborated at the subprogram, activity and sub activity level, with indicators assigned at various levels. The budget outlay for each program/subprogram/activity and the monitoring and evaluation plans are also reflected in this document. These programme details are organised in the following tables:

- Table 1: Programme Results Matrix : Broads indicators and baseline/targets for the programme
- Table 2: Programme Activities: details out till sub activity level
- Table 3: Program Plan Outlay: capital budget outlay by sub activity
- Table 4 : Monitoring & Evaluation Plan: a brief M&E plan

To bridge the central and local level programs, the Ministry has initiated the One Geog Three Products (OGTP) approach, which is over and above the geog plans. In Volume II, the OGTP have been integrated (in italics) under relevant programme to streamline and harmonize the various activities of the geogs to be supported by the central programs.

Programme Profile	
Administrative Unit: Ministry of Agriculture	Sector: Agriculture Services
Programme : Agriculture Programmes (MOA/01 to MoA/12)	Plan Phase:10 th FYP

Contribution to National and International Goals and targets

Classification	Categories	Goals	Targets/Indicators
MDG		Goal 1: Eradicate extreme poverty and hunger	Target 1: halve by 2015, the proportion of people living below poverty line
SDG	Livelihood SDG	Goal 2 Halve proportion of people in poverty by 2012	1.Percentage of people living on less than 1\$ per day (PPP terms)
Strategy for GNH	3.Integrated Rural-Urban Development and Poverty All Alleviation (IRUDPA)	3.Integrated Rural-Urban Development and Poverty All Alleviation (IRUDPA)	3.Integrated Rural-Urban Development and Poverty All Alleviation (IRUDPA)
GNH Index	Domain 9. Living Standards	Domain 9. Living Standards	Domain 9. Living Standards
	Domain 8. Ecological Diversity and Resilience	Domain 8. Ecological Diversity and Resilience	Domain 8. Ecological Diversity and Resilience

Classification	Categories	Goals	Targets/Indicators
GNH pillars	1:Equitable & Sustainable Socio-Economic Development	1. Food Security	<ul style="list-style-type: none"> • Self sufficiency in rice increased from 50% to 65%. The present level of rice production of 54,325 MT per year will be increased to 62,474 MT per year by the end of 10 FYP. • Cereal production including paddy increased from 140,000 MT to 150,000 MT per year • Portion of wetland with dry season irrigation increased from 40% to 70%. • Prime agriculture land identified and maintained purely for agriculture production • Loss from crop damage by wildlife reduced from 40% to 20%. • At least 30-40% of farmers practice sustainable land management • Quality and quantity of seeds and planting materials supply increased from 2 % to 50% of requirement; Availability and access of food crop
		2. Income Generation	<ul style="list-style-type: none"> • Value of horticulture export increased from Nu.476 million per year to Nu. 900 million per year. • Portion of farmers engaged in horticulture export cropping increased from 10% to 25% • Availability and access of fruit crops seedlings increased from 2,00,00 nos to 5,00,000 nos.
	2. Environmental Conservation	1. Access to Natural Resource	<ul style="list-style-type: none"> • Proportion of rural households adopting organic farming principles increased from 1.5% to 10% and area under certified organic agriculture doubled from 150acres to 300acres

Classification	Categories	Goals	Targets/Indicators
	4. Good Governance	1. Service Delivery	<ul style="list-style-type: none"> • 20 dedicated farmer service centers established at gewog level. • 40 One stop shops established.
		2. Enabling Policy & legal environment	<ul style="list-style-type: none"> • RNR sector related acts enacted or amended and implemented (Pesticide Act; Cooperatives Act; Water Act, Agriculture Protection Act). • RNR sector policies revised/formulated (Organic Agriculture Policy, RNR Extension Policy, etc). • At least 20 Strategic RNR program frameworks developed including National Action Plan for combating land degradation.
		3. Common Services	<ul style="list-style-type: none"> • Proportion of rural population living more than 1 hr from the road head reduced from 40% to 20% • Out-reach farm machinery services extended to gewog level.

MoA/01: Commodity/Cereal Development Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Increase cereal self sufficiency	Proportion of rural households self sufficient in rice	50% (2006)	65%
	Increase in production of cereal	177,169MT	15% increase
	Increase in national rice self-sufficiency level	50% (2006)	65%
	Total arable area covered by high yielding varieties	30% (2006)	50%

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Farmers adopt new crop varieties and management practices.	No of farmers adopting new varieties by crop and by Dzongkhag % of farming communities applying and adopting new farming practices	RNR census 2008	15% increase

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity Priority	Geographic Coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
001 Farmers adopt new crop varieties and management practices.	Activity 1: Rice Development						
	Sub Activity 1: Promotion of improved seeds, maintenance of local seeds of good varieties,		All rice growing Dzs. <i>Rice (Wangchang, Phangyul, Yalang, Nyisbo, Dala, Sangbay, Menji, Drepong, Gelephu, Umling, Dremetse, Chuzargang, Shengana, Toewang, Pemathang, Phintshothang, Samrang, Yoeseltse, Goshiling, Gaserling, Goenshari, Guma, Dzoma, bapisa, Serzhong, Chboekborling, Radhi, Toetsbo, Bbur, Nichula)</i>	July 2008	June 2013	Agriculture Division, DOA	RCs, Dz.
	Sub Activity 2. Nursery management (improved methods)		- Do -	July 2008	June 2013	Agriculture Division	RCs
	Sub Activity 3: Promote rice double cropping in potential areas (technology/support services)		- Do -	July 2008	June 2013	Agriculture Division	RCs, Dz.
	Sub Activity 4: Support irrigation water management (WUAs)		- Do -	July 2008	June 2013	Agriculture Division	Dz.

Programme Outputs	Programme activities	Activity Priority	Geographic Coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 5: Soil fertility and nutrient management (green manures, chemical fertilizers)		-Do	July 2008	June 2013	Agriculture Division	NSSC
	Sub Activity 6: Weed control and management (demonstrations/ trials/ promotions)		- Do -	July 2008	June 2013	Agriculture Division	NPPC
	Sub Activity 7 :Support rice mechanization promote new technologies/ trainings/ support services)		- Do -	July 2008	June 2013	Agriculture Division	AMC
	Sub Activity 8:Rice Production – on the job/ in-country training of Farmers/EAs		- Do -	July 2008	June 2013	Agriculture Division	Dz.
	Sub Activity 9:Create awareness on processing, value addition and marketing		- Do -	July 2008	June 2013	Agri Division	NPHC, AMC
	Sub Activity 10: Promote commercialization of rice production (market led approach)		- Do -	July 2008	June 2013	Agriculture Division	RC, Dz.,
	Sub Activity 11: Support rice OGTP gewogs		As per OGTP analysis	July 2009	June 2013	Agriculture Division	Dz.

Programme Outputs	Programme activities	Activity Priority	Geographic Coverage	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Activity 2. Maize Development						
	Sub Activity 1:Promotion of improved seeds, maintenance of local seeds of good varieties,		T/gang, Monggar, Lhuentzi, T/Y, Chukha, Haa, Samtse, Sarpang, P/G, Z/gang, Trongsa, S/J Maize (Yangneer, Silimbi, Bidung, Taraythang, Dorona, Sengye, Bartsham, Hiley)	July 2008	June 2013	Agriculture Division	RC, Dz.
	Sub Activity 2: Support post harvest and processing		-do-	July 2008	June 2013	Agriculture Division	NPHC, AMC
	Sub Activity 3: Promote improved maize storage		-do-	July 2008	June 2013	Agriculture Division	Dz.
	Sub Activity 4: Soil fertility and nutrient management (green manures, fertilizers)		-do-	July 2008	June 2013	Agriculture Division	NSSC
	Sub Activity 5:On the job in-country training of farmers and EAs		-do-	July 2008	June 2013	Agriculture Division	Dz.
	Sub Activity 6:Support Maize OGTP geogs		Maize (Yangneer, Silimbi, Bidung, Taraythang, Dorona, Sengye, Bartsham, Hiley)	July 2009	June 2013	Agriculture Division	Dz.

Programme Outputs	Programme activities	Activity Priority	Geographic Coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Activity 3. Oilseed & grain legume						
	Sub Activity 1: Promotion of improved seeds, maintenance of local seeds of good varieties,		Punakha, Wangdue, Bumthang, Sarpang, Tsirang, Dagana	July 2008	June 2013	Agriculture Division	RC, Dz.
	Sub Activity 2: Promote processing technology (oil expelling, packaging)		- Do -	July 2008	June 2013	Agriculture Division	AMC, NPHC, Dz.
	Sub Activity 3: Promote commercialization of oil seeds production in selected areas (market led approach)		Mung bean (Drugyelgang) Mustard (jarey, Kurtoc, Menbi, Tang)	July 2008	June 2013	Agriculture Division	Dz., AMS
	Activity 4. Other cereals						
	Sub Activity 1: Create awareness on the importance of cereals for household food security		Z/gang, Haa B/thang, T/Y, Trongsa, P/G, Lhuentse,	July 2008	June 2013	Agriculture Division	Dz.
	Sub Activity 2: Support processing and value addition and find niche markets		- Do -	July 2008	June 2013	Agriculture Division	AMC, NPHC,
	Sub Activity 3 : Develop production management techniques and provide support measures and services		- Do -	July 2008	June 2013	Agriculture Division	RC, Dz.

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1: Rice Development					
Sub Activity 1:Promotion of improved seeds, maintenance of local seeds of good varieties			2.000		
Sub Activity 2. Nursery management (improved methods)			2.000		
Sub Activity 3: Promote rice double cropping in potential areas (technology/ support services)			2.000		
Sub Activity 4: Support irrigation water management (WUAs)			1.000		
Sub Activity 5: Soil fertility and nutrient management (green manures, chemical fertilizers)			0.500		
Sub Activity 6: Weed control and management (demonstrations/trials/ promotions)			1.000		
Sub Activity 7 :Support rice mechanization promote new technologies/ trainings/support services)			4.500		
Sub Activity 8:Rice Production – on the job/in-country training of Farmers and EAs			1.000		
Sub Activity 9:Create awareness on processing, value addition and marketing			1.000		
Sub Activity 10: Promote commercialization of rice production (market led approach)			6.000		
Sub Activity 11: Support rice OGTP gewogs			10.000		
Activity2. Maize Development					
Sub Activity 1:Promotion of improved seeds, maintenance of local seeds of good varieties,			1.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 2: Support post harvest and processing			2.000		
Sub Activity 3: Promote improved maize storage			1.500		
Sub Activity 4 Soil fertility and nutrient management (green manures, chemical fertilizers)			2.000		
Sub Activity 5:On the job in-country training of farmers and Eas			1.500		
Sub Activity 6:Support Maize OGTP geogs			3.000		
Activity 3. Oilseed & grain legume					
Sub Activity 1: Promotion of improved seeds, maintenance of local seeds of good varieties,			2.000		
Sub Activity 2: Promote processing technology (oil expelling, packaging)			2.000		
Sub Activity 3: Promote commercialization of oil seeds production in selected areas (market led approach)			5.000		
Activity4. Other Minor cereals					
Sub Activity 1: Create awareness on the importance of minor cereals for household food security			2.000		
Sub Activity 2: Support processing and value addition and find niche markets			2.000		
Sub Activity 3 : Develop production management techniques and provide support measures and services			5.000		
TOTAL BUDGET		25.100	60.000	85.100	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Increase cereal self sufficiency	Proportion of population self sufficient	50% (2000)	70%	DoA	Semi-annual	PPD,DoA	GNHC
	Increase in production of cereal (rice, maize) crops	1,77,169 MT	15 %	DoA	Semi-annual	PPD,DoA	GNHC
	Increase rice self-sufficiency level	50% (2006)	65%	DoA	Semi-annual	PPD,DoA	GNHC
	Total arable area covered by high yielding varieties	30% (2004)	50%	DoA	Semi-annual	PPD,DoA	GNHC
Output 001 Farmers adopt new crop varieties and management practices	No of farmers adopting new varieties by crop and by Dzongkhag	RNR Census 2008	15%	DoA	Semi-annual	PPD,DoA	GNHC
	% of farming communities applying and adopting new farming practices	RNR Census 2008	15%	DoA	Semi-annual	PPD,DoA	GNHC

MoA/02: Post Harvest Management Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Post harvest loss of agricultural and horticultural crops reduced	% reduction of loss by crop	20% (2007)	10%
Outcome 002 Market value of the primary products enhanced	Community Level Food Processing Enterprises established and functioning	3 (2007)	8 (new)

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Post harvest infrastructure established & functional	Nos. of central equipped pack-house for horticultural produce established	2 (2007)	5 (new)
	Nos. Of fresh produce cold stores established	2 (2007)	4 (new)
	Nos. Of On-Farm equipped pack-houses and potato stores established	7 (2007)	17 (new)
	Refrigerated Trucks for Fresh Produce Transport procured	1 (2007)	5 (new)
Output 002 farmers using appropriate post harvest technologies	% farmers using improved packaging	<1%	25%
	Storages Loss Control Measures for Important Food Crops developed		
	% of farmers adopting other improved post harvest technologies (grading, sorting and storing)	<10% (2007)	50%
Output 003 Small agri-business rural enterprise established	No of small agri-business rural enterprises established	3 (2007)	8 (new)
	Proportion of farmers using improved handling drying and packaging recommendations/facilities	<10% (2007)	30%

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collab. agency
002. Farmers utilising post harvest technologies	Act 1: Development of Post-harvest handling technologies and value addition						
	Sub Act.1: Develop appropriate majority indexes and harvesting methods of fresh produce	1		July / 2008	June/ 2013	NPHC	Dz., CORRB
	Sub Act.2: Develop appropriate fresh produce storage technologies	1		July/ 2008	June/ 2013	NPHC	Dz., CORRB
	Sub Act.3: Develop appropriate fresh produce quality maintenance treatments and measures	1		July/ 2008	June/ 2013	NPHC	-
	Sub Act.4: Develop appropriate fresh produce handling, grading and packaging technologies	1	<i>Chilli(Ramjar,Kazbi,Dangchu,Hungr eTshirangtoe,Khamdang,Tendu,Kabjisa, Chhubu Ginger (Taraythang,Senge,Dekiling) Mandarin (Dungtoe, Pbangkar, Wangphu, Mendegang, Marsala Ngala, Denchukba, Singkbar, Jangcubling, Gomdar, Bjoka, Decenling, Chimong, Thrimshing, Shumar) Potato (Lajab, uesu, sama, bjena, dangchu, chapcha, bjabcho Vegetable (Shaba,Saleng,Chali,)</i>	July 2008	June/ 2013	NPHC	Dz., AMS, AMC

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collab. agency
	Sub Act.5: Develop appropriate drying, processing and packaging technologies for horticulture and cereal crops	1	<i>Arecanut (Samrang/ Chengmari)</i> <i>Chilli(Ramjar,KAzhi,Dangchu,Hungrel,Tshirangtoe,Khamdang,Tendu,Kabjisa,Chhubu</i> <i>Tegma & Maize value addition (Zobel, Balam, Khaling, Chuzargang, Lauri)</i>	July /2008	June/ 2013	NPHC	Dz., AMC
	Sub Act.6: Disseminate the appropriate postproduction technologies to farmers, entrepreneurs and extension officers	1	<i>Arecanut (Samrang/ Chengmari)</i> <i>Chilli (Ramjar, KAzhi, Dangchu, Hungrel, Tshirangtoe, Khamdang, Tendu, Kabjisa, Chhubu</i> <i>Mandarin (Dungtoe, Phangkar, Wangphu, Mendegang, Marsala, Ngala, Denchukha, Singkhar, Jangcubling, Gomdar, Bjoka, Decenling, Chimong, Thrimshing, Shumar)</i> <i>Ginger (Taraythang,Senge,Dekiling)</i> <i>Potato (Lajab, uesu, sama, bjena, dangch, chapcha, bjabcho</i> <i>Vegetable (Shaba,Saleng,Chali,)</i>	July /2008	June/ 2013	NPHC	Dz.
	Sub Act.7: Strengthening postproduction laboratories at the centre and IFPPs with appropriate equipments	1		July/ 2008	June/ 2013	NPHC	-

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collab. agency
Act 2: Development of rural food industry							
003: Small agri-business rural enterprise established	Sub Act.1: Establishment of fruit and vegetable drying enterprises	1	T/Y, T/gang, Mongar, Trongsa, Wangdue, Punakha, Gasa, Sarpang, Samtse, Z/gang <i>Vegetable (Shaba, Saleng, Chali), Chilli (Ramjar, Kazhi, Dangchu, Hungre+l, Tshirangtoe, Khamdang, Tendu, Kabjisa ,Chhubu Cardamom (Dungtoe,Sertig) Arecanut (Chengmari)</i>	July/ 2008	June/ 2013	NPHC	Dz., AMS
	Sub Act. 2: Establishment of chips enterprises from fruits and root crops	1	B/thang, T/gang, chukha, Haa, Wangdue, Sarpang, Samtse, S/J, Dagana, Tsirang <i>Potato (Kbaling)</i>	July/ 2008	June/ 2013	NPHC	Dz., AMS
	Sub Act.3: Establishment of vegetable pickling enterprises	1	Tsirang, Dagana, Sarpang	July/ 2009	June/ 2013	NPHC	Dz., AMS
	Sub Act. 4: Establishment of frozen vegetable enterprises	3	Thimphu, Paro, bumthang	July/ 2010	June/ 2013	NPHC	Dz.,AMS
	Sub Act. 5: Establishment of fruit and vegetable candy enterprises	2	Thimphu, Paro, T/gang, Trongsa	July /2010	June/ 2013	NPHC	D, AMS

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/year	Lead Implementing agency	Collab. agency
001 Post harvest infrastructure established & functional	Act 3: Infrastructure development						
	Sub Act.1 Establishment of centralised grading and packing house for fresh produce	1	East or Central depending on feasibility <i>Potato (Shumar, zobel, khamdang, chapcha, Naja)</i>	July /2010	June/2013	NPHC	Dz., AMS, FCB, BEA
	Sub Act.2: Establishment of centralised cold store for fresh produce(25MT)	1	- Do -	July/2008	June/2013	NPHC	Dz., AMS, FCB, EA
	Sub Act. 3 : Promotion of refrigerated trucks for fresh produce transport	2	Attached with cold stores	July /2010	June/2013	NPHC	Dz., AMS
	Sub Act. 4: Promotion of household level low cost potato seed storage	1	Chukha, T/gang, Mongar, Paro, Wangdue <i>Potato (Shumar, zobel, khamdang, chapch)</i>	July /2008	June/2013	NPHC	Dz.
	Sub Act.5: Promotion of household level grain storage	1	Z/gang, Samtse, Mongar, Lhuentse, S/J, P/G, T/Y, T/gang, Tsirang, Dagana, Wangude, Trongsa <i>Maize (Yangneer, Ramjar, Taraythang, Dorona, Senge, Bartsbam, Hiley)</i>	July /2008	June/2013	NPHC	Dz.

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Act1:Development of Post-harvest handling technologies and value addition					
Sub Act.1: Develop appropriate maturity indexes and harvesting methods of fresh produce	1		1.300		
Sub Act.2: Develop appropriate fresh produce storage technologies	1		2.000		
Sub Act.3: Develop appropriate fresh produce quality maintenance treatments and measures	1		1.000		
Sub Act.4: Develop appropriate fresh produce handling, grading and packaging technologies	1		5.000		
Sub Act.5: Develop appropriate drying, processing and packaging technologies for horticulture and cereal crops	1		5.000		
Sub Act.6: Disseminate the appropriate postproduction technologies to farmers, entrepreneurs and extension officers	1		10.000		
Sub Act.7: Strengthening postproduction laboratories at the NPHC head office and IFPPs with appropriate equipments	1		10.000		
Act2: Development of rural food industry					
Sub Act.1: Establishment of fruit and vegetable drying enterprises	1		7.000		
Sub Act.2: Establishment of chips enterprises from fruits and root crops	1		5.000		
Sub Act 3: Establishment of vegetable pickling enterprises	1		1.200		
Sub Act.4: Establishment of frozen vegetable enterprises	3		1.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Act.5: Establishment of fruit and vegetable candy enterprises	2		1.000		
Act 3: Infrastructure development					
Sub Act.1 Establishment of centralised grading and packing house for fresh produce	1		5.000		
Sub Act.2: Establishment of centralised cold store for fresh produce(25MT)	1		6.000		
Sub Act.3 : Promotion of refrigerated trucks for fresh produce transport	2		2.000		
Sub Act.4: Promotion of household level low cost potato seed storage	1		7.000		
Act3.5: Promotion of household level grain storage	1		30.000		
TOTAL BUDGET		46.000	99.500	145.500	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Post harvest loss of agricultural and horticultural crops reduced	% reduction of post harvest loss by crops	20% (2007)	10%	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC
Outcome 002 Market value of the primary products enhanced	Community Level Food Processing Enterprises established and functioning	3 (2007)	8 (new)	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC
Output 001 Post harvest infrastructure established	Nos. of centralized equipped pack-house for horticultural produce established	2 (2007)	5 (new)	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC
	Nos. of fresh produce cold stores established	2 (2007)	4 (new)	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC
	Nos. of On-Farm equipped pack-houses and potato stores established	7 (2007)	17 (new)	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC
	Refrigerated Trucks for Fresh Produce Transport procured	1 (2007)	5 (new)	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Output 002 farmers utilising appropriate post harvest technologies	% farmers using improved packaging	<1%	25%	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC
	Storage loss control measures for important food crops developed and implemented	n/a	n/a	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC
	% of farmers adopting other improved post harvest technologies (grading, sorting and storing)	<10% (2007)	30%	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC
Output 003 Small agri-business rural enterprise established	No of small agri-business rural enterprises established	3 (2007)	8 (new)	NPHC/ DoA	Semi-Annual	DoA,PPD	GNHC

MOA/03: Integrated Pest Management Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Reduce Pre-harvest crop loss to pest and diseases	% reduction in loss of crop	20 (2006)	10
	Farmers activity implement IPM in major commodities	<10% (2007)	>20%

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 IPM developed and implemented for major crops	% of farmers aware and actively implementing IPM for major crops	<10% (2006)	>20%
	Nos. of IMP/GAP package developed & tested for major commodities		
Output 002 functional & well equipped plant protection lab. Provides diagnostic service	New laboratories built and functioning	2	4
	Nos. of cases attended	(2007)	

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
001 IPM developed and implemented for major crops	Activity 1 : IPM, Awareness campaign and farmers training						
	Sub Activity 1 : Study pest prevalence in different agro ecological system (rice, maize, citrus, apple, potato, chilli, cardamom & ginger)			July 2008	June 2013	NPPC	Dzongkhag
	Sub Activity 2 : Promote pest/disease management		<p>Cash crop growing areas: <i>Walnut (Doban)</i></p> <p><i>Vegetable(Ruepisa, Bapisa, Semjong, Toepisa, shengana, Dzoma, thebsa, sbaba, Gase tshowom, lamgong, chali, gangzur, Naja</i></p> <p><i>Potato(Doteng, Uesu ,sama, Tseza, Kazi, Zobel, Bjena, Katso, Dangchu, Dzomo, Lauri, Lumang, Geney, Khamdang, Chapcha, Goenkhama, Tsento, Nyisho, Phoibi)</i></p> <p><i>Mandarin (dorokba, Dungtoe, Phangkebar, Lokchina, trong, Bangra, Wangphu, Mendegang, Martshala, Ngala, Denchukha, Goshing, Gomdar, serti, Tsamang, Bjoka, sherimung, bardo, dekiling, jigmecholing, deorali, biru, dorona, tsholingkha, Nanong, lamoyzingkha, serzong, korpbu, chongshing, dechenling, nangkor, shompangkha, barsong, dungme, kbar, bhur, shumar)</i></p> <p><i>Maize(bidung, taraythang, dorona, senge, barts ham, hiley)</i></p>	July 2008	June 2013	NPPC	Dzongkhag

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub Activity 3 : Study management of important pest/disease		-do-	July 2008	June 2013	NPPC	RC
	Sub Activity 4 : Surveillance/monitor important pest/disease		Nationwide	July 2008	June 2013	NPPC	Dzongkhag, RC
	Sub Activity 5: Evaluate appropriate chemicals for storage pests			July 2008	June 2013	NPPC	NPHC
	Sub Activity 6: Campaign to control noxious weeds (shochum)		Cereal growing areas	July 2008	June 2013	NPPC	Dzongkhag

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 7 : Diagnostic/ Advisory service		<p>Nationwide <i>Walnut (Doban)</i></p> <p><i>Vegetable(Rnepisa,Bapisa,Semjong,Toepisa,shengana,Dzoma,tbedso,shaba,Gase tshowom,lamgong,chali,gangzur,naja,</i></p> <p><i>Potato(Doteng,Uesu,samaTsez,a,Kazi,Zobel,Bjena,Katso, Dangchu,Dzomo,Lauri, Lumang, Geney, Khamdang, Chapcha, Goenkham, Tsento, Nyisbo, Phoji</i></p> <p><i>Mandarin (dorokha, Dungtoe, Phangkhar, Lokchina, trong, Bangra, Wangphu, Mendegang, Martshala, Ngala, Denchukha, Goshing, Gomdar, serti, Tsamang, Bjoka, sherimung, bardo, deking, jigmecholing, deorali,biru, dorona, tsholingkhar,Nanong, lamoyzingkha, serzong, korphu, chongshing, dechenling, nangkor, shompangkha, barsong, dungme, khar, bbur, shumar)</i></p> <p><i>Maize(bidung,taraythang,dorona,senge,barts ham,hiley)</i></p> <p><i>Groundnut (khamdang)</i></p> <p><i>Ginger (Langchenphu,pemethang,p/ling,umling,cbargarey)</i></p> <p><i>Arecunut (Shompangkha, Gelephu, Ugyentse)</i></p> <p><i>Cardamom (Denchukha, Dungna, Dungtoe, Dorokha)</i></p> <p><i>Chilli (Ramjar, Kazbi, Dangchu, Dotey, Hungrel, Nubi, Phangyul, Khamdang, Kangpara, Thrimshing, Kabjisa, Guma, Athang, Chubu)</i></p>	July 2008	June 2013	NPPC	Dzongkhag

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub Activity 8 : Train farmers/ EA's and other stakeholders		<p><i>Walnut (Doban)</i></p> <p><i>Vegetable (Ruepisa, Bapisa, Semjong, Toepisa, shengana, Dzoma, thedso, shaba, Gase tshowom, lamgong, chali, gangzur, naja,</i></p> <p><i>Potato (Doteng, Uesu, sama Tsezga, Kazji, Zobel, Bjena, Katso, Dangchu, Dzomo, Lauri, Lumang, Geney, Khamdang, Chapcha, Goenkhama, Tsento, Nyisho, Phobji)</i></p> <p><i>Mandarin (Dorokha, Dungtoe, Phangkhar, Lokchina, trong, Bangra, Wangphu, Mendegang, Martshala, Ngala, Denchukha, Goshing, Gomdar, serti, Tsamang, Bjoka, sherimung, bardo, deking, jigmecholing, deorali, biru, dorona, tsholingkhar, Nanong, lamoyzingkha, serzong, korphu, chongshing, dechenling, nangeor, shompangkha, barsong, dungme, khar, bhur, shumar)</i></p> <p><i>Groundnut (khamdang)</i></p> <p><i>Ginger (Langchenphu, pemethang, p/ling, umling, chagarey)</i></p> <p><i>Arecanut (Shompangkha, Gelephu, Ugyentse)</i></p> <p><i>Cardamom (Denchukha, Dungna, Dungtoe, Dorokha)</i></p> <p><i>Chilli (Ramjar, Kazhi, Dangchu, Dotey, Hungrel, Nubi, Phangyul, Khamdang, Kangpara, Thrimshing, Kabjisa, Guma, Athang, Chubu)</i></p>	July 2008	June 2013	NPPC	Dzongkhag

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 9 : Evaluate efficiency of bio pesticide for organic farming			July 2008	June 2013	NPPC	Horticulture Division
	Activity 2 : Infrastructure Development						
	Sub Activity 1: Construction of laboratory and office facilities (Regional Plant Protection Centres)		<p>Bhur and Wengkhār</p> <p>PP chemicals & equipments availability : <i>Vegetable (Toepisa, Dzomo, Thedsbo, shapa, Gase Tshovom, Chali, Gangz)</i></p> <p><i>Potato (Doteng, Uesu, sama Tseza, Kazji, Zobel, Bjena, Katsa, Dangchu, Dzomo, Lauri, Lumang, Geney, Khamdang, Chapcha, Goenkhamā, Tsentō, Nyisho, Phobji)</i></p> <p><i>Mandarin (dorokba, Dungtoe, Phangkbar, Lokchina, trong, Bangra, Wangphu, Mendegang, Martshala, Ngala, Denchukba, Goshing, Gomdar, serti, Tsamang, Bjoka, sberimung, bardo, dekiling, jigmecholing, deorali, biru, dorona, tsholingkbar, N anong, lamoyzingkba, serzong, korphu, chongsbing, dechenling, nangkor, sbompangkba, barsong, dungme, kbar, bhur, shumār)</i></p> <p><i>Maize (bidung, taraythang, dorona, senge, bartsham ,hiley)</i></p> <p><i>Ginger (Langchenphu, pemethang, p/ ling, umling, chargarey)</i></p> <p><i>Arecunut (Sbompangkba, Gelephu, Ugyentse)</i></p> <p><i>Cardamom (Denchukba, Dungna, Dungtoe, Dorokba)</i></p> <p><i>Chilli (Ramjar, Kazhi, Dangchu, Dotey, Hungrel, Nubi, Phangyul, Khamdang, Kangpara, Thrimsbing, Kabjisa, Guma, Athang, Chubu)</i></p>	July 2008	June 2013	NPPC	

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1 : IPM, Awareness campaign and farmers training					
Sub Activity 1 : Study pest prevalence in different agro ecological system (rice, maize, citrus, apple, potato, chilli, cardamom & ginger)			1.000		
Sub Activity 2 : Promote pest/disease management			1.000		
Sub Activity 3 : Study management of important pest/disease			0.500		
Sub Activity 4 : Surveillance/monitor important pest/disease			1.000		
Sub Activity 5: Evaluate appropriate chemicals for storage pests			0.500		
Sub Activity 6: Campaign to control noxious weeds (<i>shoobum</i>)			0.500		
Sub Activity 7 : Diagnostic/Advisory service			0.500		
Sub Activity 8 : Train farmers/EAs and other stakeholders			4.500		
Sub Activity 9 : Evaluate efficiency of bio pesticide			0.500		
Activity 2 : Infrastructure Development					
Sub Activity 1: Construction of laboratory and office facilities (RPPCs)			20.000		
TOTAL BUDGET		38.720	30.000	68.720	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Reduce pre harvest crop loss to pest & disease	% reduction in crop loss	20 (2006)	10	NPPC	Semi –Annual	PPD,DoA	GNHC
	Farmers activity implement IPM in major commodities	<10% (2007)	>20%	NPPC	Semi –Annual	PPD,DoA	GNHC
Output 001 IPM developed & implemented for major crops	% of farmers aware and actively implementing IPM for major crops	<10% (2006)	>20%	NPPC	Semi –Annual	PPD,DoA	GNHC
	Nos. of IMP/GAP package developed for major commodities			NPPC	Semi –Annual	PPD,DoA	GNHC
Output 002 Functional and well equipped NPP lab provide diagnostic service	New laboratories built and functioning	2	4	NPPC	Semi –Annual	PPD,DoA	GNHC
	Nos. of cases attended	>60 (2007)	150	NPPC	Semi –Annual	PPD,DoA	GNHC
Output 003 IPM packages dessiminated					Semi –Annual	PPD,DoA	GNHC

MOA/04: Irrigation and Water Management Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Increased agriculture area under irrigation	Increase in the portion of wetland with dry season irrigation	40% (2006)	70%

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Increased nos. of functional Irrigation Channel	Kms of Irrigation Channels constructed/renovated	870 kms (2007)	133 kms
Output 002 Farmers adopt alternative irrigation technologies	Nos of water harvesting schemes developed	Nil (2007)	200
	Nos. Of drip & sprinkler irrigation systems established	Nil (2007)	10
Output 003 National irrigation database developed and used for planning	Functional irrigation database in place and used for planning and decision	Nil	1
	No of trained extension agents		
	No WUAs formed		
Output 004 Updated policy review guidelines on irrigation system and feasibility study for large irrigation conducted	Nos of policy reviews conducted		
	Nos of studies conducted		

Table 2: Programme Activities

Program output	Program activities	Activity priority	Geographic Coverage	Start month/year	Finish month/year	Lead Implementing Agency	Collaborating Agencies
001 Increase nos. of functional Irrigation channels	Act 1: Renovation of Channels in emergency including renovation of Taklai irrigation						
	Sub Act.1: renovation of 130 km of irrigation damaged by floods/landslide		All dzongkhags <i>Chili (Ramjar, Rupesa, Yalang, Khamdang)</i> <i>Potato (Dogar, Samkhar, Khamdang, Chapcha, Tsento, Bjacho)</i>	July 2008	June 2013	Dzongkhag	DoA
	Sub Act 2: repair 3 km of irrigation channel & river work protection		Sarpang	July 2008	June 2013	CMU	Dzongkhag
	Act. 2: Water harvesting & irrigation of cash crops						
	Subact:1 establish 200 water harvesting schemes		All dzongkhags <i>Chili (Ramjar, Rupesa, Yalang, Khamdang)</i> <i>Potato (Dogar, Samkhar, Khamdang, Chapcha, Tsento, Bjacho)</i>	July 2008	June 2013	Dzongkhag	DoA
	Subact2: Estb. Irrigation system for 300 ha of orchards		All dzongkhags <i>Arecanut (Chengmari)</i> <i>Mandarin Orange (Trong, Wangphu, Mendregang, Shingkehar, Gomdar, Nanong, Lhamozingkha, Chboekhorling, Dechbhelng, Barshong)</i>	July 2008	June 2013	Dzongkhag	DoA

Program output	Program activities	Activity priority	Geographic Coverage	Start month/year	Finish month/year	Lead Implementing Agency	Collaborating Agencies
	Subact3:Train 100 Dzongkhag engineers on design of irrigation channel		All dzongkhags	July 2008	June 2013	Dzongkhags	DoA
	Act 5: Drip & irrigation trial						
	Sub-Act1: 10 drip & sprinkler irrigation established		Potential dzongkhags <i>Chili (Ramjar, Rupesa, Yalang, Khamdang)</i> <i>Mandarin Orange (Trong, Wangphu, Mendregang, Shingkar, Gomdar, Nanong, Lhamozingka, Chhoekborling, Dechbeling, Barshong</i> <i>Vegetable (Semjong, Patale)</i>	July 2008	June 2013	DoA	Dzongkhags
	Act 3: Policy review & irrigation database development						
003 National irrigation database developed and used for planning	Sub-Act 1: Irrigation policy review and revision			July 2008	June 2013	DOA	
	Sub-act 2: Consultative workshop			July 2008	June 2013	DOA	
	Sub-act 3: Development of irrigation database			July 2008	June 2013	DOA	
	Sub-act 4: Complete inventory of irrigation systems carried out			July 2008	June 2013	DOA	Dzongkhags
	Act 4: Strengthening WUA						

Program output	Program activities	Activity priority	Geographic Coverage	Start month/year	Finish month/year	Lead Implementing Agency	Collaborating Agencies
	Sub-act1: Train 2000 WUA members in irrigation & water management		All dzongkhags	July 2008	June 2013	DOA	Dzongkhags
004 Updated policy review provides guidelines on irrigation and Feasibility studies for large scale irrigation conducted	Act.6: Feasibility studies for large scale irrigation						
	Sub-act 1: Studies and surveys		Samtse, Sarpang & Samdrup Jongkhar	July 2008	June 2013	DoA	Dzongkhags

Table 3: Program activity outlay

Programme activity	Activity Priority	Estimated budget requirement in (Nu. In Million)			Remarks
		Recurrent	Capital	Total	
Act 1: Renovation of Channels in emergency including renovation of Taklai irrigation					
Sub-act.1: Renovation of 130 km of irrigation damaged by floods/ landslide			15.000		
Sub-act 2: Repair 3 km of irrigation channel & river work protection			20.000		
Act. 2: Water harvesting & irrigation of cash crops					
Sub-act:1 Establish 200 water harvesting schemes			10.000		
Sub-act2: Estb. Irrigation system for 300 ha of orchards			2.500		
Sub-act 3: Train 100 Dzongkhag engineers on design of irrigation channel					
Act 3: Policy review & irrigation database development					
Sub-Act 1: Irrigation policy review and revision			-	-	
Sub-act 2: consultative workshop			-	-	
Sub-act 3: development of irrigation database			-	-	
Sub-act 4: Complete inventory of irrigation systems carried out			1.000		

Programme activity	Activity Priority	Estimated budget requirement in (Nu. In Million)			Remarks
		Recurrent	Capital	Total	
Act 4: Strengthening WUA					
Sub-act 1: Train 2000 WUA members in irrigation & water management			3.000		
Act 5: Drip & irrigation trial					
Sub-act 1: 10 drip & sprinkler irrigation established			4.000		
Act 6: Feasibility studies for large scale irrigation					
Sub –act 1: Studies and surveys			15.000		
TOTAL BUDGET		0.000	70.500	70.500	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Increased agricultural area under irrigation	Increase in proportion of wetland with dry season irrigation	40 % (2006)	70%	DoA	Semi -Annual	DoA,PPD	GNHC
	Kms of irrigation channel renovated	870 km (2007)	133 kms	DoA	Semi -Annual	DoA,PPD	GNHC

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Output 002 Farmers adopt alternative irrigation technologies	Nos. of water harvesting schemes developed	Nil (2007)	200	DoA	Semi -Annual	DoA,PPD	GNHC
	Nos. of drip & sprinkler irrigation systems established	Nil (2007)	10	DoA	Semi -Annual	DoA,PPD	GNHC
	Nos of WUA members trained in water mgt	NA	10	DoA	Semi -Annual	DoA,PPD	GNHC
Output 003 National irrigation database developed and used for planning	Functional irrigation database in place & used for planning & decision	Nil	1	DoA	Semi -Annual	DoA,PPD	GNHC
	No. of trained extension agent			DoA	Semi -Annual	DoA,PPD	GNHC
	No of WUAs formed			DoA	Semi -Annual	DoA,PPD	GNHC
Output 004 Updated policy review provides guidelines on irrigation system & feasibility of large irrigation conducted	No of studies conducted	Nil	1	DoA	Semi -Annual	DoA,PPD	GNHC
	No of policy reviews conducted		1	DoA	Semi -Annual	DoA,PPD	GNHC

MOA/05: Seed and Plant Development Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Quality and quantity of seeds and planting materials	% of seeds and planting materials requirements met.	2% (2007)	50%
Outcome 002 Availability and access to food crop seeds and fruit seedlings increased	Availability and access to food crops seeds increased	100 mt (2007)	600 mt
	Availability and access to fruit seedlings increased	200,000 nos (2007)	500,000

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Comprehensive seeds sector development strategy	Sector development strategy developed and implemented	0 (2007)	1
Output 002 Capacity of private and farmers groups enhanced on seed management	Nos. of farmers' group trained	0	100
	No of pvt individuals trained	0	50

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
001 comprehensive seed sector development strategy	Activity 1 : Establishment of seed and plant unit						
	Sub Activity 1 : Establishment of seed and plant unit for co-ordinated supply of seed and planting materials		Nationwide	2009	2013	DOA	
	Sub-Activity 2: promotion of private seed and plant companies		Potential companies	2009	2013	DOA	
	Activity 2 : Development and Implementation of seed sector development strategy					DOA	
	Sub Activity 1 : seed and planting material requirement information gathered		Nationwide	2009	2013	DOA	Dz.
	Activity 3: Enhancing production, distribution and marketing					DOA	
	Sub Activity 1 : Infrastructure and facilities for seed processing, packaging and marketing in place		Nationwide	2009	2013	DOA	
	Activity 4 : Promote private seed units and seed growers association					DOA	
	Sub Activity 1: Support formation of seed growers group	1	Nationwide	2009	2013	DOA	Dz.
	Activity 5 : Seed Vouchers(Free seeds) during crop failure/ disasters					DOA	
Sub Activity 1: Distribute seed vouchers during natural disasters	2	Nationwide	2009	2013	DOA	DoA/MoHCA	

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1 : Establishment of seed and plant unit					
Sub Activity 1 : Establishment of seed and plant unit for co-ordinated supply of seed and planting materials			4.000		
Sub-Activity 2: Promotion of private seed and plant companies			3.000		
Activity 2 : Development and Implementation of seed sector development strategy					
Sub Activity 1 : seed and planting material requirement information gathered			1.000		
Activity 3: Enhancing production, distribution and marketing					
Sub Activity 1 : Infrastructure and facilities for seed processing, packaging and marketing in place			8.000		
Activity 4 : Promote private seed units and seed growers association					
Sub Activity 1: Support formation of seed growers group			2.000		
Activity 5 : Seed Vouchers(Free seeds) during crop failure/disasters					
Sub Activity 1: Distribute seed vouchers during natural disasters			2.000		
TOTAL BUDGET		24.700	20.000	44.700	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data Sources	Reporting frequencies & responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Quality and quantity of seeds and planting materials	50% of the seeds and planting materials requirements met.	2% (2007)	50%	Seed unit/ DoA	Semi-Annual	DoA/PPD	GNHC
Outcome 002 Availability and access to food crop seeds and fruit seedlings increased	Availability and access to food crops seeds increased	100 mt (2007)	600 mt	Seed unit/ DoA	Semi-Annual	DoA/PPD	GNHC
	Availability and access to fruit seedlings increased	200,000 nos (2007)	500,000	Seed unit/ DoA	Semi-Annual	DoA/PPD	GNHC
Output 001 Comprehensive seeds sector development strategy	Sector development strategy developed and implemented	0 (2007)	1	Seed unit/ DoA	Semi-Annual	DoA/PPD	GNHC
Output 002 Capacity of private and farmers groups enhanced on seed management	Nos. of farmers' group trained	0	100	Seed unit/ DoA	Semi-Annual	DoA/PPD	GNHC
	No of Privates individuals trained	0	50	Seed unit/ DoA	Semi-Annual	DoA/PPD	GNHC

MOA/06: Horticulture/Cash Crop Development Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Increased horticulture production for local use and export	value of horticulture export (volume of production by crop)	Nu. 476 million per year (2006)	Nu. 900 million per year
Outcome 002 More farmers engaged in horticulture export cropping	Portion of farmers engaged in horticulture export cropping increased	10% (2007)	25%
	No. of healthy fruit and nut trees	4.2 million (2006)	7.90 million

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Increased Potato production	Increased productivity-ton per ha	14 tons/hector (2004)	21 tons/per hector
	Increased production	54,683 MT (2006)	75,000MT
Output 002 Increased citrus production	Increased productivity – kg per tree	32kgs/tree (2006)	40kgs/tree
	Citrus production increased	23000 (MT) (2007)	30,000 (MT)
Output 003 Increased vegetable production	Area of agricultural land under vegetable cultivation	18692 acres (2007)	30,000 acres
	Increased annual vegetable export (MT)	25654 MT (2005)	75,000 MT
	Reduction in the import of vegetables		
Output 005 Increased mushroom production	Increased annual production	35 MT (2007)	70 MT
	Increased revenue from export of wild mushroom	7 million (2007)	14 million

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Activity1: Potato Development						
Output 001 Increased Potato production	Sub Activity1: Identification of suitable varieties		<i>Chukba, B/thang, Haa, Paro, Monggar, T/gang, P/G, T/Y, W/phodrang</i>	July 2008	June 2013	Horticulture Division	RC
Output 002 Increased fruit /citrus production	Sub Activity 2: Develop improved production techniques		<i>Potato (Gasetshogom, Thrimshang, Lajab, Naja, Dogar, Narang, Goshing, Bja, Tsezga, Kazhi, Zobel, Bejena, Katsbo, Shumar, Phongmey, Danchu Dzoma, Dunglagang, Jamkhar, Samkhar, Nabi, Lumang, Kanglung, Bidung, Geney, Khamdang, Chapcha, Nyisbo, Phobji, Sephu, Uesu, Gaserling, Yangtse, Lauri, Bjochu)</i>	July 2008	June 2013	Horticulture Division	RC
Output 003 Increased vegetable production			All important potato growing area				
Output 004 Increased mushroom production	Sub Activity 3: Diffusion of new varieties and techniques		<i>Potato (Gasetshogom, Thrimshang, Lajab, Naja, Dogar, Narang, Goshing, Bja, Tsezga, Kazhi, Zobel, Bejena, Katsbo, Shumar, Phongmey, Danchu Dzoma, Dunglagang, Jamkhar, Samkhar, Nabi, Lumang, Kanglung, Bidung, Geney, Khamdang, Chapcha, Nyisbo, Phobji, Sephu, Uesu, Gaserling, Yangtse, Lauri, Bjochu)</i>	July 2008	June 2013	Horticulture Division	Dzongkhag,

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub Activity 4: Advanced potato seed multiplication system		<i>Sepbu, Phobji, Ura, Drametsi</i>	July 2008	June 2013	Horticulture Division	Dzongkhag,, DSC, RC
	Sub Activity 5:Enhanced seed distribution system		All important potato growing area	July 2008	June 2013	Horticulture Division	Dzongkhag, DSC
	Sub Activity 6: Support seed producers group		<i>Chapcha, Ura, Drametsi, Eusu, Naja, Kanglung, Bomdelling, Phobji, Sepbu</i> Potato seed (Gangtey, Ura)	July 2008	June 2013	Horticulture Division	Dzongkhag, AMS
	Sub Activity 7: Support marketing of seed and ware potato		<i>Chukha, T/Y, B/thang, Haa, Paro, Monggar, T/gang, P/G, W/phodrang</i>	July 2008	June 2013	Horticulture Division	Dzongkhag, AMS
	Sub Activity 8: Disseminate appropriate storage and handling system		<i>Chapcha, Yangneer, Phobji, Khaling</i>	July 2008	June 2013	Horticulture Division	NPHC, AMC
	Activity 2: Citrus Development						
	Sub Activity 1: Improved seedlings identified and made available		<i>Samtse, Chukha, S/J, Dagana, Tsirang, Sarpang, Punakha, Wangdue, Z/gang</i>	July 2008	June 2013	Horticulture Division	RC, Dzongkhag

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity2: Suitable Pest Management techniques developed and disseminated		-do-	July 2008	June 2013	Horticulture Division	NPPC, Dzongkhag
	Sub Activity 3: Improved nutrient and alternative irrigation and water and land management techniques		-do-	July 2008	June 2013	Horticulture Division	NSSC, RC
	Sub activity 4 Improved post harvest handling techniques		-do-	July 2008	June 2013	Horticulture Division	NPHC
	Sub Activity 5:Rehabilate declining orchards		All declining and greening affected areas	July 2008	June 2013	Horticulture Division	Dzongkhag, NPPC
	Sub Activity 6 : Promote citrus farming		<i>All food in secure but potential citrus growing areas Mandarin Orange (Norbugang, Dungtoe, Phangkehar, Trong, Bangra, Wangphu, Khipisa, Ngangla, Goshing, Shingkehar, Gomdar, Tsamang, Bjokha, Sherimuhung, Bardo, Dekiling, Jigmechholing, Biru, Jurmey, Tsholingkehar, Gongdue, Sershong, Korpbu, Yurung, Nangkor, Thrimshing, Shompangkeha, Bbur, Shumar, Namgay Chholing, Lumang, Dorokha)</i>	July 2008	June 2013	Horticulture Division	Dzongkhag

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 7 : Improved citrus marketing system		All citrus growing areas	July 2008	June 2013	Horticulture Division	AMS, Dzongkhag
	Sub Activity 8 : Capacity development of all stakeholders(growers, EA's and researchers		<i>Mandarin Orange (Norbugang, Dungtoe, Phangkbar, Trong, Bangra, Wangphu, Khipisa, Ngangla, Goshing, Shingkebar, Gomdar, Tsamang, Bjokeba, Sherimubung, Bardo, Dekiling, Jigmechholing, Biru, Jurmey, Tsholingkebar, Gongdue, Sershong, Korphu, Yurung, Nangkor, Thrimshing, Shompangkeba, Bhur, Shumar, Namgay Chholing, Lumang, Dorokba)</i>	July 2008	June 2013	Horticulture Division	Dzongkhag
Activity 3.Fruit and Nut Development							
	Sub Activity 1 : Improved orchard management of fruit and nuts		All dzongkhags growing fruits and nuts <i>Fertilizer (Balam)</i> <i>Arecanut (Samtse, Chengmari, Samrang, Phintshothang, Shompangkeba, Gelephu, Ugyentse, Pemathang)</i> <i>Cardamom (Gakiling, Dungna, Korphu, Dungtoe, Dorokba, Serthi, Sangbay, Denchukba)</i> <i>Apple (Mevang, Sama, Usue, Dogar, Doteng)</i> <i>Honey (Lochina)</i> <i>Mango (Sipsu)</i> <i>Sugarcane (Nanong)</i>	July 2008	June 2013	Horticulture Division	RC

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 2: Rejuvenation of old apple orchards		Thimphu, Paro, Haa, B/thang <i>Apple (Mewang, Sama, Usue, Dogar, Doteng)</i>	July 2008	June 2013	Horticulture Division	Dzongkhag,
	Sub Activity 3: Promote potential new variety of fruits and nuts		All food insecure geogs <i>Walnut (Balam, Dovan, Ngatshang)</i> <i>Arecanut (Samtse, Chengmari, Samrang, Phintshotbang, Shompangkha, Gelephu, Ugyentse, Pemathang)</i> <i>Passion fruit (Goshing, Tsendagang, Langthel, Tashiding, Tsangkha, Kana)</i>	July 2008	June 2013	Horticulture Division	Dzongkhag
	Sub Activity 4: Develop specific nutrition and plant protection program		All areas	July 2008	June 2013	Horticulture Division	NPPC, NSSC, RC
	Sub Activity 5 : Promote proper irrigation system		All growing areas	July 2008	June 2013	Horticulture Division	Dzongkhags
	Sub Activity 6: Promote proper post harvest handling and value addition		All growing areas	July 2008	June 2013	Horticulture Division	NPHC

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 7: Improve technical capacity of stakeholders			July 2008	June 2013	Horticulture Division	Dzongkhag,
	Sub Activity 8: Enhance market of fruits and nuts		Major fruit and nut growing areas	July 2008	June 2013	Horticulture Division	AMS, Dzongkhag
Activity 4 : Vegetable development							
	Sub Activity 1 : Promote commercial production of vegetables		<p><i>All potential areas in the country</i></p> <p><i>Vegetable (Bapisa, Semjong, Patale, Kawang, Toepisa, Dzoma, Thedtsbo, Bongo, Katsbo, Saling, Gasatsbowom, Lamgong, Drepong, Gangzur, Naja, Beteni)</i></p> <p><i>Ginger (Tading, P/ling, Pematthang, Tarayathang, sengye, chagary, Dekaling)</i></p> <p><i>Chili (Ramjar, Kazhi, Rupesa, Mongar, doteng, Phangyul, Thrimshing, Guma, Dangchu, Nubi, Tsakaling, Tsirngtoe, Yalang, daga, Khamdang, Toewang, Athang)</i></p> <p><i>Asparagus (Menbi, Luni, Dremetse, geling, Nabi, Phuentenchu, Yangneer, chubu, dopshari)</i></p> <p><i>Peas (Gasetsogom)</i></p> <p><i>Rajma Bean (Drepong, Thangrong, Lumang, Udorong)</i></p>	July 2008	June 2013	Horticulture Division	Dzongkhag, AMS

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 2 : Promote commercial off season vegetable		<i>Paro, Thimphu, Haa, Chukha, B/thang, Trongsa, Chuli (Ramjar, Kazhi, Rupesa, Mongar, doteng, Phangyul, Thrimshing, Guma, Dangchu, Nubi, Tsakaling, Tsirngtoe, Yalang, daga, Khamdang, Toenang, Athang)</i>	July 2008	June 2013	Horticulture Division	Dzongkhag
	Sub Activity 3 : Promote winter vegetable with formation of growers group		Sarpang, Samtse, Z/gang, Tsirang Dagana	July 2008	June 2013	Horticulture Division	Dzongkhag
	Sub Activity 4: Promote post harvest handling and processing of vegetable		All vegetable growing areas	July 2008	June 2013	Horticulture Division	NPHC
	Sub Activity 5 : Encourage kitchen gardening		Food insecure geogs	July 2008	June 2013	Horticulture Division	Dzongkhag
	Sub Activity 6 : Develop suitable variety and improve seed quality			July 2008	June 2013	Horticulture Division	RC
	Sub Activity 7 : Promote improved vegetable production techniques		All vegetable growing areas	July 2008	June 2013	Horticulture Division	Dzongkhag

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub Activity 8: Capacity building of all stakeholders			July 2008	June 2013	Horticulture Division	Dzongkhag
	Activity 5:Mushroom Development						
	Sub Activity 1: Promote commercial production of mushroom		All potential areas and geogs vulnerable to food in security <i>Mushroom (Thebtsbo, Hungrel, dopsbari, Mongar, Sampbeling, Getena, Luni, Nangkor, Kabjisa, drateng, Songphu, Chang, Pagli, trong, Metap)</i>	July 2008	June 2013	NMC	Horticulture Division
	Sub Activity 2: Promote organic mushroom cultivation		All potential areas	July 2008	June 2013	NMC	Horticulture Division
	Sub Activity 3: Promote farmers group in mushroom management		Potential Mushroom growing areas	July 2008		NMC	Dzongkhag, AMS
	Sub Activity 4: Improve supply of spawn			July 2008	June 2013	NMC	Dzongkhag
	Sub Activity 5: Identification, sustainable harvesting and domestication of wild mushroom		All potential growing areas	July 2008	June 2013	NMC	Dzongkhag, RC

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 6: Promote value addition of mushroom		All potential growing areas	July 2008	June 2013	NMC	NPHC, RC
	Sub Activity 7: Improve mushroom production service through establishment of regional centres			July 2008	June 2013	NMC	
	Sub Activity 8 : Enhance post harvest handling and marketing of mushroom		All potential growing areas	July 2008	June 2013	NMC	NPHC
	Sub Activity 9: Purchase of office/ lab/ field equipments			July 2008	June 2013	NMC	
	Sub Activity 10: Purchase of vehicle			July 2008	June 2013	NMC	
	Sub Activity 11: Capacity Building			July 2008	June 2013	NMC	Dzongkhag

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity1: Potato Development					
Sub Activity1: Identification of suitable varieties			1.500		
Sub Activity 2: Develop improved production techniques			3.000		
Sub Activity 3: Diffusion of new varieties and techniques			1.500		
Sub Activity 4: Advanced potato seed multiplication system			2.500		
Sub Activity 5:Enhanced seed distribution system			1.900		
Sub Activity 6: Support seed producers group			1.500		
Sub Activity 7: Support marketing of seed and ware potato			2.000		
Sub Activity 8: Disseminate appropriate storage and handling system			1.500		
Activity 2: Citrus Development					
Sub Activity 1: Improved seedlings identified and made available			11.000		
Sub Activity2: Suitable Pest Management techniques developed and disseminate			6.000		
Sub Activity 3: Improved nutrient and alternative irrigation and water and land management techniques			3.000		
Sub activity 4 Improved post harvest handling techniques			1.000		
Sub Activity 5:Rehabilate declining orchards			12.000		
Sub Activity 6 : Promote citrus farming			2.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 7 : Improved citrus marketing system			1.000		
Sub Activity 8: Capacity building of stakeholders			4.00		
Activity 3.Fruit and Nut Development					
Sub Activity 1 : Improved orchard management of fruit and nuts			3.000		
Sub Activity 2:Rejuvenation of old orchards			2.000		
Sub Activity 3: Promote potential new variety of fruits and nuts			5.000		
Sub Activity 4: Develop specific nutrition and plant protection program			3.000		
Sub Activity 5 : Promote proper irrigation system			1.000		
Sub Activity 6: Promote proper post harvest handling and value addition			1.000		
Sub Activity 7: Improve technical capacity of stakeholders			4.000		
Sub Activity 8: Enhance market of fruits and nuts			1.000		
Activity 4 : Vegetable development					
Sub Activity 1 : Promote commercial production of vegetables			3.000		
Sub Activity 2 : Promote commercial off season vegetable and growers group			2.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 3: Promote post harvest handling and processing of vegetable			1.000		
Sub Activity 4 : Encourage kitchen gardening			1.000		
Sub Activity 5 : Develop suitable variety and improve seed quality			1.000		
Sub Activity 6 : Promote improved vegetable production techniques			2.000		
Activity 5:Mushroom Development					
Sub Activity 1: Promote commercial production of mushroom			1.500		
Sub Activity 2: Promote organic mushroom cultivation			1.000		
Sub Activity 3: Promote farmers group in mushroom management			0.500		
Sub Activity 4: Improve supply of quality spawn			0.500		
Sub Activity 5: Identification, sustainable harvesting and domestication of wild mushroom			1.000		
Sub Activity 6: Promote value addition of mushroom			1.500		
Sub Activity 7: Improve mushroom production service through establishment of regional centres			10.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 8 : Enhance post harvest handling and marketing of mushroom			1.000		
Sub Activity 9: Purchase of office/Lab/field equipments			5.500		
Sub Activity 10. Purchase of vehicles			10.000		
Sub Activity 11. Capacity building (training, farmer study tours etc.)			0.950		
TOTAL BUDGET		156.740	118.850	275.590	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 value of horticulture exports increased	Increased value of horticulture export	Nu. 476 million per year (2006)	Nu. 9000 million per year	AMS/DoA	Semi-Annual	AMS;DoA; PPD	GNHC
Outcome 002 more farmers engaged in horticulture export cropping	Portion of farmers engaged in horticulture export cropping increased	10% (2007)	25%	DoA	Semi-Annual	DoA;PPD	GNHC
	Acreage under horticulture production			DoA	Semi-Annual	DoA;PPD	GNHC
Output 001 potato production increased	Increased productivity (tonnes per hector)	14 ton per hac (2004)	21 tonnes per hector	DoA	Semi-Annual	DoA;PPD	GNHC
	Increased production	54683 mt (2006)	75000 mt	DoA	Semi-Annual	DoA;PPD	GNHC
Output 002 increased citrus production	Increased productivity kg/tree	32 kg/tree (2006)	40 kg/tree	DoA	Semi-Annual	DoA;PPD	GNHC
	Citrus production increased	23000 mt (2007)	30000 mt	DoA	Semi-Annual	DoA;PPD	GNHC
Output 003 increased vegetable production	Areas of agricultural land under vegetable cultivation	188692 ac (2007)	30000 acres	DoA	Semi-Annual	DoA;PPD	GNHC

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
	Increased annual vegetable export (mt)	25654 mt (2005)	75000 mt	AMS	Semi-Annual	DoA;PPD	GNHC
	Reduction and import of vegetables			AMS	Semi-Annual	DoA;PPD	GNHC
Output 005 increased mushroom production	Increased annual production	35 mt (2007)	70 mt	DoA	Semi-Annual	DoA;PPD	GNHC
	Increased revenue from sale of mushroom	Nu. 7 million (2007)	Nu. 14 million	AMS	Semi-Annual	DoA;PPD	GNHC

MOA/07: Organic/Natural Agriculture Program

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 increased production of organic products	Area under certified organic agriculture increased	150 acres (2007)	300 acres
	National organic framework developed and implemented	Nil	One framework finished
Outcome 002 Increased proportion of rural households adoption organic farming principles	Organic standards developed and regulatory system in place	Nil	Standards & systems in place
	Proportion of rural households adopting organic farming principles increased	1.5% (2007)	10%

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Policy & strategies related to organic development adopted	Progress towards adoption of Policy and strategy: f a. Agreed need for policy;b. policy research underway; c. policy options formulated;d. discussion and approvals underway; e. policy and strategies approved; f. policy adopted/enacted.	Nil	
Output 002 Dedicated national organic program in place and functioning	Progress towards completion of planned 1 infrastructure: a. approved in AWP, b.Work underway c. work completed to specification. Required human resources recruited Logo developed and used for production branding	0 (2007)	1
Output 003 Potential production areas,crops and best practices identified	Potential production areas identified Agreed list of priority crops	0	
	Markets identified	0	
Output 004 Selected farmers adopting organic farming principles	Nos/ proportion of farmers aware on organic farming	200	
	Proportion of farmers adopting organic farming principles	1.5% (2007)	10%

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ Year	Lead Implementing agency	Collaborating agency
001 Policy and strategies related to organic development adopted	Activity 1 : Development of national strategies and policies						
	Sub Activity 1 : National Framework and implementation plan developed			July 2008	June 2013	Horticulture Division	PPD
	Sub Activity 2 : Organic standards and legislation in place			July 2008	June 2013	Horticulture Division	PPD
	Sub Activity 3:Capacity building of staff and stakeholders			July 2008	June 2013	Horticulture Division	
002 Dedicated national organic program in place and functioning	Activity 2 :Institutional Set up						
	Sub Activity 1 : National Organic Program coordination office in place			July 2008	June 2013	Horticulture Division	
	Sub Activity 2: Formation of technical working group			July 2008	June 2013	Horticulture Division	

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/ Year	Finish Month/ Year	Lead Implementing agency	Collaborating agency
	Sub Activity 3: Organic certification service in place			July 2008	June 2013	Horticulture Division	BAFRA,
	Sub Activity 4: Logo promotion			July 2008	June 2013	Horticulture Division	AMS
003 Potential production areas, crops and best practices identified	Activity 3 : Research and Development						
	Sub Activity 1: R& D on organic in place			July 2008	June 2013	Horticulture Division	RC
	Sub Activity 2:Organic farming technology to be developed			July 2009	June 2013	Horticulture Division	RC
	Activity 4 : Production and industry support						
	Sub Activity 1: Support organic production in field		RCs	July 2008	June 2013	Horticulture Division	RC
	Sub Activity 2: Establish processing facilities		Gasa, B/ thang, Sarpang, Trongsa & Z/ gang	July 2008	June 2013	Horticulture Division	NPHC
	Sub Activity 3 : Develop bio fertilizers and bio pesticides		- do-	July 2008	June 2013	Horticulture Division	NSSC, NPPC

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/Year	Lead Implementing agency	Collaborating agency
	Sub Activity 4:Support organic farm enterprise		<i>Thimphu, B/ thang & Paro</i> <i>Organic Vegetable (Chhoekbor, Chhume, Khamme (Gasa)</i>	July 2008	June 2013	Horticulture Division	Dz.
004 Selected farmers adopting organic farming principles	Activity 5 : Education and Information						
	Sub Activity 1: Train all stakeholders		Dzs., RCs	July 2008	June 2013	Horticulture Division	Dz.
	Sun Activity 2:Develop appropriate information material						

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/Year	Lead Implementing agency	Collaborating agency
	Sub Activity 3: Disseminate appropriate organic farming technology		Nation wide	July 2008	June 2013	Horticulture Division	Dz.
	Activity 6 : Infrastructure and Logistics						
	Sub Activity 1 : Develop appropriate farm level production and processing of organic produce		Trongsa, B/thang, Sarpang	July 2008	June 2013	Horticulture Division	NPHC
	Activity 7: Market Development and Marketing Chain						
	Sub Activity 1 : Market Research and Identification of market for organic produce		Domestic & export market	July 2008	June 2013	Horticulture Division	AMS
	Activity 8 : Finance/Credit/Grant/Subsidies						
	Sub Activity 1 : Institute a system of reward or payment for conversion to organic farming		Nation wide	July 2008	June 2013	Horticulture Division	Dz.
	Activity 9 : Capacity Building						
	Sub Activity 1 : Farmers training on organic farming		Potential Dzs.,	July 2008	June 2013	Horticulture Division	Dz., RC, NGO
	Sub Activity 2 : In-country training/study tours for other stake holder			July 2008	June 2013	Horticulture Division	

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1 : Development of national strategies and policies					
Sub Activity 1 : National Framework and implementation plan developed and			0.200		
Sub Activity 2: Organic standards and legislation in place			0.200		
Sub Activity 3:Capacity building of staffs and stakeholders on organic standards			0.600		
Activity 2 :Institutional Set up					
Sub Activity 1 : National Organic Program coordination office in place			0.500		
Sub Activity 2: Formation of technical working group			0.500		
Sub Activity 3 Organic certification service in place			0.500		
Sub Activity 4:Logo promotion			0.500		
Activity 3 : Research and Development					
Sub Activity 1: R& D on organic in place			1.000		
Sub Activity 2:Organic farming technology to be developed			1.000		
Activity 4 : Production and industry support					
Sub Activity 1 : Support organic production in field			0.500		
Sub Activity 2 : Establish processing facilities			0.500		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 3 : Develop bio fertilizers and bio pesticides			0.500		
Sub Activity 4:Support organic farm enterprise			0.500		
Activity 5 : Education and Information					
Sub Activity 1: Train all stakeholders			0.500		
Sub Activity 2: Develop appropriate information material			0.200		
Sub Activity 3: Disseminate appropriate organic farming technology			0.300		
Activity 6 : Infrastructure and Logistics					
Sub Activity 1 : Develop appropriate farm level production & processing of organic produce			7.000		
Activity 7: Market Development and Marketing Chain					
Sub Activity 1 : Market Research and Identification of market for organic produce			1.000		
Activity 8 : Finance/Credit/Grant/Subsidies					
Sub Activity 1 : Institute a system of reward or payment for conversion to organic farming			1.500		
Activity 9 : Capacity Building					
Sub Activity 1 : Farmers training on organic farming & training/study tours for stake holder			7.000		
TOTAL BUDGET		31.000	24.500	55.500	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Increased production of organic products	Area under certified organic agriculture increased	150 acres (2007)	300 acres	NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
	National organic framework developed and implemented			NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
Outcome 002 Increase proportion of rural households adopting organic farming principles	Organic standard developed and regulatory in placed			NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
	Proportion of rural household adopting organic farming principle	1.5% (2007)	10%	NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
Output 001 Policy and strategies related to organic development adopted	Progress towards adoption of Policy and strategy: a. Agreed need for policy;b. policy research underway; c. policy options formulated;d. discussion and approvals underway; e. policy and strategies approved; f. policy adopted/enacted.			NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Output 002 Dedicated national organic program in place and functioning	Progress towards completion of planned infrastructure: a. approved in AWP, b.Work underway c. work completed to specification Logo developed Required human resources recruited			NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
Output 003 Potential production areas, crops and best practices identified	Acerage of potential production areas identified by Dzongkhag			NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
	Agreed list of priority crops			NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
Output 004 Selected farmers adopting organic farming principles	No/proportion of farmers trained on organic farming			NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
	Proportion of farmers adopting organic farming principles	1.5% (2007)	10%	NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC
Output 005 Farmers aware of organic farming principle	Nos. Of training & education			NOP/DoA	Semi-Annual	NOP/DoA;PPD	GNHC

MOA/08: National Medicinal and Aromatic Plants Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Number of farmers engaged in MAP cultivation increased	Farmers engaged in MAP cultivation increased	100 (2007)	200
Outcome 002 Increased acreage under sustainable MAP cultivation	Acreage under sustainable cultivation		

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Sustainable cultivation of MAPs expanded	Sustainable cultivation of MAPs expanded to Dzongkhag	9 (2007)	15
Output 002 Increased no. of MAP species under cultivation increased	No. of MAP species under cultivation	6 (2007)	10
Output 003 Improved MAP processing units established	Nos of processing units established	0 (2007)	2

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/Year	Lead Implementing agency	Collaborating agency
001 Sustainable cultivation of MAPs expanded	Act.1 Germplasm Mgt.						
	Sub Act1: Establishment of database on potential medicinal plants			July 2008	June 2013	Horticulture Division	RCs, Parks, Dz.
	Sub act 2: Establish genebank for high altitude MAP/germplasm collection & maintenance of herb garden		Lingshi, Yusipang, Darla	July 2008	June 2013	Horticulture Division	RCs, Parks, Dz.
	Subact3:Enrichment of priority/threatened MAP species		High altitude regions	July 2008	June 2013	Horticulture Division	RCs, Parks, Dz.

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/Year	Lead Implementing agency	Collaborating agency
002 Increased nos. of MAP species under cultivation	Act 2: Production mgt. & cultivation						
	Sub act 1: Domestication of potential MAPs		Thimphu, Haa, Paro, B/thang, Gasa, Trongsa, Sarpang, Tsirang, T/Y, P/G, Dagana, Punakha, Wangdue	July 2008	June 2013	Horticulture Division	RCs, Parks, Dz.
	Sub -act 2: Development of production mgt. technology & manual for 10 spp. incl. technology transfer		- Do -	July 2008	June 2013	Horticulture Division	RCs, Parks, Dz.
	Sub-act 3: Development of crop protection technology		- Do -	July 2008	June 2013	Horticulture Division	RCs,
004 Improved MAP processing units established and functional	Act 3:Product development of MAP						
	Sub –act 1: Quality analysis of economically important species		Selected production area	July 2008	June 2013	Horticulture Division	RCs
	Sub -act 2: Improvement of post harvest technology incl. farmers training		Listed areas	July 2008	June 2013	Horticulture Division	NPHC, RCs, Parks,

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/Year	Lead Implementing agency	Collaborating agency
	Sub-act 3: development of sustainable collection practices		High altitude collection sites	July 2008	June 2013	Horticulture Division	RCs, Parks, NPHC
	Sub-act 4: Processing /value addition facilities		Priority production areas	July 2008	June 2013	Horticulture Division	RCs, NPHC, Dz.
001 Sustainable cultivation of MAPs expanded	Act 4: Infrastructure development						
	Sub-act 1: Establishment of regional MAP centre			July 2008	June 2013	Horticulture Division	

Table 3: Program Plan Outlay:

Programme activity	Activity Priority	Estimated budget Million Nu)			Remarks
		Recurrent	Capital	Total	
Act.1 Germplasm Mgt.					
Sub Act1:Establishment of database on potential medicinal plants			0.600		
Sub act 2: Establish genebank for high altitude MAP/germplasm collection & maintenance of herb garden			0.300		
Subact3:Enrichment of priority/ threatened MAP species			0.200		
Act 2: Production mgt. & cultivation					
Sub act 1: Domestication of potential MAPs			0.500		
Sub act 2: development of production mgt. technology & manual for 10 spp. incl. technology transfer			1.000		
Sub-act 3:Development of crop protection technology			0.500		
Act 3:Product development of MAP					
Sub -act1: Quality analysis of economically important species			6.500		
Sub act 2: Improvement of post harvest technology incl. farmers training			1.000		
Sub-act 3: Development of sustainable collection practices			2.000		
Sub-act 4: Processing /value addition facilities			9.000		
Act 4: Infrastructure development					
Sub act 1: Establish regional MAP centre			18.850		
TOTAL BUDGET		8.200	40.450	48.650	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 no of farmers engaged in MAP cultivation	Farmers engaged in MAP cultivation	100 (2007)	200	DOA, PPD	Semi-annual	NOP, DOA, PPD	GNHC
Output 002 Increased acreage under sustainable MAP cultivation	Acreage under Sustainable cultivation of MAPs under dzongkhags	(2007)		DOA, PPD	Semi-annual	NOP, DOA, PPD	GNHC
Output 001 sustainable cultivation of MAP expanded	Sustainable cultivation of MAP expanded	(2007)		DOA, PPD	Semi-annual	NOP, DOA, PPD	GNHC
Output 002 Increased no. of MAP species under cultivation	No. of species under cultivation	100 (2007)	200 plus	DOA, PPD	Semi-annual	NOP, DOA, PPD	GNHC
Output 003 Farmers trained in improved and Sustainable collection of MAP	Nos of farmers trained	(2007)		DOA, PPD	Semi-annual	NOP, DOA, PPD	GNHC
Output 004 Improved MAP processing units established and functional	Nos. of processing units established	(2007)		DOA, PPD	Semi-annual	NOP, DOA, PPD	GNHC

MOA/09: Soil Fertility and Land Management Program

Table 1. Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Planning decisions for land use guided by soil and land information studies	Information from soil and land studies used as tools for decision making	10% (2006)	90%
	No. of samples (soil, plant, water & fertilizers) analysed and distributed	9600 (2006)	>10,000
	Nos. Of reports on soil classification & land capability information (soil maps,soil data) made available to clients	27 reports (2007)	>30 reports
	Dzongkhag wise soil fertility database developed for intensively cultivated farming system (rice & potato – maize based farming system)	6 Dz (2007)	>12 Dz
Outcome 002 SLM principles and practices mainstreamed into plans and programs	Proportion of total arable land put under appropriate land use and land management	10% (2006)	50%
	Proportion of farmers adopting improved soil fertility and Plant nutrition management practices	<10% (2007)	> 40%
	Proportion of dryland farmers adopting SLM technologies	5 % (2007)	>30 %
	No. of farmers trained on ISFM & SLM technologies	300 farmers (2007)	700 farmers
	Dzongkhags & sector plans with SLM activities		
	Acres of degraded land rehabilitated		
	Nos. stakeholders trained on SLM technologies & issues	500 (2007)	5000

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 002 Soil classification and land capability information available for informed decision making	Information from soil and land studies used as tools for decision making	10% (2006)	90%
	No. of samples (soil, plant, water & fertilizers) analysed and distributed	9600 (2006)	>10,000
	Nos. of reports on soil classification & land capability information (soil maps,soil data) made available to clients	27 reports (2007)	>30 reports
	Dzongkhag wise soil fertility database developed for intensively cultivated farming system (rice & potato – maize based farming system)	6 Dz (2007)	>12 Dz
Outcome 003 Farmers and herders adopt sustainable till land management practices (2007)	Proportion of total arable land put under appropriate land use and land management	10% (2006)	50%
	Proportion of farmers adopting improved soil fertility and Plant nutrition management practices	<10% (2007)	> 40%
	Proportion of dryland farmers adopting SLM technologies	5 % (2007)	>30 %
	No. of farmers trained on ISFM & SLM technologies	300 farmers (2007)	700 farmers
	Dzongkhags & sector plans with SLM activities		
	Acres of degraded land rehabilitated		
	Nos. stakeholders trained on SLM technologies & issues	500 (2007)	5000

Table 2 Programme Activities

Program Outputs	Program Activities	Geographic location	Start Month/year	Finished Month/Year	Lead Implementing agency	Collaborating agency
002 Soil classification and land capability information available for informed decision making	Activity 1 Soil, Plant, fertilizer and water sample analysis					
	Sub Act. 1 Provide analytical services to farmers, researchers and planners	Nationwide Ginger (Tading) Mandarin Orange (Phangkhar, Ngangla, Goshing, Shingkhar, Bjokha, Bardo, Deorali, Chimong, Nangkor, Namgay Chholing, Logchina)	July 2008	June 2013	NSSC	Dz & Research
	Sub Act. 2 Soil fertility information generated for Major crops	Dz. where major crops are grown Vegetables (Semjong)	July 2008	June 2013	NSSC	Dz & Research
	Sub. Act. 3 Soil survey & land capability classification done for generating soil information	Selected Dzongkhags	July 2008	June 2013	NSSC	Dz
	Sub. Act. 4 Soil micro-bio studies and services	Nationwide Maize (Dorona)	July 2008	June 2013	NSSC	Dz & Research

Program Outputs	Program Activities	Geographic location	Start Month/year	Finished Month/Year	Lead Implementing agency	Collaborating agency
003 Farmers and herders adopt sustainable land management practices	Activity 2 Sustainable Land Management					
	Sub. Act. 1 SLM capacity enhanced	Pilot Dz / geogs	July 2008	June 2013	NSSC	Dz
	Sub. Act. 2 SLM pilot site investment & validation through M&E	Potato (Geney, Tsento)	July 2008	June 2013	NSSC	Dz
	Sub. Act. 3 Scaling up and institutional sustainability ensured for SLM	-do-	July 2008	June 2013	NSSC	Dz
	Sub. Act. 4 Project Management & M&E & contingencies	-do-	July 2008	June 2013	NSSC	
	Act. 3 Mainstreaming of SLM		July 2008	June 2013	NSSC	Dz
	Sub. Act.1 SLM Mainstreamed in GYT & DYT annual plans	Pilot site	July 2008	June 2013	NSSC	Dz
	Sub. Act. 2 Farmers adopt SLM technologies in selected pilot sites	Pilot site	July 2008	June 2013	NSSC	Dz
	Sub. Act. 3 Land management issues (poor land management habits) studied & documented	Pilot site	July 2008	June 2013	NSSC	Dz

Program Outputs	Program Activities	Geographic location	Start Month/year	Finished Month/Year	Lead Implementing agency	Collaborating agency
	Sub. Act.4 Local communities including GYT & DYT members introduced to ISFM & SLM issues and associated mitigation	Pilot site	July 2008	June 2013	NSSC	Dz
	Sub. Act. 5 OJT of RNR staff on ISFM, bio-engineering & soil conservation measures	<i>Pilot site Maize (Dorona) Mandarin Orange (Phangkhar, Ngangla, Goshing, Shingkebar, Bjokha, Bardo, Deorali, Chimong, Nangkor, Namgay Chholing, Logchina)</i>	July 2008	June 2013	NSSC	Dz
	Sub. Act.6 Capacity development of RNR staff SLM	Pilot site	July 2008	June 2013	NSSC	Dz

Table 3: Program Plan Outlay

Program Activities	Activity Priority	Plan Outlay (Nu. Million)			Remarks
		Recurrent	Capital	Total	
Activity 1 Provide soil management services					
Sub Act. 1 Provide soil, plant, fertilizer & water analysis to farmers, researchers and planners			2.000		
Sub Act. 2 Soil fertility information generated for Major crops			1.000		
Sub. Act. 3 Soil survey & land capability classification done for generating soil information			2.000		
Sub. Act. 4 Soil micro-bio studies and services			1.000		
Activity 2 Sustainable Land Management					
Sub. Act. 1 Policy & regulatory framework for mainstreaming SLM			32.800		
Sub. Act.2 SLM pilot site investment & validation through M&E			11.400		
Sub. Act. 3 Scaling up and institutional sustainability ensured for SLM			171.000		
Sub. Act. 4 Project Management & M&E & contingencies			28.800		
Act. 3 Mainstreaming of SLM					
Sub. Act.1 SLM Mainstreamed in GYT & DYT annual plans			1.000		

Program Activities	Activity Priority	Plan Outlay (Nu. Million)			Remarks
		Recurrent	Capital	Total	
Sub. Act. 2 Farmers adopt SLM technologies in selected pilot sites			2.000		
Sub. Act. 3 Land management issues (poor land management habits) studied & documented			5.000		
Sub. Act.4 Local communities including GYT & DYT members introduced to ISFM & SLM issues and associated mitigation			1.000		
Sub. Act. 5 OJT of RNR staff on ISFM, bio-engineering & soil conservation measures			2.000		
Sub. Act.6 Capacity development of RNR staff SLM			5.000		
Total		111.900	266.000	377.900	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Planning decisions for land use guided by soil and land information studies	Information from soil and land studies used as tools for decision making	10% (2006)	90%	NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	No of samples soil, plant, water and fertilizer analyzed and distribute			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	No of report on soil classification and land capability information (soil map, soil data) made available to clients			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	Dzongkhag wise soil fertility database developed for intensively cultivate farming system (rice and potato-maize base farming system)	6 Dzongkhags	>15 Dzongkhags	NSSC/DoA	Semi Annual	DoA,PPD	GNHC

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 002 SLM principles and practices mainstreamed into plans and programs	Proportion of arable land put under appropriate land use and land management			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	Proportion of farmers adopting improved soil fertility and plant nutrition management practices			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
				NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	Proportion of dry land farmers adopting SLM technologies			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	Nos of farmers trained on ISFM and SLM issues			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	Dzongkhags & sector plans with SLM activities			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
Output 001 National land management strategy developed	Land Management Strategy developed and implemented	100 (2007)	200 plus	NSSC/DoA	Semi Annual	DoA,PPD	GNHC
Output 002 Soil classification and land capability information available for informed decision making	Database for soil and land management studies in place and used			NSSC/DoA	Semi Annual	DoA,PPD	GNHC

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
	Land capability reports made available for land use change decision			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	Updated land cover mapping	2006	Updated report	NSSC/DoA	Semi Annual	DoA,PPD	GNHC
Output 003 farmers and herders adopt Sustainable land management practices	Number of Geogs and Dzongkhags plans reflect SLM	Nil	60%	NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	Acres of degraded land rehabilitated			NSSC/DoA	Semi Annual	DoA,PPD	GNHC
	Nos. Stakeholders trained on SLM technologies and issues	500	5000	NSSC/DoA	Semi Annual	DoA,PPD	GNHC

MOA/10: Rural Access Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Reduced proportion of rural population living more than 1hour's walk from a road head	Reduction in Proportion of rural population	40%(2007)	20%

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Output 001 Farm road and PTT maintenance policy in place	Maintenance policy in place	0 (2007)	1
Output 002 FR and PTT survey, design and supervision outsourced	Nos. Of FR survey, design and supervision implemented		
Output 003 Kms of FR constructed using CMU machineries	Kms of FR constructed	250 (2007)	750

Table 2 Programme Activities

Program output	Program activities	Activity priority	Geographic coverage	Planned Month/Year	Planned Month/Year	Lead Implementing Agency	Collaborating Agencies
002 FR &PTT survey, design, supervision outsourced	Act 1. Purchase of non-destructive testing equipment, procurement of aerial photos/maps						
	Sub Act 1: Purchase of aerial photos, topographical maps			July 2008	June 2013	DoA	
	Sub Act 2 purchase of surveying equipments			July 2008	June 2013	DoA	
	Act 2: Outsourcing of farm road survey, design and supervision works						
	Sub Act1: Hire of Consultants for geotechnical and environment studies			July 2008	June 2013	DOA	Dz. & Gewogs
	Subact2: Consultancy (MoA buildings design)			July 2008	June 2013	DOA	
001 FR /PTT maintenance policy in place	Act 3: Farm road/PTT maintenance policy						
	Sub Act 1: Publication of maintenance policy, and farm road guidelines			July 2008	June 2013	DoA	Dz/MoWHS
	Subact2: Training workshop on guidelines & maintenance policy			July 2008	June 2013	DOA	Dz.
	Subact 3: Training workshop on technical specifications, standard drawings, geo-metrical guidelines.			July 2008	June 2013	DOA	Dz.

Program output	Program activities	Activity priority	Geographic coverage	Planned Month/Year	Planned Month/Year	Lead Implementing Agency	Collaborating Agencies
003 Kms of FR constructed	Act 4: Machinery support for farm road construction						
	Subact1: Office & machinery maintenance equipments			July 2008	June 2013	CMU	
	Subact2: Construction of regional machinery service office			July 2008	June 2013	CMU	
	Act 5: Construction of farm roads						
	<i>Sub act 1: Construction of Farm roads</i>		<i>Potato (Thrimshing, Dangchu, Lauri, Lumang) Mandarin orange (Chimong, Wangphu, Marshala, Shingkehar, gomdar, Kengkehar, Sherimuhung, Jurmey, Nanong, Lhamozingkeha, Gondgue, Yurung, Barshong) Maize (Slimbi) Chili (dangchu, Thrimshing, Kangpara)</i>	<i>July 2008</i>	<i>June 2013</i>	<i>Dz.</i>	

Table 3: Program plan outlay

Program activities	Activity priority	Outlay (Nu. In Million)			Remarks
		Recurrent	Capital	Total	
Act 1. Purchase of non destructive testing equipment, procurement of aerial photos/maps					
Sub Act 1: Purchase of aerial photos, topographical maps etc			0.300		
Sub Act 2: purchase of surveying equipments			0.800		
Act 2: Outsourcing of farm road survey, design and supervision works					
Sub Act1: Hire of Consultants for geotechnical and environment studies			7.200		
Sub Act2: consultancy for MoA building design works			2.200		
Act 3: Farm road/PTT maintenance policy					
Sub Act 1: publication of maintenance policy, and farm road guidelines			0.050		
Subact2: training workshop on guidelines & maintenance policy			0.500		
Subact3: training workshop on technical specifications, standard drawings, geometrical guidelines.			0.450		
Act 4: Machinery support for farm road construction					
Subact1:office & machinery maintenance equipments			26.400		
Sub Act 2: construction of regional machinery service office			35.500		
Act 5: construction of farm roads					
Sub act 1: Construction of farm roads			442.890		Spill over budget from 9FYP
TOTAL BUDGET		43.000	73.200	116.200	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Reduced proportion of rural population living more than 1hour's walk from a road head	Proportion of rural population living more than 1hour's walk from a road head reduced	40%(2007)	20%	ED/DoA	Semi- annual	DoA,PPD	GNHC
Output 001 Farm road and PTT maintenance policy in place	Maintenance policy in place	0 (2007)	1	ED/DoA	Semi- annual	DoA,PPD	GNHC
Output 002 FR and PTT survey, design and supervision outsources	Nos. Of FR survey, design and supervision implemented			ED/DoA	Semi- annual	DoA,PPD	GNHC
Output 003 Kms of FR constructed using CMU machineries	Kms of FR constructed	250 (2007)	750	ED/DoA	Semi- annual	DoA,PPD	GNHC

MOA/11: Farm Mechanization Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Farm labor shortage addressed to a large extent	Reduced farm labor shortage	(2007)	
Outcome 002 Farm machinery services extended to geog level	Support establishment of rural farm machinery	0 (2007)	18
	Community level geog machinery center established	0 (2007)	5

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Farm machinery service extended to geog level	Establishment of rural farm machinery workshop supported	0 (2007)	18
	Community level geog machinery centers established	0 (2007)	5
Output 002 Ensure Safety and quality of farm machinery services	Enactment and implementation of safely act	0 (2007)	1
	Nos. Farm machinery, tools and implement pass quality certification	0 (2007)	20
Output 003 Ensure sustainability of farm machineries	Nos of storage bins developed and installed	5 sets (8.5 MT) (2007)	25 sets (4.5MT) & 2000 sets of 500 kg
	Nos of appropriate farm machinery and technologies developed (drier, thresher, roaster, reaper, oil expeller etc)	1 prototype (2007)	9 prototypes
	Prototypes of farm machinery from other countries for local conditions collected	30 prototypes (2007)	38 prototypes
	Private firms for mass production supported	1 (2007)	5
Output 004 Capacity of end users enhanced	Nos of farmers and extension agents trained on operation and maintenance of farm machinerels	2900 (2007)	4000

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
003: Enhance Sustainability of farm machineries	Act1: Enhancement and sustainability of farm machinery						
	Sub Act.1: Develop appropriate land preparation, cultivating, seeding, spraying and dusting equipment			July/2008	June/2013	AMC	
	Sub Act.2: Develop appropriate primary processing equipment for cereal and horticulture crops			July/2008	June/2013	AMC	NPHC
	Sub Act.3: Develop appropriate green house structure			July/2008	June/2013	AMC	
	Act 2: Improving efficiency and effectiveness of farm technology						
	Sub Act.1: Modification of adapted farm technologies			July/2008	June/2013	AMC	-
	Act 3: Supply and distribution of revolving farm machinery						
	Sub Act.1: Distribution of appropriate farm machinery tools and equipment,		<i>Vegetables (Patale)</i> <i>Areca nut (Shomphangkha)</i> <i>Groundnut (Khamdang)</i> <i>Maize Product (Sengye)</i> <i>Potato (Usue, Sama)</i> <i>Mandarin Orange (Dorokha, Denchukha)</i>	July/2008	June/2013	AMC	Dz.

Programme Outputs	Programme activities	Activity priority	Geographic coverage	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
002. Ensure Safety and quality of farm machinery services	Act 4: Inspection and quality control						
	Sub Act.1: Establishment of farm equipment testing laboratory			July/2008	June/2013	AMC	
001 Farm machinery services extended to Gewog level	Act 5. Enhancement of outreach/support services						
	Sub Act.1 Disseminate the appropriate farm machinery technologies to farmers, entrepreneurs and extension officers			July/2010	June/2013	AMC	Dz.
	Sub Act.2: Strengthening regional centres with appropriate farm machinery equipments including mobile clinic service			July/2008	June/2013	AMC	
	Sub Act.3: Establishment of gewog machinery centres including hiring service of machinery					AMC	Dz.

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Act1: Enhancement and sustainability of farm machinery					
Sub Act.1: Develop appropriate land preparation, cultivating, seeding, spraying and dusting equipment			5.360		
Sub Act.2: Develop appropriate primary processing equipment for cereal and horticulture crops			8.000		
Sub Act.3: Develop appropriate rural farm structure (stores etc.)			10.000		
Act 2: Improving efficiency and effectiveness of farm technology					
Sub Act.1: Modification of adapted farm technologies			3.828		
Act 3: Supply and distribution of revolving farm machinery					
Sub Act.1: Distribution of appropriate farm machinery tools and equipment,			0.697		
Act 4: Inspection and quality control					
Sub Act 1: Establishment of farm equipment testing laboratory			4.061		
Act 5: Enhancement of outreach/support services					
Sub Act.1 Disseminate the appropriate farm machinery technologies to farmers, entrepreneurs and extension officers			2.750		
Sub Act.2: Strengthening regional centres with appropriate farm machinery equipments including mobile clinic service			5.000		
Sub Act.3: Establishment of gewog machinery centres & hiring service of machinery			21.000		
TOTAL BUDGET		277.110	60.696	337.806	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Farm labor shortage addressed to a large extent	Reduced farm labor shortage	(2007)		AMC/ DoA	Semi annual	DoA,PPD	GNHC
Outcome 002 Farm machinery services extended to geog level	Support establishment of rural farm machinery	0 (2007)	18	AMC/ DoA	Semi annual	DoA,PPD	GNHC
	Community level geog machinery center established	0 (2007)	5	AMC/ DoA	Semi annual	DoA,PPD	GNHC
Output 001 Farm machinery service extended to geog level	Establishment of rural farm machinery workshop	0 (2007)	18	AMC/ DoA	Semi annual	DoA,PPD	GNHC
	Community level geog machinery centers established	0 (2007)	5	AMC/ DoA	Semi annual	DoA,PPD	GNHC
Output 002 Ensure Safety and quality of farm machinery	Enactment and implementation of safely act	0 (2007)	1	AMC/ DoA	Semi annual	DoA,PPD	GNHC
	Nos. Farm machinery, tools and implement passed quality certification	0 (2007)	20	AMC/ DoA	Semi annual	DoA,PPD	GNHC

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Output 003 Enhance Sustainability of farm machineries	Nos of storage bins developed and installed	5 sets (8.5 MT) (2007)	25 sets (4.5MT) & 2000 sets of 500 kg	AMC/ DoA	Semi annual	DoA,PPD	GNHC
	Nos of appropriate farm machinery and technologies developed (drier, thresher, roaster, reaper, oil expeller etc)	1 prototype (2007)	9 prototypes implemented	AMC/ DoA	Semi annual	DoA,PPD	GNHC
	Prototypes of farm machinery from other countries for local conditions collected	30 prototypes (2007)	38 prototypes	AMC/ DoA	Semi annual	DoA,PPD	GNHC
	Private firms for mass production supported	1 (2007)	5	AMC/ DoA	Semi annual	DoA,PPD	GNHC
Output 004 Capacity of end users enhanced	Nos of farmers and extension agents trained on operation and maintenance of farm machinerels	2900 (2007)	4000	AMC/ DoA	Semi annual	DoA,PPD	GNHC

MOA/12: Extension Coordination and Information Management Programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Commodity production based on suitable production areas through mapping of potential sites, data generation and publications	Nos of potential areas identified and mapped	0	Potential areas for rice, maize, citrus, all oilseeds, and all legumes identified & documented
Outcome 002 16 technologies on different management and production aspects generated and applied in the field	HHs adopting improved farming practices	15% of farmers (2007)	30% of farmers

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Functional farmers group established with clear mandates and responsibilities	Nos of farmers cooperatives established	0	4 functional Farmers' Co-ops
Output 002 Farmers adopt scientific farming practices	Proportion of farming HHs demonstrated with improved extension methodologies	10% (2007)	30%
	% of farmers adopting improved technologies	15% (2007)	30%

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic location	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
002 Farmers adopt scientific farming practices	Activity 1: Information generation and management						
	Sub Activity 1: Publication of annual reports		Nationwide	2008	2013	DoA	Dz
	Sub Activity 2 : Hold National Extension Coordination meetings			2008	2013	ECC	Dz
	Sub Activity 3 : Generation, management and assessment of field programs and feedback system put in place		Nation wide	2008	2013	DoA	Dz
	Activity 2 : Farmers Training and Extension Materials						
	Sub Activity 1 : Form functional farmers groups and cooperation		Nationwide	2008	2013	DoA	Dz, AMS
	Sub Activity 2 : Increase farmers skills/ knowledge through trainings/demos./ discussions		Nationwide	2008	2013	DoA	Dz
	Sub Activity 3 : Develop and distribute extension materials		Nationwide	2008	2013	DoA	CORRB

Programme Outputs	Programme activities	Activity priority	Geographic location	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
001 Functional farmers group established with clear mandates and responsibilities	Activity 3 : Technology transfer and community development						
	Sub Activity 1: Develop geog extension centres/technology park development		20 geogs	2008	2013	DOA	CoRRB/ Dz
	Sub Activity 2 : Initiate Focus village approach		Nationwide	2008	2013	DOA	Dz
	Sub Activity 3 : Encourage Local Development Initiative		Potential geogs	2008	2013	DOA	Dz.
	Sub Activity 4 : Start Volunteer Extension System		Nationwide	2011	2013	DOA	Dz
	Sun-Activity 5: Support to 1-Stop Shop			2010	2013	DOA	
	Sub-Activity 6: Crop Insurance			2010	2013	DOA	

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1: Information generation and management					
Sub Activity 1: Publication of annual reports			0.700		
Sub Activity 2 : Hold National Extension Coordination meetings			0.600		
Sub Activity 3 : Generation, management and assessment of field programs and feedback system put in place			0.700		
Activity 2 : Farmers Training and Extension Materials					
Sub Activity 1 : Form functional farmers groups and cooperation			1.500		
Sub Activity 2 : Increase farmers skills/knowledge through trainings/demos./ discussions			2.000		
Sub Activity 3 : Develop and distribute extension materials			2.500		
Activity 3 : Technology transfer and community development					
Sub Activity 1: Develop geog extension centres/technology park development			1.500		
Sub Activity 2 : Initiate Focus village approach			0.800		
Sub Activity 3 : Encourage Local Development Initiative			0.500		
Sub Activity 4 : Start Volunteer Extension System			0.500		
Sub Activity 4 : Start Volunteer Extension System			0.500		
Sun-Activity 5: Support to 1-Stop Shop			0.200		
TOTAL BUDGET		7.100	12.000	19.100	

Table 4: Monitoring & Evaluation Plan

Results Levels	Indicators	Baseline	Targets	Data sources	Reporting Frequencies & Responsibilities		
					Frequencies	Reporting responsibilities	Report to
Outcome 001 Commodity production based on suitable production areas through mapping of potential sites, data generation and publications	Nos of potential areas identified and mapped			DoA	Semi-Annual	DoA,PPD	GNHC
Outcome 002 16 technologies on different management and production aspects generated and applied in the field	Nos of HHHs adopting improved farming practices	15% of farmers (2007)	30% of farmers	DoA	Semi-Annual	DoA,PPD	GNHC
Output 001 Functional farmers group established with clear mandates and responsibilities	Nos of farmers cooperatives established	0	4 fully functional Farmers' Cooperative	DoA	Semi-Annual	DoA,PPD	GNHC
Output 002 Farmers adopt scientific farming practices	Proportion of farming HHHs demonstrated with improved extension methodologies	10% (2007)	30%	DoA	Semi-Annual	DoA,PPD	GNHC
	% of farmers adopting improved technologies	15% (2007)	30%	DoA	Semi-Annual	DoA,PPD	GNHC

MOA /13: Feed & Fodder development programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Area under improved pasture development increased.	Increased in area under under improved pasture development	3864 acres (2007)	4636 acres
Outcome 002: Increased availability of feed and fodder	Acreage under improved pasture by Dzongkhag Acres of improved pasture per household		

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001: National grazing resource management policy and strategies implemented	Nos. of HHs implementing National grazing resource management strategies	0 (2007)	150
Output 002: Fully functional feed and fodder laboratory established and provides fodder variety and species	Nos of farmers adopting new fodder species	3979(2007)	5000
	Acres of Govt. land leased to farmers for pasture and fodder Nos of new species promoted and adopted by farmers	115 (2007)	650
Output 003: Mini feed mills established and operational	Nos. of functional feed mills constructed	1 (2007)	3

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001: Fully functional feed and fodder laboratory established and provides fodder variety and species	Activity 1. Pasture and Fodder Development						
	Sub activity1. Promote integrated pasture development program		<i>Butter & Cheese (Khar, Gakidling, Sberimung, Ngatshang, Naja, Tsangkha, chume, Gangtey, Bidung, Bjena, Phenteychu, Bji, Tading, Pugli, Lauri, Toewang, Zobel)</i> <i>Fresh milk (Songphu, Tang, Samkhar, Tomijangsa, Bumdeling, Gelephu, Shumar, Sampheling, Radi, Ura, Choekor, Bongo)</i>	July 2008	June 2013	NFFDP	Dzongkhag
	Sub activity 2. Conduct campaign on fodder trees plantation and usage		<i>Butter & Cheese (Tsangkha, Bjena)</i> <i>Chevon (Dovan)</i>	July 2008	June 2013	NFFDP	Dzongkhag & Central Farms
	Sub activity 3. Assess improved pasture development in the Dzongkhags		<i>Nationwide</i>	July 2008	June 2013	NFFDP	RCs and Dzongkhag
	Sub activity 4. Promote winter fodder production		<i>Butter & Cheese (Sama, Bjena, Shengana)</i>	July 2008	June 2013	NFFDP	Dzongkhag
	Sub activity 5. Promote / introduce new fodder specie		<i>Butter & Cheese (Ngatshang, Sama, Bidung, Bjena, Phenteychu, Shengana)</i>	July 2008	June 2013	NFFDP	RCs & Dzongkhag

Programme Outputs	Programme activities	Activity priority	Geographic Coverage / Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 6: Select , demarcate and lease Govt. land (training/ workshops, land leasing and promotional programs)		<i>Butter & Cheese (Laya, Sberimung, Dungna, chume, Sepbu, Rupeisa, Phangyuel, Kazhi, Kawang, Goenkhatoe, Jigmechoeling, Tangsibji, Bartsbam, Soe, Bjena, Pugli, Shengana, Kabjisa, Dangchu)</i> <i>Fermented cream (tsento)</i> <i>Fresh milk (Mongar, Mewang, Sampheling, Phuentsholing, Deothang)</i>	July 2008	June 2013	NFFDP	Dzongkhag, DoF, NLCS
	Sub activity7: Conduct training and promotional program on Pasture development		<i>Butter & Cheese (Khoma, Chume, Jangchubling, Zobel)</i>	July 2008	June 2013	NFFDP	Dzongkhag & RLDC
Activity 2: Animal Nutrition and feed mills							
	Sub activity 1:Revitalize crop residue treatments/usage		<i>Butter & Cheese (Yurung, Zobel, Bidung, Khar, Ruepisa, Phobji, Geyney, Jamkhar, Bjena)</i> <i>Fresh milk (Shongohu, Samkhar, Tomijangsa, Mewang Radhi, Deothang, Khaling)</i>	July 2008	June 2013	NFFDP	Dzongkhag, RCs
	Sub activity2:Introduce Stover treatment		<i>Butter & Cheese(Ngatshang, Bidung, Yurung, Zobel, Khar, Jamkhar, Menjay, Tsangkba, Bartsbam, Gangzur, Kanglung)</i>	July 2008	June 2013	NFFDP	Dzongkhag & RLDC

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 3:Up-scale silage making activities		<i>Butter & cheese (Bidung, Khar, Ruepisa, Phobji, Geyney, Yurung, Jamkhar, Bjena)</i> <i>Fresh milk (Shongphu, Samkhar, Tomijangsa, Mewang, Radhi, Deothang, Khaling)</i>	July 2008	June 2013	NFFDP	Dzongkhag & RLDC
	Sub activity 4:Promote UMMB and other non-conventional feedstuffs		<i>Butter & cheese (Bidung, Khar, Ruepisa, Phobji, Geyney, Yurung, Jamkhar, Bjena)</i> <i>Fresh milk (Shongphu, Samkhar, Tomijangsa, Mewang, Radhi, Deothang, Khaling)</i>	July 2008	June 2013	NFFDP	Dzongkhag & RLDC
	Sub activity 5:Establish mini feed mills		<i>Eggs (Chongshing, Chimung, Menbi)</i> <i>Piglets (Tsezga)</i> <i>Pork (Toetsbo)</i>	July 2008	June 2013	NFFDP	Dzongkhag & GOI projects
	Sub activity 6: Establish Feed and Fodder Analytical Laboratory		NFFDP	July 2008	June 2013	NFFDP	GOI project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 7: Establish feed sale agencies/outlets		<i>Fermented Cream (Tsentu) Pork(Ugyentse)</i>	July 2008	June 2013	NFFDP	Dzongkhag and private feed manufacturers.
	Sub activity 8: Analyze Feed and fodder quality			July 2008	June 2013	NFFDP	Dzongkhag, Farms and NSSC.
	Sub activity9: Up-grade and maintain feed mills		<i>Dairy focussed areas</i>	July 2008	June 2013		NFFDP & RPPBC, Lingmethang
Activity 3: Rangeland Development							
	Sub activity1. Implement national grazing and grazing Resources Management Policy and Strategies (training/ workshops and promotional programs)		NFFDP	July 2008	June 2013		Dzongkhags, DoF, CORRB, NLCS & DoA
	Sub activity 2: Introduce and promote appropriate winter fodder species		<i>Saling, Mongar Merak & Sakten, Chokor, Bumthang, Laya</i>	July 2008	June 2013	NFFDP	Dzongkhag, RCs
	Sub activity 3:Up-scale high altitude winter fodder production		<i>Saling, Mongar Merak & Sakten, Chokor, Bumthang, Laya</i>	July 2008	June 2013	NFFDP	Dzongkhag and RCs
	Sub activity 4:Introduce/ promot, fodder conservation		<i>Saling, Mongar, Merak & Sakten, Chokor, Bumthang, Laya</i>	July 2008	June 2013	NFFDP	Dzongkhag and RCs
	Sub activity 6: Introduce rangeland co-management concepts to high altitude farmers		<i>Saling, Mongar, Merak & Sakten, Chokor, Bumthang, Laya</i>	July 2008	June 2013	NFFDP	Dzongkhag and RCs

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 6: Introduce rangeland co-management concepts to high altitude farmers		<i>Saling, Mongar, Merak & Sakten, Chokor, Bumthang, Laya</i>	July 2008	June 2013	NFFDP	Dzongkhag and RCs
Activity 4: Infrastructure Development							
	Sub activity 1: Construct Main Office complex-		<i>NFFDP</i>	July 2008	June 2010	NFFDP	GOI project
	Sub activity 2: Construct Approach Road		<i>NFFDP</i>	July 2008	June 2010	NFFDP	GOI project
	Sub activity 3: Construct Parking Lot		<i>NFFDP</i>	July 2008	June 2010	NFFDP	GOI project
	Sub activity 4: Renovate and extend existing infrastructures		<i>NFFDP</i>	July 2008	June 2010	NFFDP	GOI project
	Sub activity 5: Construct Compound Fencing		<i>NFFDP</i>	July 2008	June 2010	NFFDP	GOI project
Activity 5: Agri-machineries, general tools, office equipment and professional services							
	Sub activity 1: Purchase four wheelers		<i>NFFDP</i>	July 2008	June 2009	NFFDP	EU project
	Sub activity 2: Purchase two wheelers		<i>NFFDP</i>	July 2008	June 2009	NFFDP	EU project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 3:Purchase farm tractor		<i>NFFDP</i>	July 2008	June 2009	NFFDP	EU/GOI project
	Sub activity 4:Purchase general tools (incl. White clover thrasher)		<i>NFFDP</i>	July 2009	June 2011	NFFDP	GOI project

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1. Pasture and Fodder Development			2.850		
Sub activity1. Promote integrated pasture development program			0.350		
Sub activity 2. Conduct campaign on fodder trees plantation and usage			0.100		
Sub activity 3. Assess improved pasture development in the Dzongkhags			0.000		
Sub activity 4. Promote winter fodder production			0.000		
Sub activity 5. Promote / introduce new fodder specie			0.300		
Sub activity 6: Select , demarcate and lease Govt. land (training/workshops, land leasing and promotional programs)			0.300		
Sub activity7: Conduct training and promotional program on Pasture development			1.300		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub activity 8: Produce and distribute extension materials			0.500		
Activity 2: Animal Nutrition and feed mills			2.330		
Sub activity 1:Revitalize crop residue treatments/usage			0.120		
Sub activity2:Introduce Stover treatment			0.150		
Sub activity 3:Up-scale silage making activities			0.110		
Sub activity 4:Promote UMMB and other non-conventional feedstuffs			0.050		
Sub activity 5:Establish mini feed mills			0.500		
Sub activity 6: Establish Feed and Fodder Analytical Laboratory			1.400		
Sub activity 7: Establish feed sale agencies/outlets			0.000		
Sub activity 8: Analyze Feed and fodder quality			0.000		
Sub activity9: Up-grade and maintain feed mills			0.000		
Activity 3: Rangeland Development			1.576		
Sub activity1. Implement national grazing and grazing Resources Management Policy and Strategies (training/workshops and promotional programs)			0.400		
Sub activity 2: Introduce and promote appropriate winter fodder species			0.150		
Sub activity 3:Up-scale high altitude winter fodder production			0.190		
Sub activity 4:Introduce /promote fodder conservation			0.160		
Sub activity 5: Develop Improved pasture in Tsa-Zhing			0.160		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub activity 6: Introduce rangeland co-management concepts to high altitude farmers			0.500		
Activity 4: Infrastructure Development			12.990		
Sub activity 1: Construct Main Office complex			9.740		
Sub activity 2: Construct Approach Road			1.000		
Sub activity 3: Construct Parking Lot			0.700		
Sub activity 4: Renovate and extend existing infrastructures			0.850		
Sub activity 5: Construct Compound Fencing			0.700		
Activity 5: Agri machineries, general tools, office equipment and Professional services			3.390		
Sub activity 1: Purchase four wheelers			1.600		
Sub activity 2: Purchase two wheelers			0.060		
Sub activity 3: Purchase farm tractor			1.600		
Sub activity 4: Purchase general tools (incl. White Clover thresher)			0.130		
Total		87.210	23.076	110.286	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001: Area under improved pasture development increased. Outcome 002: Increased availability of feed and fodder	Increased in area under improved pasture development Acreage under improved pasture by Dzongkhag Acres of improved pasture per household	3864 acres (2007)	4636 acres	PPD	Terminal 10 th FYP	DoL, PPD	GNHC
Output 001: National grazing resource management policy and strategies implemented	Nos. of HHs implementing National grazing resource management strategies	0 (2007)	150	DoL, PPD	Midterm	PPD, DoL	GNHC
Output 002: Fully functional feed and fodder laboratory established and provides fodder variety and species	Nos of farmers adopting new fodder species	3979(2007)	5000	DoL, PPD	Midterm/terminal	DoL, PPD	GNHC
	Acres of Govt. land leased to farmers for pasture and fodder Nos of new species promoted and adopted by farmers	115 (2007)	650	DoL, PPD	Annual	DoL , PPD	GNHC
Output 003: Mini feed mills established and operational	Nos. of functional feed mills constructed	1 (2007)	3	DoL, PPD	Annual	DoL , PPD	GNHC

MOA /14: Livestock Health and Laboratory services Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Reduction in loss of livestock from diseases	Reduction in loss of livestock from diseases (1.2%)	17914 nos (2005)	13779 nos

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001: RLRCs constructed & delivering mandated health services	% vaccination of all eligible animals (Nos of animals vaccinated by Dzongkhag) Surveillance & control program fully operational for all notifiable disease (Nos of doses of vaccine distributed by Dzongkhag) Recovery rate through clinical services	30-50% (2006)	>80 Functional systems in place %
Output 002: Village animals workers with knowledge and skills support extension workers	Disease reporting and data management system in place (Nos of health workers trained by gender) Disease outbreaks mapping done using GIS/GPS	0 (2007) (2007)	system in place Disease mapping initiated
Output 003: Regional centres use surveillance data to monitor and control diseases.	Disease map No of interventions based on surveillance data No of trainings based on surveillance data	273 (9th FYP)	300

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
002: Village animals workers with knowledge and skills support extension workers	001 National Centre for Animal Health (Serbethang)						
	Sub activity 1: Disease prevention and control		<i>Nationwide</i>	July 2008	June 2013	NCAH	RLDCs, Dz, Geogs
	Sub activity 2: Veterinary public health		<i>Nationwide</i>	July 2008	June 2013	NCAH	RLDCs, Dz, Geogs
	Sub activity 3: Clinical services		<i>Thimphu, Paro, Punakha, Wangdue, Haa, Gasa, NLBP, NPBC, RLBC</i>	July 2008	June 2013	NCAH	RLDCs, Dz, Geogs
	Sub activity 4: Vaccine production		<i>Nationwide</i>	July 2008	June 2013	NCAH	RLDCs, Dz, Geogs
	Sub activity 5: Laboratory services		<i>Nationwide</i>	July 2008	June 2013	NCAH	RLDCs, Dz, Geogs
	Sub activity 6: Animal health research		<i>Nationwide</i>	July 2008	June 2013	NCAH	RLDCs, Dz, Geogs, RCs
	Sub activity 7: Mobility		<i>NCAH</i>	July 2008	June 2013	NCAH	Projects
	Sub activity 8: Maintenance, PE, S&M Operating, Pl & equip, Vehicle, etc		<i>NCAH</i>	July 2008	June 2013	NCAH	

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
001: : RLRCs constructed & delivering mandated health services 003: Regional centres use surveillance data to monitor and control diseases.	002 Regional Livestock ResourceCentre (Tsimasham)-provide livestock health, breeding, feedand fodder and other allied services						
	Sub activity1: Disease prevention & control		<i>Thimphu, Chukha, Samtse, paro, Haa</i>	July 2008	June 2013	RLDC, Tsimasham	Dzongkhags, Geogs and Central farms
	Sub activity 2: Veterinary Public Health		<i>Thimphu, Chukha, Samtse, paro, Haa</i>	July 2008	June 2013	RLDC, Tsimasham	Dzongkhags, Geogs and Central farms
	Sub activity 3: Clinical services		<i>Thimphu, Chukha, Samtse, paro, Haa</i>	July 2008	June 2013	RLDC, Tsimasham	Dzongkhags, Geogs and Central farms
	Sub activity 4: Vaccine production and supply		<i>Thimphu, Chukha, Samtse, paro, Haa</i>	July 2008	June 2013	RLDC, Tsimasham	
	Sub activity 5: Laboratory services		<i>Thimphu, Chukha, Samtse, paro, Haa</i>	July 2008	June 2013	RLDC, Tsimasham	Dzongkhags, Geogs and Central farms, RCs
	Sub activity 6: Institutional development program		<i>RLDC, Tsimasham</i>	July 2008	June 2013	RLDC, Tsimasham	
	Sub activity 7: Veterinary medicines and equipments		<i>RLDC, Tsimasham</i>	July 2008	June 2013	RLDC, Tsimasham	Central store, NCAH
	Sub activity 8: Animal health research		<i>Thimphu, Chukha, Samtse, paro, Haa</i>	July 2008	June 2013		RCs & NCAH

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 9: Institutional development		<i>RLDC, Tsimasham</i>	July 2008	June 2013	RLDC, Tsimasham	GOI project
	Sub activity 10: RNR awareness activities		<i>Thimphu, Chukha, Samtse, paro, Haa</i>	July 2008	June 2013	RLDC, Tsimasham	Dzongkhag
	Sub activity 11: Feed and Fodder activities		<i>RLDC, Tsimasham</i>	July 2008	June 2013	RLDC, Tsimasham	NFFDP, Dzongkhag
	Sub activity 12: Livestock Breeding Programme		<i>Thimphu, Chukha, Samtse, paro, Haa</i>	July 2008	June 2013	RLDC, Tsimasham	NLBP, Dzongkhag
003 Regional Livestock Resource Centre (Wangdue) – provide livestock health, breeding, feed and fodder and other allied services							
	Sub activity 1: Disease Prevention and Control		<i>Wangdi, Tsirang, Sarpang, Punakha</i>	July 2008	June 2013	RLDC, Wangdi	Dzongkhags, Geogs and Central farms
	Sub activity 2 Clinical services		<i>Wangdi, Tsirang, Sarpang, Punakha</i>	July 2008	June 2013	RLDC, Wangdi	Dzongkhags, Geogs and Central farms, RCs
	Sub activity 3: Animal Health Research		<i>Wangdi, Tsirang, Sarpang, Punakha</i>	July 2008	June 2013	RLDC, Wangdi	RCs & NCAH
004 Regional Livestock Resource Centre (Zhemgang) – provide livestock health, breeding, feed and fodder and other allied services Provision of Veterinary Laboratory Services (Bumthang Region)							
	Sub activity 1: Disease prevention & control		<i>Bumthang, Trongsa, Zhemgang</i>	July 2008	June 2013	RLDC, Zhemgang	Dzongkhag, Geog, farms, BAFRA

Programme Outputs	Programme activities	Activity priority	Geographic Coverage / Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 2: Veterinary Public Health		<i>Bumthang, Trongsa, Zhemgang</i>	July 2008	June 2013	RLDC, Zhemgang	Dzongkhag, Geog, farms, BAFRA
	Sub activity 3: Clinical services		<i>Bumthang, Trongsa, Zhemgang</i>	July 2008	June 2013	RLDC, Zhemgang	Dzongkhag, Geog, farms.
	Sub activity 4: Vaccine production and supply			July 2008	June 2013	RLDC, Zhemgang	NCAH
	Sub activity 5: Laboratory services		<i>Bumthang, Trongsa, Zhemgang, Farms</i>	July 2008	June 2013	RLDC, Zhemgang	NCAH & Dzongkhag
	Sub activity 6: Feed and Fodder Development Program		<i>Bumthang, Trongsa, Zhemgang</i>	July 2008	June 2013	RLDC, Zhemgang	NFFDP & Dzongkhag
	Sub activity 7: Breeding Program		<i>Bumthang, Trongsa, Zhemgang</i>	July 2008	June 2013	RLDC, Zhemgang	NLBP & Dzongkhag
	Sub activity 8: Institutional Development Program		<i>RLDC, Zhemgang</i>	July 2008	June 2013	RLDC, Zhemgang	Projects
	Sub activity 9: RNR Awareness		<i>Bumthang, Trongsa, Zhemgang</i>	July 2008	June 2013	RLDC, Zhemgang	Dzongkhag & ICS, NCAH
005 Regional Livestock Resource Centre (Khangma)							
	Sub activity 1: Disease prevention & control		<i>Mongar, Tashigang, Tashiyangtse, Lbuentse, Pema Gatsel, Samdrup Jongkhar.</i>	July 2008	June 2013	RLDC, Khangma	Dzongkhag, Geogs, NCAH
	Sub activity 2: Veterinary Public Health		<i>Mongar, Tashigang, Tashiyangtse, Lbuentse, PemaGatsel, Samdrupjongkhar.</i>	July 2008	June 2013	RLDC, Khangma	Dzongkhag, Geogs, NCAH, BAFRA

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 3: Clinical services		<i>Mongar, Tashigang, Tashiyangtse, Lhuentse, Pema Gatsbel, Samdrupjongkhar.</i>	July 2008	June 2013	RLDC, Khangma	Dzongkhag, Geogs, NCAH
	Sub activity 4: Laboratory services		<i>Mongar, Tashigang, Tashiyangtse, Lhuentse, Pema Gatsbel, Samdrupjongkhar, Farms</i>	July 2008	June 2013	RLDC, Khangma	Dzongkhag, Geogs, NCAH
	Sub activity 5: Veterinary medicines & equipments		<i>Mongar, Tashigang, Tashiyangtse, Lhuentse, Pema Gatsbel, Samdrupjongkhar, Farms</i>	July 2008	June 2013	RLDC, Khangma	NCAH, Central Stores
	Sub activity 6: Animal health research		<i>Mongar, Tashigang, Tashiyangtse, Lhuentse, Pema Gatsbel, Samdrupjongkhar, Farms</i>	July 2008	June 2013	RLDC, Khangma	NCAH, RCs
	Sub activity 7: Institutional Development Program		RLDC, Khangma	July 2008	June 2013	RLDC, Khangma	Projects
	Sub activity 8: RNR Awareness Program		<i>Mongar, Tashigang, Tashiyangtse, Lhuentse, Pema Gatsbel, Samdrupjongkhar, Farms</i>	July 2008	June 2013	RLDC, Khangma	ICS & Dzongkhags.

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	006 National Animal Hospital, Langjophakha						
	Sub activity 1: Human Resource Development			July 2008	June 2013	NAH	Projects, HRDM, MoA
	Subactivity2:Infrastructure development		<i>NAH, Chubachu</i>	July 2008	June 2013	NAH	GOI project
	Sub activity 3: Plants & Equipments		<i>NAH, Chubachu</i>	July 2008	June 2013	NAH	GOI project
	007 Livestock Central store, P/ling- renovation and fencing						
	Sub activity 1: Human Resource Development		<i>LCS, Phuentsholing</i>	July 2008	June 2013	LCS	Projects, HRDM, MoA
	Sub activity 2: Plants & equipment		<i>LCS, Phuentsholing</i>	July 2008	June 2013	LCS	Projects
	Sub activity 3: Infrastructure Development		<i>LCS, Phuentsholing</i>	July 2008	June 2013	LCS	Projects

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001: National Centre for Animal Health (Serbethang)			43.480		
Sub activity 1: Disease prevention and control			6.400		
Sub activity 2: Veterinary public health			2.900		
Sub activity 3: Clinical services			1.600		
Sub activity 4: Vaccine production			2.360		
Sub activity 5: Laboratory services			10.800		
Sub activity 6: Animal health research			1.650		
Sub activity 7: Mobility			5.200		
Sub activity 8: Plants & Equipment			12.570		
Activity 002: Regional Livestock Resource Centre (Tsimasham) – provide livestock health, breeding, feed and fodder and other allied services			11.502		
Sub activity1: Disease prevention & control			1.020		
Sub activity 2: Veterinary Public Health			0.980		
Sub activity 3: Clinical services			1.000		
Sub activity 4: Vaccine production and supply			0.000		
Sub activity 5: Laboratory services			0.820		
Sub activity 6: Institutional development program			6.000		
Sub activity 7: Veterinary medicines and equipments			1.000		
Sub activity 8: Animal health research			0.500		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub activity 9: RNR awareness			0.200		
Sub activity 11: Feed and Fodder activities			0.000		
Sub activity 12: Livestock Breeding Programme			0.000		
Activity 003: Regional Livestock Resource Centre (Wangdue) – provide livestock health, breeding, feed and fodder and other allied services			21.032		
Sub activity 1: Disease Prevention and Control			3.600		
Sub activity 2 Clinical services			2.500		
Sub activity 3: Animal Health Research			0.500		
Sub activity 4: Institutional development program			9.450		
Sub activity 5: Plants & Equipments			4.980		
Activity 004: Regional Livestock Resource Centre (Zhemgang) – provide livestock health, breeding, feed and fodder and other allied services Provision of Veterinary Laboratory Services (Bumthang Region)			11.500		
Sub activity 1: Disease prevention & control			2.650		
Sub activity 2: Veterinary Public Health			1.500		
Sub activity 3: Clinical services			1.000		
Sub activity 4: Vaccine production and supply			0.000		
Sub activity 5: Laboratory services			0.500		
Sub activity 6: Feed and Fodder Development Program			0.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub activity 7:Breeding Program			0.000		
Sub activity 8: Institutional Development Program			4.100		
Sub activity 9: RNR Awareness			0.450		
Sub activity 10: Plants & Equipments			1.300		
Activity 005 Regional Livestock Resource Centre (Khangma)			11.500		
Sub activity 1: Disease prevention & control			1.580		
Sub activity 2: Veterinary Public Health			0.900		
Sub activity 3: Clinical services			1.800		
Sub activity 4: Laboratory services			1.000		
Sub activity 5: Veterinary medicines & equipments			0.500		
Sub activity 6: Animal health research			0.500		
Sub activity 7: 1Institutional Development Program			5.000		
Sub activity 8: 1RNR Awareness Program			0.220		
Activity 006: National Animal Hospital, Langjophakha			44.580		
Sub activity 1: Human Resource Development			0.700		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub activity 2:Infrastructure development			30.330		
Sub activity 3: Plants & Equipments			13.550		
Activity 007: Livestock Central store, P/ling- renovation and fencing			1.900		
Sub activity 1: Human Resource Development			0.510		
Sub activity 2: Plants & equipment			0.470		
Sub activity 3: Infrastructure Development			0.920		
Total		289.814	145.492	435.306	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001: Reduction in loss of livestock from diseases	Reduction in loss of livestock from diseases	17914 nos (2005)	13779 nos	DoL	Terminal (10 th FYP)	PPD, DoL	GNHC
Output 001: RLRCs constructed and delivering mandated health services	% vaccination of all eligible animals (Nos of animals vaccinated by Dzongkhag)	30 - 50 % (2006)	>80%		Semi-annual	DoL, PPD	GNHC
	Surveillance & control program fully operational for all notifiable disease (Nos of doses of vaccine distributed by Dzongkhag)	0 (2007)	Functional systems in place		Annual	DoL, PPD	GNHC
	Recovery rate through clinical services	60%(2007)	80%		Annual	DoL, PPD	GNHC
Output 002 Village health workers with knowledge and skills support extension workers	Disease reporting and data management system in place (Nos of health workers trained by gender)	0(2007)	system in place		Annual/ Midterm	DoL, PPD	GNHC
	Disease outbreaks mapping done using GIS/GPS	0 (2007)	Disease mapping initiated		Mid term	DoL, PPD	GNHC

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Output 003 Regional centers use surveillance data to monitor and control diseases	Disease map	(2007)					
	No of interventions based on surveillance data No of trainings based on surveillance data						

MOA /15: Livestock Breeding and Input Supply Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 002 Increase in improved breed population	Livestock improved breed population	100,000 (2005)	125,000
Outcome 002 Increase in improved breed population	Productivity (Qty per improved breed) by animal		

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001 Breeding Services meet farmers demand	New AI centres established	59 (2006)	50
	Improved breeding stocks procured & supplied (bulls)	446(9 th FYP)	1000
	Improved breeding stocks procured & supplied (pullets)	106349(9 th FYP)	132936
	Improved breeding stocks procured & supplied (piglets)	8557(9 th FYP)	10696
	Unproductive cattle identified, exchanged & disposed	(2007)	20,000
Output 002: National cattle identification and recording system developed	Functional System in place	0(2007)	1
Output 003 Farmer's managed input production unit supported	Farmers Association for breed conservation Created	1(2006)	7
	Contract breeding programmes expanded	6(2006)	11
Output 004: Native Breed Conservation programme developed	Native breed (Nublang) farm strengthened	Poor infrastructures	Improve infrastructures and facilities at NNBF
	1/3 of local population conserved		69594

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic Coverage / Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001: Breeding Services meet farmers demand	Activity 001 Livestock Breeding						
	Sub activity 1:Cattle breeding		<i>Butter & Cheese (Sberimuhung, Nubi, Shengana, Kabisa, Chubu, Dangchu) For AI center establishment & Mobile AI Fermented cream (Tsento) Fresh milk (Tang, Sampheling, Samkhar Phuntsboling, Ura, Dala, Choekor)- Mobile AI, AI accessories.</i>	July 2008	June 2013	NLBP	Dzongkhag, RCs and Farms, NBC
	Sub activity 2:Equine Breeding		<i>Horse Intensive region</i>	July 2008	June 2013	NLBP	Dzongkhag, RCs and Farms, NBC
	Sub activity 3:Sheep & goat breeding		<i>Breeding farms & contract farmers Chevon (Denchukha & Gozbing)</i>	July 2008	June 2013	NLBP	Dzongkhag, RCs and Farms, NBC
	Sub activity 4:Pig breeding		<i>Breeding farms & contract farmers</i>	July 2008	June 2013	NLBP	Dzongkhag, RCs and Farms, NBC
	Sub activity 5:Poultry breeding		<i>Breeding farms & contract farmers</i>	July 2008	June 2013	NLBP	Dzongkhag, RCs and Farms, NBC
	Sub activity 6:Fish breeding		<i>Breeding farms & contract farmers</i>	July 2008	June 2013	NLBP	Dzongkhag, RCs and Farms, NBC
	Sub activity 7:HRD						Dzongkhag, RCs and Farms, NBC

Programme Outputs	Programme activities	Activity priority	Geographic Coverage / Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 8:Institutional Development		NLBP	July 2008	June 2013	NLBP	GOI project
Activity 002: Livestock Input Supply							
	Sub activity 1: Jersey Breeding Bull Production & Supply		<i>Butter & Cheese(Chaskar, Khar, Sepbu, Kazhi, Kawang, Goenkhatoe, Menji, Jigmechoeling, Genye, Tangsibji, Bidung, Bjena, Umling, Dovan, tading, Lauri, Dangchu)</i>	July 2008	June 2013	NJBC	NLBP, Dzongkhag & NFFDP
	Sub activity 2:Brown Swiss Breeding Bull & Stallion Production & supply		<i>Butter & Cheese (Goenkhatoe)</i>	July 2008	June 2013	BSF & NHF	NLBP, Dzongkhag & NFFDP
	Sub activity 3: Heifer Production and Supply		<i>Butter & Cheese(Chaskar, Khar, Sepbu, Kazhi, Kawang, Goenkhatoe, Menji, Jigmechoeling, Genye, Tangsibji, Bidung, Bjena, Umling, Dovan, tading, Lauri, Dangchu, Goenkhatoe)</i> <i>Freshmilk (Shongphu, Gelephu, Memang,Shumer, Radhi)</i>	July 2008	June 2013	Heifer Project	NLBP, Dzongkhag & NFFDP
	Sub activity 4: Nublang Breeding Bull Production and Supply		<i>Butter and Cheese (Sombay)</i>	July 2008	June 2013	NNBF	NLBP, Dzongkhag & NFFDP

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 5: Calf Rearing and Supply			July 2008	June 2013	CRC	NLBP, Dzongkhag & NFFDP
	Sub activity 6: Warm Water Fish Fingerling production & Supply		<i>Fish (Phuntsbothang & Patale)</i>	July 2008	June 2013	NWWFCC	NLBP, Dzongkhag & NFFDP
	Sub activity 7: Cold Water Fish Fingerling production & Supply		<i>Haa, Paro, Thimphu</i>	July 2008	June 2013	NCWFC	NLBP, Dzongkhag & NFFDP
	Sub activity 8: Pullet/ DOC production & Supply		<i>Egg (Guma, Chang, Yoeseltse, Balam, Kalkborthang, Lajab, Mendrelgang, Toetsbo, Nyesbo, Nabi, Gase Tshowom, Tsendagang, Drmetse, Saling, Narang, Kengkebar, Jurmey, Dungmey, Kana, Khipisa, Tsenkebar, Metsbo, Membi, Kurtoe, Jarey, Katsbo, GoenKhamoe, Shapa, tashiding, Lamgong)</i>	July 2008	June 2013	RPBC, lingmethang, paro, Sarpang	NLBP, Dzongkhag & NFFDP

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 9: Ram production and supply		<i>Bumthang & Wangdue</i>	July 2008	June 2013	NSBC	NLBP, Dzongkhag & NFFDP
	Sub activity 10: Piglet Production and Supply		<i>Piglets (Getena, Tsezga, Drukgyalgang, Chenmari, Bangra)</i> <i>Pork (Toetsbo, Ugyentse, Silambi, Tshangkha, Lhamoizingka, Daga, Rangthangling, Chargharey, Hiley, Senge, Shompangkha, Kangpara, Nanong)</i>	July 2008	June 2013	RPBC, Lingmethang, NPBC Yusipang, Gelephu	NLBP, Dzongkhag & NFFDP
	Sub activity 11: Mithun Bull Production & supply		<i>Nationwide</i>	July 2008	June 2013	RMBF, Zhemgang, Aerong	NLBP, Dzongkhag & NFFDP
Output 002: National cattle identification and recording system developed	003 IMS and M & E						
	Sub activity 1: Institutional development and M&E		<i>Nationwide</i>	July 2008	June 2013	IMS and NLBP	Divisions in DOL HQ

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001: Livestock Breeding			20.790		
Sub activity 1:Cattle breeding			15.650		
Sub activity 2:Equine breeding			0.000		
Sub activity 3:Sheep & goat breeding			0.000		
Sub activity 4:Pig breeding			0.000		
Sub activity 5:Poultry breeding			0.050		
Sub activity 6:Fish breeding			0.053		
Sub activity 7:HRD (In country training and study tours)			1.922		
Sub activity 8:Institutional Development			3.115		
Activity 002: Livestock Input Supply			120.430		
Sub activity 1: Jersey Breeding Bull Production			6.500		
Sub activity 2:Brown Swiss Breeding Bull & Stallion Production			5.323		
Sub activity 3: Heifer Production and Supply			8.070		
Sub activity 4: Nublang Breeding Bull Production and Supply			2.848		
Sub activity 5: Calf Rearing and Supply			6.670		
Sub activity 6: Warm Water Fish Fingerling & Supply			3.720		
Sub activity 7: Cold Water Fish Fingerling & Supply			13.577		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub activity 8: Pullet /DOC production & Supply			46.750		
Sub activity 9:Ram production and supply			2.499		
Sub activity 10:Piglet Production and Supply			16.160		
Sub activity 11: Mithun Bull Production			8.410		
003 IMS and M & E			5.450		
Sub activity 1: Institutional development and M&E program			5.450		
Total		771.561	146.67	918.231	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001: RLRCs constructed and delivering mandated health services 25%	% vaccination of all eligible animals (Nos of animals vaccinated by Dzongkhag)	30-50% (2006)	>80%	DoL	Semi-Annual	DoL;PPD	GNHC
	Surveillance & control program fully operational for all notifiable disease (Nos of doses of vaccine distributed by Dzongkhag)	(2007)	functional system in place				
	Recovery rate through clinical services	60%(2007)	80%				
Output 001 Breeding Services meet farmers demand	New AI centres established	59 (2006)	50	DoL	Semi-Annual	DoL;PPD	GNHC
	Improved breeding stocks procured & supplied (bulls)	446(9 th FYP)	1000	DoL	Semi-Annual	DoL;PPD	GNHC
	Improved breeding stocks procured & supplied (pullets)	106349(9 th FYP)	132936	DoL	Semi-Annual	DoL;PPD	GNHC
	Improved breeding stocks procured & supplied (piglets)	8557(9 th FYP)	10696	DoL	Semi-Annual	DoL;PPD	GNHC

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Output 002 Village health workers with knowledge and skills support extension workers	Disease reporting and data management system in place (Nos of health workers trained by gender)	0(2007)	Systems in place	DoL	Semi-Annual	DoL;PPD	GNHC
	Disease outbreaks mapping done using GIS/GPS	(2007)	disease mapping initiated				
Output 003 Output 003 Regional centers use surveillance data to monitor and control diseases	Disease map created	(2007)	7	DoL	Semi-Annual	DoL;PPD	GNHC
	No of interventions based on surveillance data				Semi-Annual	DoL;PPD	
	No of trainings based on surveillance data				Semi-Annual	DoL;PPD	
	Contract breeding programmes expanded	6(2006)	11	DoL	Semi-Annual	DoL;PPD	GNHC

MOA/16: Livestock Production Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Increase livestock production	Increased value of livestock production (Production by product)	Nu. 550 million (2007)	Nu. 600 million

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001: Farmers manage community farms	Dairy production increased (No. of community farms)	7179 MT (2007)	7897 MT
	Nos. of milk and its allied processing units established	(2007)	20
Output 002 Community managed processing plants functional	Meat (poultry, pork, beef, mutton and fish) production increased	2002 MT (2007)	2202 MT
	Nos. of (pork and poultry) processing plants established	0(2007)	8 Nos
	Nos. of community fishery farms established	1(2007)	20
	Nos. of goat and sheep farms established	0(2007)	21
Output 003: Functional farmers group	Dairy groups formed and trained	23(2008)	9 groups

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001: Community managed processing plants functional	Activity 001: Dairy Production –Milk Processing Plants						
	Sub activity 1: Construct dairy processing and other infrastructures		<i>Butter & Cheese (Sepbu, Gosaling, Pugli, Lauri)</i> <i>Fermented cream (Tsento)</i> <i>Fresh milk (Samkbar, Tomijangsa, Mewang, Kbaling, Bongo)- Cattle shed.</i> <i>Fresh milk (Samkbar, Yangtse, Mongar, Gelephu, Mewang, Ura, Kbaling, Bongo)- Milk collection centers</i>	July 2008	June 2013	Dzongkhag & DDD	GOI project
	Sub activity 2: Procure & Supply of Milk processing equipments		<i>Butter and Cheese (Chaskhar, Gakidling, Minjay, Geling, Ngatsbang, Doga, Naja, Chume, Ruepisa, Phobji Sama, Goenkhotoe, Jigmechoeling, Genye, Gosaling, Jamkhar, Phuentechu, Umling, Doran, Tading, Lauri, Jangchubling, Dangchu, Gangzur)</i> <i>Fresh Milk (Samkbar, Yangtse, Gelephu, Mewang, Ura, Kbaling, Bongo)</i> <i>Icecream (Sipsu) –Ice cream equipment</i>	July 2008	June 2013	Dzongkhag & DDD	GOI project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 3: Procure dairy product packaging materials and equipments		<p><i>Butter and Cheese (Chaskhar, Gakidling, Minjay, Geling, Ngatsbang, Doga, Naja, Chume, Ruepisa, Phobji Sama, Goenkhotoe, Jigmechoeling, Genye, Gosaling, Jamkhar, Phuentechu, Umling, Doran, Tading, Lauri, Jangchubling, Dangchu, Gangzur)</i></p> <p><i>Fresh Milk (Samkhar, yangtse, Nangkor, Tomijangsa, Mongar, Trong, Gelephu, Menang, Ura, Bongo, Choekor, Phongmey)</i></p> <p><i>Ice Cream (Sipsu)</i></p>	July 2008	June 2013	Dzongkhag & DDD	GOI project
	Sub activity 4: Purchase Consumable items		<p><i>Fermented cream (Tsento) –Concentrate feeds</i></p> <p><i>Fresh Milk (Tang, Gelephu, Radi, Ura, Choekor) – Vet consumables</i></p> <p><i>Ice Cream (Sipsu)</i></p> <p><i>Chugo (Linzhi, Dagala)</i></p> <p><i>Butter and Cheese (Gakiling, Naja, Phobji, Sama, Jamkhar, Phuentenchhu, Lauri, Jangchubling, Shengana, Kabjisa, Dangchhu)</i></p> <p><i>Fermented Cheese (Merak, Sakteng)</i></p>	July 2008	June 2013	Dzongkhag & DDD	GOI Project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 5: Develop Extension materials and conduct training of farmers & Group formation		<p><i>Butter and Cheese (Chaskbar, Gakidling, Geling, Genye, Doga, Khoma, Tsangkha, Chume, Kazhi, Gangtey, Goenkhatoe, Yurung, Gosaling, Soe, Umling, Bji, Donan. Tading, Lauri, Jangchubling, Shegana, Kabjesa, Lingzhi, Gangzur) - Training</i></p> <p><i>Butter & Cheese (Khar, Gakidling, Geling, Nubi, Tading) - Group formation.</i></p> <p><i>Fresh milk – (Shongphu, Tang, Samkhar, Nangkor, Dopsbari, Trong, Bumdeling, Gelephu, Mewang, Shumer, Sampheling, Phuentsholing, Deothang, Kanglung, Ura, Radi, Bongo)</i></p> <p><i>Ice cream (sipsu)</i></p>	July 2008	June 2013	Dzongkhag & DDD	IMS, ICS, GOI project
	Activity 002: Pork Processing Centre						
	Sub activity 1: Construct pork processing centre and other infrastructures		<p><i>Piglets (Getena, Drukgyal gang, Bangra, Chengmari)</i></p> <p><i>Pork (Hiley, Senge, Shompangkha,)</i></p>	July 2008	June 2013	Dzongkhag & LPD	GOI project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 2: Procure & Supply of pork processing equipments		<i>Pork(Hiley, Senge, Shompangkha)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 3: Procure pork product packaging materials and equipments		<i>Pork(Hiley, Senge, Shompangkha)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 4: Purchase consumable items		<i>Piglets (Getena, Tseza, Drukgyal gang, Chengmari, Bangra)</i> <i>Pork(Ugyentse, Drakteng, Hiley, senge, Shompangkha)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 5: Develop Extension materials and conduct training of farmers		<i>Piglets (Getena, Tseza, Drukgyal gang, Chengmari, Bangra)</i> <i>Pork(Jarey, Toetsbo, Ugyentse, Silambi, Lhamoi zing kha, Daga, Rangt bangling, Chrbharey, Hiley, Senge, Shompangkha, Kangpara, Yangnyer)</i>	July 2008	June 2013	Dzongkhag & LPD	IMS & ICS
	Sub activity 6: Procure Animal feeds		<i>Piglets (Jarey, Chengmari, Bangra)</i> <i>Pork (Ugyentse) – Feed commission agent</i>	July 2008	June 2013	Dzongkhag & LPD	Feed agents, GOI project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity7: Procure piglets		<i>Pork(Toetsbo, Ugyentse, Silambi, Tshangkha, Lhamoizingkha, Daga, Rangthangling, Charcharey, Hiley, Senge, Shompangkha, Kangpara, Nanong)</i>	July 2008	June 2013	Dzongkhag & LPD	Central Farms
Activity 003: Poultry Processing Centre							
	Sub activity 1: Construct poultry processing centre and other infrastructures		<i>Eggs (Guma, Chang, Bapisa, Trong, Nangkor, Nabi, Daga, Dungme, Khipisa, Tsenkhar, Metsbo, Menbi, Jaray, Katsbo, Goenkhamay, Shapa, Tashiding, Lamgong, Chimung, Tsendagang)</i> <i>Eggs (Chang, Yoeseltse, Chongshing, Toepisa, Mendragang, Bjabcho, Trong, Nangkor) – Marketing support (Sale counter and other support)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 2: Procure & supply of poultry processing equipments		<i>Eggs(Chang, Umling, Norbuling, Chuzargang, Talo, Tsirangtoe, Balam, Chongshing, Athang, Nabi, Tsedagang, Dungme, Kana, Tsengkbar, Metsbo, Menbi, Katsbo, Shaba, Tashiding, Lamgong)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 3: Procure and supply of poultry product packaging materials and equipments		<i>Broiler (Dunglagang),</i> <i>Eggs(Chang, Umling, Norbuling, Chuzargang, Talo, Tsirangtoe, Balam, Chongshing, Athang, Nabi, Tsedagang, Dungme, Kana, Tsengkbar, Metsbo, Menbi, Katsbo, Shaba, Tashiding, Lamgong, Chimung, Semjong)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage / Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 4: Purchase Consumable items		<i>Egg (Guma, Chang, Yoeseltse, Balam, Kilkhorhang, Lajab, Mendrelgang, Toetsbo, Nyesbo, Nabi, Gase Tshowom, Tsendagang, Drepung, Drmetse, Saling, Narang, Kengkebar, Jurmey, Dungmey, Kana, Khipisa, Tsenkebar, Metsbo, Membi, Kurtoe, Jarey, Katsbo, GoenKhamoe, Shapa, tashiding, Lamgong, Bapisa, Toepisa, Doteng)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 5: Develop extension materials and conduct training for farmers.		<i>Broiler (Dunglagang), Eggs (Guma, Chang, Umling, Norbuling, Chuzargang, Kilkhorhang, Talo, Goenshari, Tserambtoe, Yoeseltse, Balam, Toepisa, Chimung, Semgong, Mendragang, Trong, Nangkor, , Toetsbo, Nyesbo, Nabi, Tsendagang, Narang, Saleng, Thangrong, Dungmey, GoenKhamoe, Lamgong, Doteng, Shapa, Bapisa, Khipisa, Tsenkebar, Kurtoe, Tashiding, Kana)</i>	July 2008	June 2013	Dzongkhag & LPD	IMS & ICS
	Sub activity 6: Procure animal feeds		<i>Eggs (Kilkhorhang, Toepisa, Trong, Nabi, Dungme, Khipisa, Jaray, Lamgong, Doteng)</i>	July 2008	June 2013	Dzongkhag & LPD	Feed agents, GOI project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 7: Procure Püllets		<i>Broiler,(Dunglagang), Egg (Guma, Chang, Yoeseltse, Balam,Kilkhorthang, Lajab, Mendrelgang,Toetsbo, Nyesbo, Nahi, Gase Tshowom,Tsendagang,Drepung, Drmetse, Saling, Narang,Kengekar, Jurmey, Dungmey,Kana, Khipisa, Tsenkhar,Metsbo, Membi, Kurtoe, Jarey, Katsbo, GoenKhamoe,Shapa, tashiding, Lamgong, Bapisa, Toepisa, Doteng, Talo)</i>	July 2008	June 2013	Dzongkhag & LPD	Central Farms
Activity 004: Fishery (Community Farms)							
	Sub activity 1: Construct fish ponds, nursery and other infrastructures		<i>Fish(Phuntsbothang, Langchenphu, patale)</i>	July 2008	June 2013	Dzongkhag & LPD	NWWFCC, NCWFC, GOI project
	Sub activity 2: Procure & supply fish processing equipments		<i>Fish(Phuntsbothang, Langchenphu, patale)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 3: Procure fish product packaging materials and equipments		<i>Fish(Senge, Chuzargang, shompangkha,serzhong, Dovan,umling)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 4: Purchase consumable items		<i>Fish(Phuntsbothang, Langchenphu, Patale, Umling)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 5: Develop extension materials and conduct training for farmers.		<i>Fish (Phuntsbothang, Patale, Umling)</i>	July 2008	June 2013	Dzongkhag & LPD	IMS & ICS

Programme Outputs	Programme activities	Activity priority	Geographic Coverage / Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 6: Procure animal feeds		<i>Fish(Phuntsbotbang, Langchenphu, Patale, Umling)</i>	July 2008	June 2013	Dzongkhag & LPD	Feed agents & GOI project
	Sub activity 7: Procure fingerlings		<i>Fish(Phuntsbotbang, Langchenphu, Patale, Umling)</i>	July 2008	June 2013	Dzongkhag & LPD	NWWFCC, NCWFC, GOI project
Activity 005: Sheep community farm							
	Sub activity 1: Procure wool processing equipments		<i>Bumthang</i>	July 2008	June 2013	Dzongkhag & LPD	NSBC
	Sub activity 2: Develop extension materials and conduct training for farmers on sheep farming		<i>Bumthang, Samtse & Wangdue</i>	July 2008	June 2013	Dzongkhag & LPD	ICS & IMS
Activity 006: Goat Community farm							
	Sub activity 1: Construct sheds and other infrastructures		<i>Chevon (Denchukha, Dovan & Gosbing)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project
	Sub activity 2: Procure & supply of essential equipments for goat farm		<i>Chevon (Denchukha, Dovan & Gosbing)</i>			Dzongkhag & LPD	GOI project
	Sub activity 3: Purchase consumable items		<i>Chevon (Denchukha, Dovan & Gosbing)</i>	July 2008	June 2013	Dzongkhag & LPD	GOI project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub activity 4: Develop extension materials and conduct training for farmers on Goat husbandry		<i>Chevon (Denchukba, Dovan & Goshing)</i>	July 2008	June 2013	Dzongkhag & LPD	ICS & IMS
	Sub activity 5: Procure animal feeds		<i>Denchukba, Dovan & Goshing</i>	July 2008	June 2013	Dzongkhag & LPD	Feed agents & GOI project
	Sub activity 6: Procure Doe, Kids and Buck.		<i>Chevon (Denchukba, Dovan & Goshing)</i>	July 2008	June 2013	Dzongkhag & LPD	NSBC
	Activity 007: Equine (Community Farms)						
	Sub activity 1: Procure horses for community farms		<i>Tashiyangtse, Tashigang & Mongar</i>	July 2008	June 2013	Dzongkhag & LPD	HBP
	Sub activity 2: Develop Extension materials and conduct training on horse management		<i>Tashiyangtse, Tashigang & Mongar</i>	July 2008	June 2013	Dzongkhag & LPD	ICS & IMS
	Activity 008 :Infrastructure						
	Sub activity 1:Construct DVH, RNR EC & NLBP offices		<i>Dzongkhag, Geog & Yusipang</i>	July 2008	June 2013	GOI project & NLBP	Dzongkhag

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001: Dairy Production –Milk Processing Plants			120.950		
Sub activity 1: Construct dairy processing and other infrastructures			30.950		
Sub activity 2: Procure & Supply of Milk processing equipments			30.000		
Sub activity 3: Procure dairy product packaging materials and equipments			20.000		
Sub activity 4: Purchase Consumable items			20.000		
Sub activity 5: Develop Extension materials and conduct training of farmers.			20.000		
Activity 002: Pork Processing Centre			115.000		
Sub activity 1: Construct pork processing center and other infrastructures			30.000		
Sub activity 2: Procure & Supply of pork processing equipments			25.000		
Sub activity 3: Procure pork product packaging materials and equipments			5.000		
Sub activity 4: Purchase consumable items			10.00		
Sub activity 5: Develop Extension materials and conduct training of farmers.			15.000		
Sub activity 6: Procure animal feeds			15.000		
Sub activity7:Procure piglets			15.000		
Activity 003: Poultry Processing Centre			51.000		
Sub activity 1: Construct poultry processing centre and other infrastructures			18.000		
Sub activity 2: Procure & supply poultry processing equipments			15.000		
Sub activity 3: Procure poultry product packaging materials and equipments			3.000		
Sub activity 4: Purchase consumable items			6.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub activity 5: Develop Extension materials and conduct training for farmers.			9.000		
Activity 004: Fishery (Community Farms)			86.000		
Sub activity 1: Construct fish ponds, nursery and other infrastructures			10.000		
Sub activity 2: Procure & supply fish processing equipments			10.000		
Sub activity 3: Procure fish product packaging materials and equipments			16.000		
Sub activity 4: Purchase consumable items			10.000		
Sub activity 5: Develop extension materials and conduct training for farmers.			20.000		
Sub activity 6: Procure animal feeds			10.000		
Sub activity 7: Procure fingerlings			10.000		
Activity 005: Sheep community farm			7.239		
Sub activity 1: Procure wool processing equipments.			3.000		
Sub activity 2: Develop extension materials and conduct training for farmers on sheep farming			4.239		
Activity 006: Goat Community farm			8.600		
Sub activity 1: Construct sheds and other infrastructures			5.000		
Sub activity 2: Procure & supply of essential equipments for goat farm			1.000		
Sub activity 3: Purchase consumable items			0.600		
Sub activity 4: Develop extension materials and conduct training for farmers on Goat husbandry			0.500		
Sub activity 5: Procure animal feeds			0.500		
Sub activity 7: Procure Doe, Kids and Buck.			1.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 007: Equine (Community Farms)			1.700		
Sub activity 1: Procure horses for community farms			1.000		
Sub activity 2: Develop Extension materials and conduct training on horse management			0.700		
Activity 008:Infrastructure			52.150		
Sub activity 1: Construct DVH, RNR EC &NLBP Offices			52.150		
Total		79.248	442.640	521.88	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001: Increase livestock production	Increased value of livestock production (Total Production by product)	Nu. 550 million (2007)	Nu. 600 million	DoL, PPD	Terminal/ Mid term	PPD, DoL	GNHC
Output 001: Farmers manage community farms	Dairy production increased (Nos of community farms)	7179 MT (2007)	7897 MT	DoL, PPD	Mid term	PPD, DoL	GNHC
	Nos. of milk and its allied processing units established	(2007)	20	DoL, PPD	Annual	PPD, DoL	GNHC
Output 002: Community managed processing plants functional	Meat (poultry, pork, beef and fish) production increased	2002 MT (2007)	2202 MT	DoL, PPD	Mid term	PPD, DoL	GNHC
	Nos. of (pork and poultry) processing plants established	0(2007)	8 Nos	DoL, PPD	Annual	PPD, DoL	GNHC
	Nos. of community fishery farms established	1(2007)	20	DoL, PPD	Annual	PPD, DoL	GNHC
	Nos. of goat and sheep farms established	0(2007)	21	DoL, PPD	Annual	PPD, DoL	GNHC
Output 003: Functional farmers group	Dairy groups formed and trained	23(2008)	9 groups	DoL, PPD	Mid term	PPD, DoL	GNHC

MOA/17: Targeted Highland Livelihood Support Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Increased dairy and its allied (yak) production	Increased dairy (yak) production	7811(2007)	20% (9451)

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001 Increased availability of winter fodder	% of highlanders adopting new fodder species	545HH(2008)	20% (654 HH)
	Nos of highlanders taking silage making	0 (2007)	10HH
	Nos of fodder pecies released		
Output 002: Herders use facilities for dairy and meat processing	Nos of milk processing equipments supplied and functional	0(2007)	5 sets (Cream separator, butter churner, boiler & Cheese vat)
	Nos of meat processing units established and functional	n/a (2007)	2 nos.
Output 003: Village animal health worker provide services across the highland	Nos of cases attended (Nos of VAHW trained)		
	Nos of vet. Clinical outpost established	0 (2007)	3
	Reduced incidence of Gid disease in yaks	0 (Baseline not documented)	80%
Output 004:Herders use saved time for yak productive activities	Nos of highlanders supplied with energy efficient technologies (Hrs/week devoted to yak activites)	(2007)	
	Nos of biogas and solar lamps installed and functional		

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001: Increase livestock production	Activity 001: Fodder production						
	Sub activity 1: Purchase and distribute Fodder seeds		<i>Merak, Sakten, Sephu, Laya, Soe, Lingshi, Haa, Dbur</i>	July 2008	June 2013	Dzongkhag & DDD	NFFDP
	Sub activity 3: Procure & supply fencing materials		<i>Merak, Sakten, Sephu, Laya, Soe, Lingshi, Haa, Dbur</i>	July 2008	June 2013	Dzongkhag & DDD	
	Sub activity 4: Conduct field days and training on pasture and fodder development		<i>Merak, Sakten, Sephu, Laya, Soe, Lingshi, Haa, Dbur</i>	July 2008	June 2013	Dzongkhag & NFFDP	DDD
	Sub activity 5: Supply portable power tillers		<i>Merak, Sakten, Sephu, Laya, Soe, Lingshi, Haa, Dbur</i>	July 2008	June 2013	DDD	GOI project & Dzongkhag
Output 002: Village animal health worker provide services across the highland	Activity 002: Training of Community Animal Health Workers and equipping with necessary basic equipment						
	Sub activity 1: Train community health workers		<i>Chugo (Tsentu, Lingshi, Dagala)</i>	July 2008	June 2013	RLDCs	Dzongkhag
	Sub activity 2: Supply basic health delivery equipments		<i>Merak, Sakten, Sephu, Laya, Soe, Lingshi, Haa, Dbur</i>	July 2008	June 2013	LHD	GOI project

Programme Outputs	Programme activities	Activity priority	Geographic Coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
003: Herders use facilities for dairy and meat processing	Activity 003: Dairy processing equipment						
	Sub activity 1: Procure and distribute of milk processing equipment		<i>Chugo (Lingshi, Dagala)</i>	July 2008	June 2013	DDD	Dzongkhag & GOI project
	Sub activity 2: Train farmers on basic milk processing and handling of processing equipment & group formation		<i>Butter & Cheese (Laya) Chugo (Tsento, Lingshi, Dagala)</i>	July 2008	June 2013	DDD	Dzongkhag, CORRB
	Activity 004: Establishment of meat processing units						
	Sub activity 1: Construct well equipped micro meat processing unit		<i>Soe, Merak, Sakten</i>	July 2008	June 2013	GOI project	DDD
Output 004: Sustainable alternative energy efficient technologies Introduced	Activity 005: Supply of portable solar lamps, solar cookers, biogas digester						
	Sub activity 1: Supply solar lamps and solar cookers		<i>Merak, Sakten, Laya, Soe, Lingshi, Dhur</i>	July 2008	June 2013	DDD	GOI project
	Sub activity 2: Supply and install portable biogas digester		<i>Merak, Sakten, Laya, Soe, Lingshi, Dhur</i>	July 2008	June 2013	DDD	GOI project
Output 005: Increased coverage of animal health services	Activity 006: Establish veterinary clinic Outpost						
	Sub activity 1: construct veterinary clinic outpost		<i>Lingshi, Merak & Laya</i>	July 2008	June 2013	GOI project	LHD

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001: Fodder production			13.560		
Sub activity 1: Purchase and distribute Fodder seeds			1.000		
Sub activity 3: Procure & supply fencing materials			9.860		
Sub activity 4:Conduct field days and training on pasture and fodder development			1.700		
Sub activity 5: Supply portable power tillers			1.000		
Activity 002: Training of Community Animal Health Workers and equipping with necessary basic equipment			2.500		
Sub activity 1: Train community health workers			0.800		
Sub activity 2: Supply basic health delivery equipments			1.700		
Activity 003: Dairy processing equipment			5.000		
Sub activity 1: Procure and distribute milk processing equipment			4.000		
Sub activity 2: Train farmers on basic milk processing and handling of processing equipment & group formation			1.000		
Activity 004: Establishment of meat processing units			1.200		
Sub activity 1: Construct well equipped micro meat processing unit			1.200		
Activity 005: Supply of portable solar lamps, solar cookers, biogas digester			10.000		
Sub activity 1: Supply solar lamps and solar cookers			5.000		
Sub activity 2: Supply and install portable biogas digester			5.000		
Activity 006: Establish veterinary clinic outpost			2.500		
Sub activity 1: construction of veterinary clinic outpost			2.500		
Total		0.00	34.760	34.760	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001: Outcome 001 Increased dairy and its allied (yak) production	Increased dairy (yak) production	7811(2007)	20% (9451)	DoL, PPD	Semi-Annual	PPD, DoL	GNHC
Output 001: Increased availability of winter fodder	% of highlanders adopting new fodder species	545HH (2008)	20% (654 HH)	DoL, PPD	Semi	PPD, DoL	GNHC
	Nos of highlanders taking silage making	0 (2007)	10HH	DoL, PPD	Semi	PPD, DoL	GNHC
	Nos of species released				Semi		
Output 002 Herders use facilities for dairy and meat processing	Nos of milk processing equipments supplied	0(2007)	5 sets (Cream separator, butter churner, boiler & Cheese vat)	DoL, PPD	Semi	PPD, DoL	GNHC
	Nos of meat processing units established	0(2007)	2 nos.	DoL, PPD	Semi	PPD, DoL	GNHC
	Nos of highlanders trained in dairy and meat processing				Semi		

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Output 003: Output 003 Village animal health worker provide services across the highland	Nos of cases attended (Nos of VAHW trained)			DoL, PPD	Semi	PPD, DoL	GNHC
	Nos of vet. clinical outpost established	0 (2007)	3	DoL, PPD	Semi	PPD, DoL	GNHC
	Reduced incidence of Gid disease in yaks	0 (Baseline not documented)	80%	DoL, PPD	Semi	PPD, DoL	GNHC

MOA/18: Participatory Forestry Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Increased proportion of forest area managed as community and private forest	Area under CF and PF increased from GRF	<1% (2007)	4%
Outcome 002 : Increased proportion of farming households involved in community and private forestry	Proportion of farming households involved in community and private forestry increased	4% (2007)	7%
Output 001: Enhance role of community in forest management	Nos. of CF established and operational	72 (2007)	400
Output 002 : Private forests developed	Nos. of private forest established	121(2007)	1000

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001: Community forests established and managed by local communities	Nos. of CFs established and operational	72 (2007)	400
Output 002 : Private forests established and benefiting the 121 (2007) communities	Nos. of private forest established	121(2007)	1000

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001 Community forests established and managed by local communities	Activity 001 :Strengthening Community Forestry			July 2008	June 2013	SFD	
	Sub Activity 1: CF developed in field divisions		Nationwide	July 2008	June 2013	Territorial Divisions, Dzongkhags	SFD/PFMP
	Sub Activity 2: CF Strategy developed and future directions in place		Nationwide	July 2008	June 2013	SFD	MOA, Dzongkhags
	Sub Activity 3: Approval of CF plans and awarding of CFMG certificates		Nationwide	July 2008	June 2013	SFD	
	Sub Activity 4: Develop resource inventory guidelines		Nationwide <i>Spices(Toepisa, Doban, jigmecholing)</i>	July 2008	June 2013	SFD	DOF, CoRRB
	Sub Activity 5: Revise CF manual		Nationwide	July 2008	June 2013	SFD	DOF, CoRRB
	Sub Activity 6: Revise and improve materials on Silvicultural techniques		Nationwide	July 2008	June 2013	SFD	DOF, CoRRB

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 7: Develop marketing studies		Nationwide	July 2008	June 2013	SFD	AMS, CoRRB, Projects
	Sub Activity 8: Identify training needs		Nationwide	July 2008	June 2013	SFD	HRD
	Sub Activity 9: Training of Trainers for DzFO's and extension agents		Nationwide	July 2008	June 2013	SFD	Dzongkhags, UWICE
	Sub Activity 10: Enhance capacity of farmers		Nationwide: <i>Cane & Bamboo (Chuzergang, Umling, Taraythang, Shompangkha, Serzhong, Doban, Bhur, Yoeseltse, Ugentse, Pagli, Chengmari, Jigmecholing) Incense (Laya, Taraythang)</i>	July 2008	June 2013	SFD	Dzongkhags
	Sub Activity 11: Develop community based enterprises		Nationwide <i>Timber & firewood (Lajab, Chapcha, Bjacho, Trong, Choekhor, Chhumey) Tree Seedlings (Tsenkhar, Tseza) Wood Products (Jurmey, Kengkhar, Yangtse)</i>	July 2008	June 2013	SFD	AMS, Dzongkhags. CoRRB
	Sub Activity 12: Develop CF action plans		Nationwide	July 2008	June 2013	SFD	DOF
	Sub Activity 13: Raise awareness on CF rules and importance		Nationwide	July 2008	June 2013	SFD	Dzongkhags

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 14: Capacity building for field extensions		Nationwide <i>Spices(Nangkor, Doban, jigmecholing, Toepisa)</i>	July 2008	June 2013	SFD	UWICE
	Sub Activity 15: Formation of CF groups and cooperatives		Nationwide <i>Wood products(Jurmey, kengkbar)</i>	July 2008	June 2013	SFD	CoRRB/Dz., AMS
	Sub Activity 16: Research and development		Nationwide	July 2008	June 2013	SFD	DOF, CoRRB
	Sub Activity 17: M & E		Nationwide	July 2008	June 2013	SFD	DOF, MOA
	Sub Activity 18: Coordination between HQ and field divisions		Nationwide: <i>Spices(Nichula, Deorali)</i> <i>Wood Products(Jurmey, Kengkbar, yangtse)</i>	July 2008	June 2013	SFD	DOF, Territorial Div. Dzongkhags
	Sub Activity 19: Publications		Nationwide	July 2008	June 2013	SFD	
	Sub Activity 20: Field extension kits and other equipment		Nationwide	July 2008	June 2013	SFD	MOA
	Activity 002 :Strengthening Private forestry						
	Sub Activity 1: Familiarize people on private forestry rules and its importance		Nationwide	July 2008	June 2013	SFD	Dzongkhags

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 2: revise PF manual		Nationwide	July 2008	June 2013	SFD	DOF
	Sub Activity 3: Develop marketing modalities for PF products and services		Nationwide	July 2008	June 2013	SFD	AMS, CoRRB
	Sub Activity 4: Identify training needs and prepare training plan		Nationwide	July 2008	June 2013	SFD	HRD
	Sub Activity 5: Enhance management capacities of PF owners		Nationwide	July 2008	June 2013	SFD	Dzongkhags
	Sub Activity 6. Implement PF in the field		Nationwide	July 2008	June 2013	Dz. Territorial Divisions	SFD
	Activity 003 :Strengthening forestry extension services						
Output 001 Enhance role of community in forest management	Sub Activity 1: Develop vision and strategy documents for social forestry development in the country		Nationwide	July 2008	June 2013	SFD	DOF, MOA
	Sub Activity 2: Extension related to social forestry		Nationwide	July 2008	June 2013	SFD	Dzongkhags, DOF

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 3. Extension related to forest fire		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	Dzongkhags, DOF
	Sub Activity 4. Extension related to watershed and nursery & plantations		Nationwide	July 2008	June 2013	Watershed Division/ Section	Dzongkhags, DOF
	Sub Activity 5. Procurement of office and field equipments		Nationwide	July 2008	June 2013	SFD	MOA

Table 3: Program Plan Outlay

Programmes Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001 :Strengthening Community Forestry			62.000		
Sub Activity 1. CF developed in field Divisions/Dzongkhags			20.000		
Sub Activity 2. CF Strategy developed and future directions in place			3.000		
Sub Activity 3. Approval of CF plans and awarding of CFMG certificates			0.500		
Sub Activity 4: Develop resource inventory guidelines			1.000		
Sub Activity 5: Revise CF manual			1.000		
Sub Activity 6: Revise and improve materials on Silvicultural techniques			1.000		
Sub Activity 7: Develop marketing studies			2.000		
Sub Activity 8: Identify training needs			0.500		
Sub Activity 9: Training of Trainers for DzFO's and extension agents			2.000		
Sub Activity 10: Enhance capacity of farmers			2.000		
Sub Activity 11: Develop community based enterprises			8.000		
Sub Activity 12: Develop CF action plans			2.000		
Sub Activity 13: Raise awareness on CF rules and importance			1.000		

Programmes Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 14: Capacity building for field extensions			4.000		
Sub Activity 15: Formation of CF groups and cooperatives			2.500		
Sub Activity 16: Research and development			3.000		
Sub Activity 17: M & E			1.000		
Sub Activity 18. Coordination between HQ and field divisions			0.500		
Sub Activity 19: Publications			3.000		
Sub Activity 20: Field extension Kits and equipments			4.000		
Activity 002 :Strengthening Private forestry			5.000		
Sub Activity 1: Familiarize people on private forestry rules and its importance			0.500		
Sub Activity 2: Revise PF manual			1.000		
Sub Activity 3: Develop marketing modalities for PF products and services			2.000		
Sub Activity 4: Identify training needs and prepare training plan			0.500		
Sub Activity 5: Enhance management capacities of PF owners			0.500		
Sub Activity 6: Implement PF in the field			0.500		

Programmes Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 003 :Strengthening forestry extension services			16.200		
Sub Activity 1: Develop vision and strategy documents for social forestry development in the country			3.000		
Sub Activity 2: Extension related to social forestry			4.000		
Sub Activity 3: Extension related to forest fire			5.000		
Sub Activity 4: Extension related to watershed and nursery & plantations			2.000		
Sub Activity 5: Procurement of office and field equipments			2.200		
Total	Total	95.950	83.200	179.150	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001: Increased proportion of forest area managed as community and private forest	Area under CF and PF	<1% (2007)	4%	Terminal progress report	semi-annual	DoF;PPD	GNHC
Outcome 002: Increased proportion of farming households involved in community and private forestry	Proportion of farming households involved in community and private forestry	4% (2007)	7%	Annual progress reports	semi-annual	DoF;PPD	PPD, MoA
Output 001 Community forests established and managed by local communities	Nos. of CF established and operational	72 (2007)	400	Annual progress reports	semi-annual	DoF;PPD	PPD, MoA
Output 002: Private forests established and benefiting the communities	Nos. of private forest established	121(2007)	1000	Annual progress reports	semi-annual	DoF;PPD	PPD, MoA

MOA/19: Non- Wood Forest Resource Development

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001 : Value of Non Wood Forest Products(NWFP) including MAP increased	Per annum value of NWFPs including MAPs increased	Nu. 60 Million/annum (2007)	Nu. 100 Million/ annum

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001: NWFP species under sustainable community management increased	Increase nos. of NWFP species under community management increased	4 Nos (2007)	20 Nos
Output 002 : NWFP management groups formed with significant contribution to income generation in rural communities	Nos. of NWFP management groups formed and functional	(2007)	100 groups
Output 003 : NWFP resource assessment and management guidelines developed	Nos of resource assessment guidelines developed and used Nos of management guidelines developed and used	6 Nos. (2007)	20 Nos
Output 004 : Feasibility studies for NWFP enterprise development conducted	Nos. of studies completed with specific recommendations	None	4 Nos

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001 NWFP species under sustainable community management increased	Activity 001 : Strengthening Management of NWFP resources						
	Sub Activity 1: Incorporate NWFP guidelines in CF manual		Nationwide	July 2008	June 2013	SFD	DOF, Dz., Projects, Territorial Div.
	Sub Activity 2: List potential NWFP species within community forestry		Nationwide	July 2008	June 2013	SFD	DOF, Dz., Projects, Territorial Divi.
	Sub Activity 3: Identify and prioritize NWFP based on market demand		Nationwide	July 2008	June 2013	SFD/AMS	DOF, Dz., Projects, Territorial Divi.
	Sub Activity 4: Field Implementation of NWFP program		Nationwide	July 2008	June 2013	Territorial Divisions/Dz.	SFD, Local communities
	Sub Activity 5: Conduct NWFP survey		Nationwide	July 2008	June 2013	SFD	DOF,Dz. CoRRB Projects, Territorial Divi.

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 6: Prioritize atleast 20 NWFP species for intensive management		Nationwide	July 2008	June 2013	SFD	DOF, Dz., Projects, AMS Territorial Divi.
	Sub Activity 7: Develop species specific resource assessment methodologies and management guidelines for prioritized species		Nationwide <i>Cordyceps (Lamana, Laya)</i>	July 2008	June 2013	SFD	DOF, Dz., Projects, Territorial Div.
	Sub Activity 8: Monitoring and evaluation of management and utilization of the prioritized NWFP species		Nationwide <i>Spices(Phongme)</i>	July 2008	June 2013	SFD	DOF, Dz., Projects, Territorial Div.
	Activity 002 : Strengthening Legal Framework for NWFP management						
	Sub Activity 1: Incorporate NWFP chapter in forestry rules and other appropriate legal frameworks			July 2008	June 2013	DOF	MOA
	Sub Activity 2: Publish reports and plans for local use		Nationwide	July 2008	June 2013	SFD	

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 002 : NWFP management groups formed with significant contribution to income generation in rural communities	003 Strengthening coordination and collaboration with NWFP management stakeholders and Institutions						
	Sub Activity 1: Formation of farmers collection groups and associations		<i>Cordyceps (Bumdeling, Laya, Lunana)</i> <i>Lemon Grass (Thangrong)</i> <i>MAP (Lauri, Dagala, Lingshi, Naro, Soe, Merak, Goen kha toe)</i> <i>Medicinal Fruits (Athang)</i> <i>Wild Vegetables (Sakteng, Nubi, Tangsebj, Geling)</i> <i>Sapindus (Nichula)</i>	July 2008	June 2013	SFD	DOF, Dzongkhags, Projects, Territorial Divisions
	Sub Activity 2: Strengthen collaboration and information sharing among NWFP related organizations and institutions		Nationwide	July 2008	June 2013	SFD	DOF, Dzongkhags, Projects, Territorial Divisions

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 003 : Feasibility studies for NWFP enterprise development conducted	Activity 004 : Strengthening NWFP product development, enterprises, marketing and trade						
	Sub Activity 1: Strengthening cultivation of NWFP species		<i>Broom grass (Bhur, Hiley, Lhamoyzingkba, Umling, Namgaychoeling geogs)</i> <i>Lac (Chaskbar)</i> <i>Sapindus (Nichula)</i> <i>Cane & Bamboo (Pagli, Dorokba, Jigmecholing, Chargharey, Samtse geog)</i>	July 2008	June 2013	SFD	DOF, Dz., Projects, Territorial Div., CoRRB
	Sub Activity 2: Improve market and trade channels for NWFP species		Nationwide	July 2008	June 2013	SFD	DOF, Dz., Projects, Territorial Div., AMS, CoRRB, Private Sectors
	Sub Activity 3: Explore value addition		Nationwide	July 2008	June 2013	SFD	DOF, Dz., Projects, Territorial Div., AMS, CoRRB, Private Sectors

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 4: Improve processing of NWFP products		<i>Cane & bamboo products (Gongdue, Kangpara, Bjoka, Silambi)</i> <i>Daphne paper(Gakiling)</i> <i>Incense (Laya, Merak Sakteng)</i>	July 2008	June 2013	SFD AMS	DOF, Dz., Projects, Territorial Div., AMS, CoRRB, Private Sectors
	Sub Activity 5: Conduct market research		Nationwide	July 2008	June 2013	SFD AMS	DOF, Dzongkhags, Projects, Territorial Divisions, AMS, CoRRB, Private Sectors
	Sub Activity 6: Conduct CCA of prioritized NWFP species		Nationwide	July 2008	June 2013	SFD	DOF, Dz.,AMS Projects, CoRRB, Territorial Div.

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001 : Strengthening Management of NWFP resources			40.000		
Sub Activity 1: Incorporate NWFP guidelines in CF manual			1.000		
Sub Activity 2: List potential NWFP species within community forestry			2.000		
Sub Activity 3: Identify and prioritize NWFP based on market demand			1.000		
Sub Activity 4: Field Implementation of NWFP program			11.000		
Sub Activity 5: Conduct NWFP survey			5.000		
Sub Activity 6: Prioritize atleast 20 NWFP species for intensive management			2.000		
Sub Activity 7: Develop species specific resource assessment methodologies and management guidelines for prioritized species			16.000		
Sub Activity 8: Monitoring and evaluation of management and utilization of the prioritized NWFP species			2.000		
Activity 002 : Strengthening Legal Framework for NWFP management			5.000		
Sub Activity 1: Incorporate NWFP chapter in forestry rules and other appropriate legal frameworks			0.500		
Sub Activity 2: Publish reports and plans for local use			4.500		
Activity 003 : Strengthening coordination and collaboration with NWFP management stakeholders and Institutions			5.000		
Sub Activity 1: Formation of farmers collection groups and associations			4.500		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 2: Strengthen collaboration and information sharing among NWFP related organizations and institutions			0.500		
Activity 004 : Strengthening NWFP product development, enterprises, marketing and trade			15.000		
Sub Activity 1: Strengthening cultivation of NWFP species			1.000		
Sub Activity 2: Improve market and trade channels for NWFP species			3.000		
Sub Activity 3: Explore value addition			2.000		
Sub Activity 4: Improve processing of NWFP products			2.000		
Sub Activity 5: Conduct market research			2.000		
Sub Activity 6: Conduct CCA of prioritized NWFP species			5.000		
	Total	95.950	65.000	160.950	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001: Value of Non Wood Forest Products(NWFP) including MAP increased	Per annum value of NWFPs including MAPs increased	Nu. 60 Million/ annum (2007)	Nu. 1000 Million/ annum	Mid term Progress Report	Mid term/ terminal	DoF; PPD	GNHC
Output 001: NWFP species under sustainable community management increased	Nos. of NWFP species under community management increased from	4 Nos (2007)	20 Nos	Annual progress report	Annual	SFD, DOF	PPD, MoA
Output 002 : NWFP management groups formed with significant contribution to income generation in rural communities	Nos. of NWFP management groups formed and functioning		100 groups	Annual progress report	Annual	SFD, DOF	PPD, MoA
Output 003 : NWFP resource assessment and management guidelines developed	Nos. of guidelines developed and used	6 Nos. (2007)	20 Nos	Annual progress report	Annual	SFD, DOF	PPD, MoA
Output 004 : Feasibility studies for NWFP enterprise development conducted	Nos. of studies completed with specific recommendations	(2007)	4 Nos	Mid term progress report	Mid term	SFD, DOF	PPD, MoA

MOA/20: Forest Resource Development Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Revenue from sale of timber increased	Revenue from sale of timber increased from	540 million/annum (2007)	600 million/annum
Outcome 002: Area under sustainable forest management increased and	Area under sustainable forest management increased	5% (2007)	10%

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001 : FMU management plans developed and implemented	Nos. of new FMU management plans developed and implemented	19 FMUs (2007)	6 FMUs (New)
	Nos. of existing management plans revised	7 FMUs	7 FMUs (existing)
Output 002 : Management plans for forest outside FMUs prepared and implemented	Nos. of management plans prepared and implemented	(2007)	20
Output 003 : One national forest inventory conducted	National forest inventory	(2007)	1
Output 004 : Establishment of wood-based industries supported	Forest information system developed and used	0(2007)	1
Output 005 : Forest Information management systems enhanced	Forest information system		Continuously updated

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001 : FMU management plans developed and implemented	Activity 001 : Sustainable management of FMU						
	Sub Activity 1: Operationalisation of new FMUs		Nationwide	July 2008	June 2013	FRDD	Territorial Div., Dz., NRDCL
	Sub Activity 2: Revision of management plans for existing FMUs		Nationwide	July 2008	June 2013	FRDD	Territorial Div., Dz., NRDCL
	Sub Activity 3: Strengthening implementation of FMU plans through training of field staffs		Nationwide	July 2008	June 2013	FRDD	Territorial Div., UWEFI
	Sub Activity 4: GIS system upgraded to support forest management		Nationwide	July 2008	June 2013	FRDD	DOF, PPD
	Sub Activity 5: Monitoring & Evaluation of FMUs improved and implemented		Nationwide	July 2008	June 2013	FRDD	DOF, NRDCL
	Sub Activity 6: Conduct National level Forest management workshops		Nationwide	July 2008	June 2013	FRDD	
	Sub Activity 7: Implementation of forest management plans		Nationwide	July 2008	June 2013	Territorial Divisions	NRDCL

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 002: Management plans for forest outside FMUs prepared and implemented	Activity 002 : Management of forest outside FMUs						
	Sub Activity 1: Prepare management plans for areas outside FMU systems		Nationwide	July 2008	June 2013	Territorial Divisions	FRDD, Dzongkhags
	Sub Activity 2: Train field staffs on management planning system for areas outside FMU systems		Nationwide	July 2008	June 2013	FRDD	DOF,UWICE
	Sub Activity 3 :Review and revise planning guidelines		Nationwide	July 2008	June 2013	FRDD	Territorial Divisions
Output 003: One national forest inventory conducted	Activity 003 : National forest inventory						
	Sub Activity 1: Plan and develop inventory methodology for national forest inventory		Nationwide	July 2008	June 2013	DOF	MOA/NRDCL, Donor agencies, UWICE, Dz.
	Sub Activity 2: Procure books and reports on NFIs in other countries		Nationwide	July 2008	June 2013	FRDD	MOA
	Sub Activity 3: review and analyse existing inventory methodologies		Nationwide	July 2008	June 2013	FRDD	
	Sub Activity 4: Organise and conduct national level stakeholder workshops and meetings		Nationwide	July 2008	June 2013	FRDD	UWICE

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 5: Conduct training for inventory staffs and other field staffs		Nationwide	July 2008	June 2013	FRDD	DOF, UWICE
	Sub Activity 6: Capacity development		Nationwide	July 2008	June 2013	DOF	
	Sub Activity 7: Equipments		Nationwide	July 2008	June 2013	FRDD	MOA
	Sub Activity 8: Inventory		Nationwide	July 2008	June 2013	DOF	MOA
	Sub Activity 9: Reports and publications		Nationwide	July 2008	June 2013	FRDD	UWICE
	Activity 004 : Forest Demarcation						
	Sub Activity 1: Forest boundary demarcation		Nationwide	July 2008	June 2013	FRDD	DOF, NLCS, Territorial Divi. Dz
	Sub Activity 2: Surveying, mapping and notification		Nationwide	July 2008	June 2013	FRDD	
Output 004: Establishment of wood-based industries supported	Activity 005 Wood based industries						
	Sub Activity 1: Conduct feasibility studies		Nationwide	July 2008	June 2013	FRDD	MOA, Pvt. Sector Development
	Sub Activity 2: Prepare resource based data on raw materials		Nationwide	July 2008	June 2013	FRDD	DOF, MOA

Programme Outputs	Programme activities	Activity priority	Geographic coverage/beneficiaries	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
Output 005 Forest Information management systems enhanced	Activity 006 Information management systems						
	Sub Activity 1: Establish the forestry database system including the forestry webpage			July 2008	June 2013	FIMS/FRDD	DOF, PPD, DIT
	Sub Activity 2: Establish ICT network in field offices		Nationwide	July 2008	June 2013	FIMS/FRDD	DOF, Field Divisions
	Sub Activity 3. Hardware and software for ICT support					FIMS/FRDD	
	Sub Activity 4. System analysis and design			July 2008	June 2013	FIMS/FRDD	PPD, DIT

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001 : Sustainable management of FMU			40.000		
Sub Activity 1. Operationalisation of new FMUs			10.000		
Sub Activity 2: Revision of management plans for existing FMUs			7.000		
Sub Activity 3: Strengthening implementation of FMU plans through training of field staffs			1.000		
Sub Activity 4: GIS system upgraded to support forest management			10.000		
Sub Activity 5: Monitoring & Evaluation of FMUs improved and implemented			0.500		
Sub Activity 6: Conduct National level Forest management workshops			0.300		
Sub Activity 7: Implementation of forest management plans			11.000		
Activity 002 : Management of forest outside FMU			12.000		
Sub Activity 1. Prepare management plans for areas outside FMU systems			11.000		Geog level mgt. plans for entire goegs
Sub Activity 2. Train field staffs on management planning system for areas outside FMU systems			0.600		
Sub Activity 3. Review and revise planning guidelines			0.400		
Activity 003 : National forest inventory			35.170		
Sub Activity 1: Plan and develop inventory methodology for national forest inventory			5.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 2: Procure books and reports on NFIs in other countries			1.500		
Sub Activity 3: review and analyse existing inventory methodologies			0.500		
Sub Activity 4: Organise and conduct national level stakeholder workshops and meetings			1.000		
Sub Activity 5: Conduct training for inventory staffs and other field staffs			5.000		
Sub Activity 6: Capacity development			5.000		
Sub Activity 7: Equipments			2.500		
Sub Activity 8: Inventory			14.000		
Sub Activity 9: Reports and publications			0.670		
Activity 004 : Forest Demarcation			2.000		
Sub Activity 1: Forest boundary demarcation			1.500		
Sub Activity 2: Surveying, mapping and notification			0.500		
Activity 005 : Wood based industries			0.680		
Sub Activity 1: Conduct feasibility studies			0.340		
Sub Activity 2: Prepare resource based data on raw materials			0.340		
Activity 006 : Information management systems			15.900		Activity reprioritized and shifted along with budget from Forest Protection programme to FRD programme

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 1: Establish the forestry database system including the forestry webpage			1.200		
Sub Activity 2: Establish ICT network in field offices			4.000		
Sub Activity 3. Hardware and software for ICT support			10.000		
Sub Activity 4. System analysis and design			0.700		
	Total	115.340	105.750	221.090	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 : Revenue from timber increased Outcome 002: Area under sustainable forest management increased	Revenue from sale of timber increased from Area under sustainable forest management increased	540 million/ annum (2007) 5% (2007)	600 million/ annum 10%	Mid term progress report	Mid term/ terminal	MOA	GNHC
Output 001 : FMU management plans developed and implemented	Nos. of new FMU management plans developed and implemented	19 FMUs (2007)	6 FMUs (New)	Annual progress report	Annual	FRDD, DOF	PPD, MOA
	Nos. of existing management plans revised	7 FMUs	7 FMUs (existing)	Annual progress report	Annual	FRDD, DOF	PPD/MoA
Output 002 : Management plans for forest outside FMUs prepared and implemented	Nos. of management plans prepared and implemented	(2007)	20	Annual progress report	Annual	FRDD, DOF	PPD/MoA
Output 003 : One national forest inventory conducted	National forest inventory	(2007)	1	Terminal progress report	Terminal	MOA	GNHC
Output 004 : Establishment of wood-based industries supported	Forest information system developed and used	0(2007)	1	Mid term progress report	Mid term	MOA	GNHC
Output 005 : Forest Information management systems enhanced	Forest information system		Continuously updated	Annual	Annual	FRDD, DOF	PPD, MOA

MOA/21: Watershed Management and Plantation programme

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Master plan for major watershed developed and implemented	Master plan developed and implemented for major watersheds	1 (2007)	2 (new)
Outcome 002 Acres of barren land brought under the plantation scheme	Acres of barren land brought under the plantation scheme	53,126 acres (2007)	10,000 acres (new)

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 River basin level management framework developed and implemented	Basin level framework developed	1 basin (2007)	>2 basin (new)
Output 002 Critical catchment areas notified for protection	Nos. of catchment areas notified for protection	1 (2007)	3 (new)
Output 003 Watershed management committees established and functioning at national and dzongkhag levels	Nos of functional committees	None	
Output 004 Nurseries for plantation created	Nos of nurseries established by region (2007) 12 (new) Nos of sapling distributed by region	56 (2007)	12 (new)

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001 Critical catchment areas notified for protection	Activity 002 : River basin level watershed management planning and Implementation						
	Sub Activity 1 : Management Planning for major river basins		Nationwide	July 2008	June 2013	WMD	Field Divisions, Dzs. DoE, NEC, MoA, MoH, DoD M etc
	Sub Activity 2: Implementation of river basin management plans		Nationwide	July 2008	June 2013	WMD	Field Divi., Dzs., DoE, NEC, MoA, MoH, DoD M etc
	Sub Activity 3: Reduce damages to human settlements and arable lands during flash floods		Nationwide	July 2008	June 2013	WMD	Field Divs., Dzs., DoE, NEC, MoA, MoH, DoDM etc
	Sub Activity 4: Office equipments/ Field Equipments		Nationwide	July 2008	June 2013	WMD	

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity1: Conduct periodic in country trainings on soil and water conservation for field staffs using ToT approach		Nationwide	July 2008	June 2013	WMD	Dzongkhags. Divisions
	Sub Activity 2: Conduct farmers training on participatory water management and relevant disciplines		Nationwide	July 2008	June 2013	WMD	Dzongkhags. Divisions
	Sub Activity 3: Conduct seminars, workshops related to watershed management issues.		Nationwide	July 2008	June 2013	WMD	MoEA, NEC, Dzs., Territorial Divisions of Forest etc
	Activity 003: Critical Watershed Areas management planning and implementation						
	Sub Activity 1: Asses, identify and map critical water source areas		Nationwide	July 2008	June 2013	WMD	Dzs., Divisions and other line dept.
	Sub Activity 2: Assess Tsamdrog and Sokshings within the watershed areas		Nationwide	July 2008	June 2013	WMD	Dzs., Divi. & other line depts.

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 3: Prepare, approve and implement management plans for critical water source areas		Nationwide	July 2008	June 2013	WMD	Dzs., Divis. and other line depts..
	Sub Activity 4: prepare technical guidelines for soil and water conservation		Nationwide	July 2008	June 2013	WMD	
	Sub Activity 5 :Subscribe and procure journals, newsletters and books on watershed management		Nationwide	July 2008	June 2013	WMD	
	Sub Activity 6: Recruit and engage people on participatory watershed management and also micro watershed management		Nationwide	July 2008	June 2013	WMD	Dzonkhags, Divisions and other line departments
	Sub Activity 7: Document experiences on watershed management in Bhutan		Nationwide	July 2008	June 2013	WMD	
	Sub Activity 8: Identify micro watershed areas and prepare, approve and implement participatory management plans		Nationwide	July 2008	June 2013	WMD	Dzongkhags. Divisions
	Sub Activity 9: Develop and implement M&E guidelines for soil and water conservation		Nationwide	July 2008	June 2013	WMD	

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 004 : Degraded and barren forest lands mapped for plantation	Activity 004 : Mapping of degraded and barren forestlands						
	Sub Activity 1: Carry out effective land management measures to decrease soil erosion		Nationwide	July 2008	June 2013	WMD	Dzongkhags, Divisions, and other line depts.
	Sub Activity 2: Identify degraded government land		Nationwide	July 2008	June 2013	WMD	Dzs, Div., and other line depts.
	Sub Activity 3: Assess sites or land management interventions and implement mitigation measures		Nationwide	July 2008	June 2013	WMD	Dzs., Div., and other line depts.
	Activity 005 : Afforestation and Re-forestration						
	Sub Activity 1: Identify survey and map barren and degraded sites		Nationwide	July 2008	June 2013	WMD	Dzs., Divis., and other line depts.
	Sub Activity 2: Raise new plantations in barren and degraded lands		Nationwide	July 2008	June 2013	WMD	Dzs, Divi., and other line depts.
	Sub Activity 3: Maintenance of 1 to 3 years old plantations		Nationwide	July 2008	June 2013	WMD	Dzs, Divi., and other line depts.

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 4: Prepare guidelines for different types of plantations		Nationwide	July 2008	June 2013	WMD	
	Sub Activity 4: Conduct Monitoring and Evaluation of plantations		Nationwide	July 2008	June 2013	WMD	
	Sub Activity 5: Procure reference books on plantations		Nationwide	July 2008	June 2013	WMD	
	Sub Activity 6: Develop and revise guidelines and manuals for plantations		Nationwide	July 2008	June 2013	WMD	
	Sub Activity 7: Develop plantation Master plan		Nationwide	July 2008	June 2013	WMD	
	Activity 006: Strengthening nurseries management						
Output 005: Nurseries for plantation created	Sub Activity1: Create and maintain nurseries		Nationwide <i>Cane & Bamboo products (Kangpara)</i>	July 2008	June 2013	WMD	Dzongkhags, Divisions, and other line depts.
	Sub Activity 2: Review and improve nurseries		Nationwide <i>Tree Seedlings (Tsengkar, tseza)</i>	July 2008	June 2013	WMD	Dzongkhags, Divisions, and other line depts.
	Sub Activity 3: Procure reference books and prepare nursery manuals		Nationwide	July 2008	June 2013	WMD	
	Sub Activity 4: Conduct monitoring and evaluation of nurseries		Nationwide	July 2008	June 2013	WMD	

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 002 : River basin level watershed management planning and implementation			18.000		
Sub Activity 1 : Management Planning for major river basins			8.000		
Sub Activity 2: Implementation of river basin management plans			4.000		
Sub Activity 3: Reduce damages to human settlements and arable lands during flash floods			3.000		
Sub Activity 4: Office equipments/ Field Equipments			3.000		
Activity 001: Strengthening institutional mechanism for effective watershed management			5.000		
Sub Activity1: Conduct periodic in country trainings on soil and water conservation for field staffs using ToT approach			1.500		
Sub Activity 2: Conduct farmers training on participatory water management and relevant disciplines			1.500		
Sub Activity 3: Conduct seminars, workshops for collaboration with other partners like MoEA, NEC, Dzonkhags, Territorial Divisions of Forest etc			2.000		
Activity 003: Critical Watershed Areas management planning and implementation.			40.000		
Sub Activity 1: Assess, identify and map critical water source areas.			5.000		
Sub Activity 2: Assess tsamdrog and sokshings within the watershed areas.			1.000		
Sub Activity 3: Prepare, approve and implement management plans for critical water source areas			2.500		
Sub Activity 4: prepare technical guidelines for soil and water conservation			1.500		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 5 :Subscribe and procure journals, newsletters and books on watershed management			2.000		
Sub Activity 6: Recruit and engage people on participatory watershed management and also micro watershed management.			10.000		
Sub Activity 7: Document experiences on watershed management in Bhutan			2.000		
Sub Activity 8: Identify micro watershed areas and prepare, approve and implement participatory management plans			10.000		
Sub Activity 9: Develop and implement M&E guidelines for soil and water conservation			6.000		
Activity 004 : Mapping of degraded and barren forestlands			5.000		
Sub Activity 1: Carry out effective land management measures to decrease soil erosion			3.000		
Sub Activity 2: Identify degraded government land			1.000		
Sub Activity 3: Assess sites or land management interventions and implement mitigation measures			1.000		
Activity 005 : Afforestation and Re-forestration			40.000		
Sub Activity 1: Identify survey and map barren and degraded sites			1.500		
Sub Activity 2: Raise new plantations in barren and degraded lands			22.000		
Sub Activity 3: Maintenance of 1 to 5 years old plantations			10.000		
Sub Activity 4: Prepare guidelines for different types of plantations			1.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 5: Conduct Monitoring and Evaluation of plantations			1.000		
Sub Activity 6: Procure reference books on plantations			0.500		
Sub Activity 7: Develop and revise guidelines and manuals for plantations			1.000		
Sub activity 8: Conduct in country training to field staff on plantation management, establishment			2.000		
Sub Activity 9: Develop plantation strategy			1.000		
Activity 006: Strengthening nurseries management			15.000		
Sub Activity 1: Create and establish new nurseries			7.000		
Sub Activity 2: maintain and improve existing nurseries			5.000		
Sub Activity 3: Review and improve nurseries			0.500		
Sub Activity 4: Procure reference books and prepare nursery manuals			0.500		
Sub Activity 5: Conduct monitoring and evaluation of nurseries			0.500		
Sub Activity 6: Nursery trails on propagation and technique of some important species			0.500		
Sub Activity 7: In country field training on nursery management and propagation to field staff			1.000		
	Total	95.950	123.000	218.950	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 Master plan for major watershed developed and implemented	Master plan developed and implemented for major watersheds	1 (2007)	2 (new)	Terminal progress report	Terminal	MOA	GNHC
Outcome 002 Acres of barren land brought under the plantation scheme	Acres of barren land brought under the plantation scheme	53,126 acres (2007)	10,000 acres (new)	Terminal progress report	Terminal	MOA	GNHC
Output 001 River basin level management framework developed and implemented	Basin level framework developed	1 basin (2007)	>2 basin (new)	Mid term progress report	Mid term	WMD, DOF	PPD, MOA
Output 002 Critical catchment areas notified for protection	Nos. of catchment areas notified for protection	1 basin (2007)	>2 basin (new)	Annual progress report	Annual	WMD, DOF	PPD, MOA
Output 003 Watershed management committees established and functioning at national and dzongkhag levels	Nos of functional committees	1 (2007)	3 (new)	Annual progress report	Annual	WMD, DOF	PPD, MOA
Output 004 Nurseries for plantation created	Nos of nurseries established by region (2007) 12 (new) Nos of sapling distributed by region	56 (2007)	12 (new)	Annual progress report	Annual	WMD, DOF	PPD, MOA
Output 005 Nurseries for plantation created	Nos of nurseries established	(2007)	12 (new)	Annual progress report	Annual	WMD, DOF	PPD, MOA

MOA/22: Forest Protection Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001 : Forests protected from fires, pest and disease	Nos. of pest and diseases identified Area of forest salvaged	(2007) (2007)	New pests identified and controlled

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001: Surveillance system developed for important forest pests, diseases, and forest fire	Surveillance system developed for important pests and diseases including forest fire	(2007)	20
Output 002 : Service Delivery enhanced	Service delivery in the field and local people	(2007)	
Output 003 : Reduced incidences of forest fire	Occurrence of forest fire reduced	917 incidences in the last 15 years (Avg. 61 cases per year) (2007)	Reduce by 50 %

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001 : : Surveillance system developed for important forest pests, diseases, and forest fire	Activity 001. Strengthen forest protection through proper infrastructure development						
	Sub Activity 1: Construction of field offices, check posts and related infrastructure		Nationwide	July 2008	June 2013	DOF/ Territorial Divisions, Parks	
Output 002 : Service Delivery enhanced	Activity 002: Strengthen service delivery through improvement in field facilities and creation of enabling regulatory environment						
	Sub Activity 1: Create awareness on forest policies and practices		Nationwide	July 2008	June 2013	DOF/ Territorial Divisions, Parks	Dzongkhags
	Sub Activity 2: Procure and supply forest uniforms		Nationwide	July 2008	June 2013	FPUD	AFD/MOA, Field Divisions
	Sub Activity 3: Produce and distribute forest ID Cards		Nationwide	July 2008	June 2013	FPUD	AFD/MOA
	Sub Activity 4: procurement and distribution of equipments (communication and hammers)		Nationwide	July 2008	June 2013	FPUD	Field Divisions
	Sub Activity 5 : Procurement and distribution of extension kits		Nationwide	July 2008	June 2013	FPUD	Field Divisions

Programme Outputs	Programme activities	Activity priority	Geographic coverage / beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 6: Conduct field studies on pests and diseases management		Nationwide <i>Incense (Taraythang)</i>	July 2008	June 2013	FPUD	DOF, CoRRB, Field Divisions
	Sub Activity 7: Review and revise forestry rules		Nationwide <i>Incense (Sakteng)</i>	July 2008	June 2013	FPUD	DOF, PPD
	Sub Activity 8: Review and revise forest policies		Nationwide	July 2008	June 2013	FPUD	DOF, PPD
	Activity 003: Strengthen land use monitoring						
	Sub Activity 1: Conduct feasibility studies		Nationwide	July 2008	June 2013	FPUD	CoRRB, PPD, Dzongkhags, Field Divisions
	Sub Activity 2: Conduct monitoring & evaluation of land use changes		Nationwide <i>Cordyceps(Lumana)</i>	July 2008	June 2013	FPUD	Dzongkhags, Field Divisions

Programme Outputs	Programme activities	Activity priority	Geographic coverage / beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 002 : Reduced incidences of forest fire	Activity 004: Forest fire management						
	Sub Activity 1: Field level forest fire management		Nationwide	July 2008	June 2013	Field Divisions	Dzongkhags
	Sub Activity 2: Forest fire suppression		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	DOF, MOA, NEC, Armed forces, Disaster Mgt. Division
	Sub Activity 3: Procure fire fighting tools		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	DOF
	Sub Activity 4: Develop national forest fire management strategy		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	DOF, MOA
	Sub Activity 5: Capacity building (field level fire fighting training)		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	Field Div., Dzs
	Sub Activity 9: Research and development		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	CoRRB, DOF
	Sub Activity 10: Develop and maintain forest fire database		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	FIMS
	Sub Activity 12: Revise fire fighting manuals and guidelines		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	DOF
	Sub Activity 13: Improve communication system		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	DOF, Field Divisions
Sub Activity 14: Transportation		Nationwide	July 2008	June 2013	Forest Fire Mgt. Section	DOF	

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001. Strengthen forest protection through proper infrastructure development			153.99		
Sub Activity 1: Construction of field offices, check posts and related infrastructure			153.99		
Activity 002: Strengthen service delivery through improvement in field facilities and creation of enabling regulatory environment			45.050		
Sub Activity 1: Create awareness on forest policies and practices			5.000		
Sub Activity 2: Procure and supply forest uniforms			15.000		
Sub Activity 3: Produce and distribute forest ID Cards			3.000		
Sub Activity 4: procurement and distribution of equipments (communication and hammers)			5.000		
Sub Activity 5 : Procurement and distribution of extension kits			12.000		
Sub Activity 6: Conduct field studies on pests and diseases management			1.000		
Sub Activity 7: Review and revise forestry rules			1.000		
Sub Activity 8: Review and revise forest policies			1.050		
Sub Activity 9. Office equipments			2.000		
Activity 003: Strengthen land use monitoring			2.000		
Sub Activity 1: Conduct feasibility studies			1.500		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 2: Conduct monitoring & evaluation of land use changes			0.500		
Activity 004: Forest fire management			26.100		
Sub Activity 1: Field level forest fire management			7.100		
Sub Activity 2. Forest fire suppression			2.000		
Sub Activity 3: Procure fire fighting tools			8.000		
Sub Activity 4: Develop national forest fire management strategy			0.500		
Sub Activity 5: Capacity building (field level fire fighting training			2.500		
Sub Activity 9: Research and development			1.000		
Sub Activity 10: Develop and maintain forest fire database			0.500		
Sub Activity 12: Revise fire fighting manuals and guidelines			0.500		
Sub Activity 13. Improve communication system			3.000		
Sub Activity 14. Transportation			1.000		
	Total	47.500	227.140	274.640	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 : Forests protected from fires, pest and disease	Nos. of pest and diseases identified Area of forest salvaged	(2007) (2007)	New pests identified and controlled	Terminal progress report	Terminal	MOA	GNHC
Output 001: Surveillance system developed for important forest pests, diseases, and forest fire	Surveillance system developed for important pests and diseases including forest fire	(2007)	20	Annual progress report	Annual	FPUD, DOF	
Output 002 : Service Delivery enhanced	Service delivery in the field and local people	(2007)		Annual progress report	Annual	FPUD, DOF	
Output 003 : Reduced incidences of forest fire	Occurrence of forest fire reduced	(2007) 917 incidences in the last 15 years (Avg. 61 cases per year)	Reduce by 50 %	Annual progress report	Annual	FPUD, DOF	

MOA/23: Nature Conservation Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Residents in the protected area benefited from eco-tourism and ICDP	% of residents benefited through eco/nature tourism and ICDP	NA	10%
Outcome 002 : Species identified for conservation	Nos. of new species identified for protection and conservation	30	Species updated
	Nos. of highly poached areas identified and mapped	None	

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001 : Management of existing Parks and botanical garden strengthened	External boundaries of existing PAs demarcated physically in the field	0 (2007)	6 PAs
	Management zone maps for PAs produced	0 (2007)	>3
Output 002 : New protected areas and botanical park established	Nos. of new functional parks established	6 (2007)	3 (new)
	Nos. of botanical parks established	2 (2007)	1 (new)
Output 003 : Biological corridors brought under scientific management	% of biological corridors under scientific management	9 % (2007)	25%
Output 004 : Eco-tourism activities implemented in the parks	Eco-tourism activities implemented	0 (2007)	6 parks

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 001 : Management of existing Parks and botanical garden strengthened	Activity 001: Management and Planning of Protected areas						
	Sub Activity 1: Management & Planning of existing PAs		Pas	July 2008	June 2013	NCD, Parks	DOF, Dzongkhags
	Sub Activity 2: Management & Planning of new PAs		Pas	July 2008	June 2013	NCD, Parks	DOF, Dzongkhags
Output 003 : Biological corridors brought under scientific management	Activity 002: Management of Biological Corridors						
	Sub Activity 1: Management and planning of biological corridors		Pas	July 2008	June 2013	NCD	Field Divisions, Dzongkhags,
	Sub Activity 2: Conduct biodiversity and socio-economic survey		Pas	July 2008	June 2013	NCD	Field Divisions, Dzongkhags, DOF, CoRRB

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 002: New protected areas and botanical park established	Activity 003: Management of Botanical Parks						
	Sub Activity 1: Establish ecotourism facilities (visitor information centres, cafeterias, etc)		Parks	July 2008	June 2013	NCD	Parks
	Sub Activity 2: Infrastructure development		Parks	July 2008	June 2013	NCD	Parks
	Sub Activity 3: Establish Botanical park in sub-tropical ecozone		Parks	July 2008	June 2013	NCD	
	Sub Activity 4: Establish and develop Kuensalphodrang nature Park		Parks	July 2008	June 2013	NCD	
	Sub Activity 5: Procurement of vehicles			July 2008	June 2013	NCD	
	Sub Activity 6: Procurement of office and field equipments			July 2008	June 2013	NCD	
	Activity 004 : Species Conservation, Research & Monitoring and data management						
	Sub Activity 1: Species conservation		Parks	July 2008	June 2013	NCD	Parks
	Sub Activity 2: Monitoring and research		Parks	July 2008	June 2013	NCD	Parks

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ Beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Activity 3: Wildlife rehabilitation		Parks	July 2008	June 2013	NCD	
	Sub Activity 4: Management of taxidermy unit		Parks	July 2008	June 2013	NCD	
	Sub Activity 5: Biodiversity inventory and data management		Parks	July 2008	June 2013	NCD	Field Divisions, Dzs
Output 004 Eco-tourism activities implemented in the parks	Activity 005 : Eco-tourism and ICDP						
	Sub Activity 1: Ecotourism feasibility studies in PA's		Parks	July 2008	June 2013	NCD, Parks	Dzongkhags, DOT
	Sub Activity 2: Establishment of community based ecotourism in PA's		<i>Eco-tourism(Trong)</i>	July 2008	June 2013	NCD, Parks	Dzongkhags, DOT
	Sub Activity 3: Impact study in PA's		Parks	July 2008	June 2013	NCD, Parks	Dzongkhags, DOT
	Sub Activity 4: Prepare and implement ICDP plans		Parks <i>Cane & Bamboo Products (Bjoka)</i>	July 2008	June 2013	NCD	Parks
	Sub Activity 5: Prepare evaluation reports of past ICDP activities		Parks	July 2008	June 2013	NCD	Parks
	Sub Activity 6: Human Wildlife conflict resolutions		Parks <i>Wildboar meat (Serzhong, Gelephu, Chuzergang)</i>	July 2008	June 2013	NCD	Parks

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001 : Management and Planning of Protected areas			80.000		
Sub Activity 1: Management & Planning of existing PAs			44.000		
Sub Activity 2: Management & Planning of new PAs			36.000		
Activity 002 : Management of Biological Corridors			15.000		
Sub Activity 1 : Management and planning of biological corridors			13.000		
Sub Activity 2 : Conduct biodiversity and socio-economic survey			2.000		
Activity 003 : Management of Botanical Parks			50.000		
Sub Activity 1: Establish ecotourism facilities (visitor information centres, cafeterias, etc)			6.500		Budget approved reduced by half of the budget proposed. Activities prioritizations difficult since all are integral part of new projects. Budget allocation in the column is tentative and it requires additional budget to realize its outcomes. (requires many infrastructure developments)
Sub Activity 2 : Infrastructure development			14.000		
Sub Activity 3 : Establish Botanical park in sub-tropical ecozone			8.000		
Sub Activity 4 : Establish and develop Kuensalphodrang nature Park			8.000		
Sub Activity 5: Procurement of vehicles			10.000		
Sub Activity 6: Procurement of office and field equipments			3.500		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 004 : Species Conservation, Research & Monitoring and data mgt.			10.000		
Sub Activity 1: Species conservation			4.000		
Sub Activity 2: Monitoring and research			3.000		
Sub Activity 3: Wildlife rehabilitation			-		
Sub Activity 4: Management of taxidermy unit			-		
Sub Activity 5: Biodiversity inventory and data management			3.000		
Activity 005 : Eco-tourism and ICDP			35.000		
Sub Activity 1: Ecotourism feasibility studies in PA's			5.000		
Sub Activity 2: Establishment of community based ecotourism in PA's			7.000		
Sub Activity 3: Impact study in PA's			2.000		
Sub Activity 4: Prepare and implement ICDP plans			10.000		
Sub Activity 5: Prepare evaluation reports of past ICDP activities			1.000		
Sub Activity 6: Human Wildlife conflict resolution			10.000		
	Total	140.080	190.000	330.080	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 : Residents in the protected area benefited from eco-tourism and ICDP	% of residents benefited through eco/nature tourism and ICDP		10%	Terminal progress reports	Terminal	MOA	GNHC
Output 001 : Management of existing Parks and botanical garden strengthened	External boundaries of existing PAs demarcated physically in the field	0 (2007)	6 PAs	Annual progress report	Annual	NCD, DOF	PPD, MOA
	Management zone maps for PAs produced	0 (2007)	>3	Annual progress report	Annual	NCD, DOF	PPD, MOA
Output 002 : New protected areas and botanical park established	Nos. of new functional parks established	6 (2007)	3 (new)	Annual progress report	Annual	NCD, DOF	PPD, MOA
	Nos. of botanical parks established	2 (2007)	1 (new)	Annual progress report	Annual	NCD, DOF	PPD, MOA
Output 003 : Biological corridors brought under scientific management	% of biological corridors under scientific management	9 % (2007)	25%	Mid term progress report	Mid term	NCD, DOF	PPD, MOA
Output 004 : Eco-tourism activities implemented in the parks	Eco-tourism activities implemented	0 (2007)	6 parks	Mid term progress report	Mid term	NCD, DOF	PPD, MOA

MOA/24: Forestry & Environmental Education Programme

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Skilled and qualified forest guards and rangers available	Nos. of forest guards completed the course and employed	(2007)	125 Nos
	Nos. of forest rangers completing course and employed	(2007)	125 Nos
	Nos. of forest officials completed upgradation course	(2007)	250 Nos
	Nos. of tertiary level professional trained		100 Nos
Outcome 002 : Scientific knowledge on natural resources of Bhutan generated	Nos of publication in recognized journal	n/a (2007)	10

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001 : Ugyen Wangchuck Institute of Conservation and Environment established and functional	Institute established and functional	n/a (2007)	1
Output 002 : Publication and dissemination of information on natural resources of the country enhanced	List of taxes collected, stored, documented and published	0 (2007)	1 Annual publication
	Bhutan Museum of Natural History established	(2007)	1
	Public attendance and inquiry for museum resources	0 (2007)	

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
Output 001 : Ugyen Wangchuck Institute of Conservation and Environment established and functional	Activity 001: Diploma training					
	Sub Activity 1: Student stipend for Forest Rangers		July 2008	June 2013	UWICE	
	Sub Activity 2: Student field DSA for Forest Rangers		July 2008	June 2013	UWICE	
	Sub Activity 3: Student stipend for Forest Guards		July 2008	June 2013	UWICE	
	Sub Activity 4: Student field DSA for Forest Guards		July 2008	June 2013	UWICE	
	Activity 002: Inservice/Upgradation					
	Sub Activity 1: Train forest guards and rangers in the field of PA, CF and sustainable forest management		July 2008	June 2013	UWICE	
	Sub Activity 2: Train tertiary level professionals' in the field of forestry and environmental studies		July 2008	June 2013	UWICE	
	Sub Activity 3: Upgrade knowledge and skills to enhance service delivery		July 2008	June 2013	UWICE	
Output 002 : Publication and dissemination of information on natural resources of the country enhanced	Activity 003: Research/Scholarly activities					
	Sub Activity 1: Identify and conduct relevant and priority academic research topics		July 2008	June 2013	UWICE	
	Sub Activity 2 :Organise and conduct lecture series		July 2008	June 2013	UWICE	
	Sub Activity 3 :Identify and implement discussion seminars		July 2008	June 2013	UWICE	

Programme Outputs	Programme activities	Activity priority	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
Output 001 : Ugyen Wangchuck Institute of Conservation and Environment established and functional	Activity 004: Curriculum & Syllabus development					
	Sub Activity 1: Develop dynamic, relevant and national accredited syllabus and curriculum		July 2008	June 2013	UWICE	
Output 002 : Publication and dissemination of information on natural resources of the country enhanced	Activity 005 Institutional Collaboration/Networking					
	Sub Activity 1: Collaborate in academia forged with various institutions		July 2008	June 2013	UWICE	
	Sub Activity 2: Develop and implement collaborative research programmes		July 2008	June 2013	UWICE	
	Sub Activity 3: Develop joint award programs		July 2008	June 2013	UWICE	

Programme Outputs	Programme activities	Activity priority	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
Output 001 :Ugyen Wangchuck Institute of Conservation and Environment established and functional	Activity 006: Library development					
	Sub Activity 1: Acquire library resources and make them accessible		July 2008	June 2013	UWICE	
	Sub Activity :2 Acquire and develop ICT resources		July 2008	June 2013	UWICE	
	Sub Activity 3: Develop laboratory skills and knowledge		July 2008	June 2013	UWICE	
	Activity 007: Sports and Culture Program					
	Sub Activity 1: Conduct annual sports events		July 2008	June 2013	UWICE	
	Sub Activity 2: Conduct regular fitness program		July 2008	June 2013	UWICE	
	Sub Activity 3: Conduct cultural events		July 2008	June 2013	UWICE	
	Sub Activity 4: Refresher courses on arms handling and field works		July 2008	June 2013	UWICE	
	Activity 008: infrastructure development					
	Sub Activity 1: Infrastructure development (staff quarters, eco system research sites, guest houses, academic facilities)		July 2008	June 2013	UWICE	

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 001: Diploma training			14.850		
Sub Activity 1: Student stipend for Forest Rangers			4.500		
Sub Activity 2 :Student field DSA for Forest Rangers			3.750		
Sub Activity 3: Student stipend for Forest Guards			3.600		
Sub Activity 4 :Student field DSA for Forest Guards			3.000		
Activity 002: Inservice/Upgradation			25.000		
Sub Activity 1: Train forest guards and rangers in the field of PA, CF and sustainable forest management			6.000		
Sub Activity 2: Train tertiary level professionals' in the field of forestry and environmental studies			6.000		
Sub Activity 3: Upgrade knowledge and skills to enhance service delivery			13.000		
Activity 003: Research/Scholarly activities			10.200		
Sub Activity 1: Identify and conduct relevant and priority academic research topics			5.000		
Sub Activity 2: Organise and conduct lecture series			3.200		
Sub Activity 3: Identify and implement discussion seminars			2.000		
Activity 004: Curriculum & Syllabus development			10.000		
Sub Activity 1: Develop dynamic, relevant and national accredited syllabus and curriculum			10.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 005 Institutional Collaboration/Networking			9.000		
Sub Activity 1: Collaborate in academia forged with various institutions			3.000		
Sub Activity 2: Develop and implement collaborative research programmes			3.000		
Sub Activity 3: Develop joint award programs			3.000		
Activity 006: Library development			5.500		
Sub Activity 1: Acquire library resources and make them accessible			3.500		
Sub Activity :2 Acquire and develop ICT resources			1.000		
Sub Activity 3: Develop laboratory skills and knowledge			1.000		
Activity 007: Sports and Culture Program			5.000		
Sub Activity 1: Conduct annual sports events			1.000		
Sub Activity 2: Conduct regular fitness program			1.000		
Sub Activity 3: Conduct cultural events			1.000		
Sub Activity 4: Refresher courses on arms handling and field works			2.000		
Activity 008: infrastructure development			91.000		
Sub Activity 1: Infrastructure development (staff quarters, eco system research sites, guest houses, academic facilities)			91.000		
	Total	188.510	170.550	359.060	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001: Skilled and qualified forest guards and rangers available	Nos of forest guards completed the course and employed	(2007)	125 Nos	Terminal progress report	Terminal	MOA	GNHC
	Nos of forest rangers completing course and employed	(2007)	125 Nos	Terminal progress report	Terminal	MOA	GNHC
	Nos of forest officials completed upgradation course	(2007)	250 Nos	Terminal progress report	Terminal	MOA	GNHC
	Nos of tertiary level professional trained		100 Nos	Terminal progress report	Terminal	MOA	GNHC
Outcome 002 : Scientific knowledge on natural resources of Bhutan generated	Nos of publication in recognized journal	n/a (2007)	10	Annual progress reports	Annual	UWICE	PPD, MOA
Output 001 : Ugyen Wangchuck Forestry and Environment Institute established and functional	Institute established and functional	n/a (2007)	1	Annual progress reports	Annual	UWICE	PPD, MOA

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Output 002 : Publication and dissemination of information on natural resources of the country enhanced	List of taxes collected, stored, documented and published	0 (2007)	1 Annual publication	Annual progress reports	Annual	UWICE	PPD, MOA
	Bhutan Museum of Natural History established	(2007)	1	Annual progress reports	Annual	UWICE	PPD, MOA
	Public attendance and inquiry for museum resources	0 (2007)		Annual progress reports	Annual	UWICE	PPD, MOA

MOA/25: RNR Research Programme

Programme Profile	
Administrative Unit: Ministry of Agriculture	Sector: Council for RNR Research of Bhutan (CoRRB)
Programme : MoA/25 : RNR Research program	Plan Phase: 10 th FYP

Contribution to National and International Goals and targets

Classification	Categories	Goals	Targets/Indicators
MDG		Goal 1. Eradicate Extreme poverty and Hunger	Target 1. Halve by 2015, the proportion of people living under poverty line
SDB	Livelihood Strategy	Goal 2. Halve proportion of people in poverty by 2012	1. Percentage of people living on less than \$1 per day (PPP)
Strategy for GNH	3. Integrated Rural urban Development and poverty alleviation (IRUDPA)	3. Integrated Rural urban Development and poverty alleviation (IRUDPA)	3. Integrated Rural urban Development and poverty alleviation (IRUDPA)
GNH Index	Domain 8. Ecological Diversity and Resilience	8. Ecological Diversity and Resilience	8. Ecological Diversity and Resilience
GNH Pillars		1. Common Services	<ul style="list-style-type: none"> • 10 varieties of food crops, 34 varieties of horticulture crops, 8 species of fodder developed and promoted for higher yield. • 16 technologies on different management and production aspects generated and applied in the field. • 75 % of farmers aware of RNR technologies

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Improved varieties for cereal crops, cash crops, and fodder developed and applied	Nos of cereal crop varieties developed	10 (2007)	10 (New)
	Nos of cash crop varieties developed	62 (2007)	34 (New)
	Nos of Fodder species developed	12 (2007)	8 (New)
Outcome 002 Sustainable management practices developed	Nos improved forest harvesting, cultivation methods and management practices developed and implemented	7 (2007)	15 (New)
	Management Practices for organic farming developed	n/a (2007)	5 (Commodities)
Outcome 003 Sustainable management practices	CBNRM rights developed for major natural resources	n/a (2007)	4 (major NR)
Outcome 004 75 % of farmers aware of RNR technologies.	<i>Showcasing RNR information technologies through TV & Radio through</i> Nos. of RNR programs and radio aired weekly through BBSC	40 RNR programs aired	80 RNR programs aired

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 Improved cash crop varieties developed	No of high yielding varieties of cereals, oilseeds and legumes developed	62 (2007)	34
Output 002 Improved varieties of feed and fodder increased	No of improved fodder varieties developed and released	12 (2007)	8 (new)
Output 003 Improved management practices developed and implemented	No of forest management practices developed	7 (2007)	15
	Management practices for organic farming developed for major commodities	n/a (2007)	5 commodities
	CBNRM rights developed for major natural resources	n/a (2007)	4 (NRs)

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 004 Improved varieties of cereal crops developed and released	Nos of improved varieties developed	n/a (2007)	10 (New)
<i>To be implemented by ICS</i>			
Output 005 Information Technology Support	20 more remote geogs linked to ICT		
Output 006 Linkage with national and international libraries for exchange of information and publications	Linkage with Nos. of National and international libraries	7 libraries in SE Asian countries	15 national and international libraries
Output 007 Development and publications of RNR materials and periodical and annual reports	Nos. of Newsletters, Farmers newslettes, RNR Dairy and calendar developed	Bi monthly 10000 copies of RNR newsletters, 7000 copies of farmers newsletters, 10000 copies of RNR Dairy & Calendars	Bi monthly 10000 copies of RNR newsletters, 7000 copies of farmers newsletters, 10000 copies of RNR Dairy & Calendars
Output 008 Dissemination of information through various media and services	Nos. of TV/Radio programs, publications and website updation for information dissemination	10 nos. per year	Weekly TV/Radio programs, Monthly publications, Daily website updates

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
003: Improved Management Practices Developed and Implemented	Act1. Coordination and Partnership Program for Research						
	Sub act 1. Multi-stakeholder including farmers planning meetings initiated/conducted	2		2009	2013	RD, CoRRB	Technical Deptts, Dz
	Sub Act 2: Council Executive Board (CEB), Research Co-ordination Committee (RCC), and Varsity Release Committee meeting	1		2009	2013	RD, CoRRB	Technical Deptt
	Sub Act 3: Standard research protocol practiced	1		2009	2013	RD, CoRRB	Technical Deptt, RCs
	Sub Act 4: Core funding system/mechanism developed and RGoB Fund for research mainstreamed with BCARE	1		2009	2013	CoRRB	Technical Deptt
	Sub Act 5: Bhutanese researchers participating in international and regional for a	1		2009	2013	RD, CoRRB	RCs, Deptts
	Sub Act 6: BCARE membership in international and regional research bodies/association	1		2009	2013	MoA	CoRRB/Related Agencies

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
003: Improved Management Practices Developed and Implemented	Activity 2: School Agriculture						
	Subact1. Training of Focal Agriculture Teachers on integrated farming concepts	1	Selected Schools	2009	2013	SAP CoRRB	DSE/MoE
	Subact 2. Agriculture inputs supply (agriculture tools and simple farm machineries) to schools	1	Selected Schools	2009	2013	SAP CoRRB	DSE/MoE
	Subact3. Infrastructures developments viz(Piggery sheds/poultry sheds, fencing of garden, land development, dairy sheds, fishery pound, compost sheds)	1	Selected Schools	2009	2013	SAP CoRRB	Respective Dzgs
	Sub Act 4: TA inputs	2	Selected Schools	2012	2013	SAP CoRRB	DSE/MoE, WFP
	Activity 3: Research Communication						
	Sub act 1. In-country B.Sc in CNR	1		2010	2013	RCD, CoRRB	

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
003:Improved management practices developed and implemented	Sub Act 2: Development of extension leaflets of research technologies	1		2010	2013	RCD, CoRRB	
	Sub Act 3: Extension service review and impact studies	1		2010	2013	RCD, CoRRB	
	Sub Act 3: Joint Research-extension planning for community development	1		2010	2013	RCD, CoRRB	
	Activity 4: Plants and Equipments						
	Sub Act1: Supply of tools and equipments to regional centers	1		2010	2013	RD/CoRRB	
	Sub Act 2: Supply of improved genetic resources	1		2010	2013	RD/CoRRB	
	Act 5: Professional Services						
	Sub Act 1: Development of Extension Policy, RNR Research Act	1		2010	2013	RD/CoRRB	
	Sub Act 2: Develop manuals, books and leaflets on research technologies	1		2010	2013	RD/CoRRB	
	Sub Act 3: Impact assessment of new technologies	1		2010	2013	RD/CoRRB	
	Sub Act 4: Sourcing of consultants	1		2010	2013	RD/CoRRB	

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
004:Improved varieties of cereal crops developed and released	Activity 6: Field Crop research						
	Sub Act 1: Management, production, post harvest, crop improvement and socio-economic research on Rice	1	Rice (Yalang, Pemethang, Phuntshothang	2010	2013	RC Bajo, CoRRB	
	Sub Act 2: Management, production, post harvest, crop improvement and socio-economic research on Maize	1		2010	2013	RC Bajo, CoRRB	
	Sub Act 3: Management, production, post harvest, crop improvement and socio-economic research on Wheat	1		2010	2013	RC Bajo, CoRRB	
	Sub Act 4: Management, production, post harvest, crop improvement and socio-economic research on Oilseeds	1		2010	2013	RC Bajo, CoRRB	
	Sub Act 5: Management, production, post harvest, crop improvement and socio-economic research on grain legumes	1		2010	2013	RC Bajo, CoRRB	
	Sub Act 6: Management, production, post harvest, crop improvement and socio-economic research on other minor cereals	1		2010	2013	RC Bajo, CoRRB	

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
003:Improved management practices developed and implemented	Activity 7: Forestry Research						
	Sub Act 1: Nature Conservation research	1		2010	2013	Rc-Yusipang, CoRRB	
	Sub Act 2: Non wood forest product research	1		2010	2013	Rc-Yusipang, CoRRB	
	Sub Act 3: Social Forestry Research	1		2010	2013	Rc-Yusipang, CoRRB	
	Sub Act 4: Broad leaf forest management	1		2010	2013	Rc-Yusipang, CoRRB	
	Sub Act: 5: Re-forestation and industrial plantation	1		2010	2013	Rc-Yusipang, CoRRB	
	Sub Act 6: Conifer Forest research	1		2010	2013	Rc-Yusipang, CoRRB	
	Sub Act 7: Wood products	1		2010	2013	Rc-Yusipang, CoRRB	
	Sub Act 8: Forest Protection	1		2010	2013	Rc-Yusipang, CoRRB	
	Sub Act 9: Operation, information management and infrastructure development	1		2010	2013	Rc-Yusipang, CoRRB	

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
002: Improved varieties of feed and fodder increased	Activity 8: Livestock Research						
	Sub Act 1: Livestock breeding and management	1	Honey (Logchina)	2010	2013	RC-Jakar, CoRRB	
	Sub Act 2: Livestock feed and fodder development	1		2010	2013	RC-Jakar, CoRRB	
	Sub Act 3: Animal Health Research	1		2010	2013	RC-Jakar, CoRRB	
001: Improved Cash Crop Varieties developed	Activity 9: Horticulture Research						
	Sub Act 1: Apple Research	1		2010	2013	Rc-Wengkhar	
	Sub Act 2: Cardamom	2	<i>Cardamom (Denchbukha, Korphu, Dungna)</i>	2010	2013	Rc-Wengkhar	
	Sub Act 3: Citrus	3		2010	2013	Rc-Wengkhar	
	Sub Act 4: Floriculture	4		2010	2013	Rc-Wengkhar	
	Sub Act 5: Aromatic and medicinal plants	5		2010	2013	Rc-Wengkhar	
	Sub Act 6: Other fruits and nuts	6	<i>Arecanut (Shompangkha, Phuntsotbang, Pemethang)</i>	2010	2013	Rc-Wengkhar	
	Sub Act 7: Mushroom	7		2010	2013	Rc-Wengkhar	
	Sub Act 8: Pears and Persimom	8		2010	2013	Rc-Wengkhar	
	Sub Act 9: Roots and Tubers	9	<i>Ginger (P/ling, Chargarey)</i>	2010	2013	Rc-Wengkhar	
	Sub Act 10: Vegetables	10			2010	2013	Rc-Wengkhar

Programme Outputs	Programme activities	Activity priority	Geographic coverage/beneficiaries	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
<i>To be implemented by ICS</i>							
RNR Educational and awareness program	Activity 1 Information Technology Support Program						
	Sub-Activity 1: ICT application system upgraded	1	Head office	June 2009	July 2013	ICS	DIT/Private IT firms
	Sub-Activity 2: ICT links to establish at Geog level	1	Selected geogs	June 2010	July 2013	ICS	DIT/Private IT firms/RCs/Geog centres
	Sub-Activity 3: RNR website upgradation	1	Head office	June 2009	July 2013	ICS	DIT/Pvt IT firms/RCs/Geog centres
	Activity 2 Office infrastructure						
	Sub-Activity 1: Operational office automation	1	Head office	June 2009	July 2013	ICS	AFD, MoA
	Sub-Activity 2: Procurement of audio visual equipment	1	Head office	June 2009	July 2013	ICS	AFD, MoA
	Sub-Activity 3: Procurement of computers & Peripherals	1	Head office	June 2009	July 2013	ICS	AFD, MoA
	Sub-Activity 4: Procurement of four vehicles (Toyota Hilux)	1	Head office	June 2009	July 2013	ICS	AFD, MoA/MoF

Programme Outputs	Programme activities	Activity priority	Geographic coverage/beneficiaries	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub-Activity 5: Construction of new office toilets	1	Head office	Dec 2009	May 2010	ICS	DoA/AFD, MoA
	Activity 3: Professional services/consultancy	1	Head office	Jan 2010	Jan 2012	ICS	HRD, MoA/RCSC

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Act1. Coordination and Partnership Program for Research			4.500		
Sub act 1. Multi-stakeholder including farmers planning meetings initiated/ conducted			1.000		
Sub Act 2: Council Executive Board (CEB), Research Co-ordination Committee (RCC), and Varsity Release Committee meeting convened			0.500		
Sub Act 3: Establish common library for Research Technologies			1.000		
Sub Act 4: Core funding system/mechanism exists and RGoB Fund for research mainstreamed with BCARE			1.000		
Sub Act 5: Bhutanese researchers participating in international and regional for a			1.000		
Sub Act 6: BCARE membership in international and regional research bodies/ association			1.000		
Activity 2: School Agriculture Program			20.000		
Subact1. Training of Focal Agriculture Teachers on integrated farming concepts			8.000		
Subact 2. Agriculture inputs supply (agriculture tools and simple farm machineries) to schools			5.000		
Subact3. Infrastructures developments viz(Piggery sheds/poultry sheds, fencing of garden, land development, dairy sheds, fishery pound, compost sheds)			6.000		
Sub Act 4: TA inputs			1.000		
Activity 3: Research Communication			5.300		
Sub act 1. In-country training			0.500		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Act 2: Development of extension leaflets of research technologies			0.500		
Sub Act 3: Extension service review and impact studies			1.500		
Sub Act 4: Joint Research-extension planning for community development			1.500		
Sub Act 5: Procure basic IT equipments			0.800		
Activity 4: Plants and Equipments			3.500		
Sub Act1: Supply of tools and equipments to regional centers			1.500		
Sub Act 2: Supply of improved genetic resources			2.000		
Act 5: Professional Services			5.000		
Sub Act 1: Development of Extension Policy, RNR Research Act			0.500		
Sub Act 2: Develop manuals, books and leaflets on research technologies			1.500		
Sub Act 3: Impact assessment of new technologies			2.000		
Sub Act 4: Sourcing of consultants			1.000		
Activity 6: Field Crop research			36.100		
Sub Act 1: Management, production, post harvest, crop improvement and socio-economic research on Rice			6.100		
Sub Act 2: Management, production, post harvest, crop improvement and socio-economic research on Maize			5.000		
Sub Act 3: Management, production, post harvest, crop improvement and socio-economic research on Wheat			4.000		
Sub Act 4: Management, production, post harvest, crop improvement and socio-economic research on Oilseeds			3.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Act 5: Management, production, post harvest, crop improvement and socio-economic research on grain legumes			3.000		
Sub Act 6: Management, production, post harvest, crop improvement and socio-economic research on other minor cereals			3.000		
Sub Act 7: Infrastructure development/Equipments			5.000		
Sub Act 8: Vehicle & farm implements			4.000		
Sub Act 9: TA input			3.000		
Activity 7: Forestry Research			31.950		
Sub Act 1: Nature Conservation research			3.000		
Sub Act 2: Non wood forest product research			6.000		
Sub Act 3: Social Forestry Research			4.000		
Sub Act 4: Broad leaf forest management			4.000		
Sub Act: 5: Re-forestation and industrial plantation			4.000		
Sub Act 6: Conifer Forest research			4.000		
Sub Act 7: Wood products			2.000		
Sub Act 8: Forest Protection			2.000		
Sub Act 9: Operation, information management and infrastructure development			3.950		
Activity 8: Livestock Research			35.300		
Sub Act 1: Livestock breeding and management			9.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Act 2: Livestock feed and fodder development			11.300		
Sub Act 3: Animal Health Research			7.500		
Sub Act 4: Lab and farm equipments			3.000		
Sub Act 5: Vehicle and infrastructure			8.000		
Activity 9: Horticulture Research			57.000		
Sub Act 1: Apple Research			5.130		
Sub Act 2: Cardamom			2.280		
Sub Act 3: Citrus			10.260		
Sub Act 4: Floriculture			5.130		
Sub Act 5: Aromatic and medicinal plants			3.990		
Sub Act 6: Other fruits and nuts			5.130		
Sub Act 7: Mushroom			2.850		
Sub Act 8: Pears and Persimmon			4.560		
Sub Act 9: Roots and Tubers			9.690		
Sub Act 10: Vegetables			9.120		
Sub Act 11: Farm Tools and Implements			3.000		
Sub Act 12: Vehicles and Infrastructure			5.000		
Total Budget		541.410	198.650	740.060	
Activity 1 Information Technology Support Program					

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub-Activity 1 ICT application system upgraded			1.000		
Sub-Activity 2 ICT links established at Regional/Geog level			3.000		
Sub-Activity 3 RNR website up gradation within ministry			1.900		
Activity 2 Office infrastructure					
Sub-Activity 1 Operational office automation			1.000		
Sub-Activity 2 Procurement of audio visual equipment			1.500		
Sub-Activity 3 Procurement of computers & Peripherals			1.200		
Sub-Activity 4 Procurement of four vehicles (Toyota Hilux)			5.000		
Sub-Activity 5 Construction of new office toilets			0.600		
Activity 3 Professional services/consultancy			1.000		
Total (ICS)		58.790	16.200	74.990	
Grand Total (CoRRB & ICS)		600.200	214.850	815.050	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 Improved varieties for cereal crops, cash crops and fodder developed and applied	Nos of cereal crop varieties developed	10 (2007)	10 (new)	CoRRB, PPD, DoA	Semi annual	PPD, CoRRB	GNHC
	Nos of cash crop varieties developed	62 (2007)	34 (new)				
	Nos of fodder species developed	12 (2007)	8 (new)				
Outcome 002 Sustainable Management Practices developed	Nos Improved forest harvesting, cultivation methods and management practices, developed and improved	7 (2007)	15 (new)	CoRRB, PPD, DoA, DoF	Semi Annual	PPD, CoRRB	GNHC
	Management practices for organic farming developed	n/a (2007)	5 (Commodities)				
	CBNRM rights developed for major natural resources	n/a (2007)	4 (Major NR)				

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Output 001 Improved cash crop varieties developed	No of high yielding varieties of cereals, oilseeds and legumes developed	62 (2007)	34	CoRRB, DoA, PPD	Semi Annual	PPD, CoRRB	GNHC
Output 002 Improved varieties of feed and fodder increased	Nos of improved fodder varieties developed and released	12 (2007)	8 (New)	CoRRB, PPD, DoL	Semi Annual	PPD, CoRRB	GNHC
Output 003 Improved management practices developed and implemented	Nos.of forest management practices developed	7 (2007)	15	CoRRB, DoF,DoA, PPD	Semi-annual	PPD, CoRRB	GNHC
	Management practices for organic farming developed for major commodities	n/a (2007)	5 commodities				
	CBNRM rights developed for major natural resources	n/a (2007)	4 NRs				
Output 004 Improved varieties of cereal crops developed and released	Nos of improved varieties developed	10 (2007)	10 (new)	CoRRB, DoA, PPD	Semi-annual	PPD, CoRRB	GNHC
<i>ICS components</i>							

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Information Technology Support	20 more remote geogs linked to ICT	40 RNR programs aired	80 RNR programs aired	ICS, PPD	monthly	PPD, ICS	GNHC
Showcasing RNR information technologies through TV & Radio	Nos. of RNR programs and radio aired weekly through BBSC	7 libraries in SE Asian countries	15 national and international libraries	ICS, PPD	n/a	PPD, ICS	GNHC
Linkage with national and international libraries for exchange of information and publications	Linkage with Nos. of National and international libraries	Bi monthly 10000 copies of RNR news letters, 7000 copies of farmers newsletters, 10000 copies of RNR Dairy & Calendars	Bi monthly 10000 copies of RNR newsletters, 7000 copies of farmers newsletters, 10000 copies of RNR Dairy & Calendars	ICS, PPD	Bi-monthly (Newsletters) Annual (Dairy)	PPD, ICS	GNHC
Development and publications of RNR materials and periodical and annual reports	Nos. of Newsletters, Farmers newslettes, RNR Dairy and calendar developed	10 nos. per year	20 Nos. per year	ICS, PPD	Weekly TV/Radio programs, Monthly publications, Daily website updates	PPD, ICS	GNHC

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Dissemination of information through various media and services	Nos. of TV/ Radio programs, publications and website updation for information dissemination						
Information Technology Support (ICS)	20 more remote geogs linked to ICT						
Showcasing RNR information technologies through TV & Radio	Nos. of RNR programs and radio aired weekly through BBSC	40 RNR programs aired	80 RNR programs aired	ICS, PPD	monthly	PPD, ICS	GNHC
Linkage with national and international libraries for exchange of information and publications	Linkage with Nos. of National and international libraries	7 libraries in SE Asian countries	15 national and international libraries	ICS, PPD	n/a	PPD, ICS	GNHC
Development and publications of RNR materials and periodical and annual reports	Nos. of Newsletters, Farmers newslettes, RNR Dairy and calendar developed	Bi monthly 10000 copies of RNR news letters, 7000 copies of farmers newsletters, 10000 copies of RNR Dairy & Calendars	Bi monthly 10000 copies of RNR newsletters, 7000 copies of farmers newsletters, 10000 copies of RNR Dairy & Calendars	ICS, PPD	Bi-monthly (Newsletters) Annual (Dairy)	PPD, ICS	GNHC

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Dessimation of informations through various media and services	Nos. of TV/ Radio programs, publications and website updation for information dissemination	10 nos. per year	20 Nos. per year	ICS, PPD	Weekly TV/Radio programs, Monthly publications, Daily website updates	PPD, ICS	GNHC

MOA/26: Rural Development Training Programme

Programme Profile	
Administrative Unit: Ministry of Agriculture	Sector: Rural Development Training Center
Programme : MoA/26: Rural Development Training Program	Plan Phase: 10 th FYP

Contribution to National and International Goals and targets

Classification	Categories	Goals	Targets/Indicators
MDG		Goal 1. Eradicate extreme poverty & hunger	Target 1: Halve by 2015, the proportion of people living below poverty line
SDG	Livelihood SDG	Goal 2. Halve proportion of people in poverty by 2012	1. Percentage of people living on less than 1 \$ per day (PPP terms)
Strategy for GNH	1. Innovation, Creativity and Enterprise (ICE)	1. Innovation, Creativity and Enterprise (ICE)	1. Innovation, Creativity and Enterprise (ICE)
GNH Index	Domain 9. Living standards	9. Living standards	9. Living standards
GNH Pillars	1. Equitable & Sustainable Socio-Economic Development	3. Employment Generation	<ul style="list-style-type: none"> Number of RNR farm enterprises increased from 12 to 20 through vocational training at RDTC.

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001 RNR farm enterprises increased through vocational training	Number of farm enterprises increased	12 (2007)	8 (new)

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001. Farmers trained and apply farm business skills	Nos farmers completing the course successfully	(2007)	300
	% of trained farmers applying farm business skills	n/a(2007)	60%

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
001 Farmers Trained & apply farm business skills	Activity 1 Need based and impact oriented vocational training	1	2009	2013	RDTC	Dzongkhag and geog administration, departments and agencies of MoA (same for all the activities)
	Sub-Activity 1 Agriculture Skills Training	1	2009	2013	RDTC	Dzongkhag and geog administration, departments and agencies of MoA (same for all the activities)
	Sub-Activity 2 Farm management Training	1	2009	2013	RDTC	Dzongkhag and geog administration, departments and agencies of MoA (same for all the activities)
	Sub-Activity 3 Community and Association Leaders Training	1	2009	2013	RDTC	Dzongkhag and geog administration, departments and agencies of MoA (same for all the activities)
	Sub-Activity 4 Farmers Experience Exchange Training	1	2009	2013	RDTC	Dzongkhag and geog administration, departments and agencies of MoA (same for all the activities)
	Sub-Activity 5 Youth Agriculture Awareness Training	1	2009	2013	RDTC	Dzongkhag and geog administration, departments and agencies of MoA (same for all the activities)

Programme Outputs	Programme activities	Activity priority	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Activity 2 Infrastructure Development	1	2009	2013	RDTC	Dzongkhag and geog administration, departments and agencies of MoA (same for all the activities)
	Sub-Activity 1 Construction of 1 unit staff quarter	1	2009	2010	RDTC	Dz/ geog administration, departments and agencies of MoA

Table 3: Program Plan Outlay

Programme activities	Activity priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1 Need based and impact oriented vocational training	1		9.520		Partial support is expected from Helvetas for meeting the capital part of the training. RDTC also expects others agencies involved with farmers to fund the training
Sub-Activity 1 Agriculture Skills Training	1		3.400		
Sub-Activity 2 Farm management Training	1		0.850		
Sub-Activity 3 Community and Association Leaders Training	1		1.700		
Sub-Activity 4 Farmers Experience Exchange Training	1		0.850		
Sub-Activity 5 Youth Agriculture Awareness Training	1		2.720		
Activity 2 Infrastructure Development	1		2.500		In principle Helvetas has agreed to support and project proposal prepared but the project is yet to be signed
Sub-Activity 1 Construction of 1 unit staff quarter	1		2.500		
Total		28.700	25.220	53.920	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 RNR farm enterprises increased through vocational training	Number of farm enterprises increased	12 (2007)	8 (new)	RDTC, PPD	Semi-annual	PPD,RDTC	GNHC
Output 001. Farmers trained and apply farm business skills	Nos farmers completing the course successfully	(2007)	300	RDTC, PPD	Semi-annual	PPD,RDTC	GNHC
	% of trained farmers applying farm business skills	n/a(2007)	60%	RDTC, PPD	Semi-annual	PPD,RDTC	GNHC
Output 2. Farmers groups formed through the facilitation & functioning	Nos. of functioning groups formed	(2007)	600	RDTC, PPD	Semi-annual	PPD,RDTC	GNHC

MOA/27: Agriculture Marketing Program

Programme Profile	
Administrative Unit: Ministry of Agriculture	Sector: Agriculture Marketing Services
Programme : MoA/27 (Agriculture Marketing Program)	Plan Phase: 10 th FYP

Contribution to National and International Goals and targets

Classification	Categories	Goals	Targets/Indicators
MDG		Goal 1. Eradicate Extreme poverty and Hunger	Target 1. Halve by 2015, the proportion of people living under poverty line
SDB	Livelihood Strategy	Goal 2. Halve proportion of people in poverty by 2012	1. Percentage of people living on less tha \$1 per day (PPP)
Strategy for GNH	3. Integrated Rural urban Development and poverty alleviation (IRUDPA)	3. Integrated Rural urban Development and poverty alleviation (IRUDPA)	3. Integrated Rural urban Development and poverty alleviation (IRUDPA)
GNH Index	Domain 8. Ecological Diversity and Resilience	8. Ecological Diversity and Resilience	8. Ecological Diversity and Resilience
GNH Pillars	1 Equitable & Sustainable Socio-Economic Development	2 Income Generation	<ul style="list-style-type: none"> Value of horticulture export increased from Nu.476 million per year to Nu. 900 million per year. Value of Non Wood Forest Products (NWFP) including Medicinal and Aromatic Plants (MAP) increased from Nu. 60 Million to Nu. 100 Million per annum. Value of livestock production increased from Nu. 550 million to Nu. 600 million per year
		4 Service Delivery	<ul style="list-style-type: none"> 10 farmer co-operatives established.

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001. Increased Agriculture trade both within and outside the country	Nos. of agriculture production initiative based on market information	(2007)	
	Export markets for other fresh fruit and vegetables, NWFPs and organic products identified/established	(2007)	

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001. Market Research and studies conducted	Report on major problems completed	n/a	n/a
	Supply chain studies for major agricultural products completed	(2007)	>3 products
	New potential markets identified for agricultural produce		>3
Output 002. In collaboration with ITMS markets for pharmaceutical products explored	Export markets for pharmaceuticals products explored	(2007)	
Output 003. Agriculture trade policy developed	Policy in place	n/a	n/a
Output 004. Marketing trail and promotions conducted	No. of marketing trials in domestic and exports markets conducted	(2007)	5 each
	No. of major agricultural produce and products advertised through print, radio and audio visuals	(2007)	
Output 005. Marketing information system improved and used	Improved agriculture market information system in place	n/a	n/a

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	<i>Act1: Market Research and Development</i>						
001: Market Research & studies conducted	Sub Act 1: Conduct Market Research in domestic market	1	<p>Nationwide</p> <p><i>Arecanut (Somphangkha, Gelephu, Samrang)</i></p> <p><i>Cane & Bamboo products (Gongdue, Silambi)</i></p> <p><i>Chili (Thrimshing, Kangpara, Athang)</i></p> <p><i>Groundnut (Khamdang)</i></p> <p><i>Incense (Sakteng)</i></p> <p><i>Maize (Yangnyer)</i></p> <p><i>Maize products (Chuzergang, khaling, Talo)</i></p> <p><i>Mandarine orange (Wangphu, Thrimshing, Lumang, Gomdar)</i></p> <p><i>Pork (Dragteng, Toetsbo)</i></p> <p><i>Potato (Lumang, Dangchhu, Bjena, Bji)</i></p> <p><i>Spices (Toepisa)</i></p> <p><i>Vegetables (Lamgong, Kawang, Chali, Naja, Patale)</i></p> <p><i>Wild Vegetables (Sakteng)</i></p> <p><i>Mungbean (Drugyal gang)</i></p> <p><i>Ginger (Pemethang, Taraythang,, P/ling, Chargaray, Dekeling, Senge)</i></p> <p><i>Groundnut (Khamdang)</i></p> <p><i>Organic vegetable (Choekeor)</i></p>	July 2008	June 2013	AMS	Dzongkhags, Relevant Departments/ Agencies

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub Act 2: Diagnostic studies on major marketing problems in domestic market	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Departments, Relevant Agencies
	Sub Act 3: Diagnostic studies on major marketing problems in export market	1	Abroad	July 2008	June 2013	AMS	RBE/RBC/ Relevant Organizations/ BEA
	Sub Act 4: Study on domestic consumption pattern for agricultural produce	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Relevant Agencies
	Sub Act5: Study the market segments in the region for high value products	1	Central Program	July 2008	June 2013	AMS	RBE/RBC/ Relevant Organizations
	Sub Act 6: Attend trade fairs and exhibitions	1	Abroad	July 2008	June 2013	AMS	RBE/RBC/ Donors
	Sub Act 7: Capacity building on Market Research	1	Nationwide	July 2008	June 2013	AMS	NIAM/Donors
	Sub Act 8. Conduct market forecast studies	1	Central Program <i>Potato(Kanglung)</i> <i>Vegetables (Patale,</i>	July 2008	June 2013	AMS	Dzongkhags, Relevant Departments/ Agencies/BCCI

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub Act 9: Exploration of new export markets	1	Abroad <i>Maize products (Talo)</i> <i>Potato(Bjachho)</i> <i>Vegetables(Kawang, Thedtsho)</i> <i>Seed potato (Gangte)</i> <i>Rajma beans (Uzorong, Thangrong)</i> <i>Arecanut (Sompbangkha, Gelephu, Samrang)</i> <i>Ginger (Pemethang, Taraythang,, P/ling, Chargaray, Dekeling Senge)</i> <i>Organic vegetable (Choekor)</i>	July 2008	June 2013	AMS	RBE/RBC
	Sub Activity 10:Supply chain studies for 3 major agricultural products	1	Nationwide	July 2008	June 2013	AMS	Dzs. , Relevant Departments/ Agencies
	Sub Activity 11: Organize trainings/ workshops/seminars to inform on research findings	1	Nationwide	July 2008	June 2013	AMS	Dzs., Relevant Departments/ Agencies
	Sub Act 12: Promotion of appropriate grades and standards	1	Nationwide <i>Cordyceps(Lumana)</i>	July 2008	June 2013	AMS	FCB/NPHC/ Farmers Group/ Dzongkhags

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub Act 13: Identify and study market infrastructure needs	1	Nationwide <i>Cbili (Kazhi, Hungrel, Khamdang)</i> <i>Seed potato (Gangte)</i> <i>Rajma beans (Uzorong, Thangrong)</i>	July 2008	June 2013	AMS	Dzongkhags, Departments, Relevant Agencies
	Sub Act 14: Development of mechanism to ensure infrastructure sustainability	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Farmers Group
Activity 2: Market Information System							
	Sub Activity 1: Establishment of new functional MIS in AMS	1	Central prog./AMS	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./Agencies
	Sub Activity 2: Develop standard data collection sheets	1	Central prog./AMS	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./Agencies
	Sub Activity 3: Develop standard web-enabled database system	1	Central prog./AMS	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./Agencies
	Sub Act 4: Development of interactive web page	1	Central prog./AMS	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./Agencies

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Act 5: Provision of necessary IT facilities to market information collectors	1	Dzongkhags	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./ Agencies
	Sub Act 6: Development of electronic price boards in major markets	1	Dzongkhags, principal markets	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./ Agencies
	Sub Act 7: Identify and train market information collectors	1	Dzongkhags, principal markets	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./ Agencies
	Sub Act 8: Dissemination of market information	1	Dzongkhags, principal markets	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./ Agencies
	Sub Act 9: Generate reports and market information		Central prog./AMS	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./ Agencies
	Sub Act 10. Familiarization and training on market information analysis& its uses	1	Dzongkhags, principal markets	July 2008	June 2013	AMS	Dzongkhags Relevant Depts./ Agencies
	Sub Act 11: Conduct public awareness about the system& its uses	1	Dzongkhags, principal markets	July 2008	June 2013	AMS	Relevant Departments/ Agencies
	Sub Act 12 : Maintain & store historical data	1	Central prog./AMS	July 2008	June 2013	AMS	Relevant Depts./ Agencies

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
Output 004. Marketing trail and promotions conducted	Activity 3:Agribusiness and Trade Promotion						
	Sub Activity 1: Development of agriculture trade policy	1	Central programme	July 2008	June 2013	AMS	Relevant Departments/ Agencies
	Sub Activity 2: Development of cooperatives/ marketing board for major agricultural produce	1	Central Programme	July 2008	June 2013	AMS	Relevant Departments/ Agencies
	Sub Activity 3: Establishment of Agribusiness entrepreneur network and training	1	Dzongkhags, RAMS	July 2008	June 2013	AMS	Dzongkhags, Relevant Agencies
	Sub Act 4: Establishment of small agro processing plants	1	Dzongkhags	July 2008	June 2013		Dzongkhags, Relevant Agencies
	Sub Act 5: Establishment of medium agro processing plants	1	Dzongkhags	July 2008	June 2013	AMS	Dzongkhags, Relevant Agencies

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub Act6:Tranings on agribusiness and trade promotion aspects	1	Dzongkhags	July 2008	June 2013	AMS	Dzongkhags, Departments, Relevant Agencies
	Sub Act 7: Attend trade fairs and exhibitions	1	Abroad	July 2008	June 2013	AMS	RBEs/Donor
	Sub Act 8: Organize annual marketing workshops	1	Central prog./AMS	July 2008	June 2013	AMS	Dzongkhags, Relevant Depts./ Agencies
	Sub Act 9: Organize regular meetings, workshops, seminars with growers, traders and exporters	1	Central Programme	July 2008	June 2013	AMS	Dzongkhags, Relevant Depts./ Agencies
	Sub Act 10. Trial marketing in domestic market(Twice in 6 months)	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Departments, Relevant Agencies
	Sub Act 11: Trial marketing in export market	1	Ex country	July 2008	June 2013	AMS	Departments, Relevant Agencies
	Sub Act 12: Promotion of agricultural produce through various media in domestic market	1	Nationwide	July 2008	June 2013	AMS	Relevant Departments/ Agencies
	Sub Act 13: Promotion of agricultural produce through various media in export market	1	Ex country	July 2008	June 2013	AMS	Relevant Departments/ Agencies

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
003 Agriculture trade policy developed	Activity 4: Market Extension and Farmers Group Formation						
	Sub Act 1: In country study tour & Training for farmers	1	Nationwide <i>Cane & Bamboo products(Dungtse)</i> <i>Ginger (Senge, Chargharey, Dekiling)</i> <i>Orange Mandarine (Lhamoy Zingkeha, Gongdue, Tsholingkhar)</i> <i>Vegetables (Gangzur, Naja)</i>	July 2008	June 2013	AMS	Dzongkhags, Departments, Relevant Agencies
	Sub Act 2: In country study tour & Training for extension staff	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Departments, Relevant Agencies
	Sub Act 3: Ex-country study tours & trainings for farmers	1	Ex country	July 2008	June 2013	AMS	Dzongkhags,
	Sub Act 4: Ex-country study tours & trainings for EA's	1	Ex country	July 2008	June 2013	AMS	Dzongkhags, Relevant Agencies

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
	Sub Act 5: Marketing Group Formation	1	Nationwide <i>Arecanut (Shompangkha, Gelephu, Samrang,)</i> <i>Chili (tsirangtoe)</i> <i>Maize products (Talo, Lauri)</i> <i>Mandarine orange (Norbugang, Pbangkhar, Ngangla, Shingkhar, Dorona, Tsholingkhar, Langthil)</i> <i>Potato (Sepbu, Phobji, Genye, Dungleagan, Kazhi)</i> <i>Vegetables(Dzoma, Gangzur)</i> <i>Wild Vegetables(Sakteng, Geling)</i> <i>Mustard (Jarey)</i> <i>Ginger (Pemethang, Taraythang,, P/ling, Chargaray, Dekeling Senge)</i>	July 2008	June 2013	AMS	Dzongkhags, Departments
	Sub Act 6: Initiation and encouragement of contract farming	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Farmers group Relevant Depts./ Agencies
	Sub Act 7: Initiation and encouragement of pilot project on linking production with the market	1	Pilot Dzongkhags/Geogs <i>Vegetables(Chali)</i>	July 2008	June 2013	AMS	Dzongkhags, Farmers group, Relevant Departments
	Sub Act 8: Promotion and Training of women's group in collaboration with Tarayana, NWAB, etc	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Relevant Departments/ Agencies, NGO's

Programme Outputs	Programme activities	Activity priority	Geographic Location	Start Month/Year	Finish Month/year	Lead Implementing agency	Collaborating agency
004 Marketing trail and promotions conducted	Activity 5: Market Infrastructure Development						
	Sub Activity 1: Development of Sunday markets	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Departments, Relevant Agencies
	Sub Activity 2: Construction of collection sheds	1	Nationwide <i>Ginger (Pemethang)</i> <i>Potato (Nabi , Lauri)</i> <i>Vegetables (Toepisa)</i> <i>Ginger (Pemethang)</i> <i>Wild Vegetables (Sakteng)</i>	July 2008	June 2013	AMS	Dzongkhags, Departments, Relevant Agencies
	Sub Act 3: Establishment of Rural enterprise park (Farmers shop)	1	Nationwide	July 2008	June 2013	AMS	Dzongkhags, Relevant Departments

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Act1. Market Research and Development			15.000		
Sub Act 1: Conduct Market Research in domestic market	1		0.600		
Sub Act 2: Diagnostic studies on major marketing problems in domestic market	1		0.800		
Sub Act 3: Diagnostic studies on major marketing problems in export market	1		0.700		
Sub Act 4: Study on domestic consumption pattern for agricultural produce	1		1.200		
Sub Act5: Study the market segments in the region for high value products	1		1.200		
Sub Act 6: Attend trade fairs and exhibitions	1		1.600		
Sub Act 7: Capacity building on Market Research	1		2.000		
Sub Act 8. Conduct market forecast studies	1		0.600		
Sub Act 9: Exploration of new export markets	1		2.000		
Sub Activity 10:Supply chain studies for 3 major agricultural products	1		0.600		
Sub Activity 11: Organize trainings/workshops/seminars to inform on research findings	1		1.000		
Sub Act 12: Promotion of appropriate grades and standards	1		1.400		
Sub Act 13: Identify and study market infrastructure needs	1		0.250		
Sub Act 14: Development of mechanism to ensure infrastructure sustainability	1		0.150		
Activity 2 :Market Information System			10.000		
Sub Activity 1: Establishment of new functional MIS in AMS	1		1.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Activity 2: Develop standard data collection sheets	1		0.200		
Sub Activity 3: Develop standard web-enabled database system	1		2.000		
Sub Act 4: Development of interactive web page	1		1.000		
Sub Act 5: Provision of necessary IT facilities to market information collectors	1		0.600		
Sub Act 6: Development of electronic price boards in major markets	1		0.150		
Sub Act 7: Identify and train market information collectors	1		2.500		
Sub Act 8: Dissemination of market information	1		0.250		
Sub Act 9: Generate reports and market information	1		0.750		
Sub Act 10. Familiarization and training on market information analysis& its uses	1		1.000		
Sub Act 11: Conduct public awareness about the system& its uses	1		0.300		
Sub Act 12 : Maintain & store historical data	1		0.250		
Activity 3:Agribusiness and Trade Promotion			28.000		
Sub Activity 1: Development of agriculture trade policy	1		1.000		
Sub Activity 2: Development of cooperatives/marketing board for major agricultural produce	1		2.100		
Sub Activity 3: Establishment of Agribusiness entrepreneur network and training	1		1.800		
Sub Act 4: Establishment of small agro processing plants	1		4.000		
Sub Act 5: Establishment of medium agro processing plants	1		4.500		
Sub Act6:Tranings on agribusiness and trade promotion aspects	1		3.200		
Sub Act 7: Attend trade fairs and exhibitions	1		0.800		
Sub Act 8: Organize annual marketing workshops	1		1.500		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub Act 9: Organize regular meetings, workshops, seminars with growers, traders and exporters	1		1.750		
Sub Act 10: Trial marketing in domestic market(Twice in 6 months)	1		9.500		
Sub Act 11: Trial marketing in export market	1		3.600		
Sub Act 12: Promotion of agricultural produce through various media in domestic market	1		1.000		
Sub Act 13: Promotion of agricultural produce through various media in export market	1		1.800		
Activity 4: Market Extension and Farmers Group Formation			24.370		
Sub Act 1: In country study tour & Training for farmers	1		4.275		
Sub Act 2: In country study tour & Training for extension staff	1		1.600		
Sub Act 3: Ex-country study tours & trainings for farmers	1		5.130		
Sub Act 4: Ex-country study tours & trainings for EA's	1		4.455		
Sub Act 5: Marketing Group Formation	1		1.950		
Sub Act 6: Initiation and encouragement of contract farming	1		1.060		
Sub Act 7: Initiation and encouragement of pilot project on linking production with the market	1		2.000		
Sub Act 8: Promotion and Training of women's group in collaboration with Tarayana, NWAB, etc	1				
Sub Act 9: Supply of marketing equipments to the group	1		3.900		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 5: Market Infrastructure Development			37.500		
Sub Activity 1: Development of Sunday markets	1		6.000		
Sub Activity 2: Construction of collection sheds	1		28.000		
Sub Act 3: Establishment of Rural enterprise park	1		3.500		
TOTAL		95.370	114.870	210.240	

Note: Only 65 million is committed by GoI funding of AMS

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 Increased agricultural trade both within and outside the country	Nos. of agriculture production initiative based on market information	(2007)		AMS, PPD, FCB	Semi-annual	PPD, AMS	GNHC
	Export markets for other fresh fruit and vegetables, NTFPs and organic products identified/established	(2007)					
Output 001 Market Research and studies conducted	Report on major marketing problems completed	n/a	n/a	AMS, PPD	Semi-annual	PPD, AMS	GNHC
	Supply chain studies for major agricultural products completed	(2007)	>3 products				
	New potential markets identified for agricultural produce		>3				
Output 002 In collaboration with ITMS markets for pharmaceutical products explored	Export markets for pharmaceutical products explored	(2007)		AMS, PPD	Semi-annual	PPD, AMS	GNHC

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Output 003 Agriculture trade policy developed	Policy in Place	n/a	n/a	AMS, PPD	Semi-annual	PPD, AMS	GNHC
Output 004 Marketing trail and promotions conducted	No. of marketing trials in domestic and exports markets conducted	(2007)	5 each	AMS, PPD	Semi-annual	PPD, AMS	GNHC
Output 005 Marketing information system improved and used	No. of major agricultural produce and products advertised through print, radio and audio visuals	(2007)					
Output 005 Marketing information system improved and used	Improved agriculture market information system in place	n/a	n/a	AMS, PPD	Semi-annual	PPD, AMS	GNHC

MOA/28: Bio security and Quality Assurance Programme

Administrative Unit: Ministry of Agriculture	Sector: BAFRA
Programme : MoA/28: Bio security and Quality Assurance Programme	Plan Phase: 10 th FYP

Contribution to National and International Goals and targets

Classification	Categories	Goals	Targets/Indicators
MDG		Goal 7. Ensure environmental sustainability	Target 9: Integrate the principles of sustainable development into country policies and programmes; reverse loss of environmental resources
GNH Index	Domain 8. Ecological Diversity and Resilience	8. Ecological Diversity and Resilience	8. Ecological Diversity and Resilience
GNH Pillars	1. Equitable & Sustainable Socio-Economic Development	1. Food security	<ul style="list-style-type: none"> Quality and quantity of seeds and planting materials supply increased from 2 % to 50% of requirement;
		2. Income Generation	<ul style="list-style-type: none"> Area under certified organic agriculture doubled from 150acres to 300acres.
	4. Good Governance	1. Enabling Policy & legal environment	<ul style="list-style-type: none"> RNR sector related acts enacted or amended and implemented (Plant Quarantine Act) RNR sector policies revised/formulated (Bio-safety Policy of Bhutan).

Classification	Categories	Goals	Targets/Indicators
		2. Common Services	<ul style="list-style-type: none"> • National standard for at least 10 food commodities developed. • Rapid response and containment mechanism to combat outbreak of notifiable plant and animal diseases in place. • At least 3 plants and animal quarantine stations fully equipped and functional (from 0-3). 100% food handlers trained and licensed by 2013 from 0 in 2007. • No. of HACCP certified companies increased by 100% (from 2 on 2007 to 4 in 2013. Quality of all commercial inputs regulated as per standards • All food handlers in the country trained and licensed in food safety.

Table 1: Programme Results Matrix

Results Levels (Outcome)	Indicators	Baseline	Plan Targets
Outcome 001 Plant and animal quarantine stations fully equipped and functioning	Nos of quarantine stations established and fully functioning	2007	3
	No. of GMOs and GMO products permits processed	2007	
	No. of pests and diseases of plant and animal detected and treated at quarantine	Na	Na
Outcome 002 Food handlers trained and licensed in food safety	Rules and regulations for the implementation of the Food Act in place	Na	na
	Food standards for major classes of food developed and approved	Na	Na
	% of food handlers trained and licensed on food safety	2007	100 %
Outcome 003 Quality regulation for agricultural, agrochemical, and livestock produce developed and implemented	National Bio safety Framework implemented	Na	Na
	Rules and regulations for implementation of the various RNR acts approved and implemented	Na	Na
	Guidelines for inspection and certification developed and implemented	Na	Na

Results Levels (Output)	Indicators	Baseline	Plan Targets
Output 001 Acts, rules, regulations and standards instituted and enforced	Rules and Regulations of the Seeds Act approved and implemented	Na	Na
	Rules and Regulations of the Livestock Act approved and implemented	Na	Na
	Rules and Regulations of the Plant Quarantine Act approved and implemented	Na	na
Output 002 HACCP certified companies increased	No. of HACCP certified companies increased	2 (2007)	2 (New)
Output 003 Awareness on plant and animal quarantine system	% of population aware of plant and animal quarantine system	0 (2007)	50 %
Output 004 Basic infrastructure including laboratory services developed	Set up satellite laboratories at 5 entry points	Na	Na

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ target beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
003: Awareness on plant and animal quarantine system	Activity 1: Strengthening Plant & Livestock Quarantine Measures						
	Subactivity 1: Implement plant and animal quarantine measures	1		July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 2: Strengthen legislation	1		July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 3: Devejop and strengthen quarantine infrastuctures	1		July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 4: Human resource development	1		July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 5: Public and stakeholder education and awareness	1		July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 6: International obligations	1		July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
001 Acts, rules, regulations and standards instituted and enforced	Activity 2: Input Quality Assurance, Inspection & Certification						
	Subactivity 1: Inspection and certification	1	Farmers, Exporters and Importers. Checkposts and border gates	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 2: Awareness and education	1		July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 3: Capacity building	1	BAFRA officials	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 4: infrastructure development	1	All BAFRA offices	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ target beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
004 Basic infrastructure including laboratory services developed	Activity 3: Development of laboratory services						
	Subactivity1: Analysis	1	Nationwide	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 2: Capacity building	1	BAFRA	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 3: Infrastructure development/Construction of satellite lab	1	All entry points	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 4: NQCL Accreditation	1	NQCL, BAFRA	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 5: Sampling of food, feed, livestock products	1	Nationwide	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 6: Infrastructure development at NQCL, Yusipang	1	NQCL, BAFRA	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
002 HACCP certified companies increased	Activity 4: Food Safety and Quality Assurance			July 2008	June 2013	BAFRA	Hoteliers
	Subactivity1: Regulatory	1	Nationwide	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 2: Awareness and education	1	Hoteliers and public	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 3: Capacity building	1	BAFRA officials	July 2008	June 2013	BAFRA	DoA, DoL, DoF, CoRRB
	Subactivity 4: infrastructure development	1	All BAFRA Offices	July 2008	June 2013	BAFRA	Engg. Division/ DoA & Dzongkhags

Programme Outputs	Programme activities	Activity priority	Geographic coverage/ target beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
004 Basic infrastructure including laboratory services developed	Activity 5: Infrastructure Development			July 2008	June 2013	BAFRA	MoA
	Subactivity 1: office construction in 5 Dzongkhags	1	BAFRA Officials	July 2008	June 2013	BAFRA	Engg. Division/ DoA & Dzongkhags

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1: Strengthening Plant & Livestock Quarantine Measures					
Subactivity1: Implement plant and animal quarantine measures					
Subactivity 2: Strengthen legislation			0.150		
Subactivity 3: Develop and strengthen quarantine infrastructures			27.535		
Subactivity 4: Human resource development (seminars/workshops)			4.000		
Subactivity 5: Public and stakeholder education and awareness			4.000		
Subactivity 6: International obligations			2.500		
Total			38.185		
Activity 2: Input Quality Assurance, Inspection & Certification					
Subactivity1: Inspection and certification			5.500		
Subactivity 2: Awareness and education			6.500		
Subactivity 3: Capacity building (International Obligations)			1.000		
Subactivity 4: infrastructure development			3.000		
Total			16.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 3: Development of laboratory services					
Subactivity1: Analysis			17.000		
Subactivity 2: Capacity building			0.000		
Subactivity 3: Infrastructure development			10.500		
Subactivity 4: NQCL Accreditation			4.500		
Subactivity 5: Sampling			2.000		
Subactivity 6: Infrastructure development at NQCL, Yusipang			5.000		
Total			39.000		
Activity 4: Food Safety and Quality Assurance					
Subactivity1: Regulatory					
Subactivity 2: Awareness and education			7.500		
Subactivity 3: Capacity building (international obligation)			3.000		
Subactivity 4: infrastructure development			3.500		
Total			14.000		
Activity 5: Infrastructure Development					
Sub activity 1: Office construction in 5 Dzongkhag			10.000		On-going
Total			10.000		
Grand total			117.185		

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 Plant and animal quarantine stations fully equipped and functioning	Nos of quarantine stations established and fully functioning	(2007)	3	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
	No. of GMOs and GMO products permits processed	(2007)		BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
	No. of pests and diseases of plant and animal detected and treated at quarantine			BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
Outcome 002 Food handlers trained and licensed in food safety	Rules and regulations for the implementation of the Food Act in place	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
	Food standards for major classes of food developed and approved	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
	% of food handlers trained and licensed on food safety	2007	100%	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
Outcome 003 Quality regulation for agricultural, agrochemical, and livestock produce developed and implemented	National Bio-safety Framework implemented	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
	Rules and regulations for implementation of the various RNR acts approved and implemented	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
	Guidelines for inspection and certification developed and implemented	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
Output 001 Acts, rules, regulations and standards instituted and enforced	Rules and Regulations of the Seeds Act approved and implemented	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
	Rules and Regulations of the Livestock Act approved and implemented	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
	Rules and Regulations of the Plant Quarantine Act approved and implemented	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
Output 002 HACCP certified companies increased	No. of HACCP certified companies increased	2(2007)	2 (new)	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
Output 003 Awareness on plant and animal quarantine system	% of population aware of plant and animal quarantine system	0% (2007)	50%	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC
Output 004 Basic infrastructure including laboratory services developed	Set up satellite laboratories at 5 entry points	n/a	n/a	BAFRA, PPD	Semi-annual	PPD, BAFRA	GNHC

MOA/29: National Biodiversity Conservation & Sustainable Utilization Programme

Programme Profile	
Administrative Unit: Ministry of Agriculture	Sector: National Biodiversity Center
Programme : MoA/29 : National Biodiversity Conservation & Sustainable Utilization Program	Plan Phase: 10 th FYP

Contribution to National and International Goals and targets

Classification	Categories	Goals	Targets/Indicators
Strategy for GNH	2. Strategic Infrastructure (SI)	2. Strategic Infrastructure (SI)	2. Strategic Infrastructure (SI)
GNH Index	Domain 8. Ecological Diversity & Resilience	8. Ecological Diversity & Resilience	8. Ecological Diversity & Resilience
GNH Pillars	2. Environmental Conservation	2. Biodiversity Conservation	<ul style="list-style-type: none"> • 75% of crop and 50% of animal genetic resources collected and conserved in respective gene banks. • <i>In situ</i> conservation and sustainable utilization of traditional/native agrobiodiversity promoted. • >5000 herbarium specimens of vascular plants collected and preserved. • Biodiversity Action Plan III developed and implemented. • Enabling Policy/laws on biodiversity conservation and utilization in place. • A regional botanical garden established. • Intergrated biodiversity system established. • Bio-Exploration Lab established and functional.
		2. Enabling Policy & legal environment	<ul style="list-style-type: none"> • RNR sector related acts enacted or amended and implemented

Table 1: Programme Results Matrix

Results Levels (outcome)	Indicators	Baseline	Plan Targets
Outcome 001: Crop diversity collected and documented	75% of whole crop diversity collected and documented	na	na
Outcome 002 Animal genetic resources characterized and documented	50% of animal genetic resources characterized and documented	na	na
Outcome 003 Representative species of vascular plants collected and conserved	Nos. of spp.collected & conserved	1000 (2007)	5000
Outcome 004 Commercialization/sustainable utilization of biological resources through bioprospecting	Nos of products developed	nil (2007)	> 1

Results Levels (output)	Indicators	Baseline	Plan Targets
Output 001 75% of crop and animal genetic diversity collected and preserved in the seed gene bank	Germplasm collections of major crop genetic diversity completed	1000 (2007)	5000
	Germplasm collections of major animal genetic diversity completed	(2007)	75 % of animal genetic resources
Output 003 Plants species from cool to warm temperate ecological zones collected	No. of plant specimens collected & documented	1400(2007)	>5000
	Proportion of information on invasive alien plants	n/a	>70%
Output 004: National Integrated Biodiversity Information system established	Integrated biodiversity information established and used	n/a	1
	Living collection of different plant spp. Increased with thire profile	200 (2007)	300
Output005 : Pilot project on Bioprospecting initiated	Nos. of pilot project implemented	Nil (2007)	>1

Table 2: Programme Activities

Programme Outputs	Programme activities	Activity priority	Geographi coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
002 75% of crop and animal genetic diversity collected and preserved in the seed gene bank	Activity 1: <i>Ex situ</i> conservation and sustainable utilization of crop genetic resources						
	Sub-Activity 1: Germplasm collection of major crop genetic diversity (orthodox seeds)	1		On-going	2012	NBC	DoA, CoRRB
	Sub-Activity 2: Strengthen characterization of germplasm accessions at the genebank	1		On-going	2012	NBC	DoA, CoRRB
	Sub-Activity 3: Establish conservation facilities of recalcitrant seeds	2		2009	2013	NBC	
	Sub-Activity 4: Initiate establishment of gene bank for storage of duplicate samples (crop germplasm)	3		2010	2011	NBC	CORRB
	Activity 2: <i>In situ</i> conservation, development and sustainable utilization of crop genetic resources						
	Sub-Activity 1: Promote <i>on-farm</i> Conservation of crop genetic diversity through mass awareness and education.	1			2008	2013	NBC

Programme Outputs	Programme activities	Activity priority	Geographi coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub-Activity 2: Enhance crop production through promotion of sustainable agriculture and broadening of genetic base (PVS/ PPB).	1		2008	2013	NBC	DOA, CoRRB, NSSC
	Sub-Activity 3: Enhance livelihood of farming communities by providing access to new and larger markets for local produce	1		2010	2013	NBC	DOA, CoRRB, AMS
	Sub-Activity 4: Capacity development of stakeholders on PGR-CDU.	2		2008	2012	NBC	DoA, CoRRB, farmers
	Sub-Activity 5: Development of sound & enabling PGR policies for conservation and sustainable use.	1		2009	2013	NBC	Bio-diversity stakeholders
Activity 3: Animal genetic resources conservation and sustainable utilization							
	Sub-Activity 1: Strengthen germplasm collection of local livestock and poultry.	1		2008	2013	NBC	DoL, RNRRCs, BAFRA
	Sub-Activity 2: Promote <i>in-situ</i> conservation of native livestock/ poultry & fish diversity	1		2008	2013	NBC	DoL, RNRRCs
	Sub-Activity 3: Develop enabling policies that support farmers' initiatives on conservation of native livestock /poultry breeds.	2		2010	2013	NBC	DoL, PPD,, RNRRCs

Programme Outputs	Programme activities	Activity priority	Geographi coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub-Activity 4: Enhance livelihood of farming communities by providing access to new and larger markets for local produce.	1		2008	2013	NBC	DoL, AMS, RNRRCs
	Sub-Activity 5: Capacity development and mainstreaming of livestock conservation in developmental programs	2		2008	2013	NBC	DoL, PPD, RNRRCs
	Sub-Activity 6: Development of AnGR database	1		2010	2011	NBC	ICS
Activity 1 : Strengthening of National Herbarium (NH)							
	Sub-Activity 1: Explore, collect and document under collected flowering plants and ferns	1		On-going	2013	NBC	RNRRCs, DoF
	Sub-Activity 2: Develop comprehensive alien plants information base	1		2008	2009	NBC	Bio-diversity stakeholders
	Sub-Activity 3: Strengthen facilities for botanical research	2		2008	2013	NBC	RNRRCs and DoF

Programme Outputs	Programme activities	Activity priority	Geographi coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
	Sub-Activity 4: Feasibility study for establishment of regional herbarium	3		2008	2013	NBC	RNRRCs and DoF
	Sub-Activity 5: Develop information base on ethno-botanical plants	2		2009	2013	NBC	RNRRCs and DoF
Activity 2: Development of Serbithang Botanical Garden							
	Sub-Activity 1: Enhance living collections of floral diversity.	1		2008	2013	NBC	DoF
	Sub-Activity 2: Propagation and sales of common native ornamental plants	1		2010		NBC	
	Sub-Activity 3: Develop additional garden infrastructure	2		2008	2013	NBC	
	Sub-Activity 4: Establishment of a regional botanical garden	3		2010	2013	NBC	CoRRB
	Sub-Activity 5: Provide environment education to public (visitors) and students.	2		2008		NBC	NCD/RSPN

Programme Outputs	Programme activities	Activity priority	Geographi coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
004 National integrated biodiversity information established	Sub –Activity 6: Strengthen institutional linkage and human resource capacity	1		2008	2013	NBC	HRD/PPD
	Sub-Activity 7: Development of a database for plant collections at the Garden	1		2010	2013	NBC	
	Activity 3: Development of Integrated Biodiversity Information System						
	Sub-Activity 1: Development of database and portal for biodiversity information	1		2009	2013	NBC	Bio-diversity stakeholders
	Sub-Activity 2: Digitalization of available biodiversity information.	1		2009	2013	NBC	Bio-diversity stakeholders
	Sub-Activity 3: Enhanced access to biodiversity information through portal	1		2010		NBC	Bio-diversity stakeholders

Programme Outputs	Programme activities	Activity priority	Geographi coverage/ beneficiaries	Start Month/ Year	Finish Month/ year	Lead Implementing agency	Collaborating agency
005 Pilot project on Bio-prospecting initiated	Activity 1: Development of a comprehensive Biodiversity policy and legal framework						
	Sub-Activity 1: Development of biodiversity policy	1		2009	2010	NBC	Bio-diversity stakeholders
	Sub-Activity 2: Review/ amendment of the Biodiversity Act, 2003	1		2010	2012	NBC	Bio-diversity stakeholders
	Sub-Activity 3: Drafting of Biodiversity Rules & Implementation	1		2011	2013	NBC	Bio-diversity stakeholders
	Activity 2: Bio-Exploration						
	Sub-Activity 1: Initiate documentation of TK associated with biodiversity	1		2009	2013	NBC	ITMS, IPD (MoEA)
	Sub-Activity 2: Establish Bio-exploration lab	1		2009	2010	NBC	
	Sub-Activity 3: Development of Technical Capacity	1		2009	2013	NBC	
	Sub-Activity 4: Bio-exploration and Research	1		2011		NBC	CoRRB, MoH
	Sub-Activity 5: Development of Institutional linkage and collaboration.	2		2008	2013	NBC	

Table 3: Program Plan Outlay

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 1: <i>Ex situ</i> conservation and sustainable utilization of crop genetic resources programs			16.170		
Sub-Activity 1: Germplasm collection of major crop genetic diversity (orthodox seeds)	1		4.000		
Sub-Activity 2: Strengthen characterization of germplasm accessions at the genebank	1		3.200		
Sub-Activity 3: Establish conservation facilities of recalcitrant seeds	2		5.000		
Sub-Activity 4: Initiate establishment of gene bank for storage of duplicate samples (crop germplasm)	3		3.970		
Activity 2: <i>In situ</i> conservation, development and sustainable utilization of crop genetic resources			17.000		
Sub-Activity 1: Promote <i>on-farm</i> Conservation of crop genetic diversity through awareness and education.	1		4.000		
Sub-Activity 2: Enhance crop production through promotion of sustainable agriculture and broadening of genetic base (PVS/PPB).	1		2.000		
Sub-Activity 3: Strengthen livelihood system through capacity development and linking PGR-CDU with access to new and larger markets.	1		4.000		
Sub-Activity 4: Capacity development of stakeholders on PGR-CDU.	2		4.000		
Sub-Activity 5: Development of sound & enabling PGR policies.	1		3.000		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Activity 3: Animal Genetic resources conservation and sustainable utilization			19.150		
Sub-Activity 1: Strengthen germplasm collection of local livestock and poultry.	1		3.180		
Sub-Activity 2: Promote <i>in-situ</i> conservation of native livestock/poultry & fish diversity	1		5.000		
Sub-Activity 3: Develop enabling policies that support farmers' initiatives on conservation of native livestock /poultry breeds.	2		3.490		
Sub-Activity 4: Enhance livelihood of farming communities by providing access to new and larger markets for local produce.	1		3.590		
Sub-Activity 5: Capacity development and mainstreaming of livestock conservation in developmental programs	2		3.590		
Sub-Activity 6: Development of AnGR database	1		0.300		
Activity 1: National Herbarium and Floristics programs			8.500		
Sub-Activity 1: Explore, collect and document under collected flowering plants and ferns	1		2.000		
Sub-Activity 2: Develop comprehensive alien plants information base	1		3.000		
Sub-Activity 3: Strengthen facilities for botanical research	2		2.000		
Sub-Activity 4: Create regional herbarium	3		0.500		
Sub-Activity 5: Develop information base on ethno- botanical plants	2		1.000		
Activity 2: Serbithang Botanical garden			11.800		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub-Activity 1: Enhance living collections of floral diversity.	1		2.000		
Sub-Activity 2: Propagation and sales of common native ornamental plants	1		2.000		
Sub-Activity 3: Develop additional garden infrastructure	2		2.000		
Sub-Activity 4: Establishment of a regional botanical garden	3		2.000		
Sub-Activity 5: Provide environment education to public (visitors) and students.	2		1.000		
Sub –Activity 6: Strengthen institutional linkage and human resource capacity	1		2.000		
Sub-Activity 7: Development of a database for plant collections at the Garden	1		0.800		
Activity 3: Development of Integrated Biodiversity Information System			4.600		
Sub-Activity 1: Development of database and portal for biodiversity information	1		2.950		
Sub-Activity 2: Digitalization of available biodiversity information.	1		1.000		
Sub-Activity 3: Enhance access to biodiversity information through portal	1		0.650		
Activity 1: Development of a comprehensive Biodiversity policy and legal framework			0.600		
Sub-Activity 1: Development of biodiversity policy	2		0.400		
Sub-Activity 2: Review/amendment of the Biodiversity Act, 2003	1		0.100		
Sub-Activity 3: Drafting of Biodiversity Rules & Implementation	1		0.100		
Activity 2: Bio-Exploration			11.400		

Programme Activities	Activity Priority	Plan Outlay (Nu. in million)			Remarks
		Recurrent	Capital	Total	
Sub-Activity 1: Initiate documentation of TK associated with biodiversity	1		0.700		
Sub-Activity 2: Establish Bio-exploration lab	1		8.000		
Sub-Activity 3: Development of Technical Capacity	1		2.500		
Sub-Activity 4: Bio-exploration and Research	1		0.100		
Sub-Activity 5: Development of Institutional linkage and collaboration	2		0.100		
Total		95.766	89.220	184.986	

Table 4: Monitoring and Evaluation Plan

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Outcome 001 Crop diversity collected and documented	75% of whole crop diversity collected and documented	n/a	na	NBC,PPD	Semi-annual	PPD,NBC	GNHC
Outcome 002 Animal genetic resources characterized and documented	50% of animal genetic resources characterized and documented	na	na	NBC,PPD	Semi-annual	PPD,NBC	GNHC
Outcome 003 Representative species of vascular plants collected and conserved	Nos of species collected and conserved	1000(2007)	5000	NBC,PPD	Semi-annual	PPD,NBC	GNHC
Outcome 004 Commercialization/ sustainable utilization of biological resources through bioprospecting	Nos of products developed	nil(2007)	>1	NBC,PPD	Semi-annual	PPD,NBC	GNHC

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Output 001 Field gene bank established	Nos of field gene banks established	nil	>1	NBC,PPD	Semi-annual	PPD,NBC	GNHC
Output 002 75% of crop and animal genetic diversity collected and preserved in the seed gene bank	Germplasm collections of major crop genetic diversity completed	1000(2007)	5000	NBC,PPD	Semi-annual	PPD,NBC	GNHC
	Germplasm collections of major animal genetic diversity completed	(2007)	75 % of animal genetic resources	NBC,PPD	Semi-annual	PPD,NBC	GNHC
Output 003 Plants species from cool to warm temperate ecological zones collected	Nos of plant species collected and documneted	14000	All plants listed in 3 vols. of the Flora of Bhutan including ferns	NBC,PPD	Semi-annual	PPD,NBC	GNHC

Results Levels	Indicators	Baselines	Targets	Data Sources	Reporting frequencies and Responsibilities		
					Frequency	Reporting Responsibilities	Reports to
Output 004 National integrated biodiversity information established	Integrated biodiversity information established and used	n/a	1	NBC,PPD	Semi-annual	PPD,NBC	GNHC
	living collections of different plant species increased with their profile	200 (2007)	300 (new)	NBC,PPD	Semi-annual	PPD,NBC	GNHC
Output 005 Pilot project on bio-prospecting initiated	Nos of pilot project implemented	Nil	>1	NBC,PPD	Semi-annual	PPD,NBC	GNHC