

Annex 1

Key Informants

1. The Joint Secretary, Forestry Services' Division
2. The Staff of the Policy and Planning Division
3. The Acting Director, Research, Extension and Irrigation Division
4. The Director, Crop and Livestock Services' Division
5. The Dzongkhag Agricultural Officer, Samdrup Jongkha
6. The *Gup*, Martshalla Geog
7. The Agricultural Extension Agent, Martshalla Geog
8. The Livestock Extension Agent, Martshalla Geog
9. Changlopai, Kakpadung Village
10. Tendi Tshewang, Kakpadung Village
11. Yangba, Kakpadung Village
12. Kapchi, Kakpadung Village
13. Passang, Kakpadung Village
14. Geypo, Kakpadung Village
15. Merpo, Kakpadung Village
16. Sanorbu, Kakpadung Village
17. Naktong, Kakpadung Village
18. Lungchhey, Kakpadung Village
19. Ugen Tshewang, Kakpadung Village
20. Thinlay, Kakpadung Village
21. Phatshu, Kakpadung Village
22. Penpa, Kakpadung Village
23. Norbu, Kakpadung Village
24. Kezang , Kakpadung Village
25. Sanpo, Kakpadung Village
26. Dorji Wangdi, Kakpadung Village
27. Lengay, Kakpadung Village
28. Phuntsho Daza, Gorthongma Village
29. Pem Tshewang, Gorthongma Village
30. Kezang Dema, Gorthongma Village
31. Geypo, Gorthongma Village
32. Dorji, Gorthongma Village
33. Tshewang Namgay, Gorthongma Village
34. Ugyen Wangchuk, Gorthongma Village
35. Serpay, Gorthongma Village
36. Tsering Dorji, Gorthongma Village
37. Rinzin Dorji, Gorthongma Village
38. Passang, Gorthongma Village
39. Zala, Martshalla Village
40. Bonthong, Martshalla Village
41. Tshering Wangchuk, Martshalla Village
42. Pemang, Martshalla Village
43. Kezang Norbu, Martshalla Village
44. Chheyten, Martshalla Village
45. Namgay Wangdi, Martshalla Village

Annex 2 Key Informants

Background Paper on the Case Study

Martshalla block (*geog*) of Samdrup Jongkha *Dzongkhag* (district) was selected as the site for a case study on the impact of the food security policy. It is one of 11 *geog*(s) under Samdrup Jongkha *Dzongkhag*. It is bordered by Bakuli, Orong, Lauri, Kangpara, and Gomdar *geog*(s). It is situated on the upper foothills bordering the Indian plain. It has a subtropical climate. There is no motorable road connecting the *geog* to the *dungkhag* (subdivision) headquarters at Bhangtar. It takes half a day to reach this *geog* centre.

The *geog* has mixed agriculture. The main cereal crops are maize and paddy. Other cereal crops are mustard, beans, soybean, millet, and buckwheat. The main cash crops are orange, ginger, and potato; orange plantations are now being developed.

The case study was conducted in stages.

First Stage

1. Discussion of *dzongkhag*-level RNR programmes with the RNR sector staff and Dasho Dzongda, including budget plan for irrigation, crop promotional programmes, etc.
2. Discussion of programmes and activities specific to the organization with the above *dzongkhag* authority.
3. Discussion of trend of development, food security in particular, of the *geog* over the past years with the above *dzongkhag* authority.

It was expected that this discussion would lead to the identification and assessment of development efforts at the *dzongkhag* level as perceived by the *dzongkhag* authority as the implementing agency of policies and programmes.

Second Stage

1. What were development activities in the past? Discussion with the extension staff and Gup.
2. What was the role of extension staff in these development activities? Discussion with extension staff and Gup.
3. What has been the increase in area and production of paddy and maize and number of oranges? Discussion with extension staff and Gup.
4. Selection of farmers to be interviewed and fields to be visited with extension staff and Gup.

It was expected that this discussion would provide an overall development situation of the geog. The increase in the area and production of cereal and cash crops should establish the link between policy and its impact in the field. It would also identify households for interview.

Third Stage

1. Interview with selected farmers (checklist for discussion).

Support received from the extension staff to develop new terraces?

Paddy and maize varieties grown?

Source of seed?

Enough food for one year?

How is food deficit met, if not food self-sufficient?

Role of the extension staff in agriculture, livestock, irrigation, forest?

Plans to expand existing fields or develop new fields? Why?

Irrigation channel: when constructed, support from extension staff, role of farmers in constructing and maintaining the channel, Water Users' Association (WUA)?

Been on farmers' study tour? Lessons from the tour?

Own orange plantation: number of trees/area/source of seedlings/role of extension staff?

2. Visit field to see major paddy production areas, irrigation channels, and orange plantations.

It was expected that this interview would reveal land-use change, shift in type of crops grown, and increase in yields as a result of implementation of food security policy.

Annex 3

Village-wide Increase in *Chuzhing* in the Case Study Area

No	Name of Farmer	Before 5th Five-year Plan	Addition after 5th Five-year Plan	Benefitted from Subsidy
Kakpadung Village				
1	Changlopai	0.50	1.50	Yes
2	Tendi Tshewang	1.00	0.30	Yes
3	Yangba	-	1.00	No
4	Kapchi	0.30	2.00	Yes
5	Pasang	0.79	0.50	Yes
6	Geypo	0.81	0.50	Yes
7	Merpo	-	1.00	No
8	Sanorbu	0.45	1.50	Yes
9	Naktong	-	1.50	No
10	Lungchhey	-	0.50	No
11	Ugen Tshewang	-	1.25	Yes
12	Thinlay	-	2.00	No
13	Phatshu	-	2.00	Yes
14	Penpa	0.75	0.50	Yes
15	Norbu	1.50	0.30	Yes
16	Kezang	2.40	1.35	Yes
17	Sanpo	-	1.10	No
18	Dorji Wangdi	-	1.00	No
19	Lengay	-	0.25	No
Total Kakpadung		8.50	20.05	

No	Name of Farmer	Before 5th Five-year Plan	Addition after 5th Five-year Plan	Benefitted from Subsidy
<u>Gorthongma Village</u>				
1	Phuntsho Daza	0.20	0.60	Yes
2	Pem Tshewang	0.97	1.00	Yes
3	Kezang Dema	-	0.20	No
4	Geypo	1.20	0.60	Yes
5	Dorji	-	1.20	Yes
6	Tshewang Namgay	1.10	0.40	No
7	Ugen Wangchuk	-	1.50	Yes
8	Serpay	-	0.50	No
9	Tsering Dorji	-	1.00	Yes
10	Rinzin Dorji	-	0.20	No
11	Passang	-	0.25	No
Total Gorthongma		3.47	7.45	

Martshalla Village

1	Zala	-	4.00	Yes
2	Bonthong	0.50	0.50	No
3	Tsering Wangchuk	-	1.35	Yes
4	Pemang	-	1.00	Yes
5	Kezang Norbu	-	1.00	Yes
6	Chheyten	1.00	0.50	Yes
7	Namgay Wangdi	-	1.00	Yes
Total Martshall		1.50	9.35	

Annex 4 Other Indicators of Food Security in the Case Study Area

Name of Farmer grown	Name of Paddy	Name of maize grown	Number of orange trees	Kitchen garden	Double cropping	Improved piglets
<u>Kakpadung Village</u>						
Changlopai	BR	Yangtsepa/ local	15	Yes	No	No
Tendi Tshewang	BR	Yangtsepa	19	Yes	No	1
Yangba	BR	Yangtsepa/ local	22	No	Yes	No
Kapchi	BR	Yangtsepa	12	No	Yes	No
Pasang	BR	Yangtsepa	27	No	Yes	2
Geypo	BR	Yangtsepa/ local	20	No	Yes	1
Merpo	BR	Yangtsepa	28	No	Yes	No
Sanorbu	BR	Yangtsepa/ local	30	No	Yes	No
Naktong	BR	Yangtsepa	25	Yes	Yes	1
Lungchhey	BR	Yangtsepa	6	Yes	Yes	No
Ugen Tshewang	BR	Yangtsepa	10	Yes	Yes	No
Thinlay	BR	Yangtsepa	15	Yes	Yes	2
Phatshu	BR	Yangtsepa	17	Yes	Yes	No
Penpa	BR	Yangtsepa/ Local	20	Yes	Yes	1
Norbu	BR	Yangtsepa/ lcoal	25	Yes	No	1

Name of Farmer grown	Name of Paddy	Name of maize grown	Number of orange trees	Kitchen garden	Double cropping	Improved piglets
Kezang	BR	Yangtsepa	30	Yes	Yes	No
Sanpo	BR	Yangtsepa	15	Yes	Yes	No
Dorji Wangdi	BR	Yangtsepa	No	No	No	No
Lengay	BR	Yangtsepa/ local	No	Yes	No	No
<u>Gorthongma Village</u>						
Phuntsho Daza	BR	Yangtsepa/ local	41	Yes	Yes	2
Pem Tshewang	BR	Yangtsepa/ local	30	Yes	Yes	No
Kezang Dema	BR	Yangtsepa	20	No	Yes	No
Geypo	BR	Yangtsepa/ local	48	Yes	No	No
Dorji	BR	Yangtsepa	18	Yes	Yes	1
Tshewang Namgay	BR	Yangtsepa/ local	28	Yes	No	2
Ugen Wangchuk	BR	Yangtsepa/ local	36	No	Yes	1
Serpay	BR	Yangtsepa	15	Yes	Yes	1
Tsering Droji	BR	Local	10	Yes	Yes	2
Rinzin Dorji	BR	Yangtsepa	25	No	Yes	1
Passang	BR	Yangtsepa	13	No	Yes	No
<u>Martshalla Village</u>						
Zala	BR	Yangtsepa/ local	50	No	No	2
Bonthong	BR	Yangtsepa	57	Yes	Yes	1
Tsering Wangchuk	BR	Yangtsepa	45	Yes	Yes	No
Pemang	BR	Yangtsepa/ local	60	Yes	Yes	No
Kezang Norbu	BR	Yangtsepa/ local	35	Yes	Yes	No
Chheyten	BR	Yangtsepa	33	Yes	Yes	2
Namgay Wangdi	BR	Yangtsepa	45	No	No	1

Annex 5

Schedule 1 Listing the Animals and Plants Protected by the Forest and Nature Conservation Act 1995

Common Name	Scientific Name
Asian elephant	<i>Elephas maximus</i>
Clouded leopard	<i>Neofelis nebulosa</i>
Golden langur	<i>Presbytis geei</i>
Musk deer	<i>Moschus</i>
Pangolin	<i>Manis crassicaudata</i>
Pigmy hog	<i>Sus sylvanicus</i>
Snow leopard	<i>Panthera uncia</i>
Takin	<i>Budorcas taxicolor</i>
Tiger	<i>Panthera tigris</i>
Wild buffalo	<i>Bubalus bubalis</i>
Black-necked crane	<i>Grus nigricollis</i>
Monal pheasant	<i>Lophophorus impejenu</i>
Peacock pheasant	<i>Polyplectron bicalcaratum</i>
Raven	<i>Corvus corax</i>
Rufous-necked hornbill	<i>Aceros nepalensis</i>
Golden mahseer	<i>Tor tor</i>
Spotted deer	<i>Axis axis</i>
Gaur	<i>Bos gaurus</i>
Leopard	<i>Panthera pardus</i>
Leopard cat	<i>Felis bengalensis</i>
Himalayan black bear	<i>Selenarctos thibetanus</i>
Red panda	<i>Ailurus fulgens</i>
Serow	<i>Capricornis sumatraensis</i>
Indian aloe wood	<i>Aquilaria malaccensis</i>

Name of Farmer	Common Name	Name of Plant	Number of trees	Double cropping	Improved piglets
	Chinese caterpillar fungus	maize			
Kezang Sanpo	Snow dew lily	Yangtsepa	3	Yes	No
Dorji Wangdi	Blue poppy	Yangtsepa	15	Yes	No
Langay	Ginseng	Yangtsepa/local	No	Yes	No
Gorthongma Village					
Phuntho Daza	BR	Yangtsepa/local	41	Yes	2
Annex 2					
		Yangtsepa/local	30	Yes	No
		Yangtsepa/local	25	Yes	No
		Yangtsepa/local	28	Yes	2
Ugen Wangchuk	BR	Yangtsepa/local	36	No	1
Serpay	BR	Yangtsepa/local	15	Yes	1
Tsering Droji	BR	Yangtsepa/local	10	Yes	2
Rinzin Dorji	BR	Yangtsepa/local	25	No	1
Passang	BR	Yangtsepa/local	13	No	No
Marshalla Village					
Zala	BR	Yangtsepa/local	50	No	2
Bonthong	BR	Yangtsepa/local	57	Yes	1
Tsering Wangchuk	BR	Yangtsepa/local	45	Yes	No
Pemang	BR	Yangtsepa/local	60	Yes	No
Kezang Norbu	BR	Yangtsepa/local	35	Yes	No
Chheyten	BR	Yangtsepa/local	33	Yes	2
Namgyan Wangdi	BR	Yangtsepa/local	45	Yes	1