

ANNEX VII - AGRICULTURE AND LIVESTOCK

A. INTRODUCTION

1. A majority of people of almost all the districts affected by the tsunami, with the exception of Colombo, depend on crop agriculture, livestock and sea fishing both as primary and secondary income sources. The main crop grown is paddy mostly under irrigated conditions. In addition, vegetables and field crops are grown in paddy fields during the dry season and in home gardens both under rain-fed and irrigated conditions. The major field crops grown include chillies, red onion, maize, ground nut, green gram, black gram, gingelly, etc. In Batticaloa and Ampara districts there are kadju and beatle are grown both in medium size farms and home gardens. However, most of these are operated as subsistence level income sources and not on commercial scale.

2. Similarly, livestock sector in the affected districts are not well organized or commercially oriented. People raise cattle, buffaloes, poultry etc. as a small scale secondary household income generating activity. Scarcity of high quality breeds, lack of commercial feeds, marketing networks and facilities etc. are the inhibiting factors for commercial development of this sector. There are a very few large commercial settled livestock farms in the affected area. Consequently the overall damage to the national economy is not significant although a large number of households have shared the overall loss.

B. DAMAGE OVERVIEW

3. This assessment is based on the preliminary damage assessment data collected both by the Central Government and the concerned Provincial Council Authorities, field visits to Galle and Matara districts and meetings with the provincial authorities.

Crop Agriculture

4. The tsunami has almost destroyed the entire sea fishing industry as assessed in a separate Annex to this report. In the case of Agriculture sector, a distinct feature of the agriculture sector is that a large majority of paddy tracks and the irrigation supply sources such as reservoirs, diversion weirs and canal systems in the affected area are located inland and not along the coastal belt. As a result, the overall damage to agriculture sector is significantly lesser than that of the sea fishery sector.

5. The damage to the agriculture sector is mainly confined to the destruction to standing crops in the paddy and other crop fields and home gardens along the entire coastal belt and washing away of parts of kadju and beatle cultivations along the Eastern coast. Entry of sea water to productive fields has induced high level of soil salinity and consequently the affected people will not be able to grow crops on those soils for about 3-4 years until the salinity is naturally flushed off by the seasonal monsoon rains. The mostly affected districts are Matara, Hambantota, Ampara, Batticaloa, Trincomalee, Mualitivu and Jaffna. A total of about 2308 ha of paddy lands, 589 ha of other field crops, 473 ha of vegetable cultivation, and 201 ha of fruit crop area got destroyed. In addition about 2500 home gardens, mainly in the North East have washed

off. The total damage to agricultural farms (without allowing for the cost of salinization and loss of production for 3-4 years) is about LKR 22 million.

Table 1 – Estimated Damage

Description	Quantity	Estimated Cost of Damage (Rs Million)
Crops		
Paddy (ha)	1,047	9.4
Field Crops (ha)	589	6.0
Vegetables (ha)	473	4.7
Fruit Crops (ha)	201	1.2
Home Gardens (ha)	2,500	1.4
Livestock		
Poultry (Nos)	62,900	31.5
Cattle (Nos)	6,560	65.6
Gotas (Nos)	3,090	9.3
Irrigation/drainage		
Canals (systems) (nos)	15	15.0
SWE* and other structures (nos)	10	25.0
Crop/livestock Service facilities		
Buildings and office equipment (nos)	3	12.0
Farms/dispensaries (nos)	3	9.0
Vehicles (nos)	2	6.5
Other related public buildings, vehicles and service facilities		
Buildings and office equipment (nos)	40	102
Vehicles (nos)	7	5
Total		303.6 (\$ 2.74 million)

* SWE – Salt Water Exclusion Structures (and embankments)

6. No damages to irrigation water sources have been reported. However, there are a large number of Salt Water Exclusion (SWE) Structures along the coastal belt from Kalutara to Hambantota and from Batticaloa to Jaffna across various drainage canals and natural streams that carry away rainwater and agricultural drainage from the highlands and agricultural lands to sea. These drainages are also used by the farmers inland to irrigate paddy lands during dry periods. The function of the salt water exclusion structures is to prevent salt water entry into the drainage canals and flush of rain/flood water to the sea to facilitate farming. The tsunami has caused most of the drainage canals eroded and clogged up with debris. Most of the SWE structures, their earthen embankments and control gates and devices are either fully destroyed or severely damaged. In addition, parts of irrigation canal systems close to the sea in Ampara (in *Senanayake Samudra, Weeraadi schemes and a few small tanks*), Batticaloa (*Navakiri, Thumpankerny, Unnichchai, Vakaneri schemes*), Trincomalee (*Kantalai and Allai schemes*) are damaged. The total estimated damage is about LKR 40 million.

Livestock Sector

7. The damage to overall livestock sector is not significant although poor families have lost their domestic stock of livestock. This will have a negative impact on their livelihoods as

domestic livestock raising served as a safety net against their vulnerability to crop failures, provided mostly supplementary incomes, and added nutritional inputs to their daily diet. The largest damages are reported from Ampara, Batticola, Trincomalee and Mulaitivu districts. About 63000 birds, 6500 cattle and 3100 goats are reported to be killed. The total loss of production is in the range of about LKR 106 million. This is significantly higher than the estimated damage to the crop fields.

8. *Service Facilities and Buildings:* The tsunami damaged a large number of government buildings belong to Departments Animal Production and Health, Agriculture, Irrigation, Agrarian Services, etc. These provide housing for the staff providing technical assistance and extension services to the people engaged in irrigated agriculture and livestock production. The total estimated damage to physical service infrastructure is about LKR 145 million.

C. RECONSTRUCTION AND RECOVERY NEEDS

9. The Government should undertake the reconstruction and recovery in two phases. The first or the short-term phase (3-12 months) should focus on helping the affected families to recover from the loss. This can be done by ensuring that those who dependent on crop husbandry and livestock raising should be included in the cash grant assistance programs. In addition, they should be provided with micro-credit facilities through community-based revolving fund mechanisms to restart the lost income sources. The rehabilitation of damaged structures and agriculture/livestock service facilities should be started immediately not only to reduce the potential adverse environmental impacts of not restoring the infrastructure but also to provide immediate wage labor employment opportunities in the villages. The Agriculture Department should carry out testing of the salinity affected agricultural fields, take all remedial measures and provide technical guidance for a speedy recovery of those fields. The Government should also restore the buildings and other government facilities damaged by the tsunami to enable a fast resumption of the service to the affected people. These interventions should focus on the assessments already done and needs identified and using community structures already in place.

10. For mid-term strategy (1-3 years), as a part of Government's Development Plan, the agricultural productivity should be further strengthened through diversification and commercialization of agriculture from the subsistence farming. Immediately, the Government should reexamine the strategies and availability of funds under the ongoing donor programs such as World Bank funded North East Irrigated Agriculture Project (NEIAP), "Gemi Diriya" and ADB funded NECROD etc. and use those windows to help the affected communities for more productive agricultural and livestock farming. The long-term recovery plan includes detailed assessment of status of land and water resource, strengthening marketing and support services, strengthening institutional capacity, and development of agricultural infrastructure. The estimated cost of these programs needs to be worked out in detail later.

**Table 2. Needs Assessment for Agriculture Sector
(millions)**

No	Activity	Phase I	Phase II	Total	
		3-12 months	1-3 years	Amount	
		LKR	LKR	LKR	\$
1	Micro-credit facilities to reestablish lost agriculture and livestock dependent livelihoods.	110	100	210	
2	Replace damaged agriculture facilities and infrastructure	50	100	150	
3	Rehabilitation of soil and water resource in affected area and Provision of extension services to facilitate recovery phase	2		2	
4	Restoration of damaged Salt Water Exclusion Structures, embankments and drainage canals	15		15	
5	Strengthening marketing and support services		10	10	
6	Human capacity building, training etc.		20	20	
7	Strengthening institutional capacity (adaptive research, multiplication of planting material, etc.)		10	10	
	Total	177	250	427	4.3

D. OTHER OBSERVED IMPACTS

11. The tsunami has destroyed the small agricultural enterprises. The other impacts of the disaster are very difficult to quantify. It has destroyed the main and supplementary household incomes to many affected victims. Sea water intrusion has damaged the standing crops and salinized about 2,300 ha of paddy lands along the coastal belt. While the salinity would be flushed off after 2-3 heavy rainy seasons, the affected farmers would not be able to grow crops until the salinity disappears. Therefore, the impact of the disaster on agricultural farming will be felt by the victims for a longer period until their farms recover from salinity. The loss of home gardens, farm lands, their productive capacity, and livestock is likely to affect the nutritional intake of the affected families.

12. Most of the drainage canals are clogged up with debris and need to be cleaned. These drainages are used by the farmers inland to irrigate paddy lands and the function of the salt water exclusion structures is to prevent salt water entry into the drainage canals and flush of rain/flood water to the sea to facilitate farming. Most of these structures and the control gates and devices are damaged. If these structures are not repaired and the drainage canals are cleaned, the livelihoods of some farmers inland will be affected due to inadequate drainage. In addition, water logging and stagnation of water may favor mosquito breeding.

13. It is also reported that due to flood and sea water seepage, the cattle grazing areas along the sea shore, particularly in Hambantota, Ampara, Batticaloa, Trincomalee, Mulativu and Jaffna istricts are affected. This may pose a threat to cattle to meet their supplementary food requirements.

Annex 1

Details of Damage to Crop Agriculture

District	Paddy Area (ha)	Other Field Crops (ha)	Vegetables (ha)	Fruit Crops (ha)	TOTAL (ha)
Colombo	na	na	na	na	-
Kalutara	5	3	.	5	13
Galle	55	-	15	8	78
Matara	124		15	18	157
Hambantota	143	19	23	20	205
Ampara	290	31	41	28	390
Batticaloa	41	35	119	106	301
Trincomalee	60	410	260	10	740
Mulaitivu	73	36	-	-	109
Jaffna	254	55	-	6	315
Puttlam	na	na	na	na	-
TOTAL	1047	589	473	201	2308

Note: In addition about 2,500 home gardens mainly in the North East have been destroyed. A large number of buildings, vehicles and office equipment and furniture belong to the main public sector service departments of the Crop agriculture sector (Departments of Irrigation, Agriculture, and Agrarian Services) are either fully destroyed or partly damaged. About 40 government buildings and their office furniture and equipment and seven vehicles are reported destroyed/damaged.

Annex 2

Details of Damage to Livestock

District	Poultry	Cattle	Goats	Damaged Service Facilities
Colombo	-	-	-	
Kalutara	-	-	-	
Galle	-	-	-	Habaraduwa VS office damaged
Matara	-	-	-	Weligama VS office damaged
Hambantota	-	100	100	-
Ampara	29520	3420	1110	Pothuvil milk collecting centre and veterinary dispensary fully destroyed
Batticaloa	17290	425	439	Kalladi poultry farm fully destroyed
Trincomalee	5760	275	240	-
Kilinochchi	-	-	100	-
Mulaithivu	9100	2050	950	-
Jaffna	1230	290	150	-
Total	62900	6560	3089	

Note: In addition, the following Government service facilities belong to the Department of Animal production and Health are damaged and not operational.

Muallaitivu Veterinary Dispensary in Malativu district.
 Pothuvil Veterinary Dispensary in Ampara District
 Pothuvil Milk Collection Centre in Ampara District
 Kalladi Poultry Hatchery farm in Batticaloa District
 Habaraduwa Veterinary Suregon's Office/dispensary in Galle District
 Weligama Veterinary Surgeon's Office/dispensary in Matara