



07 - Health Sector

Organization Responsible

Level of Responsibility	Name of Ministry/Agency/Institution
Ministry	Ministry of Health
Department	
District	Regional Director of Health System (RDHS)
DS Division/ MoH Division	
GN Division	

Concepts and Definitions

The Sector

The health sector is composed of the different types of hospitals, health clinics and other facilities used by the people for treatment of illnesses or health maintenance including the structures, equipment and supplies, etc. Included also here are medical related services like medical laboratories. They may be owned by the government or by private individuals or corporations. It should be noted that drug manufacturers are not included in the health sector but rather in the manufacturing sector. *However, if there is extensive damage to drug manufacturing companies, the health sector should include in their analysis the potential impacts to the supply of medicines in the affected areas and the country.*

Damages

In the health sector, damages are cost of: a) repair of partially damaged assets and/or b) replacement of totally destroyed assets and infrastructure such as:

- Total or partial destruction of physical structures related to all types of health facilities like hospitals, clinics, medical laboratories, etc.
- Total or partial destruction of medical equipment, medicines, medical supplies and others such as elevators and power generators, computers, furniture, appliances and other supplies.

Damages are measured in physical terms for which the monetary repair or replacement value is subsequently estimated.

Losses

Losses are the values of foregone revenues or income due to the change in economic flows (income and expenditures) during the period of recovery and reconstruction following the disaster. They are the current value of goods and services that were not and/or will not be produced over a time span due to the disaster until full recovery is attained. Losses in the health sector will include the following:

- **Higher costs of health care.** Government health facilities may incur additional expenses to assist the disaster-affected population (over and above the regular budget of the sector). This higher cost can be for any of the following reasons:
 - Treatment of physically and psychologically injured persons over a period of time which will require additional expenses for medicine and supplies
 - Transportation costs of injured persons to alternative, unaffected health facilities
 - Additional home visits to women and children needing more attention since they are more vulnerable and at risk
 - Rent of additional equipment, transportation to make more out of facility service provision
 - Overtime payment of health sector personnel, or cost of employing temporary additional staff if needed.

- **Cost of setting up and operating temporary health care facilities, if necessary.** If permanent structures of health facilities are destroyed or significantly damaged, temporary medical facilities may be need to be established. When temporary health care facilities are built, it will be necessary to estimate the cost of construction and related services, such as the provision of water, latrines and electric power and duration for which these temporary facilities will function. When using rented buildings as temporary health care facilities, the total value of rent will be part of the loss.
- **Losses due to lower revenues.** Closure of private and public health care facilities due to physical damages would result in the loss of revenues. On the other hand, even if the facilities are not affected, there may be a reduction in demand/patients if the facility has become inaccessible or if the people lost their source of income to pay for health services. Revenue losses will be: Pre-disaster revenues minus the estimated post-disaster revenues.
- **Other unexpected expenditures like:**
 - **Direct costs of monitoring and control of outbreak of diseases.** After a disaster, there is a possibility of breakout of epidemics which may require direct interventions like health surveillance and other disease control like fumigation, control of water-borne diseases, vaccination, public information and education, etc.
 - **Demolition and clean-up costs.** The costs of demolition, removal of debris in the affected health facilities, disposal of bio-hazardous materials, among others are considered losses in health sector. Demolition costs vary widely in relation to the type of building materials involved. The health sector specialist should consult with an engineer or architect at this point. Typically the cost of removal of debris up to the roadside is incurred by the health facilities while the disposal of debris from the road to the disposal site may be incurred by other mandated agencies.

Losses can extend beyond the year that the disaster occurred and these should be reflected in the loss assessment for the coming year/s. The duration will also include the time required for controlling and monitoring the possible outbreak of disease that may change the morbidity levels arising from the disaster. Losses are expressed in monetary value at current prices.

In conducting a post-disaster damage and loss assessment in the health sector, the following steps are normally followed for every disaster-affected district.

Steps in Undertaking Post-Disaster Damage and Loss Assessment for Health Sector

Step 1. Collect and/or validate the baseline data for each of the disaster-affected District

Baseline information must be compiled and validated at the national, provincial or district levels before the field assessment or, if possible, prior to the occurrence of disaster. The table below must be completed to be used for the baseline information of government facilities in the online system.

Table 1. Baseline information on health status in a District or RDH

Name of District or RDH				
Population as of latest Census	By Sex		By Age Group	
	Male	Female	Children (<12)	Elderly (>60)
Common diseases	Incidence for the Past Three Years by Sex		Incidence for the Past Three Years by Age Group	
	Male	Female	Children	Elderly
1. Diarrhea				
2. Dengue				
3. Others (Enumerate)				
Vital indicators				
1. Under-5 mortality rate				
2. Mortality rate				
3. Others (Enumerate)				
Other indicators	Unit of Measure			
1. Crude birth rate				
2. Maternal mortality rate				
3. Others (Enumerate)				

Note in filling out Table 1.

- All the common diseases and vital indicators must be included. The required information can be gathered from other documents like the MDGs.

The number of medical facilities by various types are in the table below.

Table 2. Baseline information of medical facilities in a district

Name of District			
Type of Public Medical Facilities	Number	Average number of patients per day	
		Male	Female
Hospitals			
Teaching Hospital (TH)			
Provincial General Hospital (PGH)			
District General Hospital (DGH)			
Base Hospital			
Divisional Hospital			
Rural Hospital			

Central Dispensary			
Primary Medical Care Units (PMCU)			
Primary Health Care Centers (PHCC)			
Maternal and Child Health Clinics (MCHC)			
MOH Offices			
Others (Specify)			
TOTAL			
Type of Private Medical Facilities			
Private Clinics			
Others			
TOTAL			

Note in filling out Table 2.

- The 'average number of patients per day' refers to the latest information on the number of people who seek treatment per day on each type of health facility. The required information can be gathered from other documents like the latest epidemiological surveys.

The unit costs of replacement and repairs for the Ministry Health System and MOH assets are shown in Table 3.

Table 3. Baseline information of unit cost of the Ministry Health System in a district

Name of District:					
Particulars	Types of Medical Facilities				
	Line Ministry Health System			MOH	
	Teaching Hospitals	Provincial General Hospitals	District General Hospitals	Offices	Others
Average replacement cost					
Structure (LKR/sqm)					
1 floor structure					
2-3 floors structure					
More than 3 floors structure					
Set of Supplies (LKR/Unit)					
Medicines					
Medical supplies					
Others					
Medical Equipment (LKR/Unit)					
CT Scan					
X-ray machine					
MRI machine					
Other equipment (Specify)					
Other Assets (LKR/Unit)					
Computers					
Vehicles					
Furniture					
Office equipment					
Others					
Average repair cost					

Structure (LKR/sqm)					
Roof					
Wall					
Flooring					
Medical Equipment (LKR/Unit)					
CT Scan					
X-ray machine					
MRI machine					
Other equipment (Specify)					
Other Assets (LKR/Unit)					
Computers					
Vehicles					
Furniture					
Office equipment					
Others					
Construction/ repair period in Months					
Average construction period					
Average repair period					

The unit costs of replacement and repairs for the other types of medical facilities is shown in Table 4.

Table 4. Baseline information of unit cost of other medical facilities in a district

District	Types of Medical Facilities						
Particulars	Base Hospital	Divisional Hospital	Rural Hospital	Central Dispensary	Primary Medical Care Units	Primary Health Care Centers	Maternal and Child Health Clinics
Average replacement cost							
Structure (LKR/sqm)							
1 floor structure							
2-3 floors structure							
More than 3 floors structure							
Set of Supplies (LKR/Unit)							
Medicines							
Medical supplies							
Others							
Medical Equipment (LKR/Unit)							
CT Scan							
X-ray machine							
MRI machine							
Other equipment (Specify)							
Other Assets (LKR/Unit)							
Computers							
Vehicles							
Furniture							
Office equipment							
Others							

Average repair cost							
Structure (LKR/sqm)							
Roof							
Wall							
Flooring							
Medical Equipment (LKR/Unit)							
CT Scan							
X-ray machine							
MRI machine							
Other equipment (Specify)							
Other Assets (LKR/Unit)							
Computers							
Vehicles							
Furniture							
Office equipment							
Others							
Construction/ repair period in Months							
Average construction period							
Average repair period							

Notes in filling out Tables 3 and 4.

- **“Average replacement cost”** refers to the value of the existing assets of the various types of health facilities. For structures, replacement and repair costs are valued at Sri Lankan Rupees per square meter.
- **“Set of Supplies”** refers to the standard sets of medical supplies that are found in the various health facilities. For example, a regular clinic may contain 1 set of medicine valued at several million LKR. Normally, medical supplies when destroyed, are not repairable, so they are not part of the cost of repair.
- **“Medical equipment”** refers to highly specialized expensive equipment that are found in the various health facilities.
- **“Average repair cost”** refers to the estimated value of repair per unit per type for the various existing assets of the various types of health facilities.
- The **average construction period** refers to the number of months for a new building to be erected.
- The **average repair period** refers to the number of months days required for the repair of the structures/buildings, equipment and other assets. This can be based on past experiences.

Step 2. Estimate damages and losses

With the baseline information, field assessment should be undertaken in the affected districts after a disaster.

✓ Step 2.1. Estimate the damages and losses to the line Ministry health system

The post disaster assessments of government-owned health facilities are the primary concerns of the Ministry of Health. Assessment per district can be undertaken which can be summarized later into a provincial then national assessment. Once the government facilities are identified and assessed, the table below will be used in the online assessment of government sector assets.

Table 5. Damages and Losses in the Line Ministry Health System

Table of Damages and Losses in the Line Ministry Health System						
District	Destroyed Facilities and Assets					
	Type of Facility					Total Number
	Line Ministry Health System			MOH		
	Teaching Hospitals	Provincial General Hospitals	District General Hospitals	Offices	Others	
Number of Destroyed Facilities						
Number of Patients Affected						
Male						
Female						
	Number of Destroyed Assets by Types of Facilities					Total Damages (LKR)
	Line Ministry Health System			MOH		
Assets	Teaching Hospitals	Provincial General Hospitals	District General Hospitals	Offices	Others	
Structures (in sqm)						
1 floor structure						
2-3 floors structure						
More than 3 floors structure						
Value of Destroyed Structures						
Set of Supplies						
Medicines						
Medical supplies						
Others						
Value of Destroyed Supplies						
Medical Equipment						
CT Scan						
X-ray machine						
MRI machine						
Other equipment (Specify)						
Value of Destroyed Medical Equipment						
Other Assets						
Computers						
Vehicles						
Furniture						
Office equipment						
Others						
Value of Destroyed Other Assets						
VALUE OF DESTROYED ASSETS						
Partially Damaged Facilities and Assets						

	Type of Facility					Total Number
	Line Ministry Health System			MOH		
	Teaching Hospitals	Provincial General Hospitals	District General Hospitals	Offices	Others	
Number of Partially Damaged Facilities						
Number of Patients Affected						
Male						
Female						
	Number of Partially Damaged Assets					Total Damages (LKR)
	Line Ministry Health System			MOH		
Assets	Teaching Hospitals	Provincial General Hospitals	District General Hospitals	Offices	Others	
Structure (in sqm)						
Roof						
Wall						
Flooring						
Value of Partially Damaged Structure						
Medical Equipment						
CT Scan						
X-ray machine						
MRI machine						
Other equipment (Specify)						
Value of Partially Damaged Medical Equipment						
Other Assets						
Computers						
Vehicles						
Furniture						
Office equipment						
Others						
Value of Partially Damaged Other Assets						
VALUE OF PARTIALLY DAMAGED ASSETS						
GRAND TOTAL OF DAMAGES						
	Losses					Total Losses (LKR)
	Line Ministry Health System			MOH		
Types of Losses	Teaching Hospitals	Provincial General Hospitals	District General Hospitals	Offices	Others	
Foregone income						
Disaster Year 1						
Year 2						

Total						
Cleaning up of debris						
Disaster Year 1						
Year 2						
Total						
Higher operating costs						
Disaster Year 1						
Year 2						
Total						
Other unexpected expenses						
Disaster Year 1						
Year 2						
Total						
TOTAL VALUE OF LOSSES						

Notes on Table 4.

- The estimation of the assets that were destroyed or damaged will be based on the field visit of the assessment team. If a certain health care center is about 80% destroyed, the assessment team should decide whether it is still repairable or be condemned as totally destroyed.
- “Set of Supplies and Equipment” refers to the sets of supply and equipment that can normally be found in the various types of health facilities.
- The table only requires the number of a) totally destroyed assets; and b) partially damaged assets. The “Total Damages” will be automatically estimated by multiplying the number of affected assets by their respective replacement or repair costs which are in the baseline information table.
- For partially damaged structures, the part or parts that was/were partially damaged has/have to be identified. For example:
 - The total value of damages from **partially damaged** health care center with 1 floor = (The number of square meters of partially damaged roof/wall/floor) X [(the average cost of repair of the damaged part or parts per square meter). If the damaged part is the roof, it will be: (the number of square meters damaged of the roof of a health care center with one floor) X (the average repair cost of the roof per square meter of a 1 floor clinic). The average repair costs are in the baseline table.
 - For equipment and medical equipment, the same principles are the same: (the number of equipment damaged) X (the average cost of repair of damaged equipment).
- It is possible to have a health care center may have damages for repair but with totally destroyed medicines. The totally destroyed medicines should be reflected in the totally damaged part.
- For the losses, the assessment team must consult with the personnel of the health facilities that were affected by the disaster who are in a better position to estimate their losses.
- Foregone income will be due to the inability of the health facility to operate or operate on a lower capacity which lowers the expected income.
- Other unexpected expenses can be the cost of setting up temporary mobile clinics in disaster-affected areas.
- Losses may occur beyond the year the disaster occurred (Yr. 1).

✓ Step 2.2. Estimate the damages and losses to the other medical facilities

The damages and losses for others medical facilities are in the table below which will appear in the online system.

Table 6. Damages and Losses of the other medical facilities

District								
Destroyed Facilities and Assets								
	Type of Facility							Total Number
	Base Hospital	Divisional Hospital	Rural Hospital	Central Dispensary	PMCU	PHCC	MCHC	
Number of Destroyed Facilities								
Number of Patients Affected								
Male								
Female								
Number of Destroyed Assets								
	Type of Facility							Total Damages (LKR)
Assets	Base Hospital	Divisional Hospital	Rural Hospital	Central Dispensary	PMCU	PHCC	MCHC	
Structures (in sqm)								
1 floor structure								
2-3 floors structure								
More than 3 floors structure								
Value of Destroyed Structure								
Set of Supplies								
Medicines								
Medical supplies								
Others								
Value of Destroyed Supplies								
Medical Equipment								
CT Scan								
X-ray machine								
MRI machine								
Other equipment (Specify)								
Value of Destroyed Medical Equipment								
Other Assets								
Computers								
Vehicles								
Furniture								
Office equipment								
Others								

Value of Destroyed Other Assets								
VALUE OF DESTROYED ASSETS								
Partially Damaged Facilities and Assets								
	Type of Facility							Total Number
	Base Hospital	Divisional Hospital	Rural Hospital	Central Dispensary	PMCU s	PHCC s	MCHC s	
Number of Partially Damaged Facilities								
Number of Patients Affected								
<i>Male</i>								
<i>Female</i>								
	Number of Partially Damaged Assets							
	Type of Facility							Total Damages (LKR)
Assets	Base Hospital	Divisional Hospital	Rural Hospital	Central Dispensary	PMCU s	PHCC s	MCHC s	
Structure (in sqm)								
<i>Roof</i>								
<i>Wall</i>								
<i>Flooring</i>								
Value of Partially Damaged Structure								
Medical Equipment								
<i>CT Scan</i>								
<i>X-ray machine</i>								
<i>MRI machine</i>								
<i>Other equipment (Specify)</i>								
Value of Partially Damaged Medical Equipment								
Other Assets								
<i>Computers</i>								
<i>Vehicles</i>								
<i>Furniture</i>								
<i>Office equipment</i>								
<i>Others</i>								
Value of Partially Damaged Other Assets								
VALUE OF PARTIALLY DAMAGED ASSETS								
TOTAL VALUE OF DAMAGES								
Losses								
	Type of Facility							Total Losses (LKR)
Types of Losses	Base Hospital	Divisional Hospital	Rural Hospital	Central Dispensary	PMCU s	PHCC s	MCHC s	
Foregone income								

Disaster Year 1								
Year 2								
Total								
Cleaning up of debris								
Disaster Year 1								
Year 2								
Total								
Higher operating costs								
Disaster Year 1								
Year 2								
Total								
Other unexpected expenses								
Disaster Year 1								
Year 2								
Total								
TOTAL VALUE OF LOSSES								

✓ Step 2.3. Estimate the damages and losses to private facilities

During the field visit, direct interviews with the affected facilities should be conducted where repair and replacement costs should be estimated. The officials and experts in the facilities can estimate their respective damages more accurately. Once the private facilities are identified and assessed, the value of damages and losses can be summarized in the following table which will appear in the online reporting system.

Table 7. Damage and loss assessment of private health facilities

District						
Types of Medical Facility	Number of Affected Facilities	Number of Affected Patients				
		Male	Female			
Private Clinics						
Others						
TOTAL						
Breakdown by Type of Educational Facility						
Type of Medical Facility and Assets	Estimated Replacement Cost (LKR)	Estimated Repair Cost (LKR)	Total Damages (LKR)	Estimated Losses (LKR)		Total Losses (LKR)
				Year 1	Year 2	
Private Clinics						
Private Clinic 1						
Structure						
Supplies and materials						
Equipment						
Total						
Private Clinic N						
Structure						
Supplies and materials						
Equipment						

<i>Total</i>						
Others						
<i>Structure</i>						
<i>Supplies and materials</i>						
<i>Equipment</i>						
<i>Total</i>						
Total						

✓ Step 2.3. Summarize the damages and losses in the sector in a District

Based on the assessment of the public and private facilities, the damages and losses will be summarized online in the following table.

Table 8. Summary of damages and losses in the health sector in a district

District							
Public Sector							
Facilities and Assets	Total Number Affected	Total Number of Patients Affected		Total Damages (LKR)	Losses (LKR)		Total Losses (LKR)
		Male	Female		Year 1	Year 2	
Line Ministry Health System							
Teaching Hospitals							
Provincial General Hospitals							
District General Hospitals							
Total							
MOH							
Offices							
Others							
Total							
Other medical facilities							
Base Hospital							
Divisional Hospital							
Rural Hospital							
Central Dispensary							
PMcUs							
PHCCs							
MCHCs							
Total							
TOTAL							
Private Sector							
Facilities and Assets	Total Number Affected	Total Number of Patients Affected		Total Damages (LKR)	Losses (LKR)		Total Losses (LKR)
		Male	Female		Year 1	Year 2	
Private Clinics							
Others							
TOTAL							
TOTAL DAMAGES AND LOSSES							
Ownership	Damages (LKR)	Losses (LKR)				Total (LKR)	
		Year 1		Year 2			
Public Sector							

Private Sector				
TOTAL				

✓ Step 2.4. Summarize damages and losses in the health sector in the Province

The total estimated effects of the disaster in the province can be summarized by combining the values of damages and losses in the Districts. The following table is used in the online system

Table 9. Summary of damage and losses in the health sector in the province

Province							
Facilities and Assets	Public Sector						
	Total Number Affected	Total Number of Patients Affected		Total Damages (LKR)	Losses (LKR)		Total Losses (LKR)
		Male	Female		Year 1	Year 2	
District 1							
Line Ministry Health System							
Teaching Hospitals							
Provincial General Hospitals							
District General Hospitals							
Total							
MOH							
Offices							
Others							
Total							
Other medical facilities							
Base Hospital							
Divisional Hospital							
Rural Hospital							
Central Dispensary							
PMCU							
PHCCs							
MCHCs							
Total							
TOTAL							
District N							
Line Ministry Health System							
Teaching Hospitals							
Provincial General Hospitals							
District General Hospitals							
Total							
MOH							
Offices							
Others							
Total							
Other medical facilities							
Base Hospital							
Divisional Hospital							
Rural Hospital							
Central Dispensary							
PMCU							

PHCCs							
MCHCs							
Total							
TOTAL							
GRAND TOTAL							
Private Sector							
Facilities and Assets	Total Number Affected	Total Number of Patients Affected		Total Damages (LKR)	Losses (LKR)		Total Losses (LKR)
		Male	Female		Year 1	Year 2	
District 1							
Private Clinics							
Others							
Total							
District N							
Private Clinics							
Others							
Total							
TOTAL							
TOTAL DAMAGES AND LOSSES							
Ownership	Damages (LKR)	Losses (LKR)				Total (LKR)	
		Year 1		Year 2			
Public Sector							
Private Sector							
TOTAL							

✓ Step 2.5. Summarize damages and losses in the health sector at the national level

A nationwide summary of the assessment will be created enumerating the damages and losses of the sector at each province. The data in the national summary should include all the information gathered by the various teams that assessed the different disaster-affected districts. The following table will be used for the national summary.

Table 10. Summary of damage and losses in the health sector nationwide

Province							
Public Sector							
Facilities and Assets	Total Number Affected	Total Number of Patients Affected		Total Damages (LKR)	Losses (LKR)		Total Losses (LKR)
		Male	Female		Year 1	Year 2	
Province 1							
Line Ministry Health System							
Teaching Hospitals							
Provincial General Hospitals							
District General Hospitals							
Total							
MOH							
Offices							
Others							
Total							
Other medical facilities							

Base Hospital							
Divisional Hospital							
Rural Hospital							
Central Dispensary							
PMcUs							
PHCCs							
MCHCs							
Total							
TOTAL							
Province N							
Line Ministry Health System							
Teaching Hospitals							
Provincial General Hospitals							
District General Hospitals							
Total							
MOH							
Offices							
Others							
Total							
Other medical facilities							
Base Hospital							
Divisional Hospital							
Rural Hospital							
Central Dispensary							
PMcUs							
PHCCs							
MCHCs							
Total							
TOTAL							
GRAND TOTAL							
Private Sector							
Facilities and Assets	Total Number Affected	Total Number of Patients Affected		Total Damages (LKR)	Losses (LKR)		Total Losses (LKR)
		Male	Female		Year 1	Year 2	
Province 1							
Private Clinics							
Others							
Total							
Province N							
Private Clinics							
Others							
Total							
TOTAL							
TOTAL DAMAGES AND LOSSES NATIONWIDE							
Ownership	Damages (LKR)	Losses (LKR)				Total (LKR)	
		Year 1		Year 2			
Public Sector							
Private Sector							
TOTAL							