Direct Economic Loss Statistics

Two ways of measuring

1. Replacement cost approach
2. Unit cost approach

Replacement Cost Approach

- The sum of directly observed data on the costs of reconstruction or replacement of assets after a disaster

Unit Cost Approach

- **Direct economic loss =**

(a) Number of physical assets affected (e.g. number of facilities damaged) *** (b) Size of the physical assets * (c) Unit Cost** (e.g. per square meters, per kilometres, per hectare)

Unit Cost Approach

- **Step 1**: Collect good quality of data, ideally disaggregated, on physical damage per hazardous event.
- **Step 2**: Apply unite/average cost per unit to estimate economic value
- **Step 3:** Convert the economic value from the one expressed in national currency into the one expressed into US dollars

Unit Cost Approach

Direct economic loss =
(a) Number of physical assets affected (e.g. number of facilities damaged)
*** (b) Size of the physical assets * (c) Unit Cost** (e.g. per square meters, per kilometres, per hectare)

Strengths	Weaknesses
There is a reference method for estimating average costs for each of the major types of assets that could be consistently utilised for calculating the statistics over time.	Methodology for deriving unit costs is not specified
The statistics on direct impacts in physical terms are useful for analysis of disaster impacts	Does not account for differences in the extent of the damages to the assets

Replacement cost approach

Strengths	Weaknesses
Avoid the problem of measuring extent of the damages	Assets may be reconstructed differently
Method would be most aligned with the existing standards for economic statistics used to produce the important aggregated indicators (e.g. GDP).	
A better approach for disaggregated analyses because the statistics are compiled based on individual observations.	

Other issues

- Further guidance should be developed on how to account for relatively extreme values.
  - Possible solution: Distinguish dwellings by different types structure related to the value.
  - An example: ICCHL Programme in Bangladesh

Table 4.2: Percentage distribution of tenureship of household and main dwelling structure by division, 2014.

Tenure ship/ Dwelling Structure	Division							
	Bangladesh	Barisal	Chittagong	Dhaka	Khulna	Rajshahi	Rangpur	Sylhet
1	2	3	4	5	6	7	8	9
	Tenureship of Household (%)							
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Own	95.85	95.69	92.17	97.64	96.63	95.39	97.02	93.99
Rented	1.49	1.92	4.35	0.78	0.94	1.67	0.39	1.19
Rent Free	2.02	2.03	2.22	1.33	1.71	1.84	1.88	4.31
Others	0.64	0.36	1.26	0.25	0.72	1.10	0.71	0.50
	Main Dwelling Structure (%)							
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Pucca	10.19	8.71	11.48	9.84	17.75	7.91	8.60	5.56
Semi-pucca	17.44	10.03	15.15	13.07	26.86	23.95	18.33	18.39
Katcha	70.31	79.50	70.41	76.01	52.01	66.04	71.99	73.16
Jhupri	1.95	1.70	2.63	1.01	3.32	1.98	1.03	2.67
Others	0.11	0.05	0.33	0.07	0.07	0.12	0.06	0.22

Source: 2015 Survey of Impacts of Climate Change on Human Life (ICCHL) Programme, Bangladesh Bureau of Statistics

Special Case: Agriculture

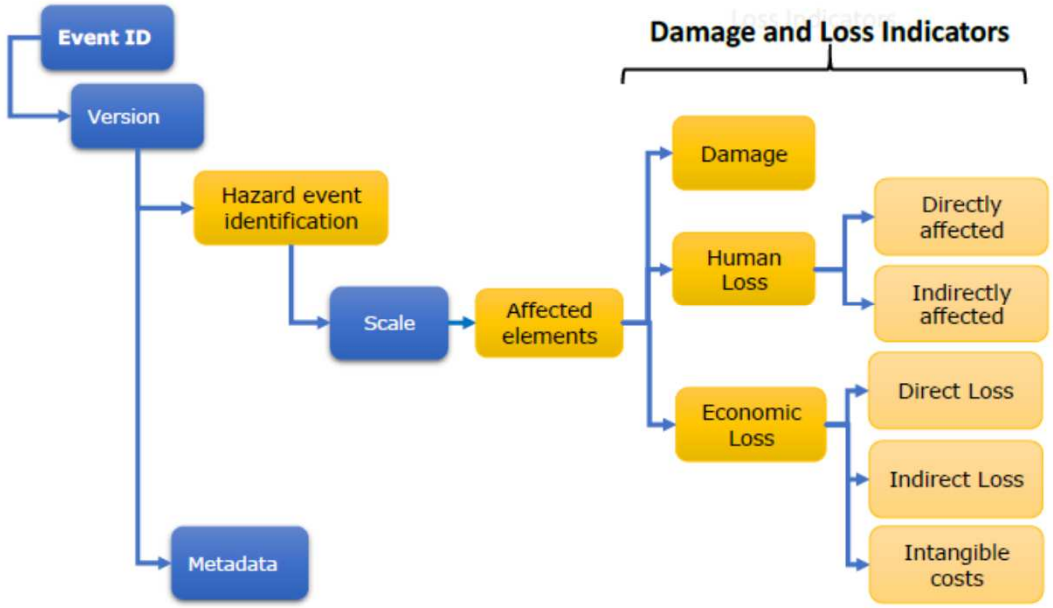
- Economic loss indicators are restricted to measure fixed assets.
- The growing crops are more likely to be work-in-progress output than fixed assets.
- However these crops are the main source of income for farmers.
- Therefore, growing crops should be counted and valued as part of direct economic loss measurements for the farmer.

Recent related work from Europe/OECD

- Improving the Evidence Base on the Costs of Disasters: Key Findings from OECD Survey
- EU-JRC: Guidance forRecording and Sharing Disaster Damage an Loss Data; Introduction:
  - "The current practice in disaster loss data recording across the EU shows that there are hardly any comparable disaster damage and loss data."

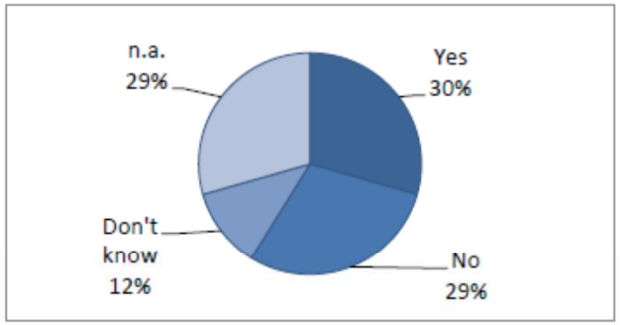
EU-JRC Guideline

- EU-JRC Guideline, 3 methodological references:
- DALA (World Bank, 2010), OECD Framework For Accounting National Risk Management Expenditures And Losses of Disasters (2014), the IRDR Guidelines on Measuring Losses from Disasters (2015).



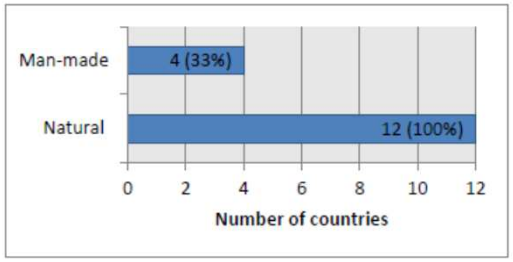
OECD Survey

FIGURE 3. THRESHOLDS FOR DISASTER EVENT ENTRY INTO THE LOSS DATABASE



Note 1: Question asks " Does your country have a threshold (such as a certain magnitude or number of people/places affected) that must be met before economic loss data is collected on a given event?".
Note 2: n.a. refers to countries reporting "No" in Figure 1.
Source: OECD Direct and Indirect economic loss collection survey.

FIGURE 4. TYPES OF DISASTERS COVERED FOR ECONOMIC LOSS DATA



Note 1: Question asks "What types of hazards are covered when your country collects economic loss data?".
Note 2: This question was replied only by countries reporting "Yes" in Figure 1.
Source: OECD Direct and Indirect economic loss collection survey.