



Food and Agriculture
Organization of the
United Nations

FAO AND THE ENHANCED TRANSPARENCY FRAMEWORK

FAO'S DAMAGE AND LOSS ASSESSMENT METHODOLOGY TO MONITOR THE SENDAI FRAMEWORK'S INDICATOR C2 AND THE ENHANCED TRANSPARENCY FRAMEWORK (ETF)

An overview of FAO's Damage and Loss Assessment methodology and using it to report on adaptation in the agriculture sectors under the ETF

SUMMARY

The Food and Agriculture Organization of the United Nations (FAO) Damage and Loss (D&L) Assessment methodology makes it possible to evaluate the impact of disasters on the agriculture sectors. It is a useful tool for developing evidence-based policies for reducing risk and building resilience in these sectors. It also helps countries report on climate change (for example on article 7 of the ETF); and monitor the Sendai Framework for Disaster Risk Reduction (SFDRR) indicator C2 on direct agricultural loss from disasters. Finally, it provides baseline data for monitoring global targets on resilience.

Type of tool



Questionnaire
for collecting data
on damage and loss

Type of data required



Examples of data required for damage and loss assessments:

- number of hectares of crops damaged and/or destroyed, by disasters, disaggregated by type of crop
- number of livestock deaths, by animal type
- stored timber volume destroyed, by disaster
- number of days fishing activities are suspended due to disasters, by fishing activity

Expertise/ special training



Yes, users need
to understand how
to run calculations

WHAT IS THE FAO D&L ASSESSMENT METHODOLOGY?

The FAO D&L methodology provides a set of procedural and computational steps for calculating damage and loss from disasters in the agriculture sectors. It can be applied to a wide range of disaster events, including climate-related events, from large-scale shocks to small-scale events. It can be used in different national and regional contexts: and at various time scales.

The methodology's five components cover direct damage and loss to crops, livestock, forestry, aquaculture and fisheries. Together, they capture the total effect of disasters on agriculture:

Impact to Agriculture: C2 = "C2(C) = Impact to crops" + "C2(L) = Impact to livestock" + "C2(FO) = Impact to forestry" + "C2(AQ) = Impact to aquaculture" + "C2 (FI) = Impact to fisheries"

Additional considerations on using the FAO D&L methodology

- ◆ The current methodology is essentially an accounting procedure which allows for flexible definitions and methods of calculations (standardized definitions, guidelines on data harmonization, etc.).
- ◆ At the global level, monitoring progress on an indicator requires time-series data across countries and an entire D&L information system.
- ◆ The methodology can be used to calculate Sendai C2 at the national level. However, for global Sendai C2 reporting and monitoring, another data processing step between country-reported data and compiled Sendai C2 data across countries is needed.

HOW IS THE IMPACT OF DISASTERS ON AGRICULTURE CALCULATED?

In order to capture the full impact of disasters on each agriculture subsector, FAO's D&L methodology distinguishes between **damage**, i.e. the total or partial destruction of physical assets, and **loss**, i.e. changes in economic flows arising from a disaster. Each subsector is further divided into **production** and **assets**. This makes it possible to estimate the extent and value of damage and loss in each subsector; and make a globally standardized assessment.

The methodology helps countries collect and record data that can be disaggregated by agricultural commodity type, hazard type and subnational administrative level. Impact data for each agricultural subsector include three subcomponents (production damage, production loss, and assets damage).

The production component measures the impact of disasters on agricultural inputs and outputs. It has two subcomponents:

- ◆ **Production damage** which includes the value of stored inputs (e.g. seeds) and outputs (e.g. crops) that were fully or partially destroyed by the disaster.
- ◆ **Production loss** which refers to declines in the value of agricultural production resulting from the disaster.

The assets component measures the impact of disasters on facilities, machinery, tools and infrastructure related to agricultural production. It has one subcomponent:

- ◆ **Assets damage** which is calculated using the cost of replacement or repair/rehabilitation, and is accounted for under damage (Table 1).

TABLE 1
FAO'S D&L METHODOLOGY

	DAMAGE		LOSS
Crops Livestock Fisheries Aquaculture Forestry	PRODUCTION	Pre-disaster value of destroyed stored production and inputs * Items: seeds, fertilizer, pesticides, fodder, fish, feed, stored crops, stored meat, dead animals, etc.	Difference between expected and actual value of production and Short-run disaster expense * Items: crop yield reduction, animal production reduction, destroyed timber, lost fish capture, cost of re-planting, etc.
	ASSETS	Replacement or repair value of destroyed machinery, equipment, tools * Items: tractors, harvesters, silos, barns, milking, machines, boats, fishing gear, pumps, aerators, etc.	

HOW CAN FAO'S D&L METHODOLOGY BE USED IN THE CONTEXT OF THE ENHANCED TRANSPARENCY FRAMEWORK?

As an integral part of the monitoring framework of the SFDRR and the SDG agenda, the D&L methodology can be used to monitor progress towards reducing the direct economic impact of disasters on agriculture. It can also be used to prepare adaptation information for area G of the ETF which recommends that countries provide information related to actions and support to avert, minimize and address loss and damage associated with climate change impacts. These include those related to extreme weather events and slow onset events (see Table 2).

HOW CAN FAO'S D&L METHODOLOGY INFORM AREAS OF THE BIENNIAL TRANSPARENCY REPORTS ON ADAPTATION?

It can be used for:

- ◆ identifying, analyzing and evaluating the impact (damage and loss) of climate related disasters on all agriculture subsectors using a methodology that is flexible in terms of estimation and data needs;
- ◆ monitoring progress on specific targets for reducing the direct economic loss from climate related disasters;
- ◆ collecting and interpreting information to inform risk-related policy decision-making aimed at minimizing and addressing loss and damage associated with climate change impacts; and
- ◆ standardizing disaster impact assessments in agriculture for global resilience agendas – for example, to track progress on the Sendai Indicator C2, and the SDG indicator 1.5.2 (Direct economic loss from natural disasters).

WE WANT TO USE THE D&L METHODOLOGY – WHAT ARE THE NEXT STEPS?

In order to build capacity and systems needed for implementing the D&L methodology, the following steps are recommended:

1. The interested government agency can contact FAO at: FAO-DRR@fao.org
2. An initial **scoping exercise** to assess the current state of D&L assessments in agriculture and existing D&L information systems in the country takes place.
3. Upon agreement with the government agency responsible for D&L assessments, a **national level workshop** on the key concepts and application of the methodology is organized. Government representatives from statistical offices, disaster risk reduction agencies and ministries of agriculture, forestry and fisheries participate. The workshop is an opportunity for experts and decision makers to share information on the major hazards and threats to the agricultural sectors in their countries; and share their experiences in collecting damage and loss data.

4. A **roadmap** for institutionalising national information systems to collect, analyze and disseminate disaster impact data is prepared.
5. **Institutional capacities** for implementing the actions identified in the roadmap are enhanced.

TABLE 2

ASPECTS OF THE ETF WHICH THE D&L METHODOLOGY ADDRESSES

Aspect of ETF	Specific areas of ETF aspect	What the D&L methodology can do	Specific D&L methodology output to use
G. Information related to averting, minimizing and addressing loss and damage associated with climate change impacts	a) Observed and potential climate change impacts, including those related to extreme weather events and slow onset events, drawing upon the best available science	<ul style="list-style-type: none"> ▶ Assess direct agricultural damage and loss attributed to climate-related disasters ▶ Ensure consistency across countries, regions and disasters for all agricultural subsectors 	<ul style="list-style-type: none"> ▶ Results from the analysis and evaluation of the impact of climate related disasters on the agriculture sector ▶ A globally standardized definition of how damage and loss are measured for each agricultural subsector
	b) Activities related to averting, minimizing and addressing loss and damage associated with the adverse effects of climate change	<ul style="list-style-type: none"> ▶ Assemble and interpret existing information to inform risk-related policy decision-making and planning ▶ Strengthen national institutions and their statistical capacity for monitoring and collecting climate related disaster data in agriculture 	<ul style="list-style-type: none"> ▶ Using the methodology could lead to the establishment of D&L information systems covering the entire process from collecting data at the national and subnational level, to managing databases, to calculating disaster damage and loss in agriculture, to disseminating results to policy makers, investors and practitioners

FOR MORE INFORMATION, PLEASE VISIT:

- ▶ FAO's methodology for damage and loss assessment in agriculture
<http://www.fao.org/3/ca6990en/CA6990EN.pdf>
- ▶ Introduction to FAO's Damage and Loss Assessment methodology e-learning course
<https://elearning.fao.org/course/view.php?id=608>
- ▶ FAO CBIT-AFOLU project
<http://www.fao.org/climate-change/our-work/what-we-do/transparency/en/ETF@FAO.ORG>