



## REVIEW AND RECOMMENDATIONS ON THE REU WORK PROGRAMME 2022-2023

### RI 3: ASSESSING DAMAGE AND LOSS ATTRIBUTED TO DISASTERS ON CROPS, LIVESTOCK, FISHERIES, FORESTRY AND AQUACULTURE

#### Introduction

Extreme weather -related and climate-induced events have notably increased in frequency and intensity over the past decades, posing significant challenges to the agriculture systems. Given the heavy reliance of agriculture on weather and climate, the occurrence of extreme events, aggravated by the adverse effects of climate change, often leads to an increase in the number of outbreaks of transboundary animal and plant pests and diseases, negatively impacts agriculture production, and seriously compromises forest and other ecosystems.

Agriculture, including, crops, livestock, forestry, fisheries and aquaculture, bears a great share of the economic loss from disasters. A review of Post-Disaster Needs Assessments conducted between 2008–2018 in low- and lower-middle-income countries, included in the 2021 edition of the FAO report on the Impact of Disasters and Crises on Agriculture and Food Security, concluded that agriculture absorbed 26 percent of the overall economic impact of medium- to large-scale disasters. Relative to agriculture, industry, commerce and tourism, taken as a whole (excluding infrastructure), the study revealed that agriculture on its own held 63 percent of all damage and loss from disasters. Drought impacts almost exclusively agriculture, which, in the 10-year period absorbed 82 percent of all damage and loss caused by drought.

Accurate data is, however, scarcely available and the impact, on the sector, of disaster events remains underestimated and frequently unreported. Damage and loss assessments are, often, conducted only after major large-scale disasters while data on the frequent small-scale and geographically localized events, is either not regularly collected or elaborated with different methodologies which hinder aggregation at the national level for evidence-based and risk-informed policy decisions on disaster risk prevention, reduction and resilience building.

Aimed at building a comprehensive knowledge base on the impact of disasters on the agriculture sector, FAO has developed a standard methodology to assess disaster damage and loss in agriculture. The 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 weather -related and climate-induced, from large- to small-scale. 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) = [Impact to crops (C)] + [Impact to livestock (L)] + [Impact to forestry (FO)] + [Impact to aquaculture (AQ)] + [Impact to fisheries (FI)]**

The methodology is an integral part of the 2015-2030 Sendai Framework for Disaster Risk Reduction (SFDRR) and the 2030 Agenda for Sustainable Development monitoring frameworks. In particular, it can be used to calculate the “Direct agricultural loss attributed to disasters” (SFDRR indicator C2). This is a sub-indicator of SFDRR’s Indicator C-1 and corresponding SDG’s Indicator 1.5.2, that measure the “Direct

economic loss attributed to disasters in relation to global gross domestic product” (2) which comprises, in addition to agriculture, also productive assets, housing, critical infrastructure and cultural heritage.

The methodology can also be used to report Loss and Damage in agriculture resulting from climate change under Section G. “Information related to averting, minimizing and addressing loss and damage associated with climate change impacts” of the of the Biennial Transparency Report (BTR) of the of the Enhanced Transparency Framework of the Paris Agreement.

### **Activities undertaken**

Since early 2019 the Regional Office for Europe and Central Asia (REU) has been very active in promoting, among member countries, the adoption of the FAO Methodology to assess damage and loss in agriculture.

In 2019 the Regional Office organized in Kiev, Ukraine, Almaty, Kazakhstan and Skopje, North Macedonia, three sub-regional training workshops to present the methodology, discuss national approaches and experience in assessing damage and loss in agriculture as well as needs for improvement of existing systems. Over one hundred technical officers and decision makers from Ministries of Agriculture, Forestry, Environment, Ministries of Emergency Situations, National Statistics Offices and national DRR Agencies from Albania, Armenia, Azerbaijan, Belarus, Bosnia-Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Montenegro North Macedonia, Serbia, Tajikistan, Turkey, Turkmenistan, Ukraine and Uzbekistan participated in the workshops.

Technical scoping missions to develop road maps for the institutionalization of the FAO methodology and national trainings on the FAO methodology, addressing central and local authorities and tailored to the specific country needs, were conducted by FAO REU and Headquarters’ Statisticians and REU Disaster Risk Reduction Officer in Armenia (2019) Kyrgyzstan (2019), Tajikistan (2020), North Macedonia (2020) and Albania (2021 and 2022).

In June and October 2022, two e-learning courses on Damage and Loss assessment, in Russian language, were published through the FAO elearning Academy "*Introduction to FAO’s damage and loss assessment methodology*" (Введение в методологию ФАО по оценке ущерба и потерь) <https://elearning.fao.org/course/view.php?id=817> and "*Using FAO methodology to compute damage and loss*" (Применение методологии ФАО для расчета ущерба и потерь) <https://elearning.fao.org/course/view.php?id=885>. These on-line trainings were developed with the specific scope of facilitating a free and easily accessible initial induction and training of a wide number of personnel from ministries, governmental agencies, central and local administrations of Russian-speaking countries on the principles and application of the FAO damage and loss assessment methodology. The same courses in English language were already available on the elearning Academy (<https://elearning.fao.org/>).

Throughout 2022, in partnership with the Centre for Emergency Situations and Disaster Risk Reduction (CESDRR), operating in Central Asia, REU supported the Ministry of Emergency Situations of the Kyrgyz Republic to harmonize existing damage and loss assessment methodologies for agriculture in use in the country with FAO’s methodology adapting it to the specific requirements of the country. Relevant ministries, research institutes, local administrations and specialists in all sub-sectors of agriculture contributed to the design and testing of the methodology. A comprehensive methodological guide was finalized in March 2023 for official approval by the government. The guide provides specific formulas, examples of applications, data and statistical requirements, protocols, organizational arrangements and legal frameworks for data collection and analysis in each agriculture subsector.

To facilitate the application of the methodology, in 2022, REU finalized the development of a damage and loss assessment digital solution (eDLA). Through five modules, the web-based software allows collecting, recording, elaborating and managing detailed information of disaster effects on agriculture per entity or territorial units providing individual and aggregated monetary valuation. The eDLA software can integrate information available in existing national databases including statistical data needed for assessments, georeferenced maps, and remote sensing maps to transpose damages on satellite images. The eDLA was designed in line with the FAO methodology as a tool for free use of national and local authorities. The tool is easily modifiable and can be adapted to any specific country context and language and allows collecting data at different administrative division levels down to individual farms holdings. It also allows processing data based on samples. It can be used with tablets and mobile phones. The software was presented to Albania (May 2022) and Armenia (February 2023) and to representatives of ECA countries at a Regional workshop on enhancing climate action in ECA held in Istanbul, Turkey in September 2022.

### **Work ahead**

- Continue providing technical assistance to member countries on the adoption of the FAO DLA methodology by national governments, to increase the evidence base on the impact of disasters on agriculture and the reporting to SDGs and SFDRR
- Promote the application of the FAO DLA methodology, to calculate loss and damage and report to section G of the BTR under the Enhanced Transparency Framework of the Paris Agreement.
- Accelerate the presentation to national governments of the eDLA software as a digital solution to reduce time and cost of assessments, facilitate information flows and use of data and support evidence-based policy decisions.
- Raise awareness on the operationalization of the Santiago Network for averting, minimizing and addressing Loss and Damage, decided at COP 27 and participate in the technical working group that provides advice and guidance Santiago Network Secretariat.