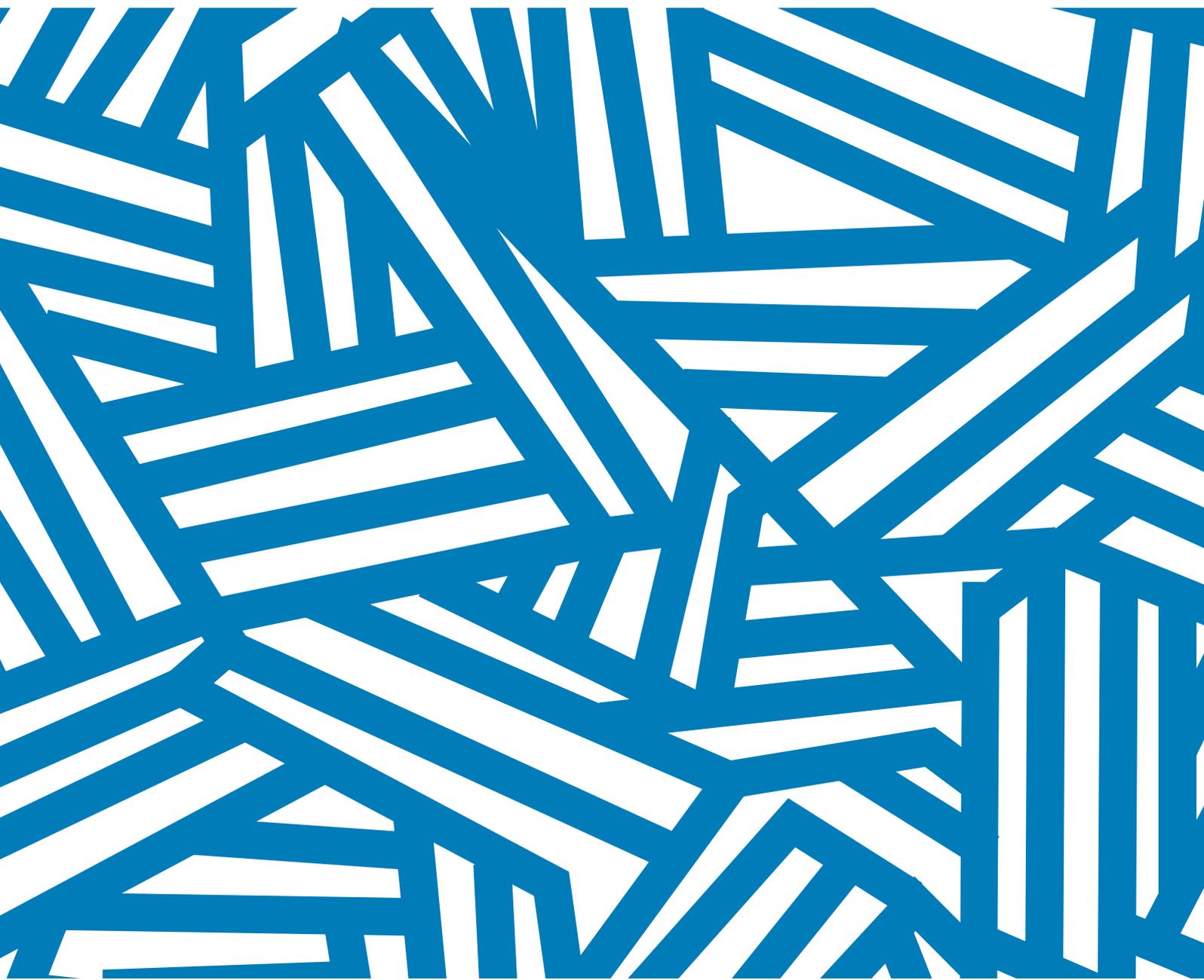


# Agriculture and Disaster Risk

A contribution by the United Nations to the consultation leading to the  
Third UN World Conference on Disaster Risk Reduction



## SECTOR BRIEF

### *“Mainstreaming Disaster Risk Reduction in Agriculture”*

This brief has been prepared building on the findings of a paper prepared by FAO to contribute to the objectives of the Global Assessment Report 2015 (GAR15). The analysis and findings of the study focused on the process and current stage of mainstreaming DRR into formal planning processes in 30 developing countries highly vulnerable to natural disasters.

## Recommendations for addressing disaster risk in agriculture in the

### Post-2015 framework for disaster risk reduction

1. Prioritize critical sectors and themes for DRR, in which progress needs to be bold – e.g. productive sectors such as agriculture – and include specific targets and indicators for each in order to monitor and report progress.
2. Propose clear financial commitments for DRR in key development sectors.
3. Reinforce the systematic incorporation of DRR in post-disaster recovery, including across all sectors.
4. Better integrate DRR and CCA in sectoral policies, investment plans, and development programmes in order to reduce emerging risks associated to extreme climate events.
5. Address vulnerabilities beyond natural hazards, taking into account transboundary plant pests and diseases, and food safety events.
6. Improve linkages between humanitarian and development interventions to risk management for agriculture, food security and nutrition.

## Overview

Exposure to and losses resulting from natural disasters in particular hydrological disasters, are increasing worldwide, affecting peoples' livelihoods and food security. Worldwide, there are currently 842 million undernourished people; about 14% percent of the population living in developing countries suffer from chronic hunger<sup>1</sup>. Most of them live in rural areas and depend on agriculture, fisheries, forests and livestock for their livelihoods. Agriculture is one of the sectors most affected by natural hazards and disasters, which enhance vulnerabilities of resource-poor farmers/fishers/herders in particular, and often threaten their livelihood security. Over the past decade, natural disasters have caused an estimated USD 1.3 trillion in damages, causing the loss of life of 1.1 million and affecting another 2.7 billion people. For 2013, the Centre for Research on the Epidemiology of Disasters registered 334 natural disasters that affected 97 million people and caused over USD118 billion in economic damages. Large shocks and extensive risks cause serious long-term damage to livelihoods and food security, often diminishing or reversing gains in poverty reduction, agricultural development and in the reduction of hunger. The loss data in table 1 shows that damage of various types of hazards on agriculture is massive and varies from case to case, depending where the hazard hits.

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1 The State of Food Insecurity in the World. 2013. FAO.

**Table 1: Examples of major disaster impacts on sector:**

|   | <b>Total damage &amp; loss</b><br>(USD million) | <b>Damage &amp; loss to agriculture</b><br>(USD million) | <b>% Agriculture damage &amp; loss of total</b> | <b>Agriculture value added<sup>1</sup></b><br>(% share of GDP) |
|---|---|--|---|--|
| <b>Brazil<sup>2</sup> 2013 drought</b>  | 10,000  | 4,300  | 43%   | 5%   |
| <b>Philippines<sup>3</sup> Typhoons</b> |   |  |   |  |
| <b>Haiyan, 2013</b>                     | 12,940  | 1,407  | 10.9%   | 12%  |
| <b>Pablo, 2012</b>                      | 897.6   | 645  | 71.8% <sup>4</sup>                              |  |
| <b>Kenya 2011 drought</b>               | 12,100  | 10,251   | 84.7%   | 30%  |
| <b>Thailand 2011 floods</b>             | 46,500  | 1,240  | 2.6%  | 12%  |
| <b>Pakistan 2010 floods</b>             | 10,100<br>(5.8% of 2009/2010 GDP)               | 5,000  | 49.5%   | 24%  |
| <b>Haiti 2010 earthquake</b>            | 7,800<br>(120% of 2009 GDP)                     | 149  | 1.9%  | --   |
| <b>Senegal 2009 floods</b>              | 104   | 13   | 12.5%   | 17%  |
| <b>Djibouti 2008 to 2011 drought</b>    | 209   | 70   | 33.6%   | --   |

Source: www.gfdr.org (unless otherwise specified)

A generic trend is that damage and losses from mega disasters in agriculture are higher in countries where the contribution of agriculture to GDP is still high and where agriculture provides a main source of employment. Both characteristics feature high in LDCs. On top of the recorded events, recurrent "silent disasters" (extensive disasters) – more frequent, smaller in size, often localized and not systematically recorded by governments - account for an additional estimated 50% of damages and losses

Given this scenario, as well as other complex global trends and constraints, agriculture is challenged to move towards resilient food systems that are more efficient and productive, preserve the natural resource base and ecosystem services, while being able to withstand risks, shocks and long-term climate variability. This transition requires a major shift towards sector specific disaster risk reduction (DRR) measures, technologies and practices, as well as towards a more sustainable use and management of vital resources such as land, water, soil nutrients and genetic resources. Considerable changes in regional, national and local governance, legislation, policies and investments in the sector are needed to strengthen resilient agricultural production systems.

To reduce underlying vulnerabilities and the exposure to current and future losses and damage caused by natural hazards and disasters it is crucial to systematically mainstream DRR into the agricultural sector, in synergy with climate change adaptation and natural resources management.

### **\$ figure of scale of global expenditure in sector (or typical % of national economic turnover) with, if possible, projection of potential loss to disaster and/or climate risk<sup>2</sup>:**

- Global agriculture value added in % of GDP for 2011: 3.1 %
- Least developed countries' agriculture value added in % of GDP for 2012: 25.7%

<sup>2</sup> Worldbank. 2014. Data. <http://data.worldbank.org/>

## Status of mainstreaming disaster risk in agriculture

### 1. Progress in addressing disaster risk in agriculture, including:

- **Agriculture planning**

Initial progress has been achieved in addressing disaster risks in agricultural development planning, but continued efforts are necessary to support implementation of planning frameworks and achieve broader progress across countries. A strong need remains for in-depth planning to define vision, priority needs, and strategic measures that reduce risks within the agriculture sector of countries, informed by multiple key stakeholders, including civil society, the private sector and research institutions.

- **Post/disaster recovery assessment and planning**

DRR is not yet mainstreamed adequately into post-disaster recovery efforts in the agriculture sectors. Capacity development and investments for DRR are usually lacking in the fabric of building-back-better strategies that could ensure the sustainability of recovery investments through all sub-sectors.

- **Agriculture legislation/policies**

Even though some countries adopt international standards - like Voluntary Guidelines on the Responsible Governance on Land Tenure, on Securing Sustainable Fisheries, on Fire Management or the Code of Conduct on the Distribution and Use of Pesticides – the principles and practices outlined provide limited direct guidance on systematic disaster risk reduction. Some countries have laws for land use, but these do not include risk considerations as criteria for land use planning. There is a need to ensure that legislation and policies for the agriculture sector integrate DRR to inform sector planning and investment and do not underrate the importance of equitable land use rights to achieve more sustainable land stewardship.

- **Capacities for DRR in agriculture sector agencies**

The state of existing technical capacities and know-how for DRR within the agriculture sector varies considerably from one country to another. Often DRR-related activities are not labeled or earmarked as such, given that they have long been part of regular development activities in agriculture, such as breeding of hazard tolerant varieties and the monitoring and mitigation of plant pests and diseases. In general, more support and capacities are needed within sectoral ministries to enable them to proactively address DRR, such as sector specific technical expertise, clear responsibilities, earmarked funding and outreach capacity to local levels in a coherent and coordinated way. The DRR related capacity needs assessment in agriculture, however, remain difficult since such sector-specific information is not reported in the HFA progress reports.

- **Agriculture preparedness (EWS, assessment, other tools):**

Early warning and preparedness measures are the most common aspects of DRR adopted in the agricultural development plans of many countries, reflecting their direct relevance to the sector. This focus also reflects the continued emphasis countries put on disaster management rather than on proactive DRR. There is a need to further support capacity development for agriculture sector specific applications of risk assessments and early warning systems and to establish them as key elements in the wider context of systemic DRR addressing all five priority areas of the HFA in an integrated way.

- **Annual budget allocation**

Disaster risk related budget allocations in most countries are done for DRM, rather than for DRR, and most of the resources used for emergency funds and response. Even in the rare cases where national funding is specifically allocated to DRR, it hardly ever reaches into the agriculture sector. Beyond stand-alone budget allocations for DRR – usually targeting national and local DRR-specific agencies - financial resources should be mainstreamed across ministries/departments, including at sub-national level.

- **Agriculture specific institutional mechanisms and set-up**

Progress in addressing DRR in agricultural development planning has in most countries not yet translated into enabling institutional structures within the sector. The existence of agriculture specific institutional mechanisms to coordinate within and across related sectors, drive policy formulation and planning for DRR in agriculture, and oversee implementation at all levels is still incipient and needs to be strengthened in the future to accelerate progress. It will require strong offices and/or focal points in the key ministries/departments, at all levels, with clearly defined and coordinated responsibilities vis-à-vis DRR, to which research institutions, civil society and other relevant national actors contribute to the sector specific planning and implementation of DRR in agriculture.

- **Implementation of DRR in agriculture (agriculture's capacity to deliver at national and local levels)**

While DRR is increasingly being integrated into agricultural planning, the implementation of proactive DRR measures through the agriculture sector is lagging behind and remains a gap, often due to lack of capacities and financial resources for DRR. Implementation will require the allocation of sector-specific responsibilities and funding for DRR and strengthened technical capacities to facilitate the planning and implementation of DRR processes and measures from national to local levels, including sub-national mechanisms and actions that benefit local farming communities and promote resilient livelihoods. In this process the agriculture sector has a key responsibility in promoting at much bigger scale than achieved at present the wide replication of good practices and technologies for DRR and natural resource management.

## 2. Emerging trends

A recent trend observed is the increasing integration of DRR and CCA linkages into sector planning instruments and institutional mechanisms (e.g. Nepal, Peru, Philippines), reflecting the increasing recognition of the complementarities and overlaps between CCA and DRR. This trend is also emerging in the institutional arrangements within ministries, where in some countries a technical unit or office is formally mandated to oversee either or both DRR and CCA (e.g. Bangladesh, Peru, Pacific States).

Another emerging trend is the development of agriculture-specific plans for DRR/M that integrate a comprehensive set of strategic measures in the sector along the HFA priorities for action. (e.g. Plans of Action for DRR/M in Nepal, Lao PDR, Bangladesh, Peru, Saint Lucia, Jamaica, Grenada, Saint Vincent and Grenadines, Commonwealth of Dominica, Guyana).

A third, more specific trend in the integration of DRR into the agriculture sectors in the growing recognition of the importance of national drought management policies for preparedness and early response. More countries are implementing such policies. Progress in many regions is under way facilitated also by the current joint capacity building campaign of FAO, WMO, CBD and UNCCD coming out from the 2013 High Level Meeting on National Drought Management Policies.

### Drivers for mainstreaming disaster risk into agriculture

- **Brief description of incentives for integrating disaster risk into agriculture.**

The main drivers for integrating DRR into the agriculture sector are 1) the presence of clear cross-sectoral national policies that make mainstreaming DRR into development sectors an explicit and strategic priority, 2) a good understanding of the nexus between disaster risk and sustainable agriculture development, and 3) the global agenda on climate change adaptation.

- **Challenges in mainstreaming disaster risk into agriculture**

- Lack of explicit guidance in the HFA on mainstreaming into sectors with clear targets
- Moving from concept to action: similar sector-specific capacities, planning processes and financing are still needed at the national, sub-national and local levels.
- Making the mainstreaming of DRR in agriculture a priority in countries with high levels of food insecurity and where agriculture is a key economic sector (% of GDP), and in those that are at risk of multiple and often cascading shocks, in particular where natural hazards happen in the context of protracted crises, violent conflict or post-crisis transition
- More than 95% of humanitarian finance is still spent on disaster response and less than 5% is spent on reduction of the risk of disasters<sup>3</sup>. Little or no DRR funding going into sectors, and there is no earmarked funding for DRR in AG sector ministries.

### Regional/international policy frameworks and initiatives

#### within agriculture to be targeted

**(other than the HFA2)**

International: Post-2015 development agenda (SDGs), UNFCCC, UNCCD, CFS, Global Alliance for Climate-Smart Agriculture  
 Regional: AGIR, CAADP, ECOWAP, AADMER, Drought Resilience and Sustainable Livelihoods Programme (DRSLP) for the Horn of Africa, etc

### Measuring disaster risk in agriculture

- **Qualitative (Substantial, moderate or limited integration) description of level of references and integration of agriculture in HFA country report/HFA indicators/IPCC SREX/others:**

The national HFA reports have not been adequately capturing the progress made in DRR within the agriculture sector. Reporting on the sector is limited, patchy and inconsistent. This is largely due to the design of the HFA monitor itself and particularly the formulation of questions within it that are broad and non-sector specific.

- **Level of integration of disaster risk within agricultural national and global monitoring processes:**

No evidence.

3 ODI. 2012. Disaster Risk Management in post-2015 Policy Frameworks. Briefing Paper. London. UK.

## **Agriculture Target and Indicator options (as they would related to the SDGs and the HFA2)**

### **• Risk Governance (previous PFA1):**

Disaster Risk Reduction is an integral part of national agriculture, food and nutrition related policies and plans and/or the national policy for disaster risk reduction and/or management has an explicit and comprehensive inclusion of agriculture, food, nutrition and/or related sectors.

- Existence of a well-functioning disaster risk reduction/management structure within agriculture, food and nutrition and related sectoral agencies.
- Adequate levels of human and financial resources allocated towards risk reduction for agriculture, food security and nutrition.
- Risk Knowledge (previous PFA2 and 3):
- Systems are in place to collect, monitor and share data on key hazards and vulnerabilities for risks affecting agriculture, food and nutrition.
- Loss and damage data are systematically collected for the agriculture sector, not only in generic terms.
- Early warning systems are in place for all major risks affecting agriculture, food and nutrition with outreach to communities.

### **Preventing New Risk (previous PFA4):**

- Prevention and mitigation measures are applied to reduce risks for agriculture, food and nutrition at all administrative levels. (e.g. sustainable land management techniques and drought management measures to restore and rehabilitate desertified, degraded and drought-prone areas and prevent future degradation/desertification).
- Sector development policies, planning instruments and public investments have DRR mainstreamed and tools are available to risk proof new development investments.

### **Reducing Existing Risk (previous PFA5):**

- Multi-hazard disaster preparedness and/or contingency plans for agriculture, food and nutrition are in place and effective for DRR at all administrative levels and/or the national contingency plan has an explicit and comprehensive inclusion of agriculture, food, nutrition and/or related sectors.
- Disaster risk reduction measures for agriculture, food and nutrition are integrated into emergency response, post disaster recovery and transition-development planning and interventions.

### **Strengthening Resilience:**

- Agriculture, food and nutrition related social and economic support and services provided to communities at risk to reduce their vulnerabilities.

## **List of agencies contributing and description of institutional commitment**

In FAO, disaster risk reduction and management for resilience is a corporate priority. It is expressed in FAO's Strategic Framework 2010-19, and further elaborated through its renewed results-based management via its Strategic Objective 5 "Increase the resilience of livelihoods to threats and crises" affecting agriculture, food and nutrition (one objective among its five new strategic objectives).

The UNCCD as the key intergovernmental normative platform for land and soil provides a global framework to support the development and implementation of national and regional policies, programmes and measures to prevent, control and reverse desertification/land degradation and mitigate the effects of drought. As such, the reduction and forward-looking management of disaster risk for resilience is part of its reason of being. UNCCD promotes land-based techniques and mechanisms for the mitigation of, and adaptation to climate change and climate-aggravated disaster risks, with a particular focus on the slow-onset disaster of drought and the slow-moving process of land degradation<sup>4</sup>. Addressing challenges to the food, energy, water nexus from the "land and soil" leverage point – to improve ecosystems and livelihoods wherever land is desertifying or degrading -, the UNCCD is spearheading efforts to achieve land degradation neutrality through a post-2015 land and soil policy.

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<sup>4</sup> Since the slow-onset disaster of drought significantly differs from most other (in the majority sudden-onset) disaster types, analysis of its underlying drivers is particularly important. A separate sector brief on the complex issue of disaster-relevant, socio-economic drought and land degradation will therefore be issued.

## Key documents/source of additional info

FAO. 2014. Mainstreaming Disaster Risk Reduction in Agriculture: An Assessment of Progress made against the Hyogo Framework for Action. Input Paper prepared for the Global Assessment Report on Disaster Risk Reduction 2015.

FAO. 2013. Resilient Livelihoods: Disaster Risk Reduction for Food and Nutrition Security. Rome, Italy.

FAO. 2013. Climate-Smart Agriculture Sourcebook. Rome, Italy.

**About the UN Plan of Action on Disaster Risk Reduction for Resilience:** The UN Plan of Action, endorsed by the UN Secretary-General and the Executive Heads of UN Specialized Agencies, Funds and Programmes, includes a commitment for the UN system to work together to ensure disaster risk reduction is a key component of the post-2015 development agenda supported by a post-2015 framework for disaster risk reduction (HFA2). The UN Plan of Action improves system-wide coordinated actions and coherence, as well as increased effectiveness and collaboration in the support to Member States on disaster risk reduction.

**UN High Level Programmes Committee Senior Managers Group on Disaster Risk Reduction for Resilience (HLCP/SMG):**

Members of the HLCP/SMG that oversees the implementation of the UN plan of Action are FAO, IAEA, IFAD, IFRC, ILO, IMO, IOM, ITU, UNAIDS, UNCCD, UNDP, UNEP, UNESCO, UNFPA, UNHABITAT, UNHCHR, UNICEF, UNISDR, UNOCHA, UNOPS, UNOOSA, UNWOMEN, UNWTO, UPU, WFP, WHO and the World Bank.



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