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Lecture Notes of the Massive Open Online Course

National Adaptation Plans: Building Climate Resilience in Agriculture

Module 2: International Frameworks and National Adaptation
Planning

Lecture Notes of the Massive Open Online Course

National Adaptation Plans: Building Climate Resilience in Agriculture

Module 2: International Frameworks and National Adaptation Planning

Food and Agriculture Organization of the United Nations

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Module 2

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Foreword

This document presents a lecture note prepared for the National Adaptation Plans: Building Climate Resilience into Agriculture Massive Open Online Course (MOOC) which is one of the deliverables of the National Adaptation Plans (NAP-Ag) Programme.

The NAP-Ag Programme is a joint effort led by the United Nations Development Programme (UNDP) and the Food and Agriculture Organization of the United Nations (FAO) to support a set of developing countries to identify and integrate climate change adaptation measures in the agricultural sectors into relevant national planning and budgeting processes. Under this programme, UNITAR supported UNDP and FAO in developing a MOOC to raise awareness and increase the capacities of a wide range of interested stakeholders in climate change adaptation planning, specifically for the agriculture sectors.

This MOOC is structured around 6 thematic modules:

1. Introduction to climate change adaptation, agriculture and food security
2. International Frameworks and National Adaptation Planning
3. Identifying and assessing climate change impacts and risks
4. Identifying and prioritizing climate adaptation options
5. Governance, coordination and finance
6. Communications, monitoring and evaluation

The lecture notes include links to complementary lecture videos and additional resources.

The Module 2 introduces the NAP process and the NAP-Ag Programme. The Module 2 presents the LEG Technical Guidelines on NAP and the key elements of the NAP process. Attention is paid to the importance of the NAPs' alignment with the Nationally Determined Contributions (NDCs) and the 2030 Agenda for Sustainable Development. This module also introduces the "[Addressing agriculture, forestry and fisheries in National Adaptation Plans – Supplementary guidelines](#)" developed by FAO. Country experiences from Uruguay and Zambia on integration of agriculture in NAPs are presented.

Learning Objectives

- (1) Explain the process of formulation and implementation of National Adaptation Plans;
- (2) Describe the Integrating Agriculture in National Adaptation Plans (NAP-Ag) Programme and supplementary guidelines for addressing agriculture in national adaptation planning.

Acknowledgements

This course and the programme were made possible by the generous funding of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) through its International Climate Initiative (IKI).

Part I

2.1.1 Introduction to the LEG Technical Guidelines on NAP

UNITAR

Key messages

- 1) The guiding principles for the NAP process (decided under the UNFCCC, Decision 5/CP.17) reflect a continuous planning process at the national level with iterative updates and outputs, that is to be country-owned, country-driven, non-prescriptive, but flexible and based on country needs.
 - 2) The NAP technical guidelines lay down principles and elements which assist decision-makers to lead and navigate the process of NAP formulation and implementation in their countries.
 - 3) The four proposed elements of the NAP process provide a flexible series of steps and activities that can be carried out in any order or combination, as per the need of each country.
-

Guiding Principles

The guiding principles for the NAP process (decided under the UNFCCC, Decision 5/CP.17) reflect a continuous planning process at the national level with iterative updates and outputs, that is to be country-owned, country-driven, non-prescriptive, but flexible and based on country needs.

The planning process should:

- ensure to build on and not duplicate existing adaptation efforts,
- be participatory and transparent, enhance coherence of adaptation and development planning,
- consider vulnerable groups, communities and ecosystems,
- be guided by best available science,
- take into consideration traditional and indigenous knowledge, and
- be gender-sensitive.¹

Technical Guidelines

At COP 17, the countries that are Parties to the United Nations Framework Convention on Climate Change (or UNFCCC), asked the Least Developed Country Experts Group (LEG) to draft comprehensive technical guidelines for NAPs. In December 2012, the experts group published the Technical Guidelines for the NAP process. Today, these guidelines are a key resource for adaptation planning and are extensively used by countries.

¹ Decision 5/CP.17, p.80

The Guidelines are not prescriptive and are flexible – there is no single approach that applies to all countries, and each can decide on their own steps and sequence to accomplish their own planning process. They are generic because they can be used by Least Developed Countries (LDCs) and non-LDCs alike. Finally, the guidelines are iterative because the elements, steps and activities build on and inform each other.

The principles give shape to the general approach of the NAP, which is also reflected in the way the elements of the NAP can be addressed – in a generic, flexible manner, where no one approach or sequence of activities is imposed on planning in different countries. Complementarity of approaches and steps, which are developed to suit specific circumstances, is encouraged.

Elements of the NAP Process

The LEG NAP Technical Guidelines (2012) identify four elements for the formulation and implementation of national adaptation plans: A) lay the groundwork and address gaps; B) preparatory elements; C) implementation strategies; D) reporting, monitoring, and review (refer to Table 1 below).

<p>ELEMENT A. LAY THE GROUNDWORK AND ADDRESS GAPS</p> <ol style="list-style-type: none"> 1. Initiating and launching of the NAP process 2. Stocktaking: identifying available information on climate change impacts, vulnerability and adaptation and assessing gaps and needs of the enabling environment for the NAP process 3. Addressing capacity gaps and weaknesses in undertaking the NAP process 4. Comprehensively and iteratively assessing development needs and climate vulnerabilities
<p>ELEMENT B. PREPARATORY ELEMENTS</p> <ol style="list-style-type: none"> 1. Analysing current climate and future climate change scenarios 2. Assessing climate vulnerabilities and identifying adaptation options at the sector, subnational, national and other appropriate levels 3. Reviewing and appraising adaptation options 4. Compiling and communicating national adaptation plans 5. Integrating climate change adaptation into national and subnational development and sectoral planning
<p>ELEMENT C. IMPLEMENTATION STRATEGIES</p> <ol style="list-style-type: none"> 1. Prioritizing climate change adaptation in national planning 2. Developing a (long-term) national adaptation implementation strategy 3. Enhancing capacity for planning and implementation of adaptation 4. Promoting coordination and synergy at the regional level and with other multilateral environmental agreements
<p>ELEMENT D. REPORTING, MONITORING AND REVIEW</p> <ol style="list-style-type: none"> 1. Monitoring the NAP process 2. Reviewing the NAP process to assess progress, effectiveness and gaps 3. Iteratively updating the national adaptation plans 4. Outreach on the NAP process and reporting on progress and effectiveness

Table 1: Steps under each of the elements of the formulation of National Adaptation Plans, which may be undertaken as appropriate (LDC Expert Group, 2012, 23, Table 1)

Each element includes 17 steps and indicative activities under each step to provide further guidance and direction for decision-makers. Each step and suggested activity is provided in the technical guidelines available online.

There are several cross-cutting themes which will need to be taken into consideration in more than one of the recommended steps and activities. Examples of these cross-cutting themes are communication and outreach, stakeholder involvement, and education and training.

A. Lay the Groundwork and Address Gaps

Element A is about the launch the NAP process. This phase of the NAP process can be used for understanding the general planning and decision-making processes that shape the country's development and climate change priorities, understanding the institutions and stakeholders in the government, the nongovernmental sector and the broader development community along with sourcing financial support.

The main outputs of this element could include:

- A national mandate and strategic plan for the NAP process

For example, in Bhutan, the need for a NAP process, supported by a climate change policy, was identified during a Climate Dialogue held in 2015. In February 2016, government directives formally established a mandate for the Climate Change Department to lead the development of a NAP and a Climate Change Policy.²

- A roadmap or strategy for the NAP process

Australia's national adaptation framework, developed as part of its Plan of Collaborative Action on Climate Change in 2006, is an example of such strategy.³ It outlines the future agenda of collaboration between the Australian subnational governments to address key demands from business and the community for targeted information on climate change impacts, and to fill critical knowledge gaps which inhibit effective adaptation.

- The designation of a multi-stakeholder secretariat or coordinating committee to spearhead the process.

Remember the example from Zambia discussed in Week 1. In Zambia, the Ministry of National Development Planning was assigned the mandate to coordinate the NAP process, through its Interim Climate Change Secretariat.

- Synthesis of available data and knowledge and gap analyses

In effect, the step includes stocktaking of ongoing and past adaptation activities, and combining available data and analyses of the current and future climate at the broad national and regional level. A good example of the output is Malawi's NAP Stocktaking Report 2016 (UNDP), 2016, which includes pre-existing climate adaptation processes in Malawi, factors contributing to Malawi's vulnerability to climate change, climate change science and data resources in Malawi, etc. The synthesized data and knowledge could then

² Government of Bhutan, 2015

³ LDC Expert Group, 2012

feed into the possible next step of carrying out a gap analysis of the capacities and weaknesses of the activities, and the adequacy of available data and resources.

B. Preparatory Elements

Element B is associated with the preparation of the national adaptation plan. At this stage, countries can involve all stakeholders in preparing a NAP that builds on, and can be integrated into, sectoral, subnational and national plans and strategies. In this element, the recommendations produced at the end of the first phase are converted into actionable and concrete adaptation plans and projects, duly approved by national authorities.

The main outputs could include:

- Vulnerability and adaptation assessments⁴

The results of the vulnerability and adaptation assessment can be a compilation of vulnerabilities and a description of their context, root causes, trends and potential assumptions made, and can be assembled into national plans. Vulnerability assessments can be found in Assessment Report 5 – Working Group 2 of the IPCC, National Communications, and often as part of baseline assessments for different projects and programme's.

- Initiation of adaptation plans at different subnational levels or sectors

The adaptation plans may contain adaptation priorities, planned activities, and an implementation strategy for a period of time. This is a multi-year, multi-stakeholder effort that entails working with government actors.

- An appraisal of adaptation options⁵

Individual adaptation options, including economic, ecosystem and social costs and benefits, and possibilities for unintended impacts of these measures, may be categorized at multiple scales to address priority vulnerabilities.

C. Implementation Strategy

Element C is about implementation. During this phase of the planning process, focus shifts to adaptation actions which can be prioritized within the country's long-term planning an strengthening institutional capacity and regulatory frameworks for NAPs at national, sectoral and subnational levels. The main outputs would be:

- A (long-term) strategy for implementing the NAPs

An example of an implementation strategy is Tonga's Joint National Action Plan⁶ on Climate Change Adaptation and Disaster Risk Management (2010– 2015) formulated by the Ministry of Environment and Climate Change and National Emergency Management Office.

⁴ These will be discussed in more detail in Week 3.

⁵ These will be discussed in more detail in Week 4.

⁶ For more information: <http://www.sprep.org/att/irc/ecopies/countries/tonga/66.pdf>

- Concrete activities to implement priorities identified in the earlier steps.
- Plans for ensuring and promoting synergy with other multilateral environmental agreements and programs at the regional and national level.

D. Reporting, Monitoring and Reviewing

Element D is about monitoring, reporting, review and dissemination. In Element D, countries collect information on the NAP process, assess it through a national M&E system and provide/share outputs for the reporting on progress to the COP of the UNFCCC.

The main outputs of this element would include:

- A plan for monitoring and evaluation, data collection and ongoing compilation and synthesis of new information on impacts and vulnerabilities to be used in updating the NAPs

This would involve several steps beginning with revisiting and reviewing NAP process and the initial M&E system set up in the first element to assess progress, effectiveness and gaps; compiling and synthesizing information of new assessments and emerging science; and identifying areas that would be evaluated through qualitative and quantitative performance measures.

- Iteratively updated national adaptation plans

The update could include the revision of the NAP strategy, specifying what steps and activities would be repeated, replaced or added. The updates to the NAPS could be aligned with relevant national development plans.

- Outreach on the NAP process and reporting on progress and effectiveness

In fact, the NAPs are to be disseminated internationally and through the UNFCCC secretariat.

The LEG technical Guidelines on NAP are a comprehensive but non-prescriptive set of guidelines to assist countries in formulating their National Adaptation Plans. The main elements and steps countries may wish to undertake as part of their NAPs include laying the groundwork; carrying out preparatory elements; implementing strategies and actions; and monitoring, reviewing and reporting. Finally, each country's climate change adaptation concerns are different and countries should decide on the specific steps for their national process.

Abbreviations

GEF – Global Environment Facility

LDCF – Least Developed Countries Fund

ASC – Adaptation Sub-Committee under UK's Climate Change Act of 2008

MEA – Multilateral Environmental Agreements

LAPA – National Framework for the Local Adaptation Plan for Action initiated in 2010 in Nepal

Key resources

- 1) Decision 5/CP.17, Available here:
<http://unfccc.int/resource/docs/2011/cop17/eng/09a01.pdf#page=80>
- 2) LEG Technical Guidelines on NAP, Available here:
https://unfccc.int/files/adaptation/cancun_adaptation_framework/application/pdf/naptechguidelines_eng_high_res.pdf

Resources for further learning

Supporting Comoros to advance their NAP process. Available at:

<http://www.adaptation-undp.org/projects/comoros-nap-process>

Kingdom of Tonga. Joint National Action Plan On Climate Change Adaptation And Disaster Risk Management (2010-2015). Available at:

<http://www.sprep.org/att/irc/ecopies/countries/tonga/66.pdf>

Government of Nepal. Ministry of Environment. NAPA to LAPA. Available at:

<http://www.moenv.gov.np/cdkn/knowledge%20products/NAPA%20TO%20LAPA.pdf>

NAP Global Support Programme: Malawi. Available at:

<http://globalsupportprogramme.org/projects/malawi-nap-process>

2.1.2 NAP-NDC linkages

Experts: Rohini Kohli, Julie Teng

Key Messages

- 1) The challenges posed by climate change require a coordinated medium-term to long-term strategy at country level and it is crucial that both adaptation and mitigation actions are planned for adequately, using the best available science and evidence base.
- 2) It is important that NAP and NDC implementation, where countries have chosen to have the two processes, build on each other to provide a coherent framework.
- 3) The synergy between NAP and NDC can be harnessed with regards to integrated institutional frameworks, capacity development strategies, prioritization of interventions, integrated financing frameworks, and monitoring, evaluation and reporting.
- 4) NAP processes are an important part of both implementing the Paris Agreement, through NDCs, and achieving the SDGs. There is a strategic opportunity to improve adaptation planning and action on the ground as well as to enhance the scale and sustainability of impact from the three planning processes, by harnessing the linkages and leveraging each to the mutual benefit of all three.

With the Paris Agreement's entry into force in 2016, the focus shifted to its implementation. Nationally Determined Contributions (NDCs) are the primary vehicle for capturing, reporting and updating countries' commitments and progress under the Paris Agreement. Countries are looking at how to meet the commitments they set out in their NDCs. More than a hundred developing countries have chosen to include an adaptation component in their NDC and at least fifty mention the NAP. The importance of adaptation is also emphasized within the text of the Paris Agreement itself, both through the inclusion of a global goal on adaptation and with a call for all countries to engage in national adaptation planning processes. Developing countries are, in parallel, aligning their long-term national development priorities with the Sustainable Development Goals' (SDGs) framework.

The NAPs' process will govern prioritization and planning for scaling up adaptation investments for the near and medium term in many developing countries. Here are some of the reasons why establishing synergies and systematic linkages between NAPs and key processes such as NDCs, the 2030 Development Agenda and its SDGs are essential:

- All countries have a stake in the implementation of the Sustainable Development Agenda and the Paris Agreement; countries are rolling out actions on both simultaneously.
- Ministries of Environment, Finance and Planning, as well as sectoral ministries, play a key role with respect to NAPs, SDGs and NDCs and need to manage these processes effectively for the benefit of both development and climate action
- There is a strategic opportunity to improve adaptation planning and action on the ground as well as to enhance the scale and sustainability of impact from the three planning processes, by harnessing the linkages and leveraging each to the mutual benefit of all three.

- Coordination and linkages would also allow to:
 - Reduce vulnerability by integrating adaptation considerations into all relevant plans, policies, and strategies and prioritize and plan for adaptation
 - Implement the Paris Agreement: with NDCs as the primary vehicle for capturing, reporting and updating commitments and progress
 - Align long-term national development priorities with the SDG framework.

This alignment of development priorities between NAPs and NDCs can be done along the following lines:

- Integrated governance:
 - Collaborative coordination mechanisms and clear institutional mandates: as the responsibility for leading and coordinating both NDC and NAPs are likely to fall under the same Ministry
 - A coherent policy framework on climate change from which mitigation and adaptation strategies would derive, or to which the latter would contribute
 - Strengthened awareness of and knowledge on climate change impacts on development among decision makers in all sectors and at all levels of Government
- Capacity development:
 - Joint skills assessment: many of the capacities and skills required are common to mitigation and adaptation with regards to the planning and technical skills (e.g. climate information and climate science, economic appraisal tools), managerial skills (e.g. results-based management, policy development) and participatory skills (e.g. communications, stakeholders' consultations), although some skills are more specific.
 - Comprehensive long-term capacity development interventions and a training of trainers approach: many of the stakeholders are common to mitigation and adaptation. The emphasis should be put on building the capacities of local training and academic institutions to foster this long-term approach and to integrate climate change related topics into primary, secondary and higher education curricula.
- Prioritization of interventions:
 - Identification of activities with multi-sector co-benefits for development and climate resilience
 - Appraisal of economic/non-economic benefits and tradeoffs between interventions using tools such as cost-benefit analysis⁷, multi-criteria analysis, cost-effectiveness analysis.
- Integrated financing frameworks.
 - Close involvement between Ministries of Finance and Ministries of Planning or Economy lead. This will result in stronger outcomes and a more credible process that builds confidence and trust among private investors and external climate funders.
 - Use of financing scenarios and diagnostics (such as Climate Public Expenditures and Institutional Reviews, climate change coding and tracking reports)

⁷ Cost Benefit Analysis will be discussed in more detail in Week 4.

- Engagement of private sector, and public-private partnership options and blended financing, with an enhancement of the regulatory and fiscal frameworks to promote a better investment climate
- Monitoring, evaluation and reporting:
 - Developing complimentary indicators
 - Strengthening the M&E systems in place and integrating them into an overall development M&E system
 - Coordinating reports to the UNFCCC

These entry points would guide the planning processes for the countries' overall strategy to meet their commitments in the framework of the Paris Agreement.

Resources for further learning

FAO. 2017. Regional analysis of the nationally determined contributions of Eastern Africa GIZ, April 2017. Linking National Adaptation Plan Processes and Nationally Determined Contributions. Available at <http://www.fao.org/3/a-i8165e.pdf>

NAP Global Network, IISD, April 2017. Using NDCs, NAPs and the SDGs to Advance Climate-Resilient Development. Available at: <http://www.ndcpartnership.org/news-and-events/news/shared-learning-can-align-ndcs-naps-and-sdgs-expand-climate-resiliency>

UNDP, 2017. Implementation Guidance on NDCs (forthcoming).

UNDP-FAO, 2017. Briefing Note on NAP and NDCs in the agricultural sectors (working title, forthcoming).

Part II

2.2.1 NAP-Ag Programme Introduction

Experts: Julia Wolf, Rohini Kohli

Key Messages

- 1) The NAP-Ag Programme supports partners under a country-driven process to identify and integrate climate change adaptation measures for the agriculture sectors into relevant national planning and budgeting processes.
 - 2) NAP-Ag also supports countries in accessing climate finance through multilateral and bilateral financing sources.
 - 3) Each partner country's climate change adaptation concerns are different and so the support is tailored to help each country address their specific climate change adaptation concerns related to the agriculture sectors.
-

Launched in 2015, the Integrating Agriculture in National Adaptation Plan (NAP-Ag) Programme is working to address climate change impacts in the agriculture sectors within the formulation and the implementation of national adaptation plans. NAP-Ag is a multidisciplinary program, funded by Germany's Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB) through the International Climate Initiative (IKI), and implemented jointly by the Food and Agriculture Organization of the United Nations (FAO) and the United Nations Development Programme (UNDP).

The NAP-Ag Programme supports partners under a country-driven process to identify and integrate climate change adaptation measures for the agriculture sectors into relevant national planning and budgeting processes, including National Adaptation Plans (NAP), in several countries throughout Africa, Asia and Latin America. Specifically, FAO and UNDP are working with representatives in Ministries of Agriculture, Environment, Finance and Planning, in addition to UNFCCC focal points in Colombia, Gambia, Guatemala, Nepal, Kenya, the Philippines, Thailand, Uganda, Uruguay, Viet Nam and Zambia.

Each partner country's climate change adaptation concerns are different and so the support is tailored to help each country address their specific climate change adaptation concerns related to the agriculture sectors. For example, in Kenya, it was identified that there is a need to develop gender guidelines, monitoring and verification frameworks and to strengthen capacity of actors on gender and climate change as part of its medium- to long-term adaptation response to climate change. Another example is Uruguay, where adaptation measures are focused on cattle production, including water sources, feed and rangeland management measures, to be included in national development planning processes.

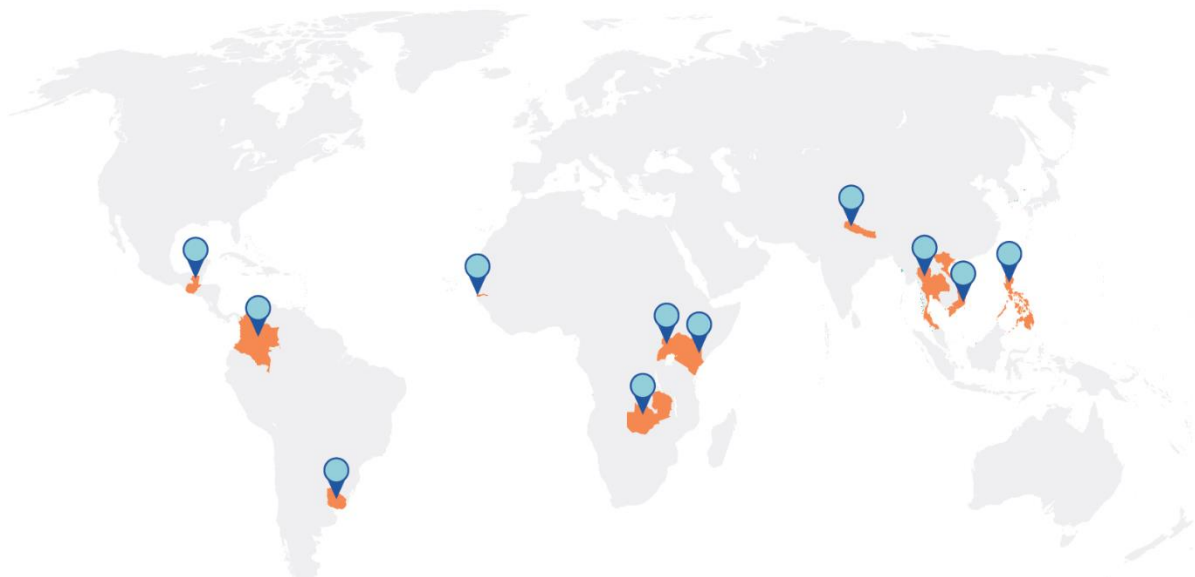


Figure 1: Partner countries of the NAP-Ag Programme

Another important function of the NAP-Ag is that it supports countries in accessing climate finance through multilateral and bilateral financing sources.

NAP-Ag key activities include:

Strengthening technical capacity and institutions at the national level by:

- Carrying out vulnerability and impact evaluations;
- Mainstreaming gender and gender analysis in policymaking;
- Conducting cost-benefit analysis of adaptation; and
- Identifying budgeting needs.

Developing an integrated roadmap by laying the groundwork

- stocktaking of existing adaptation policies;
- addressing gender equality and women's empowerment in market development;
- enhancing coherence between NAPs and other national processes; and
- supporting countries in leveraging climate finance for adaptation.

Improving evidence-based results by:

- developing an impact assessment framework;
- conducting cost benefit analyses; and
- collecting sex-disaggregated data and analyzing gender-differentiated adaptation needs.

Building the knowledge base by:

- enhancing mutual learning between countries on the NAP process;
- developing case studies on lessons learned and best practices; and
- promoting and facilitating peer-to-peer exchanges.

Key Definitions

Impact Assessment - The practice of identifying and evaluating, in monetary and/or non-monetary terms, the effects of climate change on natural and human systems.

Gender Mainstreaming - is a strategy that considers the concerns and experiences of women and men as an integral dimension of the design, implementation, monitoring and evaluation of all policies and programs.

Resources for further learning

FAO. NAP-Ag Programme. Available at www.fao.org/in-action/naps

FAO. NAP-Ag brochure - Integrating agriculture in National Adaptation Plans: Safeguarding livelihoods and promoting resilience through NAPs. Available at <http://www.fao.org/3/a-i6670e.pdf>

FAO, 2016. Integrating Agriculture in National Adaptation Plans. Available at <https://www.youtube.com/watch?v=yZTOpmBpvAc&t=74s&list=PLzp5NgJ2-dK5nlGEx4aqox4orKU7YctvW&index=8>

FAO-UNDP. 2017. Safeguarding livelihoods and promoting resilience through National Adaptation Plans—Case study: Kenya. Available at <http://www.fao.org/3/a-i8257e.pdf>

FAO-UNDP. 2017. Safeguarding livelihoods and promoting resilience through National Adaptation Plans— Case study: Uruguay. Available at <http://www.fao.org/3/a-i8237e.pdf>

Teng J. and Wolf, J. Building climate resilient food systems. Available at <http://www.undp.org/content/undp/en/home/blog/2017/building-climate-resilient-food-systems.html>

2.2.2 Supplementary Guidelines: Addressing Agriculture, Forestry and Fisheries in National Adaptation Plans

Expert: Kaisa Karttunen, Julia Wolf, Claudia Garcia and Alexandre Meybeck

Key Messages

- 1) Agriculture sectors are among the most exposed and sensitive sectors to the impacts of changing climate.
 - 2) Agricultural adaptation is tightly linked to many other cross-cutting or multi-sectoral adaptation issues.
 - 3) Agriculture sectors are extremely diverse and differ in how they will be impacted by climate change and how they will need to adapt.
 - 4) The NAP-Ag guidelines target national planners and decision-makers working on climate change issues in developing countries, as well as those working in the agriculture sectors.
 - 5) As a NAP is a national plan and its preparation an overall national process, all relevant sectors need to be involved and the unique context in each country needs to be considered.
-

The [Addressing agriculture, forestry and fisheries in National Adaptation Plans – Supplementary guidelines](#) (referred to as the NAP-Ag Guidelines) responds to a call by the Least Developed Group (LEG) of the UNFCCC, inviting international actors to draft sectorial guidelines to the [UNFCCC NAP Technical Guidelines](#).

The NAP-Ag Guidelines aim to support developing countries in:

- 1) reducing vulnerability of the agriculture sectors to the impacts of climate change by building adaptive capacities and resilience;
- 2) addressing agriculture in the formulation and implementation of NAPs; and
- 3) enhancing the integration of adaptation in agricultural development policies, programs and plans.

These guidelines were developed over the past two years in a consultative process involving 15 countries and 20 international agencies, including the Rome-Based Agencies and the CGIAR System, as well as the UNFCCC and the LEG. The NAP–Ag Guidelines are informed by the joint UNDP and FAO program, [Integrating Agriculture into National Adaptation Plans](#), which aims to address climate change adaptation concerns related to the agricultural sectors in 11 partner countries' national planning and budgeting processes. Notwithstanding the unique individuality of each country, important lessons can be drawn from existing experience. Such insights have enriched the NAP–Ag Guidelines with experiences from the ground. To facilitate integration with adaptation planning across different economic sectors, the NAP–Ag Guidelines follow the same four elements that structure the UNFCCC NAP Technical Guidelines: laying the groundwork and addressing gaps; preparatory elements; implementation strategies; and reporting, monitoring and review. Within each element, various possible steps related to the agricultural sectors are outlined. As every country pursues its individual,

nationally driven process to address climate change, the planning elements and steps described offer guidance, and are not prescriptive.

Resources for further learning

FAO, 2017. Addressing agriculture, forestry, and fisheries in National Adaptation Plans – Supplementary guidelines. Available at <http://www.fao.org/in-action/naps/adaptation-planning/guidelines/en/>

FAO. NAP-Ag Knowledge Tank for agriculture sectors' adaptation to climate change. Available at http://www.fao.org/in-action/naps/knowledge-tank/en/?page=8&ipp=10&tx_dynalist_pi1%5Bpar%5D=YToxOntzOjE6IkwiO3M6MToiMil7fQ%3D%3D

LEG Technical Guidelines on NAP. Available at https://unfccc.int/files/adaptation/cancun_adaptation_framework/application/pdf/naptechguidelines_eng_high_res.pdf

2.2.2a Genetic Resources in NAPs

Expert: FAO

Key Messages

- 1) Crops, livestock, trees and aquatic organisms that can survive and produce in future climates will be crucial in future production systems.
 - 2) It is essential to secure and mobilize genetic resources as part of national and global climate change adaptation planning.
 - 3) The FAO's Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning aim to assist countries in managing genetic resources as a pivotal reservoir and tool at their disposal to adapt agriculture and build resilience into agricultural and food production systems.
-

Genetic resources for food and agriculture play a crucial role in food security, nutrition and livelihoods and in the provision of environmental services.⁸ They are key components of sustainability, resilience and adaptability in production systems. They underpin the ability of crops, livestock, aquatic organisms and trees to withstand a range of different climatic.⁹ Crops, livestock, trees and aquatic organisms that can survive and produce in future climates will be crucial in future production systems.¹⁰ For example, livestock breeds raised in harsh production environments over a long period tend to acquire characteristics that enable them to cope with these condition.¹¹ It is therefore essential to secure and mobilize genetic resources as part of national and global climate change adaptation planning. In parts of the world, new combinations of temperature, moisture availability and day length are creating production environments not experienced previously for which adapted materials may not exist. The "Community based management of genetic resources in Honduras" case study demonstrates how replenishment of the diversity in agricultural systems encouraged the community management of genetic resources in Honduras.¹² See more on Honduras in Resources for this week.

Coping with climate change will require revising the goals of breeding programs¹³ and in some places the introduction of new varieties and breeds, even species. Improvements to *in-situ* and *ex-situ* conservation programs for domesticated species, their wild relatives and other wild genetic resources important for food and agriculture, along with policies that promote their sustainable use, are therefore urgently required.

The FAO's *Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning*¹⁴ aims to:

⁸ FAO, 2014

⁹ Ibid.

¹⁰ FAO, 2015a, Galluzzi *et al.* 2011

¹¹ FAO, 2014

¹² Ibid.

¹³ HLPE, 2012

¹⁴ FAO, 2015b

- promote the use of genetic resources for food and agriculture in climate change adaptation and support their integration into national climate change adaptation planning;
- support genetic resources experts and those involved in climate change adaptation to identify and address the challenges and opportunities of genetic resources for food and agriculture in adaptation; and
- promote the involvement of genetic resources stakeholders in the national climate change adaptation planning process.

The Guidelines include a list of adaptation measures in the different sectors of crop, livestock, forestry, fisheries and aquaculture in the following areas:

- i) Conservation
- ii) Production system adaptability and resilience
- iii) Specific adaptation of crops, domestic animals, forest tree and aquatic species
- iv) Availability and access

Key Definitions

Genetic resources - Genetic resources for food and agriculture encompass the variety and variability of animals, plants and micro-organisms that sustain the ecosystem structures, functions and processes in and around production systems, and that provide food and non-food agriculture products.

Resources for further learning

FAO, 2014. Submission by the Food and Agriculture Organization of the United Nations (FAO) to the United Nations Framework Convention on Climate Change (UNFCCC) on Issues relating to agriculture: adaptation measures. UNFCCC. 29 pp. Available at

https://unfccc.int/files/documentation/submissions_from_non-party_stakeholders/application/pdf/595.2.pdf

FAO, 2015a. Coping with climate change – the roles of genetic resources for food and agriculture.

FAO, 2015b. Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning. Rome. Available at <http://www.fao.org/3/a-i4940e.pdf>

2.2.3 Country voices for NAP-Ag in Uruguay and Zambia

Experts: Cecilia Jones, Arthur Asumani

Key Messages

- 1) The NAP-Ag is an opportunity for countries to address their concerns about climate change impact on agriculture sectors in their national development processes.
 - 2) Uruguay has organized a series of consultations called Adaptation Dialogues which aim to involve stakeholders from different agriculture production systems, especially farmers, to identify gaps in the adaptation capacity of these production systems and to find strategies to address these gaps.
 - 3) Zambia is focusing on capacity building of individuals and institutions, and enhanced recording and production of evidence based results as part of integrating agriculture into national development planning and budgeting processes for its NAP-Ag.
 - 4) Farmers have a profound knowledge of how climate affects them, however taking steps to overcome the challenges derived from climate change requires additional support, information, infrastructure, technical aspects, etc.
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Uruguay

For an Agriculture NAP to be effective at addressing the challenges of climate variability and climate change in agriculture, it must be inclusive of all the relevant actors of all agricultural sectors. Uruguay has decided to build a shared vision for its Agriculture NAP through a series of consultations, called Adaptation Dialogues, held between different stakeholders in climate change and agriculture.

These consultations began by identifying production systems such as: dairy system, agriculture, irrigated rice, livestock and animal husbandry, horticulture and fruticulture, fisheries, forestry and a transversal system that includes family farmers of all production systems.

Farmers, rural organizations, academia and public officers of each production systems have been invited to participate in the dialogues. The exchanges aim to identify adaptation options that are being implemented to reduce vulnerability, and increase adaptation capacity and resilience. Gaps will be discussed and the dialogue will also focus on finding effective ways to address those gaps.

One of the challenges of adaptation is that it is challenging to measure it. This is because adaptation has many dimensions that are difficult to summarize, which create problems in reporting and evaluating the progress of adaptation goals. The Adaptation Dialogues will attempt to resolve these issues for adaptation planning in Uruguay by determining meaningful adaptation indicators for the different monitoring and evaluation systems.

Zambia

The *integration of agriculture sectors in national adaptation plans*, or the NAP-Ag Programme, aims at facilitated incorporation of climate change adaptation, building on the lessons learnt from the NAPA,

into relevant new and existing policies, programs and the development planning processes and strategies, within the agriculture sectors at various levels. The NAP Ag Zambia project has prioritized several adaptation options in line with the four elements in the development of NAP in Agriculture sectors:

- Enhance capacities of individuals and institutions that are involved in climate change mitigation and adaptation planning implementation through provision of training that will enhance technical capacities and institutions. This includes training in capacity building assistance (CBA), gender mainstreaming and impact evaluation. It is anticipated that once the capacities are built, climate change mitigation and adaptation measures will be incorporated into the planning and budgeting processes in the agriculture sectors leading to increased sector resilience, improved productivity, enhanced food security and ultimately an improved rural and national economy, able to deal with and recover from the effects of climate change.
- Develop a framework via formulation of a road map for integrating climate related actions into planning by addressing knowledge gaps, institutional strengths/ weaknesses by engaging in widespread consultations at various levels.
- Document evidence based adaptation measures by recording case studies. Two studies are under way following the CBA training. It is envisaged that the documented adaptation evidence that is currently lacking in Zambia can be developed so that mitigation and adaptation technologies/methodologies such as climate smart agriculture can be enhanced.
- Encourage advocacy and knowledge sharing on NAPs in agriculture through increased outreach to different target audiences including the professional institutions and the private sector. This will also promote and encourage sharing and uptake of climate adaptation technologies and strategies at various levels.

Resources for further learning:

Ministry of National Development Planning, Republic of Zambia, 2016. National Policy for Climate Change, Zambia. Available at <http://www.mndp.gov.zm/>

UNDP. Spearheading adaptation dialogue in Uruguay: The dairy system. Available at <http://www.adaptation-undp.org/spearheading-adaptation-dialogue-uruguay-dairy-system>

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FAO, 2014. Submission by the Food and Agriculture Organization of the United Nations (FAO) to the United Nations Framework Convention on Climate Change (UNFCCC) on Issues relating to agriculture: adaptation measures. UNFCCC. 29 pp. Available at https://unfccc.int/files/documentation/submissions_from_non-party_stakeholders/application/pdf/595.2.pdf

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FAO, 2016. Climate Change and Food Security: Risks and Responses. FAO, Rome. Available at <http://www.fao.org/3/a-i5188e.pdf>

Galluzzi, G., Duijvendijk, C. van, Collette, L., Azzu, N. & Hodgkin, T., eds., 2011. Biodiversity for food and agriculture: contributing to food security and sustainability in a changing world. Outcomes of an Expert Workshop held by FAO and the Platform on Agrobiodiversity Research from 14-16 April 2010, Rome, Italy. FAO/PAR. Available at <http://www.fao.org/3/a-i1980e.pdf>.

Government of Bhutan, August 2015. National Adaptation Plan (NAPs). Available at https://unfccc.int/files/adaptation/application/pdf/bhutan_summary_cca.pdf

HLPE, 2012. Food security and climate change. A report by the High-Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.

LDC Expert Group, December 2012. National Adaptation Plans: Technical guidelines for the national adaptation plan process. Available at https://unfccc.int/files/adaptation/cancun_adaptation_framework/application/pdf/naptechguidelines_eng_high_res.pdf

Reddy, S. K., and Gondwe, K. J., 2016 Malawi NAP Stocktaking Report. Available at http://globalsupportprogramme.org/sites/default/files/uploaded-images/malawi_nap_stocktaking_report_final_2016.pdf

UNDP-GSP Country Initiatives. Available at <http://www.adaptation-undp.org/projects/naps-ldcs>

MOOC videos

Week 2 Part 1 - Introduction to the LEG Technical Guidelines. Watch here:

<https://www.youtube.com/watch?v=Vl5osl7fnLY&index=3&list=PLyBRsrYRs7YfwMYIxBV41CPwMgeC1e-h>

Week 2 Part 2 - Supplementary Guidelines on Address Agriculture. Watch here:

<https://www.youtube.com/watch?v=4xrLsw7yKMU&index=4&list=PLyBRsrYRs7YfwMYIxBV41CPwMgeC1e-h>

Integrating Agriculture in National Adaptation Plans. Watch here:

https://www.youtube.com/watch?time_continue=6&v=yZTOpmBpvAc

The Philippines Case study:

Episode 1. Watch here:

<https://www.youtube.com/watch?v=luJ5H2LSjn8&list=PLyBRsrYRs7YfwMYIxBV41CPwMgeC1e-h&index=15>

Episode 2. Watch here:

<https://www.youtube.com/watch?v=4x3gyuqxgk8&list=PLyBRsrYRs7YfwMYIxBV41CPwMgeC1e-h&index=16>

Climate Action | Addressing agriculture in NAPs (Julia Wolf), Watch here

<https://youtu.be/j6loyiTUpX8>

