Food and Agriculture Organization of the United Nations

FAO'S TOOLS AND GUIDANCE TO ASSIST IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY AND THE STRATEGIC PLAN FOR BIODIVERSITY 2011-2020

Background

This document aims to highlight FAO's existing tools and guidance that can assist countries implement the Strategic Plan for Biodiversity 2011-2020. It can also assist the CBD National Focal Points and their partners in the involvement of the different food and agriculture sectors in the planning and implementation of the Strategic Plan on Biodiversity 2011-2020.

The document presents, grouped by Aichi Targets, the FAO's areas of work and the specific tools that are available to countries and which contribute to the implementation of the Strategic Plan for Biodiversity 2011-2020 and to achieving the Aichi Biodiversity Targets. Although most of the tools are listed only once under the Target they are most relevant to, a number of them could also contribute to other Targets.

Biodiversity in FAO (www.fao.org/biodiversity)

The Mandate of FAO is to "improve nutrition, increase agricultural productivity, raise the standard of living in rural populations and contribute to global economic growth". Although biodiversity is relevant to all FAO's Strategic Objectives, one of them especially mainstreams biodiversity and aims to: "make agriculture, forestry and fisheries more productive and sustainable".[1]

The work of FAO is guided by member countries through its Governing Bodies. These bodies provide a platform for countries to address issues related to improving the sustainability of agriculture, livestock, forestry, fisheries and aquaculture practices. The FAO Conference is the main decision-making body, and its work is supported by a number of other bodies, which include the technical committees on agriculture, forestry and fisheries. The work of the FAO is also supported by a number of Statutory Bodies, such as the Commission on Genetic Resources for Food and Agriculture, where countries debate and deliberate on matters related to the mandate of FAO at global or regional level.

The different FAO bodies have developed and adopted a number of biodiversity-related instruments, conventions and agreements. These include the Global Plans of Action on Plant, Animal and Forest Genetic Resources (negotiated within the Commission on Genetic Resources for Food and Agriculture), the International Treaty on Plant Genetic Resources for Food and Agriculture, the International Plant Protection Convention, the Code of Conduct for Sustainable Fisheries, the International Code of Conduct on Pesticide Management and Sustainable Forest Management, to name a few.

FAO is also a leading partner in a number of biodiversity related partnerships, including the Collaborative Partnership on Sustainable Wildlife Management, the Collaborative Partnership on Forests, and the International Partnership for Sustainable Development of Mountain Regions.

FAO biodiversity related knowledge

FAO has developed a number of different instruments, guidelines, tools and other technical materials that integrate biodiversity concerns and that would prove especially useful if implemented at national levels through coordinated efforts between agriculture and environment constituencies. A more

[1] See the The Director-General's Medium Term Plan 2014-17 and Programme of Work and Budget 2014-15 available at http://www.fao.org/docrep/meeting/027/mf490e.pdf

complete list of these tools, including the main knowledge generation instruments, is annexed to this document.

As part of its specific mandate, FAO collects information from countries and generates knowledge on issues specific to natural resources, especially as they relate to food and agriculture. Among these there are a number of periodic assessments that have become part of the core work of FAO. They also contribute to developing FAO's policies, strategies and action plans on several topics and at different levels.

The knowledge generated by FAO through its studies, analysis or assessments is of public access and can provides the basis for the development of specific national instruments such as action plans, codes of conducts, guidelines and other management or policy oriented tools for the implementation of the Strategic Plan for Biodiversity 2011-2020.

FAO's tools and areas of work and the Aichi Biodiversity Targets

A number of tools and areas of FAO work are presented below. These are listed according to their relevance to specific Aichi Biodiversity Targets with the aim of supporting countries identifying possible synergies at national level. FAO's periodic assessments of natural resources, relevant to most Aichi Targets, include:

- Global Forest Resources Assessment (FRA)
- State of the World Fisheries and Aquaculture (SOFIA)
- The State of the World's Plant Genetic Resources for Food and Agriculture
- The State of the World's Animal Genetic Resources for Food and Agriculture
- The State of the World's Forest Genetic Resources for Food and Agriculture
- State of the World's Forests
- The State of the World's Land and Water Resources for Food and Agriculture
- The State of the World's Aquatic Genetic Resources for Food and Agriculture (in preparation)
- The State of the World's Biodiversity for Food and Agriculture (in preparation)

Strategic Goal A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

Target 4. ***By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.***

FAO's Work on: Sustainable intensification of crop production; Increased sustainable livestock production; Sustainable management and use of fisheries and aquaculture resources; Sustainable management of forests and trees; The inclusion of biodiversity in agricultural and livestock production policies; Sustainable management of land, water and genetic resources and improved responses to global environmental challenges affecting food and agriculture; FAO and UNEP joint Sustainable Food Systems Programme to improve resource use efficiency and reduce the pollution intensity of food systems, from production to consumption, while addressing issues of food and nutrition security; FAO supports its member countries and relevant intergovernmental processes in making the transition to Energy-Smart Food (ESF). Becoming energy-smart will require a transformation along the food chain that involves: relying more on low-carbon energy systems and using energy more efficiently; strengthening the role of renewable energy within food systems; providing greater access to modern energy services for development, and at the same time supporting the achievement of national food security and sustainable development goals.

Tools

- Development and implementation of context specific fisheries and aquaculture management plans consistent with the Ecosystem Approach to Fisheries (EAF) and the Ecosystem Approach to Aquaculture (EAA), using the Toolbox for EAF and EAA
- The UN-Energy Decision Support Tool (DST) for Sustainable Bioenergy (FAO, UNEP)
- The Bioenergy & Food Security (BEFS) project
- The Bioenergy & Food Security Criteria & Indicators (BEFSCI) project
- Integrated Food Energy Systems (IFES)
- Bioenergy Environmental Impact Assessment Framework (BIAS) gives a brief overview of the main environmental issues related to bioenergy and examines methodological options, knowledge platforms and databases. It also identifies their limitations for evaluating environmental impact of bioenergy projects and policies. Issues covered include water, soil, biodiversity, greenhouse gas emissions, land use change and data and knowledge gaps.
- Global Bioenergy Partnership (GBEP) Sustainability Indicators for Bioenergy
- Save and Grow

Strategic Goal B: Reduce the direct pressures on biodiversity and promote sustainable use

Target 5. ***By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.***

FAO's Work on: Sustainable intensification of crop production; Increased sustainable livestock production; Sustainable management and use of fisheries and aquaculture resources; Sustainable management of forests and trees; The inclusion of biodiversity in agricultural and livestock production policies; Sustainable management of land, water and genetic resources and improved responses to global environmental challenges affecting food and agriculture.

Tools

- Global Bioenergy Partnership (GBEP) Sustainability Indicators for Bioenergy
- Voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security

Target 6. ***By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.***

FAO's work on: Sustainable management and use of fisheries and aquaculture resources; Work with members and other stakeholders to improve formulation of policies and standards that facilitate the implementation of the Code of Conduct for Responsible Fisheries (CCRF) and other international instruments, as well as response to emerging issues

Tools

- Code of Conduct for Responsible Fisheries and its technical guidelines

International Plans of Action:

- International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks)
- International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU)
- International Plan of Action for the Management of Fishing Capacity (IPOA-Capacity)
- International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds)

International Guidelines:

- Guidelines on Bycatch Management and Reduction of Discards.
- International Guidelines for the Management of Deep-sea Fisheries in the High Seas
- Two International Guidelines for eco-labelling of Fish and Fishery products from i) capture fisheries and ii) inland fisheries
- FAO leads the development of International Guidelines on Securing Sustainable Small-Scale Fisheries as a complement to the Code of Conduct for Responsible Fisheries
- FAO Technical Guidelines for Responsible Fisheries
- Ecosystem Approach to Fisheries (EAF) toolbox which has been designed to guide users through each of the four main EAF management planning steps and activities using simplified text and clear instructions

Target 7. ***By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.***

FAO's Work on: Sustainable intensification of crop production; Increased sustainable livestock production; Sustainable management and use of fisheries and aquaculture resources; Sustainable management of forests and trees; The inclusion of biodiversity in agricultural and livestock production policies; Sustainable management of land, water and genetic resources and improved responses to global environmental challenges affecting food and agriculture.

Tools

- Second Global Plan of Action for Plant Genetic Resources
- Global Plan of Action for Animal Genetic Resources and the Interlaken Declaration
- Global Plan of Action on Forest Genetic Resources
- Climate-Smart Agriculture Sourcebook
- Responsible management of planted forests- Voluntary guidelines
- Promoting sustainable management of forests and woodlands
- FAO Technical Guidelines for Responsible Fisheries – Guidelines on Aquaculture Development
- Sustaining communities, livestock and wildlife – a guide to participatory land-use planning
- Set of Land Degradation Assessments in Drylands (LADA) Manuals for Local Level Assessment of Land Degradation and Sustainable Land Management
- Sustainability Assessment of Food and Agriculture systems (SAFA)
- Save and Grow
- Code of conduct on responsible fisheries
- International Code of Conduct on Pesticide Management
- Voluntary guidelines on the responsible governance of tenure of land, fisheries and forests in the context of national food security

Target 8. ***By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.***

FAO's work on: Sustainable management of land, water and genetic resources and improved responses to global environmental challenges affecting food and agriculture.

Tools

- International Code of Conduct on Pesticide Management

Target 9. ***By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.***

International Plant Protection Convention (IPPC) and its framework and strategic objectives.

- IPPC Strategic Objective B - Protect the environment, forests and biodiversity from plant pests.

The IPPC develops standards dealing with the potential movement of invasive alien species important to the protection of biodiversity. These will deal with minimizing pest movement by sea containers and air containers and reducing the pest risk of waste material from ships.

Tools

- Several (about 53) International Standards on Phytosanitary Measures (ISPMs) adopted by the - Commission on Phytosanitary Measures (CPM), including annexes (diagnostic protocols and phytosanitary treatments). Texts of adopted International Standards on Phytosanitary Measures (ISPMs) are available in the IPPC website.
- Guide to implementation of phytosanitary standards in forestry
- Global Bioenergy Partnership (GBEP) Sustainability Indicators for Bioenergy

Target 10. ***By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.***

FAO's work on: Sustainable management and use of fisheries and aquaculture resources; Effective management of marine and inland capture fisheries; Sustainable management of land, water and genetic resources and improved responses to global environmental challenges affecting food and agriculture.

Tools

- International Guidelines on the Management of Deep-sea Fisheries in the High Seas

Strategic Goal C: To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

Target 11. ***By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.***

Tools

- FAO Technical Guidelines for Responsible Fisheries No. 4, Suppl. 4 Fisheries Management 4. Marine protected areas and fisheries
- International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks)
- International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU)
- International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds)
- Guidelines on Bycatch Management and Reduction of Discards
- International Guidelines for the Management of Deep-sea Fisheries in the High Seas
- Two International Guidelines for eco-labelling of Fish and Fishery products from i) capture fisheries and ii) inland fisheries
- FAO Technical Guidelines for Responsible Fisheries
- Ecosystem Approach to Fisheries (EAF) toolbox designed to guide users through each of the EAF management planning steps and activities

Target 12. ***By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.***

FAO's Work on: Sustainable intensification of crop production; Increased sustainable livestock production; Sustainable management and use of fisheries and aquaculture resources; Sustainable management of forests and trees; The inclusion of biodiversity in agricultural and livestock production policies; Sustainable management of land, water and genetic resources and improved responses to global environmental challenges affecting food and agriculture.

Tools

- Code of Conduct for Responsible Fisheries
- FAO Technical Guidelines for Responsible Fisheries
- Development and implementation of context specific fisheries and aquaculture management plans consistent with the Ecosystem Approach to Fisheries (EAF) and the Ecosystem Approach to Aquaculture (EAA), using the Toolbox for EAF and EAA
- International Plan of Action for the Conservation and Management of Sharks (IPOA-Sharks)
- International Plan of Action to Prevent, Deter, and Eliminate Illegal, Unreported and Unregulated Fishing (IPOA-IUU)
- International Plan of Action for Reducing Incidental Catch of Seabirds in Longline Fisheries (IPOA-Seabirds)
- Guidelines on Bycatch Management and Reduction of Discards
- International Guidelines for the Management of Deep-sea Fisheries in the High Seas
- Two International Guidelines for eco-labelling of Fish and Fishery products from i) capture fisheries and ii) inland fisheries
- Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture
- Tools and guidelines for *in situ* conservation and on-farm management of plant genetic resources for food and agriculture (e.g. Concept note on Global Networking on in situ conservation and on-farm management of plant genetic resources for food and agriculture)

- Guidelines for Developing a National Strategy for Plant Genetic Resources for Food and Agriculture (draft)
- Global Plan of Action for Animal Genetic Resources and the Interlaken Declaration
- Global Plan for Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources
- Responsible management of planted forests- Voluntary guidelines
- FAO Expert Advisory Panel for the Assessment of Proposals to Amend Appendices I and II of CITES Concerning commercially-exploited Aquatic Species

Target 13. ***By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.***

FAO's Work on: Sustainable intensification of crop production; Increased sustainable livestock production; Sustainable management and use of fisheries and aquaculture resources; Sustainable management of forests and trees; The inclusion of biodiversity in agricultural and livestock production policies; Sustainable management of land, water and genetic resources and improved responses to global environmental challenges affecting food and agriculture.

Tools

- Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture
- Global Plan of Action for Animal Genetic Resources and the Interlaken Declaration
- Global Plan for Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources
- Elements of the Code of Conduct of Responsible Fisheries and associated tools for assessing their implementation, aimed to maintain a broad genetic basis and to ensure sustainable use and conservation of aquatic genetic resources (due 2018-2019)

Guidelines supporting the work on Animal Genetic Resources

- Surveying and monitoring of animal genetic resources
- Phenotypic characterization of animal genetic resources
- Molecular characterization of animal genetic resources
- Breeding strategies for sustainable management of animal genetic resources
- Cryoconservation of animal genetic resources
- *In vivo* conservation of animal genetic resources
- Preparation of national strategies and action plans for animal genetic resources
- Developing the institutional framework for the management of animal genetic resources

Guidelines supporting the work on Plant Genetic Resources

- Tools and guidelines for *in situ* conservation and on-farm management of plant genetic resources for food and agriculture (e.g. Concept note on Global Networking on in situ conservation and on-farm management of plant genetic resources for food and agriculture)
- Genebank Standards for Plant Genetic Resources for Food and Agriculture
- Guidelines for Developing a National Strategy for Plant Genetic Resources for Food and Agriculture (draft)
- Guide for National Seed Policy Formulation (draft)

Strategic Goal D: Enhance the benefits to all from biodiversity and ecosystem services

Target 14. ***By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.***

Tools

- Guidelines for restoring the resilience of forest landscapes in drylands (due December 2014)
- Forest and landscape restoration mechanism
- International Code of Conduct on the Distribution and Use of Pesticides
- Development of relevant policies with respect to Valuation of the Contribution of Forests and Wildlife to Economic Development in Africa (due mid 2015)
- Human dimensions of the ecosystem approach to fisheries: an overview of context, concepts, tools and methods
- Guidance on Payments for Ecosystem Services in Fisheries and Aquaculture (due mid 2015)
- Technical paper/review of aquaculture potential in peatlands with reduction of emissions (due end of 2015)
- Multiple tools under the Global Action on Pollination Services for Sustainable Agriculture:
    - Aspects Determining the Risk of Pesticides to Wild Bees
    - Handbook for Participatory Socioeconomic Evaluation of Pollinator-friendly Practices
    - Potential Effects of Climate Change on Crop Pollination
    - Protocol to Detect and Assess Pollination Deficits in Crops: A Handbook for its Use
    - Tool for Valuation of Pollination Services at a National Level
- Remuneration of positive externalities from generation of ecosystem services: analyses of link between policy framework and actual operating schemes of different selected countries case studies (due mid 2015)
- Development of payments for ecosystem services schemes/valuation of sustainable grassland management

Target 15. ***By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.***

FAO's work on: Forest and climate change programme, Mitigation of Climate Change in Agriculture (MICCA) Programme and Climate-smart agriculture (CSA) Initiative (knowledge sharing, capacity building, sectoral integration, and regional cooperation), Commission's Programme of Work on Climate Change and GRFA; Sustainable management of land, water and genetic resources and improved responses to global environmental challenges affecting food and agriculture;

FAO supports its member countries and relevant intergovernmental processes in making the transition to Energy-Smart Food (ESF). Becoming energy-smart will require a transformation along the food chain that involves: relying more on low-carbon energy systems and using energy more efficiently; strengthening the role of renewable energy within food systems; providing greater access to modern energy services for development, and at the same time supporting the achievement of national food security and sustainable development goals.

Tools

- The UN-Energy Decision Support Tool (DST) for Sustainable Bioenergy (FAO, UNEPP)
- Compilation of Tools and Methodologies to Assess the Sustainability of Modern Bioenergy (publication)
- Good Environmental Practices in Bioenergy Feedstock Production (publication)
- Bioenergy and Food Security Investment Screening (BEFS operator level tool)

- Bioenergy and Food Security Rapid Appraisal
- Integrated Food Energy Systems (IFES)
- Bioenergy Environmental Impact Assessment Framework (BIAS) gives a brief overview of the main environmental issues related to bioenergy and examines methodological options, knowledge platforms and databases. It also identifies their limitations for evaluating environmental impact of bioenergy projects and policies. Issues covered include water, soil, biodiversity, greenhouse gas emissions, land use change and data and knowledge gaps
- Global Bioenergy Partnership (GBEP) Sustainability Indicators for Bioenergy

Target 16. ***By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.***

FAO Work includes the technical and policy support to the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture, in harmony with the Convention on Biological Diversity and in a mutually supportive manner with the Nagoya Protocol as well as the work carried out on different subsectors of genetic resources for food and agriculture by the Commission on Genetic Resources for Food and Agriculture in cooperation with other international instruments and organizations.

Tools

Knowledge

- Background Study Papers 1, 2, 4, 7, 8, 12, 14, 30, 42, 43, 44, 45,46, 47 and 59 of the Commission on Genetic Resources for Food and Agriculture

Policy

- Commission on Genetic Resources for Food and Agriculture
- International Treaty on Plant Genetic Resources for Food and Agriculture

Strategic Goal E: Enhance implementation through participatory planning, knowledge management and capacity building

Target 17. ***By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.***

The development of FAO's periodic assessments involves the contribution of national experts, and often national and regional processes, mostly from the agriculture and food sectors institutions, on a number of topics of specific relevance to biodiversity. Their involvement could effectively contribute to the development and implementation of national strategies and action plans.
National focal points have been established on the following topics:

- Animal genetic resources
- Forest genetic resources
- Forest Resources
- Plant genetic resources
- International Plant Protection Convention
- Aquatic genetic resources
- Biodiversity for Food and Agriculture

Tools

Most of the tools presented in the other targets

Target 18. ***By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.***

Tools

- FAO Policy on Indigenous and Tribal People
- FAO Voluntary Guidelines to support the progressive realization of the right to adequate food in the context of national food security