



Food and Agriculture Organization
of the United Nations

Targets, indicators and verifiers for forest genetic resources

Regional Briefing
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Background

13th Session of the CGRFA (2011)

- Requested FAO to continue developing targets and indicators within the planned or on-going processes of global assessments or action plans.
- Requested intergovernmental technical working groups to review targets and indicators within their respective sectors, and to provide recommendations to the Commission for their further development.
- Indicators should be policy relevant, scientifically sound, understandable, feasible and sensitive to changes.





Development of targets and indicators for FGR

- ITWG-FGR-2 (Jan 2013) considered a provisional list of possible indicators
- ITWG-FGR-3 (July 2014) revised a draft list of indicators and recommended that the number of indicators should be further reduced to few key verifiable indicators
- CGRFA-15 (Jan 2015) requested FAO to coordinate an inter-sessional consultative process with the participation of the Working Group to further refine the draft list of indicators, and to identify a set of targets for the conservation, sustainable use and development of FGR
- ITWG-FGR-4 (May 2016) made a proposal for targets, indicators and verifiers
- CGRFA-16 (Feb 2017) endorsed the proposal.





The purpose of the targets and indicators

1. Specify objectives for countries to achieve as their response to the Global Plan of Action and track how many countries have met these objectives, and to which extent;
2. Set objectives for the conservation, use and development of forest genetic resources, and measure the progress countries are making towards these objectives; and
3. Contribute to monitoring the progress made towards Aichi Biodiversity Target 13 (and a subsequent target replacing it for 2021-2030) as well as relevant targets of the Sustainable Development Goals.





Targets and indicators as assessment tools

Hierarchy of goals (or principles), targets (or criteria), indicators and verifiers

- Goals provide the overall justification for targets, indicators and verifiers.
- Targets make goals more meaningful and operational without being themselves direct measures for implementation.
- Indicators are based on components of natural or man-made systems that can be attributed to, or used as a proxy for, the sustainability or other aspects of these systems and their utilisation.
- Verifiers are data or information that provide means of verification.

Boyle, T.J. 2000. Criteria and indicators for the conservation of genetic diversity, in: Young, A. G., Boshier, D. H., Boyle, T. J. (Eds.), *Forest Conservation Genetics: Principles and Practice*. CABI Publishing, Wallingford, pp. 239–251.





Targets and indicators for FGR

The following approach was used in their finalization:

1. Two sets of targets and indicators are needed
 - one set for monitoring the responses of countries to the Global Plan of Action
 - another set for assessing the state of conservation, use and development of forest genetic resources
2. The targets and indicators are formulated based on the broader needs and actions identified at the level of priority areas in the Global Plan of Action.
3. The targets and indicators focus on actions that need to be carried out at the national level.





Targets and indicators for FGR

Set 1. Four targets for countries to respond to the Global Plan of Action, 10 indicators

1. Availability of data and information on FGR is increased;
2. National *in situ* and *ex situ* systems for FGR conservation are strengthened;
3. Tree seed and breeding programmes, as well as extension efforts on FGR use, are reinforced; and
4. National coordination mechanisms on FGR are created, and national strategies for FGR conservation and use are developed and implemented.





Targets and indicators for FGR

Set 2. Four targets for the state of conservation, use and development of forest genetic resources, 10 indicators

1. FGR are regularly assessed and characterized;
2. FGR are conserved *in situ*, and complementary *ex situ* measures have been implemented;
3. Use and development of FGR are enhanced; and
4. Policies and capacities supporting FGR conservation and sustainable use are strengthened.





Set 1 – Target 1

Target	Indicator (response)	Verifier(s)
Availability of data and information on FGR is increased	Extent of national FGR inventories or similar arrangements	Number and list of countries with operational national FGR inventories or similar arrangements
	Extent of up-to-date national FGR information systems	Number and list of countries with up-to-date national FGR information system(s) or other similar arrangements





Set 1 – Target 2

Target	Indicator (response)	Verifier(s)
National <i>in situ</i> and <i>ex situ</i> systems for FGR conservation are strengthened	Extent of national <i>in situ</i> conservation systems	Number and list of countries with operational national <i>in situ</i> conservation systems
	Extent of national <i>ex situ</i> conservation systems	Number and list of countries with operational national <i>ex situ</i> conservation systems





Set 1 – Target 3

Target	Indicator (response)	Verifier(s)
Tree seed and breeding programmes, as well as extension efforts on FGR use, are reinforced, including for conservation collections	Extent of national tree seed programmes	Number and list of countries with operational national tree seed programmes or similar arrangements
	Extent of tree breeding programmes	Number and list of countries with operational tree breeding programmes
	Extent of extension efforts promoting appropriate use of FGR	Number and list of countries with ongoing extension programmes or activities on FGR use





Set 1 – Target 4

Target	Indicator (response)	Verifier(s)
National coordination mechanisms on FGR are created, and national strategies for FGR conservation and use are developed and implemented	Extent of national coordination mechanisms on FGR	Number and list of countries with national coordination mechanisms on FGR
	Extent of national strategies for FGR conservation and use	Number and list of countries implementing national strategies for FGR conservation and use
	Extent to which national strategies contribute to the implementation of regional or sub-regional FGR conservation strategies	Number and list of countries whose national strategy contribute to the implementation of regional or sub-regional FGR conservation strategy





Set 2 – Target 1

Target	Indicator (state)	Verifier(s)
FGR are regularly assessed and characterized	Assessment of FGR	Number and list of species for which an up to date national distribution range is available
	Characterization of FGR	<p>Number and list of species which have been characterized based on non-molecular information (e.g. provenance trials, ecological or climatic zonation)</p> <p>Number and list of species which have been characterized based on molecular information (e.g. range-wide sampling of populations for molecular marker studies)</p>





Set 2 – Target 2

Target	Indicator (state)	Verifier(s)
FGR are conserved <i>in situ</i> , and complementary <i>ex situ</i> measures have been implemented	Amount FGR conserved <i>in situ</i>	Number and list of species included in <i>in situ</i> conservation programmes Number of <i>in situ</i> conservation units by species Area (ha) designated and managed for <i>in situ</i> conservation by species
	Amount of FGR conserved <i>ex situ</i>	Number and list of species included in <i>ex situ</i> conservation programmes Number of <i>ex situ</i> conservation units by species Area (ha) designated and managed for <i>ex situ</i> conservation by species Number of <i>ex situ</i> accessions (in seed and clone banks) by species





Set 2 – Target 3

Target	Indicator (state)	Verifier(s)
Use and development of FGR are enhanced	Species included in tree seed and breeding programmes (including international breeding cooperation and efforts carried out by the private sector)	Number and list of species included in national tree seed programmes Number and list of species included in tree breeding programmes
	Production of forest reproductive material	Area (ha) and number of seed stands by species Area (ha) and number of seed orchards by species Amount (average number per year) of planting stock produced through macro and micropropagation by species
	State of tree breeding programmes	Testing and selection cycle (1 st , 2 nd etc. generation) by species





Set 2 – Target 4

Target	Indicator (state)	Verifier(s)
Policies and capacities supporting FGR conservation and sustainable use are strengthened	Integration of FGR conservation and use into relevant national policies	Number of countries which have integrated FGR conservation and use into their national forest programme and/or national forest policy Number of countries which have integrated FGR conservation and use into their national biodiversity action plans and/or related policies Number of countries which have integrated FGR conservation and use into their national adaptation strategies for climate change
	Participation in regional/sub-regional collaboration on FGR	Number of countries participating in regional/sub-regional networks on FGR
	Participation in international research and development cooperation on FGR	Number of countries and national organizations participating in international R&D cooperation on FGR

