Key messages/Conclusions

The generic definition of forest degradation provides an adequate umbrella for international level and a common framework to develop specific definitions for particular purposes.

The concept of degradation involves both the state of the forest and the degradation process:

- The state of degrading or degraded forest may have to be defined to differentiate it from primary and sustainably managed forest and from non-forest to ensure comprehensive coverage. This may be determined by the management objectives.
- The degradation process reduces the delivery and distorts the balance of forest goods and services.
- Equally important is to consider improvement processes (restoration, rehabilitation and natural recovery of forests).

Degradation is related to temporal and spatial scales:

- There is need to have a long-term view in assessing reduction (or improvement) in forest goods and services so that temporary changes at stand level due to regular forest management operations (e.g., thinning, selective cutting) are not considered degradation. On the other hand, short-term changes need also be monitored as they may impact livelihoods of forest-dependent people. [A priori specification of the temporal scale in the definitions of forest degradation is not recommended].
- Degradation needs to be addressed both at stand and higher levels (forest management unit, landscape, sub-national, national, regional and global) and for various forest types for various purposes. This should be considered in stand-level focused definitions.

Trade offs exist: There are trade-offs between different forest goods and services and the balance between them is determined in management objectives. The trade-offs also need to be considered in assessing forest degradation.

Management objectives: In setting management objectives there is a general trend from wood production towards more focus on a wide range of ecosystems services of forests which has implication for assessment of forest degradation. If management (or use) objectives for a specific forest area (e.g. FMU, forest stand) are available, a more target-oriented and cost-effective assessment of forest degradation can be carried out.

Information Needs: For defining, monitoring and assessing forest degradation it is necessary to define for what purpose and on what aspects information is needed, for whom and how the information is going to be used. This links back to the objectives of management, which must be clearly established.

Separation of natural and human induced causes: Both human induced and natural causes cause forest degradation. Although their separation is often difficult due to inter-linkages, for the design of policy instruments and support programmes separation of these causes may be necessary.

Reference states, thresholds and baselines: It is particularly challenging to establish appropriate reference states, thresholds and baselines for forest degradation due to limitations of data, different management objectives and issues of scale. Thresholds need to be identified and

applied at a local level. Reference data could be considered as the recovery function according to the management objective that has been set.

Status and process: In assessing forest degradation there is a need to separate the status and the process of degradation, drivers and impacts (environmental, social and economic). The elements of Sustainable Forest Management (SFM) provide a useful comprehensive framework for identifying relevant aspects related to forest degradation.

Targets: In addressing forest degradation there is a need to establish specific targets for improvement measures and addressing the drivers of degradation in order to raise necessary resources through various mechanisms of financing. This calls for adequate information on the status and process of degradation as well as cost-benefit analyses and economic valuation of lost benefits due to forest degradation, for example, through forest accounting combined with use valuation of environmental services.

Country and location specific character: This calls for flexibility in defining forest degradation and indicators for its assessment. It may be more important to have consistent information on changes over time within a country than fully comparable information between countries at a given point of time. However, at the international level there is a need to have common definitions for selected key indicators.

Indicators and Methodologies:
Common indicators for monitoring and assessing forest degradation can be developed for the following key element to be used in assessing forest degradation:

- Biomass (e.g. growing stock, forest structure);
- Biodiversity (e.g. species composition and richness, habitat fragmentation);
- Forest health (e.g. fire, pest and diseases, invasive and alien species);
- Forest goods obtained (compared against sustainably managed forests);
- Soil quality (as indicated by cover, depth and fertility).

Promising methods to monitor and assess forest degradation include:

- Combination of remote sensing, GIS and field observations;
- Advanced technologies, for example aerial laser scanning;
- Community-based assessment.

There is major potential to address forest degradation by involvement of local communities (particularly for the collection of field data), but they need adequate understanding of the problem and its consequences for their livelihoods and they should have sufficient incentives to take necessary action, in addition to requiring adequate training and supervision. To achieve this they should also understand (i) forest classifications and other basic technical elements as well as (ii) compensation mechanisms to engage them fully in taking necessary improvement measures. Local communities should realize benefits, other than financial to be motivated to take action.

Monitoring of the degradation process should be systematic and continuous, involving more than two points of time. Assessment of the status or degree of degradation can be made through comparing non-degraded and degraded forests in similar ecological and socio-economic conditions. Another approach is to use periodic data on changes in area by forest categories in two points of time.

Recommended actions

International Definitions

1. Some of the existing international definitions should be improved in terms of their clarity, consistency and compatibility including clarity about their formal status, for example those of ITTO and CBD.

Climate change discussions

2. Improved understanding of assessment and monitoring of carbon emissions and fluxes from forest degradation need to take into account the inter-linkages between biomass, biological diversity and forest health, and forest carbon. In other words, in order to understand how or what to assess and monitor as regards forest degradation (as a state and process), it is also necessary to take into account the linkages with biodiversity, forest health, etc. It is not so much the means or methodologies per se.

3. In implementing actions to reduce emissions from deforestation and forest degradation in developing countries, forest carbon assessment and monitoring need to be carried out at national level to avoid leakage. A comprehensive approach (including non-degraded and degraded forest lands and non-forest lands) could avoid leakage between different land-use categories.

National level information dissemination

4. The scope of national forest inventories should be expanded to include the key elements needed to assess forest degradation.

5. Key common internationally applicable indicators should be identified for forest degradation to be applicable in FRA.

6. Supporting data sets should be developed at national level e.g. on national Red Lists of Threatened Species.

Capacity Building

7. Available methodologies and tools to address forest degradation should be further developed including guidelines for measurement and corrective action including those targeted at local communities.

8. Efforts to measure and assess forest degradation should be intensified through case studies, pilot measurements and their replication, and dissemination including ensuring policy feedback.

9. Support should be provided to capacity building in national forest inventories and education and training at different levels including local communities.

10. Support should also be provided to countries to meet international reporting requirements on forest degradation.

11. Basic research should be expanded to address forest degradation and its impacts on ecosystem services and their inter-linkages.