



SmartWood

Practical conservation through certified forestry

SmartWood Interim Standard

For Assessing Forest Management in Thailand

Purpose

May 2003

The purpose of the SmartWood Program is to recognize good forest managers through credible independent verification of forestry practices. The purpose of these guidelines is to provide forest managers, landowners, forest industry, scientists, environmentalists and the general public with information on the aspects of forest management operations that SmartWood evaluates to make certification decisions. These guidelines should be regarded as the fundamental "starting point" for SmartWood certification field assessments and certification decisions. Though the criteria¹ provided in this document may be valuable for assessing all forestry operations, no matter what objective or product is being produced, the principal focus of this document is on forest management certification for operations that harvest wood products.

Background

Forests can be managed for many different objectives and products. Such management can occur in natural forests or plantations, be predominantly mechanized or manual, and be managed by a large industrial concern or a local community or landowner cooperative. Many combinations are possible. A key question has been: how to evaluate the wide range of ecological, socioeconomic and silvicultural impacts of forest management activities in a clear and consistent fashion, based on a combination of scientific research and practical experience.

In 1991, the SmartWood Program put forth its draft "Generic Guidelines for Assessing Natural Forest Management" as the first broadly based (i.e. worldwide) set of evaluation or assessment criteria applicable at the field or operational level. At the same time, SmartWood developed and distributed region-specific guidelines for management of natural forests in Indonesia. In 1993, SmartWood distributed the draft "Generic Guidelines for Assessing Forest Plantations" and revised guidelines for natural forest management. In 1998, after seven years of application and "learning by doing" through innumerable forest assessments and audits, SmartWood provided a new and revised set of criteria for assessing forest management in both natural forests and tree plantations. These "Generic Guidelines" were reviewed and approved by the Forest Stewardship Council (FSC), the international body that has accredited (i.e. approved) SmartWood as a forest management and chain of custody certifier. In March 2000, after ten years of application and "learning by doing" through innumerable forest assessments and audits, SmartWood provided a new and revised set of combined plantation and natural forest management criteria for assessing forest management. These SmartWood "Generic Guidelines" were reviewed and approved by the Forest Stewardship Council (FSC) and we believe are in accord with the intent of forest management and biological

¹ It is SmartWood philosophy to keep the certification process as straightforward and simple as possible, without sacrificing technical quality, in order to foster the value of certification as an educational, policy, and training tool. In practice this means writing as clearly as possible and keeping scientific terms to a minimum. In the context of this document, SmartWood checking points (under the criteria) are, or may incorporate, a combination of indicators, certification thresholds, etc.

conservation guidelines issued by the International Union for the Conservation of Nature (IUCN) and the International Tropical Timber Organization (ITTO). We would also like to acknowledge the contributions made by many other organizations, including the Center for International Forestry (CIFOR), the World Rainforest Movement, International Labor Organization (ILO), FSC regional standards working groups and many others. We have also been fortunate to gain input from researchers and innumerable forestry operations (certified and uncertified), foresters, loggers, and local stakeholders who have critiqued past versions and provided suggestions for improvement.

SmartWood Interim Standard for Thailand

The FSC currently has twenty-eight (28) national initiatives that are developing region-specific guidelines for forestry certification in natural forests and plantations. However, there are no region specific or formally endorsed FSC guidelines for Thailand. Therefore, in developing this Interim Standard, SmartWood has sought other documents that could provide some basis for certification criteria in Thailand. As of May 2003, two FSC certification assessments had been conducted in Thailand, by SmartWood (Forest Industry Organization) and SGS (Metro MDF). Among the other documents that have been reviewed and considered in developing this Interim Standard are:

- *“SmartWood Generic Guidelines for Assessing Forest Management”, April 1998 and March 2000 versions;*
- *Forest Stewardship Council Principles and Criteria January 1999;*
- *SmartWood Certification Assessment Report for: Forest Industry Organization Plantations at Thong Pha Phum (TPP) and Khao Kra Yang (KKY) Thailand, January 24, 2001*
- *Thailand Production Forestry Policy – Status and Issues for Dialogue – World Bank/Sida/Ministry of Foreign Affairs, Government of Finland, June 11, 2001*
- *SGS Forest Management Public Summary Report Metro MDF - Thailand, 04/04/02, SGS Qualifor Programme.*

Based on SmartWood's long experience with standards development and the use of Interim Standards, we place a high degree of importance on interaction with those organizations involved in standard setting for responsible forest management and conservation in Thailand to ensure that the maximum degree of learning and exchange of experience is facilitated.

Public Input on the Standards and SmartWood Certification Processes

A minimum of three public documents is available which are specific for every SmartWood certified operation:

1. A public stakeholder consultation document related to each SmartWood certification assessment;
2. The certification standards used, and,
3. A “public certification summary”.

The basis for certification evaluation, the certification standard, is a public document for all certifications in the FSC system before, during and after the assessment process.

Prior to assessment, SmartWood also produces and distributes a public stakeholder consultation document that informs the public about the certification assessment that is taking place. This document is produced and distributed prior to the assessment, after explicit agreement with the candidate forest management operation (FMO). FAX, mail, electronic mail or hand delivery is used for distribution. ALL public stakeholder consultation documents are available at www.smartwood.org under “Ongoing Assessments”.

During assessments, SmartWood may organize either private and/or public stakeholder certification forums, based on an assessment of the most effective method for obtaining high quality stakeholder input. These are announced

beforehand by email, and FAX, and public notices may be put in newspapers as to where they will be held. SmartWood is developing a master stakeholder list for Thailand. The public is encouraged to help us add to this list by emailing, faxing or mailing us the name and contact information of interested stakeholders.

The public certification summary is produced as a final step of the certification process and available only after an operation has been certified and a five-year certification contract has been signed. Actual certification assessment documents are not public unless required by law (e.g. typical for some public forests in some countries) or approved for public distribution by the certified operation.

Philosophy of the SmartWood Guidelines

SmartWood has developed the criteria below as minimum acceptable measures for assessing the sustainability of forest management practices and impacts of forestry operations applying to be certified by SmartWood. Certification is a tool for showing the public and the forest industry that sustainable forest management (SFM) is indeed attainable and worthwhile. Concise criteria, based on good science and experience, are an excellent way of communicating about SFM at the field level. Certified operations may not be scientifically or definitively “sustainable” in all aspects; but they will have demonstrated a clear commitment in policy and practice to SFM, and in particular to three broad concepts that SmartWood considers the fundamental aspects of sustainable forest management:

1. Forest operations must maintain environmental functions, including watershed stability, conservation of biological resources and protection of wildlife habitat;
2. Management planning and implementation must incorporate sustained yield concepts for all harvested or utilized forest products, based on an understanding of, and documentation related to, local forest ecology; and,
3. Activities must have a positive impact on the long-term social and economic well being of local communities.

In practice, SmartWood staff has found that certified forest managers consistently show an on-the-ground and measurable commitment to the concept of “continuous improvement”. Continuous improvement has become a guiding philosophy not only for the operations SmartWood has certified, but also for SmartWood as a certification program (e.g. improvements in these generic guidelines).

Types of Certification

Forest management operations that adhere to the criteria provided in this document are certified as “well managed” by SmartWood. Certified operations may use the SmartWood and FSC labels for public marketing and advertising purposes.

SmartWood currently offers three types of certification, which are endorsed by the FSC:

1. Forest management certification for operations that manage natural forests and/or tree plantations;
2. Resource manager certification for forestry consultants and land managers that manage other people’s land to certifiable standards (see separate SmartWood policy for resource manager certification); and,
3. Chain of custody certification for operations that manufacture, buy, sell or distribute certified forest products.

In addition to the above types of certification, SmartWood has also developed Rediscovered Wood certification for products made from recycled, reused, reclaimed or salvage wood. In general, products certified under this program are considered “neutral” in the FSC system and products that combine with FSC-certified raw materials and

Rediscovered Wood may qualify for FSC labeling. SmartWood has also pioneered the concept of non-timber forest product certification in the FSC system. For information on this and any other type of SmartWood certification, please contact SmartWood headquarters.

Interim Standard Structure

The guidelines follow the structure of the FSC P&C, in order to enhance public understanding of SmartWood certification efforts, and to facilitate the work of multidisciplinary SmartWood assessment teams and forest auditors, as well as independent peer reviewers (a minimum of two for every certification assessment). The guidelines are divided into the following subject areas:

- 1.0 Compliance with Laws and FSC Principles
- 2.0 Tenure and Use Rights & Responsibilities
- 3.0 Indigenous Peoples' Rights
- 4.0 Community Relations and Workers' Rights
- 5.0 Benefits from the Forest
- 6.0 Environmental Impact
- 7.0 Management Plan
- 8.0 Monitoring and Assessment
- 9.0 High Conservation Value Forests
- 10.0 Plantations

In the guidelines, a brief general discussion of each subject area is provided, followed by a series of criteria. All criteria in the core subject areas must be evaluated in every assessment. In some cases, certain subject areas will not be applicable (e.g. Principle 10 will not be applicable if there are no plantations in the candidate operation). SmartWood assessors assess and score each criterion.

In order to pass certification, certified operations must have an average score above 3 for each subject area (see discussion below), based on the average score of each criterion in the subject area. Each criterion will have a number of different indicators. These indicators are used as a basis for assessing compliance and assigning a score for each criterion. All indicators specified in the applicable standard must be assessed, though there may be differences in indicators depending on the region. Some indicators may be quite specific and quantitative; others may be qualitative. This depends on the amount of experience and strength of consensus within a region around certain technical issues.

Synopsis of the Certification Assessment Process²

SmartWood assessors are provided with detailed guidance on the certification process, including pre-assessment briefings (either in person or by telephone) and access to a written SmartWood manual for forest assessment. The purpose of these briefings and the manual is to ensure that a consistent and thorough certification process is followed.

In addition to following the SmartWood procedures outlined in our manual for forest assessment, there are three other ways in which SmartWood ensures accuracy and fairness in our certifications:

1. The assessment must involve individuals who are familiar with the particular region and type of forest management operation under evaluation. It is SmartWood policy to involve local specialists in all assessments.

² For more detailed information about certification procedures, please contact SmartWood headquarters or regional offices.

2. Team members should be familiar with SmartWood certification procedures. Each SmartWood certification assessment has a designated team leader who must have either participated in a formal SmartWood assessor training course and/or have previously participated in another SmartWood forest management assessment.
3. The assessment must use either region-specific evaluation guidelines (i.e. criteria and local checklists or indicators), if they exist, or adapt the SmartWood Generic Guidelines to the local situation; all guidelines are public documents.

Team organization - In the field, the assessment team leader's first task is to ensure that all team members understand the scope and intent of the assessment process. The team reviews and discusses the generic criteria and indicators, or they go directly to a review of local standards if they exist. Based on this review, the team will assign individual responsibilities for coverage of different subjects and criteria. All team members can provide input into any category of information, but it is crucial that clear lead responsibility is assigned for data collection, analysis and writing for each subject area and for all criteria.

Reviewing/Revising Assessment Criteria and Indicators – Assessment teams must include all elements covered in either these SmartWood Generic Guidelines, SmartWood regional guidelines, or FSC-endorsed regional standards. The criteria and indicators are part of the public record for each certification assessment. The criteria and indicators will be reviewed by the candidate operation, peer reviewers, and SmartWood headquarters, and are publicly available for stakeholders. Team members also review applicable national or international laws, and regulations or administrative requirements, and may incorporate relevant items as indicator items under the appropriate criterion in the guidelines.

Data Collection - Once initial internal team discussions have taken place, team members meet with the forestry staff of the operation being assessed. In initial meetings, an emphasis is placed on clarifying assessment procedures and criteria and indicators. The assessment process then moves quickly to the field phase. Visits are made to sites chosen by SmartWood assessors based on a comprehensive review of the candidate operation's forest holdings and management activities, discussion of past or current interaction with nearby landowners and communities, and identification of critical issues, challenging sites, etc. Site visits occur in the forest, at processing facilities, and in the surrounding local communities. Visits emphasize seeing management activities of all types and phases, by different staff of the candidate operation, and in different biological or physical conditions.

Team members also meet independently with stakeholders. All assessments solicit and incorporate input (confidential and/or open) from as many directly affected and/or knowledgeable stakeholders as possible, including local communities, adjoining landowners, local forest industry, environmental organizations, government agencies, and scientific researchers. During these consultations, assessment team members explain the assessment process, solicit opinions, and gather impressions about the field performance of the operation being assessed. Before, during and after visits to stakeholders and actual field operations, the team constantly meets to review criteria, discuss progress in gathering information, and discuss preliminary findings.

Data Analysis and Scoring – Assessment teams work in a consensus fashion to analyze, score and reach agreement on certification conclusions. Internal team meetings will happen throughout the assessment process. A critical step during the analysis is to identify certification pre-conditions, conditions and recommendations, using the following definitions:

- **Pre-conditions** are required improvements that FMOs must do before SmartWood certification will be granted;
- **Conditions** are required improvements that FMOs must implement by specific deadlines during the five-year certification period; and,
- **Recommendations** are voluntary improvements suggested by the assessment team, but are not mandated or required.

Following is the scoring system that is used for SmartWood certification assessments. For each SmartWood criteria, assessors must indicate the appropriate number using the following table as a guide and based on information derived from field observations, consulted documents, and interviews. In assigning values to specific criteria, SmartWood SW Interim Standard for Assessing Forest Management in Thailand

assessors take into consideration national norms and regulations, the scale and context of the operations, and local standards or guidelines that may have been developed by FSC Working Groups.

Score	PERFORMANCE	COMPLIANCE
	General Description	Pre-conditions, Conditions and Recommendations
N/A	Not an applicable criteria.	Not applicable, thus no pre-conditions, conditions or recommendations; criteria not used for score averaging
1	Extremely weak performance; strongly unfavorable or data lacking.	Pre-conditions required
2	Weak performance; significant improvement is still needed.	Pre-conditions optional; conditions required
3	Satisfactory performance	Conditions optional
4	Favorable performance	Recommendations; no conditions
5	Clearly outstanding performance	Recommendations possible, but not typical

If pre-conditions have been identified, they must be satisfied before certification will be granted.

Report Write-up - The certification assessment report follows the FSC P&C structure, with a discussion following each criterion and analyzing performance in relation to the indicators for that criterion. The analysis provides, as appropriate, the pre-conditions, conditions or recommendations that apply, and a score for each criterion.

Review of Assessment Report by Candidate Operation, Independent Peer Reviewers and SmartWood headquarters – Each certification assessment report is reviewed by the candidate operation, a minimum of two independent peer reviewers, and staff at SmartWood headquarters. SmartWood headquarters approves all SmartWood certifications.

Certification Decision – Once the above steps are completed, SmartWood headquarters will coordinate a certification decision process, with input from SmartWood regional representatives. If a certification decision is positive, i.e. an operation is approved for certification, a five-year certification contract will be executed which includes, as a requirement, annual on-site audits. If an operation is not approved, the certification decision will clearly establish what needs to be done in order for the operation to achieve certified status in the future, i.e. identification of preconditions for certification.

THE INTERIM STANDARDS FOR THAILAND

PRINCIPLE #1: COMPLIANCE WITH LAWS AND FSC PRINCIPLES

Forest management shall respect all applicable laws of the country in which they occur, and international treaties and agreements to which the country is a signatory, and comply with all FSC Principles and Criteria.

All operations must demonstrate a commitment in policy and practice to the FSC Principles and Criteria for Forest Management, the central defining document of the FSC. For many obvious reasons, SmartWood certification must also be in accordance with national, province, and local laws. The purpose of the certification process is not to assess actual legal compliance; that is the mandated task of government institutions. But SmartWood must check with government agencies and other stakeholders to verify that an operation is dealing with legal requirements in a responsible fashion, and in some cases the field assessment can be a valuable way for helping operations improve the quality of their compliance. Finally, in some cases there may be applicable international conventions or treaties that apply, as is clearly the case of the Convention on Biological Diversity. During the assessment process, SmartWood assessors are responsible for pointing out what they perceive to be conflicts between laws, the FSC P&C and international treaties or conventions. In practice this has rarely occurred. However, if they occur,

resolution of conflicts may involve the candidate operation, SmartWood, and/or FSC (or its national contact person or organization).

1.1 Forest management shall respect all national and local laws and administrative requirements.

- Interviews with public officials and other stakeholders and observations in field indicate that FMO is meeting national, state/provincial and local environmental, labor and forestry laws. (Local standards should include here a list of key relevant legislation in order to ensure coverage.)
- Any FMO compliance issues with laws are, or are being, resolved expeditiously with designated government authority.
- Relevant Laws include:
 - Forest Law (1941)
 - National Park Act (1961)
 - Forest Reserve Act (1964)
 - Environmental Quality Act (1992)
 - Forest Plantation Act (1992)
 - Wildlife Sanctuary Law of (1964)
 - Watershed Classification Act (1985),
 - Local Administration Act (1994)
 - Logging Ban (1989)
 - Safety Act (1992)
 - Labor Protection Law (1998)
 - Constitution of Thailand (1991)

1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.

- FMO is up-to-date in payment of local taxes, timber rights or leases, fees, royalties, etc.

1.3 In signatory countries, the provisions of all binding international agreements such as CITES, ILO Conventions, ITTA, and Convention on Biological Diversity, shall be respected.

- For large operations, FMO is aware of applicable international conventions and provides guidance so that field operations meet the intent of such conventions including CITES, Convention on Biological Diversity and ILO 87 & 98.
- Thailand is a signatory to the following ILO Conventions:
 - Forced Labour Convention, 1930 (No. 29)
 - Abolition of Forced Labour Convention, 1957 (No. 105)
 - Equal Remuneration Convention, 1951 (No. 100)
- For small and medium sized operations, FMO becomes aware of applicable international conventions either prior to or during the certification assessment, and agrees to provide guidance to staff and contractors so that field operations meet the intent of applicable agreements.
- FMO demonstrates willingness to meet requirement, intent and spirit of applicable agreements.

1.4 Conflicts between laws, regulations and the FSC Principles and Criteria shall be evaluated for the purposes of certification, on a case by case basis, by the certifiers and the involved or affected parties.

- Perceived conflicts between laws, the FSC P&C and international treaties or conventions are identified.
- Conflicts between FSC requirements and laws are resolved through consultation between FSC national contact person (if available), the FSC certifier, or FMO, as needed.

1.5 Forest management areas should be protected from illegal harvesting, settlement and other unauthorised activities.

- For large operations, a monitoring system with formal periodic inspections is documented and implemented.
- In-migration, settlement, hunting, and timber extraction along logging roads is controlled.
- Little to no evidence of unauthorized activities in forest management areas.

1.6 Forest managers shall demonstrate a long-term commitment to adhere to the FSC Principles and Criteria.

- FMO clearly demonstrates long-term support for the FSC P&C (e.g. through public presentations, verbal commitment by senior management, or other actions).
- For large operations, FMO commitment is in writing. This is also encouraged for other sizes of operations.
- FMO agrees that it will not implement activities that blatantly conflict with the FSC P&C on forest areas outside of the forest area under current assessment.

PRINCIPLE #2: TENURE AND USE RIGHTS AND RESPONSIBILITIES

Long-term tenure and use rights to the land and forest resources shall be clearly defined, documented and legally established.

Experience indicates that consistent long-term forest management will not take place unless forest managers can be sure that forestland will stay as forest and that the rights and responsibilities of direct forest managers and other users are clear. Though many parties may play a role in this, the intent of this section is to ensure that the candidate forestry operation is taking all realistic actions under their control to protect and maintain the forest over the long-term, and resolving conflicts with neighbors or other forest users. In some cases this means protecting the forest from threats of competing land uses, or misuse by other forest users (e.g. timber trespass, hunting, etc.). In other cases forest operations may take proactive steps to improve forest security by carefully negotiating and controlling joint management or access to forest resources with local communities or individuals. The existence of major unresolved, or poorly resolved, conflicts within the local community may be an impediment to certification.

2.1 Clear evidence of long-term forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated.

- Land tenure is clear and legally secure.
- Plantation lands are registered under the Plantation Law (1992)

2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.

- Local communities' legal or customary/traditional rights to own, manage or use forest resources (timber and non-timber) have been formally recognized, documented in written agreements if necessary, and honored.
- Controlled access is given or offered to local communities for timber and non-timber forest products based on either legal agreements or longstanding local arrangements.

2.3 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.

- Resource conflicts with adjoining landowners or other resource users are resolved or being addressed in a systematic and legal manner.
- For large operations, large-scale harvesting or other similar scale forest management activities are described to affected communities in public meetings, mailings or other types of communication, in advance.
- Large-scale operations are begun only after conflicts have been resolved or after all reasonable attempts to resolve issues have been made.

PRINCIPLE #3: INDIGENOUS PEOPLES' RIGHTS

The legal and customary rights of indigenous peoples to own, use and manage their lands, territories, and resources shall be recognised and respected.

Fairness to indigenous peoples has been one of the founding crucibles of the FSC and the SmartWood program. However, in order to achieve such fairness, first there must be clarity as to which groups constitute "indigenous". The following definition has been accepted by the FSC:

"The existing descendants of the peoples who inhabited the present territory of a country wholly or partially at the time when persons of a different culture or ethnic origin arrived there from other parts of the world, overcame them and, by conquest, settlement, or other means reduced them to a non-dominant or colonial situation; who today live more in conformity with their particular social, economic and cultural customs and traditions than with the institutions of the country of which they now form a part, under State structure which incorporates mainly the national, social and cultural characteristics of other segments of the population which are predominant."

If there are any doubts as to whether groups qualify under this definition, please contact SmartWood.

3.1 Indigenous peoples shall control forest management on their lands and territories unless they delegate control with free and informed consent to other agencies.

- Indigenous customary/traditional rights to own, manage or use forest resources (timber and non-timber) have been documented in writing or are evident to both sides through clear verbal understandings.
- The above agreements with indigenous groups are honored.

3.2 Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.

- Indigenous groups do not perceive FMO operations as a major threat to their resources or tenure.
- FMO takes explicit actions to ameliorate threats or diminshments to indigenous resources or tenure.

3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in co-operation with such peoples, and recognised and protected by forest managers.

- Sites of special significance are on field maps or identified in the field.
- Where definitive identification is difficult, diligent efforts are being made by FMO to identify special sites.
- Sites are protected in the field.

3.4 Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.

- Indigenous groups are fairly compensated for use of traditional knowledge or other resources.
- Where applicable, systems of compensation are clearly understood between FMO and indigenous groups.

PRINCIPLE #4: COMMUNITY RELATIONS AND WORKER'S RIGHTS

Forest management operations shall maintain or enhance the long-term social and economic well being of forest workers and local communities.

Certified operations are expected to be generally recognized good neighbors in local communities. For smaller operations this may be quite simple, such as responsible operation of harvesting equipment on local roads, protection of historic cultural or archeological sites, or positive relationships with adjoining landowners. For larger public or private operation the implications are usually greater. Typically, larger operations will need to give careful consideration to local recreational needs, hiring practices that emphasis the training and participation of local people,

and contributions or support for local services, such as health or education. Finally, given the scale of larger operations, their activities will affect broader regions and numbers of people; because of this it is important that such operations have in place more of a system for public interaction on their forest management activities.

4.1 The communities within, or adjacent to, the forest management area should be given opportunities for employment, training, and other services.

- Local communities and residents are given first preference in logging and other forest management activities in terms of ownership, management, training, labor pool and other benefits or opportunities.
- Evidence that a significant portion of workforce originates from local communities.

4.2 Forest management should meet or exceed all applicable laws and/or regulations covering health and safety of employees and their families.

- Wages and other benefits (health, retirement, worker's compensation, housing, food) for full-time staff and contractors are fair and are at or above the official government published minimum wage for the province.
- Worker safety conditions meet legal requirements.
- If documented (i.e. for larger operations), there is a not higher than normal accident rate.
- Safety equipment is used in the forest (e.g. local norms are important, ideally the following: hard hats, hearing protection, high visibility vests, and steel toe boots and chainsaw proof chaps).

4.3 The rights of workers to organise and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organisation (ILO).

- Workers are given freedom to organize and negotiate with employers, in keeping with Convention 87.
- FMO does not interfere with workers or workers' organizations that are organizing or implementing collective bargaining, in keeping with Convention 98.
- ILO conventions 29, 100, and 111 are implemented.

4.4 Management planning and operations shall incorporate the results of evaluations of social impact. Consultations shall be maintained with people and groups directly affected by management operations.

- For large FMOs, some assessment or evaluation of social impact has been, or will be, conducted and incorporated into planning or management.
- FMO has documented in writing formal and/or informal processes that the FMO will use to interact or consult with affected stakeholders and adjoining landowners during and after forest management planning.
- Regular, systematic, and broad-based consultations are occurring between FMO and affected communities.
- Local organizations or individuals directly affected by forestry activities are given an opportunity to participate in forest management planning, as would be normal given societal norms.
- FMO maintains an up-to-date list of adjoining landowners.

4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.

- Local people and institutions generally perceive FMO as fair and effective in avoiding losses and damages affecting local peoples, and in resolving grievances related to legal rights, damage compensation and negative impacts, if any.
- Where written procedures exist for resolving grievances and determining compensation for loss or damage (especially encouraged for large operations), these procedures are followed.
- See Criterion 2.3 for resolution of land tenure (e.g. property or use rights) challenges.

PRINCIPLE # 5: BENEFITS FROM THE FOREST

Forest management operations shall encourage the efficient use of the forest's multiple products and services to ensure economic viability and a wide range of environmental and social benefits.

In general, SmartWood certification is focused first and foremost on forests and local communities. The emphasis in this section is on how to maximize the value of forest operations in terms of local economies and how to ensure that certified operations remain economically viable over the long-term. Businesses can succeed or fail for many different reasons. SmartWood certification may have little ultimate impact in this regard. It is not the mandate or responsibility of SmartWood to serve as a financial guarantor of success to investors, shareholders, or other parties. Rather, our mandate is to evaluate economic viability from the perspective of ensuring, as much as possible, that sound long-term investments are being made by the operation in terms of forest management, conservation and local communities.

5.1 Forest management should strive toward economic viability, while taking into account the full environmental, social, and operational costs of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.

- Revenue received is sufficient to cover forest management costs, e.g. management planning, road maintenance, silvicultural treatments, long-term forest health, growth and yield monitoring, and conservation investments.

5.2 Forest management and marketing operations should encourage the optimal use and local processing of the forest's diversity of products.

- FMO seeks the "highest and best use" for individual tree and timber species.
- FMO encourages utilization of frequently occurring, lesser known, or less-commonly utilized plant species for commercial and subsistence uses.
- Non-timber forest products (NTFPs) are considered during forest use and processing.
- Local processing is emphasised where possible.

5.3 Forest management should minimise waste associated with harvesting and on-site processing operations and avoid damage to other forest resources.

- FMO and processing centers minimize waste associated with harvesting or processing.
- See Principle 6 for assessing damage to forest resources.

5.4 Forest management should strive to strengthen and diversify the local economy, avoiding dependence on a single forest product.

- FMO fosters product diversification and exploration of new markets and products (also see Criterion 5.2).
- FMO supports local and small-scale value-added processing where possible.

5.5 Forest management operations shall recognise, maintain, and, where appropriate, enhance the value of forest services and resources such as watersheds and fisheries.

- Interviews with fishing and recreational groups indicate positive or neutral impact on fisheries and other recreational resources.
- Field observations indicate normal, natural levels of siltation and sedimentation in or near watercourses.

5.6 The rate of harvest of forest products shall not exceed levels which can be permanently sustained.

- Annual allowable cut (AAC), by area or volume, has been set based on conservative and well-documented estimates of growth and yield, and ensuring that the rate of harvest does not exceed sustainable levels.
- AAC or other harvest calculations are being followed in the forest.
- Silvicultural prescriptions (pre-, during-, and post- harvest) are being adhered to.

- See Criterion 8.2 for monitoring.

PRINCIPLE #6: ENVIRONMENTAL IMPACT

Forest management shall conserve biological diversity and its associated values, water resources, soils, and unique and fragile ecosystems and landscapes, and, by so doing, maintain the ecological functions and the integrity of the forest.

Environmental protection and biological conservation in certified forest management includes a combination of proactive and protective measures. Proactive measures may include efforts to increase the landscape-level biological diversity value of the lands being managed or restoration activities. Protective measures will focus on ensuring that all staff and contractors are cognizant of sensitive areas and take actions to avoid problems. Certification requires that forest managers place attention on the protection or restoration of endangered ecosystems (e.g. wetlands), conservation of threatened/endangered species, and precautionary use of chemicals.

6.1 Assessment of environmental impacts shall be completed -- appropriate to the scale, intensity of forest management and the uniqueness of the affected resources -- and adequately integrated into management systems. Assessments shall include landscape level considerations as well as the impacts of on-site processing facilities. Environmental impacts shall be assessed prior to commencement of site-disturbing operations.

- Environmental assessments have occurred during management planning.
- Environmental assessments consistently occur prior to forest management activities or other site disturbances.
- Environmental impacts of on-site processing facilities are assessed and controlled (e.g. waste, construction impacts, etc.).
- See Criteria 6.4 for landscape considerations.

6.2 Safeguards shall exist which protect rare, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.

- Threatened, rare, or endangered species or ecosystems are explicitly taken into consideration during all operations.
- Timber species on either local and/or international endangered or threatened species lists (e.g. CITES Appendix 1, national lists) are not being harvested.
- Conservation zones are preferably a contiguous block, though it may be a series of smaller blocks linked by corridors as wide as the average height of forest canopy in a mature forest in the region.
- Conservation zones are demarcated on maps and in the field, and operations carefully controlled in these areas.
- Hunting, fishing, trapping, NTFP collecting, and eco-tourism are controlled in the forest and guidelines for management and monitoring of these activities have been prepared.

6.3 Ecological functions and values shall be maintained intact, enhanced, or restored, including:

a) Forest regeneration and succession.

b) Genetic, species, and ecosystem diversity.

c) Natural cycles that affect the productivity of the forest ecosystem.

- Ecological and silvicultural rationale behind management prescriptions is well-documented, i.e. based on site-specific field data or published analyses of local forest ecology (e.g. regeneration and succession) or silviculture, and government regulations.
- Management prescriptions maintain, enhance or restore forest composition (i.e. species numbers and diversity) and structure.

6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources.

- For large FMOs, representative samples of existing ecosystems are being protected in their natural state, based on the identification of key biological areas and/or consultation with environmental stakeholders, local government and scientific authorities (a 10% target figure is encouraged by not mandatory).
- For small and medium sized FMOs, representative samples of existing ecosystems are being protected in their natural state either within the forest under evaluation or in nearby forests, based on the identification of key biological areas and/or consultation with local government or other scientific authorities.
- Landscape scale conservation considerations are evident in field activities, staff/contractor actions and/or in coordination with adjoining landowners, conservation organizations or government conservation agencies.

6.5 Written guidelines shall be prepared and implemented to: control erosion; minimise forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources.

- Maps and work plans are produced at adequate scale to be useful for supervision of soil and water resource management and protection activities and to facilitate on-site monitoring thereof.
- Topographic maps specify areas suitable for all-weather harvesting or dry-weather only; and indicate locations for extraction (or haul) roads, loading ramps (or log yards), main skid (or snig) trails, drainage structures, streamside and/or roadside buffer zones, and conservation areas.
- Topographic maps have been prepared before logging or road construction occurs.
- Clear guidance is given to field staff and contractors in the form of written manuals, policies and training so that they understand and can implement the forest management plan.
- Guidance covers silvicultural operations, biological conservation, technical specifications for skid trail (location, width and density), road design and conservation structures, handling of chemicals, etc.
- Road construction, maintenance and closure standards are followed in the field.
- No road fill is placed in stream courses.
- Road surfaces are well drained, culverts are large enough to avoid ponding, and water bars installed and effective.

6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organisation Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimise health and environmental risks.

- A constant effort is made to reduce or eliminate the use of chemicals in the forest and wood processing.
- If chemicals are used in the forest, they are used as part of an integrated pest management (IPM) system that carefully identifies threats and analyzes chemical and non-chemical alternatives.
- If chemicals are used:
 - *A complete inventory of chemicals is provided by the FMO and detailed inspections of storage areas or other facilities validate that inventory is complete and accurate;
 - * Careful handling, application and storage procedures are followed; and,
 - * Staff and contractors receive training in handling, application and storage procedures.
- Chemicals banned in Europe, U.S. and target country, or World Health Organization Type 1A or 1B and chlorinated hydrocarbon pesticides are not used. The only exception is when alternative control

strategies do not address the threat that has been identified (e.g. feral or exotic species proliferation). In such cases a consensus must be reached and documented through discussions with government agencies, environmental, other stakeholder groups and the FSC, and extremely careful use procedures and training must be in place.

- 6.7 Chemicals, containers, liquid and solid non-organic wastes including fuel and oil shall be disposed of in an environmentally appropriate manner at off-site locations.**
- Chemical, container, liquid and solid waste is disposed of in an environmentally sound and legal manner, whether from forest operations or processing facilities.
- 6.8 Use of biological control agents shall be documented, minimised, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.**
- Use of biological control agents is documented, minimized, monitored and strictly controlled.
 - Use of genetically modified organisms (GMOs) is prohibited.
- 6.9 The use of exotic species shall be carefully controlled and actively monitored to avoid adverse ecological impacts.**
- Use of exotic species is discouraged and carefully controlled, i.e. when used it is for well-justified and specific purposes (e.g. environmental benefit) and monitored for environmental impact.
 - Species selected for reforestation are well suited to the site and management objectives.
 - Emphasis is placed on planting, and/or applied research on, forest species native to the region.
 - Where exotic species are planted, measures occur to prevent spontaneous regeneration outside plantation areas, unusual mortality, disease, insect outbreaks or other adverse environmental impacts.
- 6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion:**
- a) Entails a very limited portion of the forest management unit; and**
 - b) Does not occur on high conservation value forest areas; and**
 - c) Will enable clear, substantial, additional, secure, long-term conservation benefits across the forest management unit.**
- Primary, degraded primary and mature secondary forests are not cleared by current forest managers to create tree plantations.
 - Plantations do not replace ecologically classified wetlands.
 - If plantations are established in early successional forest areas or natural grasslands, clear verbal, written or visual guidelines are given to field staff for identifying acceptable areas.
 - FMO takes aggressive measures to restore, conserve or manage natural forest or grasslands in surrounding or adjoining areas equal to or exceeding the area disturbed; and support for such actions exists amongst environmental stakeholders.

PRINCIPLE #7: MANAGEMENT PLAN

A management plan -- appropriate to the scale and intensity of the operations -- shall be written, implemented, and kept up to date. The long-term objectives of management, and the means of achieving them, shall be clearly stated.

Forest management planning should be seen as a process and not just a document. The value of a written plan is that it improves understanding of the management approach by all staff and other observers, and it also facilitates consistency in the face of personnel changes, landowner changes, etc. Scale and location (i.e. country) are extremely important in determining expectations in terms of management planning. Except in very special cases, absence of a written forest management plan will mean an operation cannot be certified. What are those special cases? They are:

1. Significant documentation already exists that meets most, if not all, of the data requirements of a management plan and virtually the only step remaining is to compile and produce an overall management document;
2. The mere completion of a written management plan will have no major affect (negative or positive, as determined by the assessment team) on the quality of the field operations in terms of silviculture, environmental or socioeconomic practices; and,
3. There is a well-documented general forest management system that provides clear guidance and consistency for site-specific management interventions (i.e. the cost of more detailed management plans for smaller parcels would have a negatively impact on the viability of the operation or participation of smaller landowners in sustainable forest management).

These situations do not eliminate the need for management planning. However, in the SmartWood system, it is crucial to emphasize that field performance matters more than documentation and/or management systems. This does not reduce the need or value of documentation or systems; experience indicates value in them. The question is one of balance between performance, documentation and systems. In SmartWood on-the-ground performance might be regarded as “the first among equals”.

SmartWood expects that management plans for large operations will be much more detailed and systematic than those for small landowners, due to financial constraints and the relative risk of negative environmental impact due to scale differences. Recently, much more understanding of the importance of landscape level biological concerns has been gained and increasing importance is placed on this topic during SmartWood assessments, particularly for medium and large public or private forest holdings. Adjoining landowner concerns are always important, no matter what scale of operation, but expectations in terms of processes of local consultation, during and after the initial planning process, are clearly higher for larger operations. Some aspects of community interaction on management planning are covered in Section 6.0.

In the selection of a forest management system, SmartWood does not advocate any single silvicultural approach, e.g. even-aged versus uneven-aged, single tree selection versus shelterwood, etc. Rather, certified forest managers are expected to balance production with environmental objectives, weigh the advantages and disadvantages of each forest management approach, and select techniques that maintain or restore ecosystems while at the same time responding to social and economic realities. Every technique can be used well, or misused.

Finally, from both certification and sustainable forest management perspectives, experience indicates that it is crucial for internal monitoring systems to exist that provide quality control for forest management operations, identify operational challenges, and report on the success or failure of management interventions to resolve problems. This section also focuses on clarifying internal controls that each forest management operation has established to ensure quality control.

7.1 The management plan and supporting documents shall provide:

- a) **Management objectives.**
- b) **Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.**
- c) **Description of silvicultural and/or other management system, based on the ecology of the forest in question and information gathered through resource inventories.**
- d) **Rationale for rate of annual harvest and species selection.**
- e) **Provisions for monitoring of forest growth and dynamics.**
- f) **Environmental safeguards based on environmental assessments.**
- g) **Plans for the identification and protection of rare, threatened and endangered species.**
- h) **Maps describing the forest resource base including protected areas, planned management activities and land ownership.**
- i) **Description and justification of harvesting techniques and equipment to be used.**
 - Management plan, or appendices to plan, includes presentation of the following components:
 - Management objectives,
 - Land ownership and/or tenure status,

- Description of forest resource (timber and non-timber, forest types and plant and animal species including observations on quantity and quality),
 - General environmental conditions and current land use,
 - Forest management prescriptions and their silvicultural and ecological rationale,
 - Rate and quantity of harvest of forest products (timber or non-timber, as applicable), including AAC,
 - Map(s) describing the forest including forest types, compartments/blocks, roads and skid trails, log landings and processing sites, protected areas, riparian buffers, unique biological or cultural resources, and other planned management activities,
 - Description and justification for use of different harvesting techniques and equipment,
 - Product processing and marketing procedures or plans, and,
 - Plan for monitoring and reporting.
- Plan is technically sound and sufficiently detailed, given FMO size, complexity and intensity of forest operations.
 - Rationale behind silvicultural prescriptions is well-documented, i.e. based on site-specific field data or published analyses of local forest ecology or silviculture, and government regulations.
 - NTFP resources and uses have been inventoried and their management explicitly considered during planning.
 - Maps that are presented are high quality and sufficient to guide field activities (also see Criterion 6.5);
 - Management plans or related annual operating or harvesting plan is available to staff and used in the field.

7.2 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing environmental, social and economic circumstances.

- A technically sound and financially realistic timeframe exists for revision/adjustment of the management plan.
- Management plan (and/or annual operating plan) revision or adjustments occur on timely and consistent basis.
- Management plan revisions incorporate changing silvicultural, environmental, social and economic conditions.

7.3 Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.

- Evidence of formal or informal training exists in the field.
- For large FMOs, a formal training plan should exist.

7.4 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.1.

- FMO is willing to make available a public certification summary of forest management operation, including a summary of the management plan, as per SmartWood and FSC requirements.

PRINCIPLE #8: MONITORING AND ASSESSMENT

Monitoring shall be conducted -- appropriate to the scale and intensity of forest management -- to assess the condition of the forest, yields of forest products, chain of custody, management activities and their social and environmental impacts.

This section focuses first on monitoring, and then on chain of custody, i.e. how an operation keeps track of product inventory and handling up to the point of sale or transport of the product to other parties outside of the forest. In these Generic Guidelines, SmartWood provides enough detail and coverage so that forest management operations will be

able to receive a combined forest and chain of custody certificate, as per SmartWood and FSC requirements. These guidelines will be sufficient except under the following circumstances:

1. The FMO has on-site processing that combines the use of both certified and non-certified material.
2. The FMO has multi-site, multi-division, and/or geographically distant, production and processing capabilities.
3. There are extremely complicated internal multi-product COC issues, or there are COC risks needing more in-depth treatment.

If any of the above circumstances exist, the separate, more detailed "SmartWood Chain of Custody Assessment Guidelines" must be used for the COC assessment process. The assessment team leader will make this decision, after input from SmartWood headquarters and consultation with the FMO. Questions can be referred to SmartWood headquarters.

8.1 The frequency and intensity of monitoring should be determined by the scale and intensity of forest management operations as well as the relative complexity and fragility of the affected environment. Monitoring procedures should be consistent and replicable over time to allow comparison of results and assessment of change.

- Monitoring reports provide sufficient timely, accurate and technically sound information, given the size and complexity of the operation.
- Monitoring reports indicate how management prescriptions should be changed, based on new ecological, silvicultural, or market information.
- Monitoring reports facilitate efficient and effective auditing and certification by third parties.

8.2 Forest management should include the research and data collection needed to monitor, at a minimum, the following indicators:

- a) **Yield of all forest products harvested.**
 - b) **Growth rates, regeneration and condition of the forest.**
 - c) **Composition and observed changes in the flora and fauna.**
 - d) **Environmental and social impacts of harvesting and other operations.**
 - e) **Costs, productivity, and efficiency of forest management.**
- A plan and design exists for periodic monitoring and reporting.
 - Monitoring plan is technically sound and identifies/describes observed changes in conditions in terms of:
 - Silviculture (growth rates, regeneration and forest condition, typically as part of a suitable continuous forest inventory system);
 - Environment (environmental changes affecting flora, fauna, soil and water resources); and,
 - Socioeconomic aspects (forest management costs, yields of all products, and changes in community and worker relations or conditions).

8.3 Documentation shall be provided by the forest manager to enable monitoring and certifying organisations to trace each forest product from its origin, a process known as the "chain of custody."

- Volume and source data on loads of raw material (certified logs or lumber) is available (i.e. scaled, inventoried, measured) in the forest, in transport, and at intermediate storage yards (e.g. log yards), processing and distribution centers controlled by FMO.
- Invoices, bills of lading, certificates of origin (e.g. GATT Form A) and other applicable documentation related to shipping or transport of forest products are kept in a central location and/or easily available for inspection.
- Certified forest products will clearly distinguished from non-certified products through marks or labels, separate documented storage, and accompanying invoices or bills of lading. Unique marking or identification of certified products will exist at all stages of processing and distribution up to the point of sale or transport either outside the forest (i.e. up to the "forest gate") or to a third party.

8.4 The results of monitoring shall be incorporated into the implementation and revision of the management plan.

- Review of management plan (either plan or appendices) demonstrates that monitoring results are incorporated into planning on a regular basis.
- There is evidence that information from monitoring is used to improve management.

8.5 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the results of monitoring indicators, including those listed in Criterion 8.2.

- Results of monitoring are incorporated into public summaries and other documents (also See Section 1.3).

PRINCIPLE 9: MAINTENANCE OF HIGH CONSERVATION VALUE FORESTS

Management activities in high conservation value forests shall maintain or enhance the attributes, which define such forests. Decisions regarding high conservation value forests shall always be considered in the context of a precautionary approach.

HCVFs have a specific definition within the FSC context.

An HCVF is determined to exist when:

- a forest contains globally, regionally or nationally significant :
 - concentrations of biodiversity values (e.g. endemism, endangered species, refugia); and/or,
 - large landscape level forests, contained within, or containing the management unit, where viable populations of most if not all naturally occurring species exist in natural patterns of distribution and abundance;
- they are in, or contain rare, threatened or endangered ecosystems;
- they provide basic services of nature in critical or unique situations (e.g. watershed protection, erosion control); and,
- it is fundamental to meeting basic needs of local communities (e.g. subsistence, health) and/or critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

The FSC currently is organizing a technical committee to assist FSC-approved certifiers in developing procedures for more consistent application of the HCVF idea. FSC regional standards groups are wrestling with this issue as well. In addition, SmartWood has already implemented certification assessments in a number of HCV forest areas. The main implications so far have been that:

1. Technical environmental, forest and social assessments must occur to determine HCVF presence; and,
2. Stakeholder consultation procedures need to be particularly strong in areas where HCVF may exist.

In the absence of absolute clarity in regards to either 1) or 2) above, SmartWood has taken an extremely proactive approach to stakeholder consultation and, in particular, application of the following criteria and indicators, and section 6.0 on Environmental Impacts. SmartWood headquarters staff should be consulted in any and all circumstances, whether there are either procedural or technical questions. Scale issues are particularly important; no one expects small landowners to be able to cover HCVF issues as well as larger organizations, but conservation of HCVF values must be stressed in all cases.

9.1 Assessment to determine the presence of the attributes consistent with High Conservation Value Forests will be completed, appropriate to scale and intensity of forest management.

- For large operations, FMO has conducted internal assessment to determine whether they are managing HCVF. If HCVF values are present, FMO has an explicit written strategy for HCVF conservation and a process of stakeholder consultation that contributes towards maintaining or restoring such values.
- For small and medium sized operations, consultations have occurred with environmental stakeholders, government or other scientific authorities to determine whether forest areas that should be considered HCVF. This may occur during actual certification assessment. If HCVF values are present, FMO takes all reasonable steps to protect these values.

- 9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for the maintenance thereof.**
- Stakeholder consultations indicate that FMO consistently considers and protects HCVF values.
 - For large operations, the stakeholder consultation strategy must be in writing.
 - For small and medium sized operations, see Criterion 9.1.
- 9.4 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.**
- Forest management plan is site-specific and detailed in describing the measures taken to protect the HCVF resource.
 - Measures to protect HCVF values are available in public documents.
 - Regular, periodic documentation is available on HCVF values that can be used in public summary documents.
- 9.5 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.**
- A system for monitoring the maintenance of HCVF values is incorporated into the FMO's planning, monitoring and reporting procedures.
 - Annual HCVF monitoring occurs as written in plans and in a technically sound and timely fashion.

PRINCIPLE # 10: PLANTATIONS

Plantations shall be planned and managed in accordance with Principles and Criteria 1 - 9, and Principle 10 and its Criteria. While plantations can provide an array of social and economic benefits, and can contribute to satisfying the world's needs for forest products, they should complement the management of, reduce pressures on, and promote the restoration and conservation of natural forests.

Plantations can play an important role in social and economic development in rural areas. From an environmental perspective, plantations have played an important historic role in re-establishing or maintaining tree cover, particularly in areas with intense land use pressure. In some countries, conversion of natural forest to plantations has provoked a broad and intense public policy debate (e.g. Indonesia, Malaysia and Brazil). In parts of the U.S., Africa and Brazil, there is concern that reforestation may supplant native grassland or savannah ecosystems (i.e. ecosystems where the natural presence or density of trees was relatively low). In many others, plantations are not controversial at all and in fact may even be preferred by many stakeholders to timber harvesting in natural forests (e.g. New Zealand). In some regions, most reforestation is done with native species. In others, there is virtually no experience with commercial native species reforestation. For ecological reasons, SmartWood does encourage the use of native species in reforestation. However, we have certified forest operations where native species play a very, very minor part of the commercial forest area. For these and other reasons, it is absolutely critical that the role of plantations be examined in their regional context. The key in all situations is to assess plantations from a holistic perspective, balancing and optimizing (wherever possible) ecological, social and economic values.

- 10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.**
- Objectives of tree planting are explicit in the management plan, with clear statements regarding the relationship between tree planting and the silvicultural, socioeconomic and environmental (i.e. forest conservation and restoration) realities in the region.
 - Balance of management objectives is demonstrated in actual field implementation.
- 10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones**

and a mosaic of stands of different ages and rotation periods, shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocs shall be consistent with the patterns of forest stands found within the natural landscape.

- A system for monitoring the maintenance of HC VF values is incorporated into the FMO's planning, monitoring and reporting procedures.
- Annual HC VF monitoring occurs as written in plans and in a technically sound and timely fashion.

10.3 Diversity in the composition of plantations is preferred, so as to enhance economic, ecological and social stability. Such diversity may include the size and spatial distribution of management units within the landscape, number and genetic composition of species, age classes and structures.

- Plantation management enhances landscape diversity by varying block size and configuration, species, genetic diversity, age class and structure.
- Emphasis is placed on planting and/or applied research on forest species native to the region.
- Also see Criteria 6.4 and 6.10.

10.4 The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.

- Species selected for reforestation are technically sound choices, given the site and management objectives.
- Where exotic or invasive species are planted, measures occur to prevent spontaneous regeneration outside plantation areas, unusual mortality, disease, insect outbreaks or other adverse environmental impacts.
- Also see Criterion 10.3.

10.5 A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover.

- Representative samples of existing natural ecosystems are being protected or restored in their natural state, based on the identification of key biological areas and/or consultation with environmental stakeholders, local government and scientific authorities (a 10% target figure is encouraged by not mandatory). Also see Criterion 6.4.
- Conservation zones are demarcated on maps and in the field.
- Forest operations carefully controlled in conservation zones.

10.6 Measures shall be taken to maintain or improve soil structure, fertility, and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long-term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.

- Explicit measures are taken to assess the soil in terms of structure, fertility and biological activity.
- Explicit measures are taken to maintain or enhance the soil in terms of structure, fertility and biological activity.
- Soil erosion control is implemented, including no tractor plowing on areas over 5% slope, planting or site preparation measures are done on contour, and specifications on buffer zones are strictly followed.
- No road fill or waste material (e.g. rocks, brush) from site preparation or other activities are in stream courses.

- 10.7 Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.**
- A plan exists for forest protection against encroachment, uncontrolled fires, etc.
 - An integrated pest management plan is in place that identifies pests and alternative methods of addressing threats, and a systematic procedure is in place that reduces the threats whilst minimizing financial and environmental costs.
- 10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.**
- Monitoring incorporates ecological and social impacts of plantation activities, where significant (according to assessor judgment and stakeholder observations).
 - For exotic or invasive species issues, see Criterion 10.4.
 - The purchase of lands, or land leases, for plantation establishment does not adversely impact the community and/or resource use by local people.
 - Plantations established in areas converted from natural forests after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible directly or indirectly of such conversion.
 - Primary, degraded primary and mature secondary forests are not cleared by current forest managers to create tree plantations.