ProForest

Modular Implementation and Verification (MIV):

a toolkit for the *phased* application of forest management standards and certification

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The WWF and IKEA Cooperation on Forest Projects – A partnership to promote responsible forestry

WWF International and the IKEA Group have joined forces to promote responsible forestry. In a three-year cooperation, the organisations will carry out a series of forest projects that will contribute to the development of global toolkits on forestry issues. This *Modular Implementation and Verification (MIV) toolkit* is one of the global projects supported by the partnership.

For more information go to www.panda.org/forests4life or email wwf-ikea-forestprojects@wwf.se

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1 INTRODUCTION

1.1 Phased approaches to standards and certification

It is now widely recognised that the process of implementing responsible forestry standards and achieving forest certification is very challenging and that there is a need to develop phased or stepwise approaches if certification is to become more accessible to forest managers in many parts of the world[1] (see Box 1.1).

As a result, the demand for practical tools to support phased approaches is now increasing rapidly, and it is likely that over the next few years the concept will be used in some form by a wide range of people and organisations for a number of purposes including:

- **companies** wanting to implement responsible forestry standards and/or achieve certification over a period of time and communicate progress
- **individual purchasers** including private sector and government and groups such as the Global Forest and Trade Network (GFTN) as a part of responsible purchasing policies
- **donors and investors** who wish to tie investment to a programme of improvement and eventual certification
- **governments** who wish to see the forest sector in their country improve its performance.

Each of these different users could produce their own phased approach, but there is a growing recognition that it would be very useful to have some consistency to allow comparison between users and clear communication of exactly what is being done. **Modular Implementation and Verification (MIV)** provides a credible mechanism for delivering a phased approach which is practical, consistent and easy to communicate.

Box 1.1 **The need for phased or stepwise approaches to standards and certification**

Despite considerable improvement in forest management in many regions, many forests worldwide still do not meet certification requirements because current levels of forest management are well below the level required by the standard. As a result:

- Considerable work is required to implement all the changes needed to meet the standard. This presents huge challenges for forest managers, particularly if they have very limited staff and other resources to undertake the work.
- The process of improvement is usually a lengthy one requiring several years of concerted effort. It is often difficult for forest managers or external parties to assess clearly the progress made during this time since so many different activities are being undertaken.
- Currently, there is no mechanism for providing an incentive for forest managers during the 'improvement period' to reward the investment being made. For example, buyers are unable to differentiate between products from forests in the transition to responsible forest management and certification and those from forests being poorly managed or even illegally harvested.

It has been proposed that all of these problems might be overcome if there was a mechanism for applying a phased or stepped approach to the implementation of responsible forestry standards and certification:[2]

- firstly, by undertaking one phase or step at a time, forest managers can focus limited resources on specific activities and make the process more manageable
- secondly, it becomes much easier to assess the progress which has been made as one phase is completed and another begun
- finally, if the implementation of a phased approach is linked to a mechanism for credible verification of progress, then a system for providing some type of incentive can be linked to the process.

1 Ebaa'a Atyi, R, Nussbaum, R and Simula, M (2002) *Interim report on the potential role of phased approaches to certification in tropical timber production countries as a tool to promote sustainable forest management* ITTO Interim Report

2 Cozannet, N and Nussbaum, R (2001) *A system for modular verification of progress* Technical Working Group report to the WWF Global Forest and Trade Network

What is Modular Implementation and Verification (MIV)?

Responsible forestry standards are made up of a number of requirements which cover legal, technical, social and environmental activities and outcomes. Any phased approach is based on making progress by dividing these requirements between phases and then addressing them gradually, phase by phase.

If each organisation makes its own decision about which requirements to address in each phase then there will be considerable variation in the way that this is done. As a result, any comparison between forest organisations is difficult, while communication about progress requires a reasonably detailed understanding of both the requirements of the standard and the way they have been divided between phases.

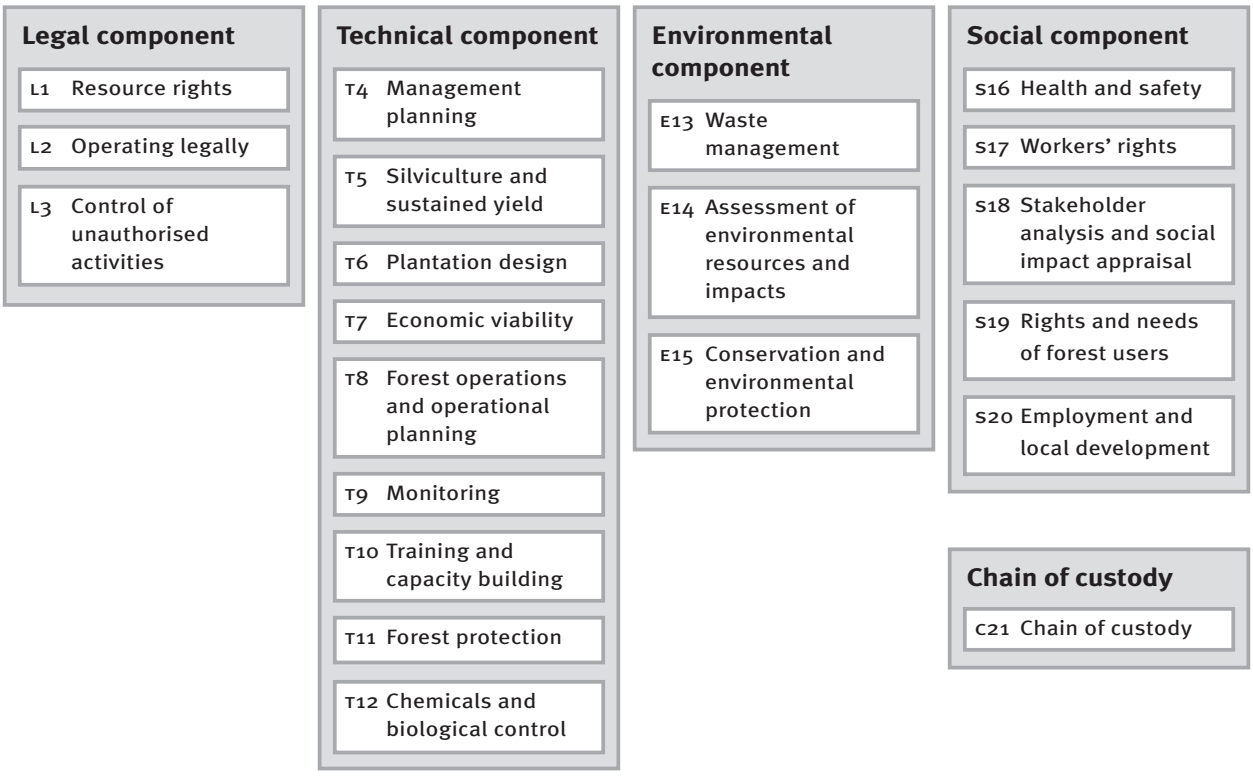
Modular Implementation and Verification (MIV) provides a practical solution through a set of predetermined modules which, like the standards themselves, cover legal, technical, environmental and social issues. Each of the modules covers a topic or issue such as management planning, health and safety or conservation. All the requirements of the standard which relate to that topic are included in the module (see Figure 1.1).

Through these modules the MIV toolkit provides the basis for a consistent phased approach:

- each module can be addressed separately, allowing a phased approach to both implementation and verification
- the requirements of each module are defined, thereby providing a standardised progression.

All aspects of a phased approach can then be based on these modules, from planning and undertaking phased implementation of a standard in the forest to verification of progress and communication of results to others. Since everyone knows what each module requires, communication is clear and comparison between different companies relatively easy.

Figure 1.1 **The Modular Implementation and Verification (MIV) approach, shown schematically**



For example, a company making a commitment to improvement to a purchaser can tell them which modules have already been completed and the timetable for completing remaining modules. This provides an accurate picture of current performance and future progress for the purchaser.

Similarly, a donor or investor can require compliance with certain modules as a prerequisite for funding, plus verified compliance with remaining modules required over an agreed timeframe. Verification of progress can then be linked to achieving each module, again making communication clear and consistent.

The use of modules has three additional advantages beyond those already outlined:

- **Entry modules** Many of the groups considering the use of phased approaches see a need for a minimum set of requirements which must be met before any relationship can be developed. This can easily be delivered by making the completion of certain modules an 'entry requirement'.
- **Flexibility** Although the requirements of each module are predefined, the forest manager can decide the order in which the modules will be implemented (within certain parameters as some modules build on the output of others). This allows the toolkit to be adapted to the individual needs of each forest, while still providing a consistent approach overall.
- **Linkages to provision of training and support** Since modules are predefined, it is very clear what training, support or capacity building will be needed for a particular module. This can help forest managers plan what training or external support they may need, and also help external programmes to focus their provision of support so that it is delivered to coincide with the implementation of the relevant module.

1.3 The MIV toolkit

The MIV toolkit includes the modules themselves, information on how to adapt them for different uses, and guidance on how they can be used to achieve phased implementation of the standard and phased verification of progress. In summary, it contains six sections and an appendix:

- this **introduction** (Section 1)
- **Using the modules** (Section 2) introduces the modules, outlines their content and describes how the generic modules can be adapted for local use
- **Implementation: using the modules to implement a standard** (Section 3) is primarily directed at forest managers and describes a process for using the modules at forest management unit (FMU) level
- **Verification: verifying progress in implementing the modules** (Section 4) discusses how the modular approach can be used as a mechanism for verifying the progress that is being made in improvements to forest management
- **Further information and related papers** (Section 5)
- **The modules** (Section 6) contains the twenty-one full generic modules including a chain of custody module for those wishing to link products to forest management
- an **appendix** showing the links between modules and standards, at a glance.

1.4 Development process

This first version of the MIV toolkit has been developed as part of the WWF-IKEA partnership to promote sustainable forestry[3]. The initial development was undertaken by a technical working group including forest managers, certification specialists, standards developers and purchasers.

3 More information on the WWF-IKEA Cooperation on Forest Projects can be found in the Partnerships section at www.panda.org/forests4life or via email wwf-ikea-forestprojects@wwf.se

They attempted to define modules which reflected normal activities and responsibilities within forest management such as management planning, chemical use or conservation, while at the same time providing a sound basis for communication with third parties such as purchasers and investors.

Based on the work of the technical working group, an initial discussion draft of this toolkit was prepared and made available for wide-ranging consultation over a four-month public consultation period. As a result of comments received, the discussion draft has been extensively revised, and this first version of the MIV toolkit prepared.

The next step will be to use the MIV toolkit, through national interpretation, through use by companies, and directly at forest management unit (FMU) level. It is likely that the toolkit will then be revised based on this practical experience, possibly including the way that the requirements have been divided into modules.

2 USING THE MODULES

2.1 What the modules contain

As discussed in the introduction, at the heart of the MIV toolkit is a series of modules that cover the legal, technical, environmental and social requirements of responsible forestry (see Box 2.1). An additional module covers chain of custody which is necessary for anyone who wants to provide external assurance about forest products.

The MIV modules aim to reflect the requirements of 'responsible forestry standards' in general. However, there are two standards which are particularly widely used internationally. These are the ITTO (International Tropical Timber Organisation) guidelines and the FSC (Forest Stewardship Council) Principles and Criteria. Therefore, the MIV modules are specifically applicable to these two initiatives, including cross-references to the requirements of each. In addition, the World Bank-WWF Principles for forest

Box 2.1 **The MIV modules**

Legal component

L1	Resource rights
L2	Operating legally
L3	Control of unauthorised activities

Technical component

T4	Management planning
T5	Silviculture and sustained yield
T6	Plantation design
T7	Economic viability
T8	Forest operations and operational planning
T9	Monitoring
T10	Training and capacity building
T11	Forest protection
T12	Chemicals and biological control

Environmental component

E13	Waste management
E14	Assessment of environmental resources and impacts
E15	Conservation and environmental protection

Social component

S16	Health and safety
S17	Workers' rights
S18	Stakeholder analysis and social impact appraisal
S19	Rights and needs of forest users
S20	Employment and local development

Chain of custody

C21	Chain of cusstody

management were also incorporated as they are likely to become increasingly important for many forest companies.[4] Appendix 1 contains full cross-references between each of the standards and the MIV modules.

These three initiatives were all developed to be internationally applicable and therefore they are generic in order to be equally appropriate for a range of forest types, sizes and locations. Consequently, the requirements of the modules are also generic and will need interpretation for use. Therefore each module includes guidance for national-level interpretation and for interpretation directly at forest management unit (FMU) level (see Box 2.2). The process of adaptation for different users and in different situations is discussed in Section 2.2.

2.2 Adapting the modules

The MIV modules in this toolkit are generic because they need to be appropriate for any forest type in any country around the world. They can be made much more useful and focused for a particular audience such as forest managers in a particular country, users of a specific national standard or small forest owners, by customising them.

There are a number of ways the modules can be customised. They may be adapted:

- to an existing national or regional standard
- to reflect the requirements of a particular organisation such as a donor, investor or customer
- to a particular national or regional context and forest type
- for use by a particular user group, for example managers of small forests or the plantation sector.

Each of these is discussed below, with guidance for those who wish to undertake such a process.

2.2.1 Adapting to an existing national or regional standard

Where a national or regional standard already exists, adapting the modules is a relatively straightforward and technical exercise which can be carried out by any adequately qualified person or group.

Box 2.2 **The MIV modules**

Each module includes the following elements:

- an **introduction** providing a brief overview of what the module requires
- a **Required outputs** box summarising the main requirements which must be met in order to complete the module
- **Guidance for national interpretation**, explained further in Sections 2.2.1, 2.2.2 and 2.2.4
- **Guidance for forest managers** aimed at forest managers who are implementing the modules at forest management unit (FMU) level
- advice for **Small, low-impact and community forests** on how the module might be adapted to be more appropriate to the needs and resources of small forest owners, forests managed with low impacts (such as the collection of non-timber forest products) and community forests (see Section 2.2.5)
- where relevant, a **Further guidance** section identifying other sources of information pertinent to the module
- a box titled **Links to standards** provides a summary of the requirements of the FSC, ITTO, and World Bank-WWF standards which are covered by the module.

In reality, forest management is a holistic process and cannot be divided neatly into separate activities. Therefore, there are many links between the requirements of different modules and cross-references to these are made throughout the text. Where modules are particularly closely linked, for example, where one module needs to be completed prior to undertaking another one, this is explicitly stated in the *Required outputs* section.

4 All of the standards can be found on the internet. Details are provided in Section 5.

Matching requirements to modules Begin by going through the standard and allocating each requirement to the appropriate module. Where the standard follows the ITTO or FSC approach the *Links to standards* box in each module should help with this. Appendix 1 explains the information schematically.

For most standards, there will probably be some requirements which relate to more than one module. In this case put them in both the possible modules noting the cross reference.

Interpreting the requirements One of the major problems identified by forest managers in implementing standards is that the language used is unfamiliar and difficult to understand.[5] The development of modules is an excellent opportunity to rewrite the requirements in order to:

- use language which is familiar and easily understandable for forest management staff
- combine and rationalise overlapping or repeated requirements
- make it as clear as possible what must be achieved in order to meet the requirement.

It may be useful to include people who are actively involved in day-to-day forest management in this part of the process to ensure that the language and approach used is genuinely appropriate for forest managers.

It is probably a good idea to have the original wording (or numbers) of all the requirements covered by the module available for reference, for example in a box or an annex, to allow easy cross-reference back to the actual standard.

Guidance In addition to the requirements, the modules are also a good place to provide more practical guidance or links to readily available, reliable information. This is especially important where there are a range of ways a requirement might be met, or where there are different levels of requirement for different sizes or types of forest.

Additional information It might also be useful to include:

- sources of further information or guidance in codes of practice, books, publications from government, NGOs, forestry associations etc, useful websites and anything else likely to be helpful for forest managers
- training relating to the module (e.g. 'Free two-week training courses on safety for forest workers are run annually by the Ministry of Forestry: contact details for further information are…' in the health and safety module; basic training on ecological survey techniques which would be useful for environment managers is run by the National Bird Society: contact…' in the conservation module)
- contact details for useful people or organisations (government agencies which can provide support, specialist consultants, university and research institutes doing relevant work)
- examples of how requirements have been met in practice – this can be particularly useful for forest managers since it gives them practical ideas about what to do.

2.2.2 Combining two or more existing standards

MIV may be particularly helpful in overcoming the problems currently being created by the existence of competing forest certification schemes in many regions. It allows two or more standards to be combined and rewritten in a way which makes it straightforward for a forest manager to implement the requirements of all relevant standards without needing to spend time understanding the overlaps and differences, or the politics of each scheme.

To undertake the process, the requirements of both standards should be allocated to the appropriate modules, and then the same process followed as for an individual standard as described in Section 2.2.1 above.

5 Nussbaum, R, Garforth, M, Scrase, H and Wenban-Smith, M (2001) *An analysis of current FSC accreditation, certification and standard-setting procedures identifying elements which create constraints for small forest owners* UK Department for International Development Forestry Research Programme 20 pp

It is very important to ensure that the process of combining and rationalising the requirements is carried out very thoroughly.

The resulting module should then allow the forest manager to focus on forest management without needing to develop an understanding of the two standards.

2.2.3 Adapting for a user-defined set of requirements

In a very similar process to the one set out above, the modules can be adapted to reflect the requirements of a specific user such as a donor agency which requires recipients of aid money to meet certain requirements, investors who have a set of minimum requirements or purchasers with their own set of purchasing requirements.

This can be done in exactly the same way that the modules are interpreted for an existing standard. Where necessary, modules required as 'entry requirements' can be highlighted.

A particularly useful variation on this approach is where a specific organisation wants to link their own requirements to an existing standard. This is easily done through the MIV approach by incorporating user-specific requirements and the requirements of the existing standard into each module. These can then be linked in a way which makes them easy to understand and implement for the forest manager.

2.2.4 Adapting in the absence of an existing standard

Where no national or regional standard exists, then the process of adapting the modules for a particular forest type, region or country is more difficult because it involves making decisions about the appropriate interpretation of the generic requirements.

When generic requirements are interpreted to develop a national standard, it is usually done by a multi-stakeholder group working over a period of months or even years in consultation with a wide range of different interested parties.

However, in many cases it might be useful to have an adaptation of the MIV approach before a full national interpretation process has been undertaken. This is particularly important if, for example, a national standard-setting process is underway but will still take a long time to be completed.

Therefore, there are two possible approaches to adapting MIV for a particular forest type or region in the absence of an existing national or regional standard:

- **Multi-stakeholder, consensus-based approach** This will result in a definitive set of modules which have the same degree of wide-ranging support as a national or regional standard.

  If a full, multi-stakeholder process is preferred for interpreting the modules, then it is a very good idea to base the process on the guidance which has been developed for this type of standard-setting.[6]

- **Technical adaptation** Using a representative working group or team, this approach will result in a set of modules which reflect a particular set of views and the resulting interpretation. They will not be definitive, but may well be extremely useful as a practical way forward while a national or regional standard is being developed in a separate process. Once the standard is complete, the modules can be revised in line with the guidance in Section 2.2.1.

  If the adaptation is to be made by a technical working group or team, there are some important things which should make the process successful.

  Firstly, be clear from the beginning that the process is not equivalent to a national standard-setting process and that the product (the modules) will not have the status of a national standard or norm.

6 Scrase, H and Lindhe, A (2001) *Developing Forest Stewardship Standards – A Survival Guide* Available at www.taigarescue.org
The Pathfinder – a website supporting multistakeholder forest standards development at www.piec.org/pathfinder

Secondly, be sure that the working group or team includes:

- Expertise: the expertise of the members of the group or team needs to cover the full range of topics included in the modules including legal, technical, environmental and social aspects. For some very specific modules (e.g. health and safety) and it may be useful to bring in an appropriate expert on a short-term basis to provide some input.
- Range of views: sustainable forest management involves balancing the competing demands of economic, environmental and social outcomes. A key role of the group or team will be to make decisions on the appropriate point of balance in the local or national context. Since this is a subjective exercise, the outcome will depend on the membership of the group. As a result, it is important to try to make sure that the membership represents an appropriate range of views and perspectives.
- Practical experience: it is very important that the group or team includes people with real, current, practical experience to ensure that the interpretation and accompanying guidance are appropriate, implementable and accessible to forest managers.
- Process: whichever approach is adopted, the process begins by deciding what is an appropriate local interpretation for the requirement of each of the modules. Once this has been established, accompanying guidance and further information should be developed just as for modules based on an existing standard (Section 2.2.1).

Finally, include a summary of the process with the completed modules and have realistic expectations about what level of support or credibility the interpretation is likely to have with different stakeholders.

2.2.5 Adapting the modules for a particular user group

One of the exciting potential uses of MIV is to create modules which are specifically designed for a particular user group or sector. The most obvious of these is small forest owners.

Small and low-impact forests There has now been considerable work on the analysis of standards from the view of small forest owners, and there is widespread consensus that forestry standards are generally not written in a way which makes them easy for small forest owners to use.[7]

However, work on the development of standards specifically for small forest owners has shown that this is not always easy since it is necessary to develop standards which are less complex and more appropriate but are not *lower* than those which apply to other forests.

In particular, there is a reluctance to drop requirements which are irrelevant to the vast majority of small forests, but still important to a small minority. As a result, standards supposedly adapted for small forest owners are often nearly as complicated as the original standard from which they are developed.

Using the modular approach provides a practical alternative. Each module can be adapted to have a straightforward interpretation of what a requirement means for the majority of small forests, allowing for a simplified interpretation. However, by retaining the links to the original standard, the need for occasional exceptions can also be retained.

For example, in the module on social impact assessment the interpretation might be that the owner or manager of a small forest must have noted any impacts he/she might have on neighbours and discussed these with the neighbours if appropriate. However, there could then be a note to say that if the social implications of the small forest were, for some reason, very significant, that the standard required a more formal approach.

7 Higman, S and Nussbaum, R (2002) *How Standards Constrain the Certification of Small Forest Enterprises* UK Department for International Development Forestry Research Programme 22 pp Available from www.proforest.net on the Publications page

Specific forest types Another situation in which the use of MIV can be useful is in developing a tool for a particular forest sector or type, where the national standard covers several forest types, e.g. many national standards cover both natural and plantation forest management. As a result:

- some requirements are not applicable to one or other of the forest types
- some requirements are not very explicit since they have to be interpreted for both forest types.

By having a set of modules adapted for one type only (e.g. plantations) it is possible to:

- exclude the requirements which are only relevant to natural forests
- make vague requirements much more specific by focusing on how they should be interpreted for plantations.

3 IMPLEMENTATION: USING THE MODULES TO IMPLEMENT A STANDARD

This guidance is directed primarily at forest managers wanting to use the modules to implement a standard. It should also provide useful background information for those developing national or other customised versions of the modules.

There are a number of different reasons, internal and external, why an organisation may decide to use MIV. Regardless of the context in which the MIV approach is applied, phased implementation of the standard using MIV should normally be a three-stage process:

- a baseline appraisal of the current situation, or **initial review**
- development of an **action plan** for improvement
- **implementation** of the action plan.

The way in which each of these stages is undertaken will depend on the purpose for which the MIV toolkit is being used.

3.1 Initial review

The first stage in the modular implementation of the standard is to undertake an initial review or baseline appraisal of the current level of management. The purpose of this review is:

- to assess to what extent the requirements for each module are already being met
- to identify all the gaps which must be addressed in order to achieve full compliance with the requirements for each module.

The results of the initial review will form the basis for an action plan to guide progress towards implementation of all the modules (Section 3.2).

There are a number of ways this review can be carried out:

- **Internal review** The manager or management

team undertake the review themselves.

- **External review** The review is carried out by someone external such as a consultant or a member of staff from a purchaser, donor or investor.
- **Independent review** The review is carried out by a recognised independent third party such as a certification body or recognised auditing specialist. In this case, the initial review becomes equivalent to a baseline assessment as discussed in Section 4.1.1.

Whoever carries out the initial review, it is essential that they are:

- familiar with the requirements of the modules (and/or the standard), including the interpretation of the requirements for the specific location and forest type. This is particularly important if you are using the generic modules in this toolkit without any national adaptation
- competent to carry out an assessment or audit effectively
- able to adequately examine technical, social, environmental and economic issues. This will almost always require the use of a team for medium and large forests;
- able to report the findings both verbally and in writing in a way which is easy to understand for the forest manager and will ensure that the information is of maximum use for the development of action plans.

3.2 Development of an action plan

At the heart of an organisation's phased approach to implementing all the modules is an action plan. This sets out in detail the timetable for full implementation of each of the modules and therefore compliance with the full requirements of the standard.

The action plan should be developed by the forest manager. This may be done with external assistance such as consultants, government forest departments or NGOs, and wherever appropriate should include people involved in undertaking the initial review.

The initial review will have indicated:

- the modules where there is already full compliance with the requirements and no further work is required
- the modules where there are gaps between the requirements and current management practices, and exactly what these gaps are.

For each of the modules where further work is required, a detailed programme will be needed planning how full implementation will be achieved. All of these separate programmes need to be combined, and an overall timetable developed setting out the timing for starting and completing work on each outstanding module.

In other words, development of the action plan involves two activities:

- planning a programme of actions to achieve compliance within a module
- organising these separate programmes into a set of coordinated activities which provide a coherent and efficient path to achieving full compliance following a planned timetable.

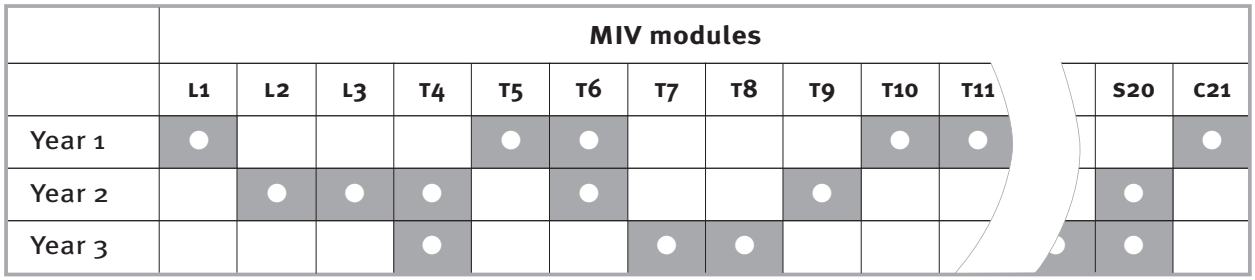
These two components together make up the action plan.

3.2.1 Programmes for individual modules

The starting point for developing actions for individual modules will be the results of the initial review. Therefore, it is important that the results of the initial review are clearly and accurately reported.

As well as a good understanding of *where* the gaps are between the requirements of each module and current performance, it is also critical that either during the initial review, or immediately afterwards, the forest manager develops a good understanding of *why* the organisation's practice is currently not satisfactory. This is because when developing actions to improve performance it is important to focus on the root causes of gaps rather than the gaps themselves. For example, if a

Figure 3.1 **How a forest manager might plan to complete modules over a three-year period – note that some modules might take more than one year to complete**



problem is identified in an organisation's calculation of harvesting yield, there would be little benefit gained from using more sophisticated yield models if the root problem was the unreliability of the inventory data.

For each individual module where gaps have been identified and so further work is required the action plan must set out a programme for implementation including:

- who is responsible for ensuring the module is implemented
- details of all the other people who will be involved in implementation
- the actions which will be required, including any interim targets and the timing for each one
- what staff, equipment, resources and training will be needed
- how progress will be monitored, reported and reviewed
- the internal timetable for the module (i.e. what activities, when, and how long will it take from beginning work to completing the whole programme).

Since the action plan is likely to extend over a period of years (for example, up to a maximum of five years in the case of WWF GFTN Producer Groups) there will need to be some flexibility to allow response to changes and unforeseen circumstances. This can be provided by developing detailed actions for the first year together with a less detailed plan for subsequent years, and linking this to a regular review process such as once every six months (see Section 3.3 below).

3.2.2 Developing a timetable for full implementation

Perhaps the most complex part of any phased approach is deciding the order in which each requirement will be addressed and producing a timetable for full compliance (see Figure 3.1).

This is no exception with the implementation of MIV modules. Each forest organisation using the MIV approach will be different and will be beginning from a different starting point. Therefore, it is essential to allow forest managers the flexibility to make their own decisions about the most appropriate order in which to implement the modules. However, this also means that they will need to make decisions about the right approach for their organisation. The guidance below aims to assist in this process.

It is probably best to begin by deciding the total implementation period (e.g. three years or five years). This may be an internal decision, or may be driven by external demands such as customers, investors or government. Once you have decided the total time available, you need to decide which modules will be implemented in each period (e.g. each year, each month).

When doing this it is probably helpful to consider the points below.

- Identify all modules which need to be completed **as the basis for other modules** and ensure that they are timetabled for the beginning of the process. This will normally include:
  - *Module T5 Silviculture and sustained yield* which provides the basis for economic and operational planning *(Module T4*

Management Planning, Module T7 Economic Viability and Module T8 Forest Operations and Operational Planning)

- *Module E14 Assessment of environmental resources and impacts* which acts as a basis for environmental and conservation planning *(Module E15 Conservation and Environmental Protection)*
- *Module S18 Stakeholder analysis and social impact appraisal* which provides the information needed for subsequent social modules covering forest users and local communities *(Module S19 Rights and needs of forest users and Module S20 Employment and local development)*
- *Module T10 Training and capacity building*. Training may be needed as fundamental parts of the achievement of many other modules

- Identify modules which need to be completed in order **to meet entry requirements** for investors or customers and timetable them to be undertaken first. These might include modules such as *L1 Resource rights* and *E14 Assessment of environmental resources*
- If purchasers are particularly concerned about ensuring that the timber is from known and legal sources then prioritise the legal modules *(Module L1 Resource rights, Module L2 Operating legally and Module L3 Control of unauthorised activities)* and the chain of custody module *(Module C21)*
- Using the internal timetable for each module described in Section 3.2.1, ensure the module is begun early enough to allow the full programme to be completed
- Identify activities in different modules which overlap and could be done together and timetable those modules to be implemented together
- Identify modules where the same person or resources will be used and stagger implementation unless the work is complementary
- Generally, try to divide the costs of implementation reasonably evenly, making sure that the total cost of implementation for the modules timetabled for any particular year does not exceed the resources available in the budget for that year.

If the timetable covers several years, then it is probably a good idea to have more detail at the beginning and to leave some of the planning for later stages until nearer the time. However, this will only work with two important provisos:

- firstly, things almost always take longer than planned, so build this into your timetable and, in particular, do not leave all the more challenging work until the end of the time available
- secondly, make sure that you have a system of regular monitoring and review as set out in Section 3.3 below.

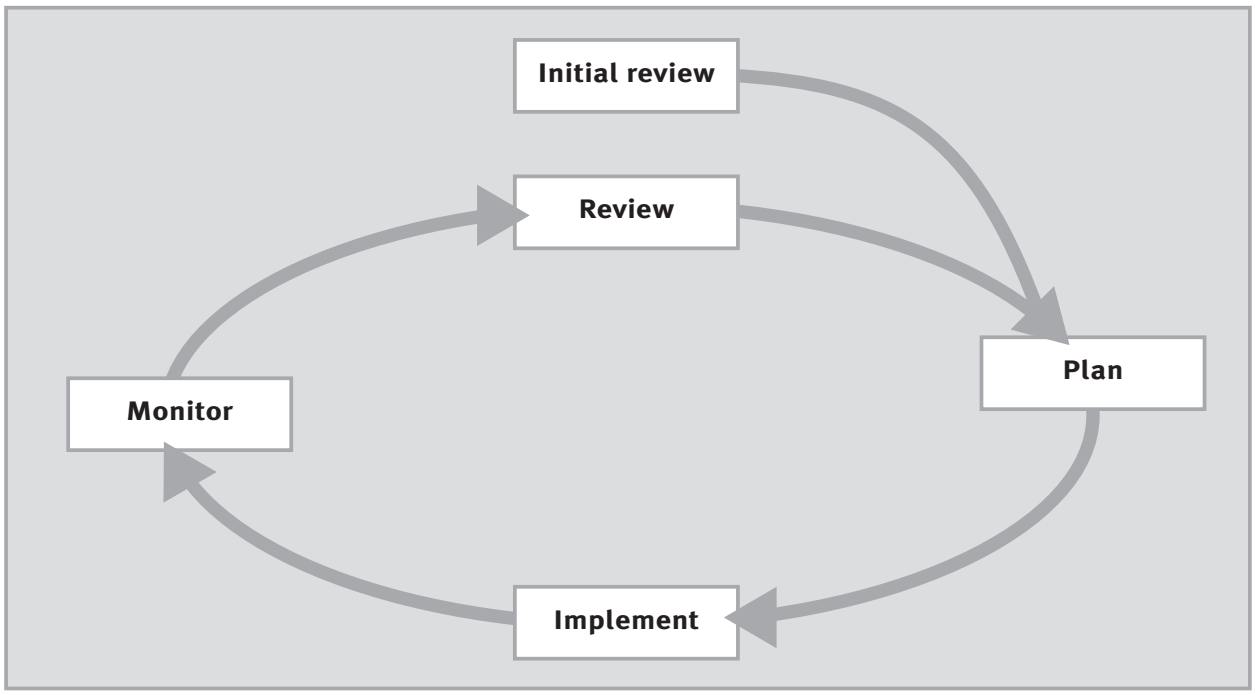
3.3 Implementation of the action plan

Implementing the action plan is the most important part of the entire process since it is this which will deliver improvement on the ground. If the action plan has been developed well, then it should be very clear what is supposed to happen when and who is responsible.

However, there will always be changes and unexpected issues that arise, so it is very important to have a mechanism for regular review of progress and planning of any changes which need to be made. This is shown schematically in the plan-implement-monitor-review cycle in Figure 3.2.

In medium and large organisations, a specific person should be nominated to organise and manage the monitoring programme. The programme should be designed to ensure that each element of the action plan is checked regularly. The frequency with which monitoring of each element is carried out should be specifically determined and justified. In smaller organisations, while monitoring will be less formal, it should still be undertaken regularly and at least annually. The practicalities of monitoring or auditing are discussed further in Section 4.2.

Figure 3.2 **The action plan implementation cycle**



The results of the monitoring programme should be fed into a review process which identifies any problems and initiates action to resolve them. The review should be carried out regularly (e.g. twice a year) and involve senior management (which may simply mean the forest manager in small and medium organisations).

If the initial action plan did not include full detail for the second and subsequent years, this will need to be added on an annual basis. Remember to ensure that it is closely linked to annual business planning and budgeting to make sure adequate resources are available.

Annual revisions should also include any changes needed as a result of failure to meet plans for the current year. Where this happens, it is extremely important to review the reasons you failed to meet your commitments and to ensure that commitments for the coming year can be met.

Where MIV is being used by third parties such as purchasers, investors or donors, there may be penalties associated with failure to meet the requirements of the action plan.

4 VERIFICATION: VERIFYING PROGRESS IN IMPLEMENTING THE MODULES

In addition to providing a tool for implementing the standard, MIV also provides a convenient mechanism for verifying the progress being made in a consistent manner, providing the basis for communicating, either internally or externally, how the implementation process is progressing. This section looks at:

- how verification can be used (Section 4.1)
- the practical issues when carrying out MIV verification (Section 4.2).

4.1 Uses of verification within MIV

There are two main uses of verification in the MIV process:

- internal monitoring of progress in implementing the modules in accordance with the action plan. This was discussed in Section 3.3 above and is

not explicitly discussed further. However, much of the discussion about verification for external purposes, and in particular the practical issues discussed in Section 4.2 are relevant

- verification as a basis for providing credible information on current performance and progress to external interested parties such as customers, investors, donors, governments or civil society. This form of verification is discussed in this section.

There are three main potential verification activities:

- a baseline assessment of the current level of performance (Section 4.1.1)
- confirmation that an adequate baseline or entry level has been met (Section 4.1.2)
- confirmation of progress in implementing the modules and meeting the action plan (Section 4.1.3).

4.1.1 Baseline assessment

As discussed in Section 3.1, modular implementation is based on an initial review of the current level of performance which identifies the areas of non-compliance with the requirements for each module. This is then used as a basis for developing an action plan.

If MIV is being used as a basis for phased implementation to meet the needs of external parties such as customers, investors or donors, they will need confirmation that the action plan is realistic. This requires verification that the initial review was accurate and identified all significant gaps. This verification is provided by the **baseline assessment**.

The baseline assessment, just like the initial review, assesses the current level of performance against the requirements of each module, identifying all areas where there are gaps between current management and the requirements of the module.

There are two ways in which the baseline assessment and the initial review can be organised:

- if the initial review is carried out internally or by a consultant, then an additional baseline assessment by an independent auditor will be required to confirm the findings
- an alternative is for the initial review to be undertaken by an independent auditor. In this case it doubles as the baseline assessment and does not need to be further verified.

The advantage of a separate initial review and baseline audit is that the people who undertake the initial review, whether internal or external, can also be involved in developing and implementing the action plan. Independent auditors are not normally allowed to provide this level of consultancy.

The advantage of combining the initial review and baseline audit, apart from possible cost savings, is that the independent auditor should have previous experience of this type of audit helping them to identify all gaps accurately, providing a good basis for developing the action plan.

4.1.2 Entry-level requirements

Many potential uses of MIV (e.g. WWF GFTN Producer Groups, investors, government procurement), while keen to support a phased approach, also need to be sure that their suppliers or clients meet a certain minimum level of performance.

This can be achieved by designating certain modules as 'entry-level requirements' and, as part of the baseline assessment, ensuring that these modules are already fully complied with.

There are some particular issues which are likely to demand this type of entry-level requirement approach.

Known and legal sources In response to the growing awareness of the serious threat posed to sustainable forest management by illegal logging, many state and private purchasers are now making commitments only to buy forest products from 'known and legal sources'. This could be delivered in practice by requiring compliance with *Module L1 Resource rights* and *Module C21 Chain of custody*. Once these two modules are in place, all other requirements, including full legal compliance

in all operations *(Module L2)*, can be implemented in line with an action plan over an agreed time.

Unwanted sources Many purchasing policies prohibit the purchase of forest products from unwanted sources which include, for example, inadequately managed high conservation value forests (HCVFs), areas with serious social disputes and forest being converted to other uses. Requiring completion of *Module E14 Assessment of environmental resources and impacts* and *Module S18 Stakeholder analysis and social impact appraisal* provides assurance that if there are any controversial issues, they will be identified.

Figure 4.1 **An example of an MIV audit report summary**

MIV year 2 audit report summary

Action plan summary

	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
Year 1	✓			✓	✓		✓							✓				✓			✓
Year 2		✓		✓				✓		✓	✓	✓			✓	✓			✓	✓	
Year 3		✓	✓	✓				✓	✓	✓					✓		✓			✓	
Year 4									✓				✓								

In year 1 modules 1, 4, 5, 7, 14, 18 and 21 were completed as planned

Year 2 results

Modules scheduled for completion in year 2

Module	Complete	Incomplete	Comments
T11	✓		
T12	✓		
S16		✓	*New safety equipment arrived late so training is still underway. Rescheduled for completion in Q1 of year 3*
S19	✓		

Modules scheduled to be underway in year 2

Module	On schedule	Not on schedule	Comments
L2	✓		
T4	✓		
T8		✓	*Road crews still not fully implementing new water crossing guidelines. Additional supervision planned and budgeted for Q1 and Q2 year 3* *Chainsaw operators still not meeting directional felling targets. Additional training planned and budgeted for Q2 year 3*
S20	✓		
T10	✓		
E15	✓		

4.1.3 Confirmation of progress

The most routine use of verification in the MIV toolkit will be as a means of ensuring that adequate progress is being made against the commitments of the action plan. This should be happening internally on a regular basis as part of the plan for implementation (see Section 3.3), but where there is interest from external parties there will also need to be some independent verification of progress.

This routine monitoring of progress will be driven very much by the action plan. Each module which, according to the action plan should be complete or underway needs to be checked.

- **Modules scheduled for completion** The auditor should check that all the outcomes required by the module have been achieved in full.
- **Modules underway** Many modules may be scheduled to be completed over more than one year. In this case, the auditor should check that the programme for the individual module is being followed and that progress against the internal timetable for the module is adequate (see Section 3.2.1).

The way in which progress is checked and confirmed should follow standard auditing techniques which are discussed in Section 4.2. The frequency with which verification is carried out will depend on the user, but should normally be at least annually and may need to be more frequently.

The results of this type of audit will identify where adequate progress has been made and also highlight any areas where progress does not meet the plan. Communication of the results should be in a form which ensure that it is clear and accurate for both internal use and to any relevant external interested parties. Figure 4.1 provides an example of how this communication might be summarised.

4.2 Verification in practice

There are three ways in which verification can be carried out. The most appropriate approach for any particular circumstance will depend on the way in which the MIV toolkit is being used:

- **Internal or first party verification** Verification can be carried out internally by the forest manager or staff. This may be either informal or formal. If a formal approach is adopted, it is likely to take the form of an internal audit. This is the most appropriate approach for routine internal monitoring of the implementation of the action plan.
- **External or second party verification** Verification is referred to as second party when it is carried out by an external person or organisation which has a link with the forest enterprise being verified. This might be, for example, the staff or representatives of a donor agency funding improvements, a bank making investments or a customer purchasing wood products.
- **Independent or third party verification** Third party verification is carried out by an organisation which is completely independent of the forest enterprise being verified. This can be an accredited certification body, an organisation specialising in independent verification or a consultancy organisation with recognition for verification in this particular field.

The process of verification against the modules is very straightforward, simply involving an assessment of whether the requirements of each module have been met or not. However, it is important that the verification is undertaken by a person or team who:

- understands and has experience of auditing techniques
- has a good understanding of the requirements of the modules and, particularly if certification is the ultimate aim, the standard on which they are based
- has the necessary technical skills and knowledge to adequately undertake an assessment of all the modules. This will usually require a team for medium and large forests.

5 FURTHER INFORMATION AND RELATED PAPERS

ITTO Forest Management Guidelines Copies of the *Guidelines for the Sustainable Management of Natural Tropical Forests* (ITTO Guidelines NTF), the *Guidelines for the Establishment and Sustainable Management of Planted Tropical Forests* (ITTO Guidelines PTF) and the *Manual for the Application of Criteria and Indicators for Sustainable Forest Management of Natural Tropical Forests: Part B Forest Management Unit Indicators (ITTO C&I)* can be obtained from **www.itto.or.jp**

Forest Stewardship Council Principles and Criteria Copies of the FSC Principles and Criteria (FSC P&C) can be obtained from the website **www.fscoax.org**

World Bank-WWF Alliance Principles The Alliance principles for responsible forest management are available from the Alliance website **http://lnweb18.worldbank.org/essd/envext.nsf/80bydocname/wbwwfforestalliance**

WWF Global Forest and Trade Network Further information on the GFTN can be found on the website **www.panda.org/forestandtrade**

ITTO Discussion Paper on Phased Approaches The ITTO discussion paper on the need and potential for a phased approach to implementation of standards and certification was presented to the ITTO Council in November 2002 and is available from **www.itto.or.jp/ittcdd_ses/thirty_third_sessions.html**

Producer Groups For copies of a GFTN briefing paper on Producer Groups, contact the GFTN Global Producer Group coordinator

Sustainable Forestry Handbook This book provides practical guidance for forest managers on meeting the requirements of responsible forestry standards. Available from Earthscan at **www.earthscan.co.uk**

6 THE MODULES

As discussed in preceding sections, MIV includes legal, technical, environmental and social modules, with an additional chain of custody module for those wishing to link products to forest management. Guidance on the adaptation and use of the modules can be found in Sections 2, 3 and 4.

This section consists of the following modules:

Legal component

- **L1** Resource rights
- **L2** Operating legally
- **L3** Control of unauthorised activities

Technical component

- **T4** Management planning
- **T5** Silviculture and sustained yield
- **T6** Plantation design
- **T7** Economic viability
- **T8** Forest operations and operational planning
- **T9** Monitoring
- **T10** Training and capacity building
- **T11** Forest protection
- **T12** Chemicals and biological control

Environmental component

- **E13** Waste management
- **E14** Assessment of environmental resources and impacts
- **E15** Conservation and environmental protection

Social component

- **S16** Health and safety
- **S17** Workers' rights
- **S18** Stakeholder analysis and social impact appraisal
- **S19** Rights and needs of forest users
- **S20** Employment and local development

Chain of custody

- **C21** Chain of custody

L1 Resource rights

A basic requirement of sustainable forest management is that the forest resource is only exploited by the people who *have a right* to do so. Widespread illegal exploitation of forest resources in many parts of the world is a major threat to sustainability and as a result has become the focus of international concern. This has led to many timber buyers making a commitment only to buy timber from legal sources.

Required outputs

1 Demonstrate legal and, where appropriate, customary rights to harvest timber from the forest management unit (FMU) including all relevant maps, permits, licences and other documents.

2 Demonstrate that any legal and customary rights of other groups are being maintained.

3 Demonstrate that all applicable charges such as fees, royalties and taxes are paid.

Guidance for national interpretation

Legal or customary right to harvest

Identify the existing mechanisms for securing the legal or customary right to harvest timber from a forest management unit (FMU) and provide guidance on the types of documentation required to demonstrate these rights. In addition, if appropriate, identify the government departments responsible for controlling tenure and resource rights.

Where there are likely to be conflicts, it is also very useful to provide guidance on how these should be addressed.

Protecting others' rights

In many countries a range of groups have legal or customary rights to various forest resources. Provide guidance on the other users who may have rights (either legal or customary) and on ways of ensuring that these rights are protected. See also *Module S18 Stakeholder analysis and social impact appraisal and Module S19 Rights and needs of forest users.*

Fees and royalties

Provide details of applicable charges such as fees, royalties and taxes which may be in operation in the country. Provide guidance on what types of evidence will be required to demonstrate that charges have been paid.

Guidance for forest managers

1 **The right to harvest timber from the forest management unit (FMU)**

You must be able to demonstrate that you have a legal right and/or, where appropriate, a customary right to manage the forest and harvest timber from the forest management unit (FMU). This can usually be demonstrated by holding concession permits, ownership documents, licences, leases, and similar documents.

2 **Protecting others' rights**

You must also be able to demonstrate that your activities are not diminishing anyone else's rights to the resource. This might include people with

L1

rights (either legal or customary) to collect fuel wood, harvest timber, fish, hunt or access clean water from the forest. If you do not already have information on other users and their rights, this should be included in the social appraisal required by *Module S18 Stakeholder analysis and social impact appraisal*. This is very closely linked to *Module S19 Rights and needs of forest users*, which covers the rights and needs of forest users and should probably be planned simultaneously.

The FSC standard explicitly requires an organisation operating on the lands or territories of indigenous people to have their free and informed consent to the activities taking place.

3 Payment of charges

You have to be able to demonstrate that your organisation has paid all applicable charges such as fees, royalties and taxes for which you are responsible. You should ensure that you obtain and keep copies of any receipts you receive.

Small, low-impact and community forests

All forest managers, whatever the size and type of forest, have to be able to demonstrate that they have the right to the resource they are managing and that they are not having an adverse impact on others' rights. However, for small and community forests this should be kept as simple as possible.

Communities or individuals with customary rights to harvest may need to be provided with guidance on how to demonstrate these rights in an acceptable way.

Links to standards (see also Appendix 1)

FSC Principles and Criteria
1.1, 1.2, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3 and 10.8

ITTO Guidelines for Natural Tropical Forests
1.1, 4.1, 7.14 and 7.15

ITTO Guidelines for Planted Tropical Forests
2, 6, 8, 14, 15 and 55

World Bank-WWF Alliance Principles
2 and 3

L2 Operating legally

Legal compliance with relevant *laws and regulations* is a key element and basic requirement of responsible forestry standards. Legal requirements generally cover the same range of forest activities as standards, so many legal requirements will be specifically addressed through other modules.

Required outputs

1 Comply with all relevant local, national and international law and regulations including, as appropriate:

- national legislation and codes of practices covering forestry operations, environmental protection, tenure and use rights of indigenous and forest-dependent communities, workers' rights, health and safety, and trade
- international conventions and treaties signed in the country of operation such as the UN Convention on Biological Diversity, the Convention on International Trade in Endangered Species (CITES), ILO Conventions.

2 Maintain a system that ensures tracking of changes in legal requirements and continuous compliance over time.

Guidance for national interpretation

Operating legally

In most countries there are many laws which are relevant to forestry. In order to comply with the law, forest managers need to know what the law is, and what it means. Therefore, it is very useful to identify and where necessary, provide interpretation of local and national legislation which affects the forest sector, such as:

- land tenure legislation (see *Module L1 Resource rights*)
- company, financial and tax regulations (see *Module L1 Resource rights*)
- forestry regulations
- biological control and chemical use regulations
- wildlife conservation and environmental protection regulations
- legislation regulating land use, e.g. land dedicated for agricultural production, forestry, mining
- labour and health and safety law
- legal rights of indigenous people and other forest users
- specific activities, e.g. processing, transport and trade.

In addition, where they are not already covered by national law, provide details of any relevant international and regional conventions and treaties with which forestry organisations are expected to comply.

The relevant international conventions and treaties include:

- the UN Convention on Biological Diversity (completion of *Module E15 Conservation and environmental protection* should ensure you comply with the requirements of this Convention)
- the Convention on International Trade in Endangered Species (CITES)
- International Labour Organisation (ILO) Conventions (see also *Module S17 Workers' rights*).

L2

Regular updates

In many countries there are various organisations which provide regular summaries or updates on laws affecting forest management, for example the government (usually through forestry department guidance), forestry associations or legal firms. Where such services exist, it may be useful to provide information on what they provide and how much they cost.

Other government departments (e.g. labour, finance or health) may provide guidance on specific issues such as health and safety law or taxation. Where possible provide contact information or highlight sources of guidance.

Guidance for forest managers

1 **Legal compliance**

Forest standards require you to operate in full compliance with the law. This means that you need to know what the law is, check that you are meeting it and, if not, take action to bring your operations into compliance. Legal compliance is becoming increasingly important as more and more governments, donors, investors and timber traders make commitments only to deal with legally managed forests and their products.

Ensuring legal compliance will generally involve:

- identifying relevant local, national and international laws
- assessing current activities (including operational practices) against these legal requirements and identifying areas of non-compliance or 'gaps'
- developing an appropriate plan of action to address all identified gaps. This can be done in two ways:
  - developing a specific plan for legal compliance. This is a good approach for companies which are already close to complying and need to demonstrate full compliance quickly
  - assigning actions to specific modules and incorporating them into the general action plan for implementing the modules. This is probably more appropriate for forest organisations which are still some way from legal compliance. However, it will probably still be useful to maintain a central summary of progress in implementing full legal compliance and, therefore, completing this module
- Setting up a mechanism to monitor ongoing compliance with legal requirements.

2 **Tracking changes**

In addition to ensuring that all current laws are complied with, it is important to have a mechanism for keeping up to date with any changes to the law which affect forest management. This might, for example, involve being a member of an association which provides this service to its members, appointing a member of staff to check regularly for any changes or hiring a legal firm to provide routine advice.

Small, low-impact and community forests

All forest managers, whatever the size and type of forest, have to comply with the law. However, unnecessary complication should be avoided for small forests.

Where possible, national interpretations should provide straightforward advice on the way this sector should comply with legal requirements. The focus should be on achieving compliance in the forest, rather than on internal systems for planning, implementing and monitoring.

In addition, in many countries exemptions are made to some legal requirements for small organisations and businesses. Check whether this is the case for any requirements relating to forest management.

Guidance should also be provided on where small and community forest managers can access information on changes to the law in a form which they can understand and use.

L2

Links to standards (see also Appendix 1)

FSC Principles and Criteria
1.1, 1.2, 1.3, 2.1, 2.2, 4.2, 6.6, 6.8 and 8.3

ITTO Guidelines for Natural Tropical Forests
1.1, 5.1, 5.2, 5.3 and 5.4

ITTO Guidelines for Planted Tropical Forests
6, 7 and 15

World Bank-WWF Alliance Principles
1, 2 and 3

L3 Control of unauthorised activities

In many places *illegal or unauthorised activities* such as illegal logging, starting fires or hunting pose a serious threat to the sustainability of forest management and the implementation of a management plan. Therefore, the forest management unit (FMU) needs to be protected from these activities when they are incompatible with the objectives of responsible forest management.

Required outputs

1 Identify and understand actual and potential illegal or unauthorised activities which might threaten the forest.

2 Develop ways to control or prevent illegal or unauthorised activities, where appropriate in collaboration with other parties which may include regulatory agencies.

3 Monitor the success of the control activities.

Guidance for national interpretation

Identification of unauthorised activities

Identify common illegal and unauthorised activities and provide any relevant information which is available on how these might be managed or controlled. This might include advice from government, examples from other companies or references to best practice.

Assistance with control

Identify agencies and bodies which can help forest organisations control illegal and unauthorised activities and which should be consulted by forest managers.

Guidance for forest managers

1 **Identification**

You need to identify any illegal or unauthorised activities which are occurring in your forest. This could include damage to infrastructure, forest clearance or degradation, illegal hunting and fishing, waste disposal, fire raising, or illegal harvesting. Since other people may have legal or customary rights to your forest not all activities by third parties are illegal or unauthorised even if, in some cases, they impact on sustainable management. You need to differentiate these.

2 **Control and prevention**

You need to consider what is the best way to deal with each illegal or unauthorised activity. It is very important if there are other people using the forest that forest protection is considered alongside the protection of other users' legal or customary rights (see *Module S18 Stakeholder analysis and social impact appraisal* and *Module S19 Rights and needs of forest users*). Appropriate control or prevention may include:

- trying to **stop the activity** altogether, either internally or in collaboration with other parties such as forestry or wildlife department officials or the police. This is more likely to be used when there are large scale, commercial illegal activities occurring such as illegal logging or commercial poaching of endangered species
- working with the people carrying out the activity to **find alternatives** or to organise the

L3

activity in a way which no longer jeopardises management. This is more likely to be an appropriate approach to unauthorised or illegal activities by local communities such as hunting, mining or felling trees for local use. This links closely to the process of building relationships with local communities (*Module S19 Rights and needs of forest users*).

3 Monitor success

Once you have implemented control measures, it is important to check periodically whether or not they are successful in reducing or preventing the unauthorised activity (see also the discussion of operational monitoring in *Module T9 Monitoring*). Control of illegal activities can be very difficult and it is generally accepted that it may take some time and never be completely effective. However, forest managers should be able to demonstrate that they are taking all reasonable steps to minimise and control problems.

Small, low-impact and community forests

In community forests where people in the community have the right to hunt, fish or engage in other activities, it is very important that there is widespread support for, and understanding of, forest management from the community. Building from this basis, it is then necessary to develop mechanisms to manage the other activities which do occur and ensure that they are not incompatible with the objectives of management.

Links to standards (see also Appendix 1)

FSC Principles and Criteria
1.1 and 1.5

ITTO Guidelines for Natural Tropical Forests
1.1, 2.4, 2.5 and 3.1

ITTO Guidelines for Planted Tropical Forests
63

World Bank-WWF Alliance Principles
1 and 2

T4 Management planning

The *management plan*, which is the output of forest management planning (and may be a single document or a series of separate documents) is the place where the whole range of requirements and plans for sustainable forest management are brought together and turned into a cohesive whole. The management plan should, primarily, be a document for the forest manager, which is used as the basis for all the activities undertaken in the forest. It also needs to meet any legal requirements for management planning documentation. A forest management plan usually applies to a particular forest management unit (FMU).

Required outputs

This module must be developed based on information produced through the planning and implementation of most of the other MIV modules. It is particularly important that it incorporates the outcomes of impact assessments (*Module E14 Assessment of environmental resources and impacts* and *Module S18 Stakeholder analysis and social impact appraisal*) and all specific planning including operations (*Module T8 Forest operations and operational planning*), conservation (*Module E15 Conservation and environmental protection*) and community welfare (*Module S19 Rights and needs of forest users* and *Module S20 Employment and local development*). This module requires that you:

1 Prepare management planning documentation which:
   - provides a sound and useful basis for managing the forest
   - meets all legal requirements for management planning as well as any specific requirements of the standard
   - includes long-, medium- and short-term planning at an appropriate level of detail.

2 Ensure that the management planning documentation is being used as the basis for all forest management activities.

3 Plan and undertake a regular review and update of the plan which incorporates the results of monitoring as well as any other relevant information.

4 Make available relevant information from the management plan to stakeholders if requested.

T4

Guidance for national interpretation

Legal requirements

In many countries there are already clear legal requirements for management planning. These must always be complied with. However, in some places meeting legal requirements does not ensure compliance with the requirements of standards. Therefore it is useful to provide guidance on what additions need to be made to a legally compliant plan in order to meet the full requirements of the standard.

Guidance

Where there is no legal requirement outlining management planning, then it is useful to suggest sources of guidance (these are often produced by forestry departments). Again, it is important to note where any additional work will be needed to comply with the standard.

Where neither legislation nor guidance exists, provide as much information as possible on what management planning documentation is expected for compliance with the standard. It may be useful to compile a management plan template which contains all the relevant sections or headings, to be completed by the forest manager.

Whichever approach is used, try to ensure that the management plan will be useful to, and used by, the forest manager.

Guidance for forest managers

1 **Develop management planning documentation**

The purpose of management planning documentation is to bring together all the information on the forest, together with all the planned activities and to turn them into a coherent whole which can then be used as a basis for forest management. This may be in a single document, but is often made up of a number of documents which reference each other when necessary. Whichever approach is used, management planning documentation must meet any legal requirements for planning and must build on and be consistent with the outcomes and activities of many of the other modules. This may mean revising the plan periodically during the completion of other modules.

Existing management plans If you already have a management plan or management planning documentation, then you will need to:

- check that it meets all the specific requirements of national legislation and the standard
- decide how to make any revisions or additions required as a result of the outcome of other modules. For example, if you develop a conservation plan as part of *Module E15 Conservation and environmental protection*, this will need to be incorporated into overall management planning.

Developing a plan If you do not have a plan, or it is clearly inadequate to meet the standard, then you will need to develop it. The exact way in which a management plan is produced, and the information it contains, will depend on national legislation, local custom, forest type and size and the preference of each organisation. The guidance below is not detailed, but provides some general points to remember.

Management planning should always begin with collecting information on resources and constraints (see *Modules T5 Silviculture and sustained yield*, *T6 Plantation design*, *T7 Economic viability*, and *T8 Forest operations and operational planning*; also see *Module E14 Assessment of environmental resources and impacts* and *Module S18 Stakeholder analysis and social impact appraisal*). Based on the information collected, it is then possible to plan activities.

- Management planning documentation usually covers three timescales – long-, medium- and short-term planning. This is discussed in Box 6.1.
- A very important part of management planning, especially for medium and large forests, is some form of zoning. It is rarely possible to achieve the wide range of objectives required by the standard simultaneously over the whole forest area. Therefore, it is necessary to identify areas where particular objectives will be focused on. For example, in addition to production forest, some areas may be managed

T4

Box 6.1 **The three timescales for management planning**

Management planning documentation usually covers three timescales – long, medium and short term:

Long-term planning (sometimes called the **strategic plan**) This summarises the main plans and activities for the entire forest area over the long term, such as an entire rotation or felling cycle, or a 20-year period. The strategic plan will generally include:

- information on the forest resources and constraints (*Modules L1 Resource rights*, *L2 Operating legally*, *T5 Silviculture and sustained yield)*
- demarcation of areas for different uses such as harvesting, conservation, use by local communities or protection of watersheds (see *Modules E14 Assessment of environmental resources and impacts*, *E15 Conservation and environmental protection*, *S18 Stakeholder analysis and social impact appraisal*, *S19 Rights and needs of forest users*)
- description of the silvicultural systems to be used (*Module T5 Silviculture and sustained yield*)
- the basis for harvest rates and the division of the harvestable area into annual operating areas (coupes) or compartments (see *Modules T5 Silviculture and sustained yield*, *T6 Plantation design*)
- the design of the main transportation system
- the type of operations which will be undertaken, together with an overview of where and when (see *Module T8 Forest operations and operational planning*).

Medium-term planning (or **tactical plan**) This usually sets out the activities planned over a period of about five years in greater detail. It must be derived from and compatible with the long-term plan. It also needs to be closely linked to budgeting (see *Module T7 Economic viability*). If you are developing an action plan for implementation of the MIV modules, the action plan and tactical plan also need to be compatible.

Annual plan (often called an **annual plan of operations**) This details the precise activities to be carried out in the next year. Annual plans of operation and annual budgets must be closely linked. Part of developing this annual plan is ensuring proper planning for each operation. Operational planning is crucial in bridging the gap between planning and implementation. This is covered in *Module T8 Forest operations and operational planning*.

exclusively for conservation purposes, others set aside to protect cultural features or to provide areas for local community use. Other areas may be inaccessible or have legal protection (e.g. fragile watersheds).

- A lot of management planning information can be presented usefully in the form of maps. This is often quicker, easier and more useful than producing a lot of text. Increasingly many larger organisations make use of techniques such as GIS (Geographical Information Systems) as a basis for management planning. However, where these are not available, particularly for smaller forests, paper-based maps are also perfectly adequate.

Identifying existing planning documents It is likely that you already have some planning documentation and by completing other modules you will produce more.

2 Implementation

Effective implementation and monitoring of the management plan is essential. Successful management relies on planned activities being carried out effectively and consistently according to the plans, prescriptions and guidelines in the management plan. Careful control of the implementation of management activities is essential, particularly in situations where staff turnover is relatively high and continuity of management may be lacking. It is therefore important to document and justify the particular methods used or to be used in information gathering (e.g. inventory techniques), analysis, operational guidelines and prescriptions.

T4

3 Review and update

Once prepared, a management plan should be revised periodically to take account of changing legislation and situations, new information and technology and the results of monitoring activities. To do this there must be a mechanism for channelling information from external sources and from monitoring activities (*Module T9 Monitoring*) into management plan revision.

4 Communication

To facilitate consultation with stakeholders on elements of management planning you should make relevant management planning documents and maps available to stakeholders. It may be helpful to summarise lengthy or technical documents and/or translate documents into the local language. This is a requirement for FSC certification.

Small, low-impact and community forests

Management planning documentation is needed for all types and sizes of forest, but should be appropriate to the size and context of the enterprise. Where legal requirements for management plans exist, there are sometimes different requirements for small forests.

In many cases, if this is consistent with legal requirements, annotated maps can provide much of the documentation needed for small forests or those where few operations are taking place. Community forests which are intensively managed will generally require the same level of management planning as any other similarly managed forest.

The national interpretation could provide guidance on the minimum requirements for small and low-impact forests. A management plan template and guidance may be especially useful for this type of forest management.

Further guidance

Guidance on management planning is often available nationally from the forestry department or equivalent agency

Sustainable Forestry Handbook pp 22–24 and 109–117 (see Section 5 of this toolkit, page 20)

Links to standards (see also Appendix 1)

FSC Principles and Criteria
1.6, 4.4, 6.1, 7.1, 7.2, 7.3, 7.4, 8.4, 8.5, 9.3, 10.1, 10.4 and 10.8

ITTO Guidelines for Natural Tropical Forests
1.7, 2.1, 2.2, 2.3, 2.4, 4.4, 4.5, 4.6 and 4.7

ITTO Guidelines for Planted Tropical Forests
3, 8, 9, 17, 18, 22, 26, 27, 28, 32, 33, 34, 35, 36, 40, 41, 42, 43, 44, 45, 47,48, 50, 51, 53, 59 and 61

World Bank-WWF Alliance Principles
7 and 8

T5 Silviculture and sustained yield

Sustainable management must ensure that any activities which are undertaken in the forest, particularly harvesting, do not jeopardise the long-term production potential of the forest. Two important and linked requirements for achieving this are:

- choosing the right *silvicultural system* which minimises damage to the forest and optimises recovery, including the recruitment of commercial species
- ensuring that the harvest of forest products is at a level that does not exceed those which can be maintained over the long-term (*sustained yield*).

Sustained yield is not only important for the long-term sustainability of the forest, but also for the survival of the forest organisation since a permanent income is essential to economic sustainability.

Required outputs

1. Carry out forest resource assessment collecting information on the quantities of forest products available, including growth and yield data where appropriate.
2. Select the most appropriate silvicultural system(s) to be used in order to maintain adequate recovery and growth of forest products while meeting the other objectives of management.
3. Set and control harvest levels taking into account both the resources available and any constraints.
4. Monitor the forest resource including growth rates of forest products to ensure that they will support the planned and implemented harvest levels.

Guidance for national interpretation

Inventory and resource assessment

Provide national guidance or best practice on inventory methods, or references to accepted sources. It may also be useful to provide information on organisations which are able to carry out inventories or provide training in inventory techniques.

Silviculture

Provide national guidance or best practice on silvicultural systems for different forest types, or key parameters for determining silvicultural systems, such as natural disturbance regimes. Alternatively, provide references to accepted sources. Where there are legal requirements defining silvicultural systems to be used, these should be followed.

T5

Box 6.2 **Net productive area**

In all forests there are significant areas which cannot be harvested. These include:

- natural features such as rivers, wetlands, areas which are inaccessible or locations with infertile soils
- man-made features such as roads, log landings, camps and other infrastructure
- areas demarcated for other uses such as set-asides for wildlife protection, riparian reserves, areas with particular cultural values or watershed protection areas.

Identifying and deciding where all these areas should be is one of the most important parts of management planning (see *Module T4 Management planning*).

Once all of these areas have been identified, the remaining forest area is the net productive area, and it is this – not the total forest area – which must be used for any calculation of available resources and yield regulation.

Yield control

Provide practical guidance or references for setting annual allowable cuts or other yield control mechanisms. This may include guidance such as:

- how to determine the net productive area (see Box 6.2)
- any legal restrictions on harvest levels, minimum diameters, protected species, and so on
- available sources of information on growth and yield, or information on how to collect and analyse growth and yield data within the forest management unit (FMU).

Monitoring

Provide guidance on monitoring requirements and protocols.

Guidance for forest managers

This process of gathering information, planning and monitoring is likely to be most important for timber, but is required to some extent for any product being exploited significantly.

1 Collecting forest resource information

Adequate data must be collected through inventory and, where appropriate, research to ascertain current stocking levels of all harvested species, net productive area (see Box 6.2) and growth and yield information.

It is also important, as a basis for determining the appropriate silvicultural system, to collect information on the regeneration requirements of the harvested species and their response to management interventions.

2 Determining the silvicultural system

The rationale for the selected silvicultural system must be based on the type of forest and the species being harvested. In practice, it is often reasonably clear what system should be used since regimes for operations such as thinning, pruning and harvesting are often well documented for a particular forest type. In many countries the silvicultural system to be used is prescribed by the forestry department or other authority, or by a national standard.

Where this is not the case, the silvicultural system chosen needs to fulfil three requirements:

- producing forest products cost effectively
- minimising damage to the forest and maximising the chances of recovery
- ensuring the regeneration and recruitment requirements of key desired species into the next crop.

3 Setting and controlling harvest levels

Once you know what resources you have, the silvicultural system to be used and the likely growth and yield rates, you will need to set harvest levels. Using the net productive area combined with the timber stock inventory and growth and yield information from permanent sample plots you need to calculate the sustainable harvest level.

T5

If the available information on stocking, growth rates or recovery after disturbance is limited or unreliable, then it is important that planned harvest levels are set conservatively.

4 **Monitoring of forest growth and response to harvesting**

Maintenance of sustained yield must be checked through long-term monitoring of the forest resource.

Small, low-impact and community forests

For small forests the requirements should focus on the need to ensure that the long-term productivity of the forest is not being jeopardised, rather than on the collection and analysis of detailed information.

Collecting information Where it is needed, managers of small forests should collect information on stocking levels (inventory), but growth and yield data from other sources can normally be used, rather than trying to collect primary data in each small forest. Where little timber is harvested, the requirements for information should be similarly limited.

Sustained yield It is not appropriate in many small forests to aim produce a similar amount of product each year. Rather, sustained yield might involve an approach such as felling the whole block once in twenty years and then replanting. National or regional standards may specify maximum proportions of the area which can be harvested at one time, or harvest levels which should not be exceeded.

Non-timber forest products (NTFPs) Where NTFPs are the primary product to be extracted, information on stocking, growth and yield data, and appropriate calculations of sustained yields should still be undertaken. If detailed and reliable data is not available, harvest levels should be set conservatively.

Further guidance

Information on inventory techniques, management characteristics of key tree species and silvicultural systems are often available from national forestry or research organisations. See also:

Manual of Forest Inventory,
FAO Forestry Paper no. 27

Sustainable Forestry Handbook
chapters 5.2, 15.4, 15.5 and 16.3
(see Section 5 of this toolkit, page 20)

Links to standards (see also Appendix 1)

FSC Principles and Criteria
5.1, 5.4, 5.6, 6.3, 6.6, 6.9, 7.1, 8.2, 8.3, 10.2, 10.3, 10.4 and 10.6

ITTO Guidelines for Natural Tropical Forests
4.2, 4.3, 4.6, 4.8 and 7.3

ITTO Guidelines for Planted Tropical Forests
8, 9, 28, 29, 33, 34, 35, 42, 43, 44, 45, 47, 54, 56, 57, 59 and 60

World Bank-WWF Alliance Principles
5, 6, 7 and 8

T6 Plantation design and planning

Plantations can have a significant impact on the landscape, local biodiversity and socio-economic environment in which they are set. It is therefore particularly important that plantations are *well designed*. This obviously applies to new plantations, but is also important for existing plantations which were poorly designed in the past. In the latter case, remedial action may be needed.

All MIV modules are applicable to plantations, but this module focuses on the specific additional needs for good plantation design.

Required outputs

This module applies to all new plantations and, as appropriate, to existing plantations which need to be restructured. It requires that you:

1. Assess the potential impact of the plantation on landscape, the environment and local people (this links to *Modules E14 Assessment of environmental resources and impacts* and *E15 Conservation and environmental protection*).
2. Assess the potential risks to the plantation from pests, diseases, fire and other hazards.
3. Design plantations to minimise impacts on people and the surrounding landscape and environment.
4. Design plantations to minimise internal impacts and risks (this links to *Module T8 Forest operations and operational planning*), and to maintain and enhance site productivity.
5. Design plantation layout and select species, clones and genetic material to ensure adequate diversity.

Guidance for national interpretation

Legal requirements

There are often legal requirements relating to the location, design and development of plantations. Provide reference to these, or a summary of the requirements.

Best practice

Many countries have codes of practice or other existing guidance on the design of plantations.

This information should be summarised or cited together with guidance on any additional planning or actions that will be required in order to meet the standard. In particular, it may be useful to provide additional information on:

- social and environmental assessment methods including legal requirements but also highlighting any additional requirements, which are not met by legal compliance alone

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- low-impact methods for minimising the risk from pests, diseases and fire including integrated pest management, natural vegetation corridors and firebreaks
- what is adequate to meet the requirements of the standard in terms of:
  - stand diversity
  - species selection and composition
- environmental protection measures such as buffer zones and conservation areas within the forest management unit (FMU)
- where appropriate, guidance on positioning of plantations and land acquisition.

If there is no available national guidance, then try to obtain information from other similar plantations and make this available.

Existing plantations

Make sure that the information is helpful for existing plantation managers who need to restructure badly designed plantations, as well as for anyone planning a new plantation.

Requirements of specific standards

The FSC standard:

- prohibits the conversion of natural primary or well-developed secondary forest to plantations
- requires some restoration of natural forests (or other natural vegetation) within plantations
- prohibits the use of genetically modified organisms (GMOs).

If compliance with the FSC standard is likely to be an aim of forest managers using the MIV modules then these issues will need to be addressed. It is very useful to provide any available information on the conservation and restoration of natural forests.

Guidance for forest managers

1 Assessing potential impacts

This is always necessary when developing a new plantation, and is often a legal requirement for medium or large developments. Make sure that any assessment carried out not only meets legal requirements, but also meets the requirements of the standard and is useful for you (see *Module E14 Assessment of environmental resources and impacts* and *Module S18 Stakeholder analysis and social impact appraisal*).

A particular issue for plantation managers who are aiming for implementation of the FSC standard is conversion. The FSC standard explicitly prohibits the conversion of natural primary or well-developed secondary forests to plantations after November 1994 except in circumstances where conversion:

- entails a very limited portion of the forest
- does not occur on high conservation value forest (HCVF) areas
- will enable clear, substantial, additional, secure, long term conservation benefits across the forest management unit (FMU).

2 Potential risks to the plantation

All potential risks to new plantations, and potential and actual risks to existing plantations such as pests, fire or diseases should be identified. In countries with a successful plantation industry, this is probably well documented. If not, extensive information has been published in textbooks and research papers for most commonly-used species.

3 Minimising impacts on people and the surrounding environment

Plantations can have a huge impact, either positive or negative, on people and the adjacent environment. Meeting any standard requires understanding and minimising these impacts. Particular attention needs to be paid to the way that land is acquired and resources are used.

4 Designing to minimise risks

It is now widely accepted that good plantation design can significantly reduce the risks of pests, diseases and fire. Ensure that plantation design meets current best practice. If current national guidelines or codes of practice are out of date, then look for more recent information.

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5 Promoting plantation diversity and conservation

Plantations should be designed to include as much diversity as possible within productive areas. This can include:

- creating variety in the species and genetic composition, as well as in the size and distribution of management blocks
- creating a mosaic of stands, combining protected old growth or natural stands in close proximity to logged stands
- maintaining wildlife corridors of protected forest within the plantation, connecting old growth or natural areas of forest
- planting native species within the plantation, of local provenance wherever possible
- establishing stands with different rotation periods.

Where final harvest of plantation stands is being planned, consideration must be given to the re-establishment of the subsequent generation or rotation of trees. In particular, opportunities for increasing biodiversity within the stand should be maximised.

Small, low-impact and community forests

For very small forests this module will often be relatively informal and may not be extensively documented. In particular, small woodlots, which are part of a mosaic of agricultural use of the landscape, may be treated more like a crop than a forest.

It may not be necessary for small-scale operations to ensure stand age and genetic diversity if they are located in a mosaic of forest types in which diversity and natural forest cover are adequate. Similarly, the restoration of natural forest areas is likely to be impractical in small plantations. Managers of small plantations should focus instead on ensuring that riparian zones and existing wildlife habitats are protected and native species are planted where possible.

Further guidance

For tropical plantations, the *ITTO Guidelines for Planted Tropical Forests* provides an excellent basis (see Section 5 of this toolkit, page 20 for details)

Links to standards (see also Appendix 1)

FSC Principles and Criteria
4.4, 5.5, 6.1, 6.5, 6.9, 6.10, 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8 and 10.9

ITTO Guidelines for Natural Tropical Forests
2.1

ITTO Guidelines for Planted Tropical Forests
1, 8, 9, 10, 11, 12, 13, 15, 17, 18, 19, 20, 22, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 42, 43, 54, 55, 58, 61, 62, 65 and 66

World Bank-WWF Alliance Principles
10

T7 Economic viability

Economic viability is fundamental to long-term sustainable management of forests. To achieve economic viability planning must be based on accurate predictions of income and costs. It is particularly important to ensure that this assessment covers the full environmental, social and operational costs of production. In order to sustain economic viability it is also important to ensure the economic efficiency of operations and the optimal use of the forest resource.

Required outputs

1 Develop accurate predictions of income in the short, medium and long term, including, where appropriate, the identification of potential new income sources.

2 Collect information and understand the full costs of implementing forest management which meets the requirements of all the MIV modules.

3 Assess the efficiency of operations and the way resources are used and make any necessary improvements.

4 Prepare budgets with an appropriate level of detail for the short, medium and long term that demonstrate that the costs of all planned activities can be covered by predicted income. Monitor and report actual costs and income including keeping appropriate accounts, and make any necessary changes to future budgets.

Guidance for national interpretation

Sources of information. It may be helpful to identify sources of information for forest managers such as:

- national guidance or best practice on optimising the efficiency of working practices
- standard costings for certain operations, or references to accepted sources
- guidance or contact details for specialist advice on financial management in forestry (e.g. calculating internal rates of return, depreciation etc).

Where information on costs is not readily available, it may be helpful to see if forest organisations which have already implemented similar requirements have any information which they would be prepared to make available.

New sources of income. If new mechanisms for funding forestry management, or new markets for forest services (such as payments for watershed services or biodiversity protection) are developed in your region, it may be helpful to provide information and contact details for forest managers to follow up.

Guidance for forest managers

1 Income

Many forest companies will already have made predictions about the income the forest will generate in the short, medium and long term.

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If this has not been done, then you will need to do it based on predictions for harvest levels (see *Module T5 Silviculture and sustained yield*) and probable markets and prices. It is extremely important to be realistic in these predictions.

If income predictions already exist, then it may be worthwhile to check the predictions to make sure that they are based on:

- harvest levels and net productive areas established in conformance with the requirements of the standard – these may change as additional requirements for conservation or protection are met
- current expectations of market prices.

Timber remains the most important source of income for most forest organisations, but it is always important to consider other existing and potential income sources such as:

- non-timber forest products (e.g. rattan, rubber, fruits or meat)
- tourism
- sale of environmental services (e.g. carbon, biodiversity)
- government grants or other assistance.

All income sources should be considered.

2 Costs

It is very important to have a clear understanding of all the costs which will be associated with implementing responsible forestry. This includes two types of cost:

- the cost of the improvement process including any investment which is required. This could include a range of different activities such as hiring specialists to help plan compliance with the standard, buying new equipment, adjusting annual harvesting levels to meet new sustainable yield predictions, providing local infrastructure or undertaking training
- the ongoing costs of running the organisation in compliance with the standard based on the plans developed for each of the modules.

All of these costs need to be incorporated into the budget, and revised regularly.

3 Economic efficiency

It is important to consider efficiency when planning operations (see *Module T8 Forest operations and operational planning*). Operational efficiency can be specifically assessed using work study techniques. In addition, positive impacts on efficiency may result from implementation of some improvements to social and environmental performance. Assessing whether or not the full range of forest resources is being used efficiently and optimally is also important.

4 Budgeting and financial forecasts

Developing, using, monitoring and revising budgets is a normal part of doing business for most forest organisations. If you are not currently doing this, you will need to get proper financial guidance on what to do. Budgets need to be closely linked to management planning (*Module T4 Management planning*).

Small, low-impact and community forests

For small forests the requirements for this module are generally relatively informal, with the focus on demonstrating that forest managers have considered the long-term viability of the enterprise and have budgeted adequately (either money or time) for the forest management activities planned.

Links to standards (see also Appendix 1)

FSC Principles and Criteria
5.1, 5.2, 5.3, 5.4, 5.6, 7.1, 7.2, 8.2 and 10.3

ITTO Guidelines for Natural Tropical Forests
1.2, 1.3 and 4.6

ITTO Guidelines for Planted Tropical Forests
1, 8, 9, 34, 35, 49, 50, 53, 55 and 56

World Bank-WWF Alliance Principles
5

T8 Forest operations and operational planning

Forest operations include all activities carried out in the forest, such as harvesting and extraction, road building and maintenance, establishment, firebreaks and chemical use. The proper planning and implementation of *forest operations* is fundamental to responsible forest management. The economic efficiency, long-term sustainability of the forest, environmental protection and social benefits required by other modules are all dependent on the way operations are *planned* and *carried out*.

Required outputs

1. Identify recognised good practice for forest operations and, where appropriate, develop written guidelines or standard operating procedures.
2. Provide staff at all levels with adequate training. Where operations are carried out by contractors, ensure that they are adequately trained and supervised.
3. Implement the identified good practice for all operations, including, where appropriate, the development and implementation of operational plans for each operation within the framework of the annual plan of operations (see *Module T4 Management planning*).
4. Monitor compliance with, and effectiveness of, plans and guidelines (see also *Module T9 Monitoring*).

Guidance for national interpretation

Developing best practice

For the main operations which are carried in forests in your country identify what constitutes best management practice and provide information on any existing operational guidelines, codes of practice or other documentation. For example, for natural tropical forests, best management practice might include reduced impact logging (RIL) with available information provided by the FAO Model Code of Forest Harvesting Practice.

Where no appropriate document exists consider developing written guidelines, or recommend where forest managers can find relevant information, and what internal operating procedures need to be developed. If information exists in another language, consider translating it.

Ensure that any guidance adequately addresses:

- legal requirements related to forest operations such as environmental statements for particular operations (see also *Module L2 Operating legally* and *Module E14 Assessment of environmental resources and impacts*)
- health and safety requirements (see also *Module S16 Health and safety*)
- management of impacts on the environment and people (see also *Module E15 Conservation and environmental protection* and *Module S18 Stakeholder analysis and social impact appraisal*).

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Training

Provide information on any appropriate training courses or other training resources available to forest managers (see also *Module T10 Training and capacity building*).

Operational planning

Operational planning is one of the most important activities in forest management since it is where all the information gathering and planning activities finally have to be translated into actual behaviour in the forest. In many forests this is the point where communication between planners and field staff breaks down and as a result, although management planning may be quite adequate to meet the standard, performance in the forest is not.

It is therefore very important to provide references to information or guidance on how operational planning should be done, in particular references to practical guidelines or provision of actual examples. This links closely to *Module T4 Management planning*.

Monitoring

Provide practical guidance or, if appropriate practical examples, of monitoring techniques for operational monitoring. This links closely to *Module T9 Monitoring*.

Guidance for forest managers

This module covers two linked activities:

- firstly, **identifying good practice** for your main operations such as harvesting, planting or building roads. These should all be based on best management practices and generally need to be documented, either through internal guidance such as standard operating procedures (SOPs) or through the adoption of existing external documents such as a code of practice.
- secondly, **planning operations on the ground** in a manner that complies with the standard. Operational planning is closely linked to management planning (*Module T4 Management planning*), particularly the annual plan of operations.

1 Developing best management practices

Determine which operations need documented guidelines. The operations for which documented guidelines may be needed vary according to the scale and intensity of management and the type of forest. Operations with potentially significant environmental, social or economic impacts, or that pose a potentially significant health and safety risk are likely to need documented guidelines. These operations include:

- **Roading** including planning, design, construction, use and closure of roads, log landings and quarries.
- **Harvesting and extraction** including stock mapping and tree marking, harvesting and extraction techniques – such as reduced impact logging (RIL), extraction route planning, demarcation of protection areas, definition of maximum clearcut sizes, and post-harvest assessment, block rehabilitation and closure.
- **Other operations** including planning and establishment of firebreaks, site preparation, planting and weeding techniques for tree planting, and chemical use (see *Module T11 Forest protection* and *Module T12 Chemicals and biological control*).

It is not necessary to prepare your own written guidelines for the operations identified if there are relevant, appropriate and up-to-date codes of practice or guidelines already available. In many countries, for example, there are already codes of practice covering harvesting and reduced impact logging.

Where an appropriate code of practice or equivalent is not already available, you may need to develop and implement internal guidelines. It may be possible to base these on existing, generic documents, such as the FAO Model Code of Forest Harvesting Practice or ILO Guidelines for Health and Safety (see *Further guidance*). For operations with potentially negative social impacts, you will need to consult with affected parties in the preparation of operational procedures. Written guidelines must be sufficiently clear to ensure they can be fully implemented in practice and to allow operations to be checked against them (see *Module T9 Monitoring*).

It is important that any written guidelines specifically state how operational plans for the activities covered should be developed and implemented.

2 Training

Employees and contractors must have the skills to successfully carry out operations to the requirements of operational guidelines, plans and prescriptions. Training or capacity building may be needed when new forest operations or techniques are introduced and refresher courses may be needed over time (see *Module T10 Training and capacity building*).

3 Developing and implementing operational plans

At the site level, operating guidelines will need to be interpreted to take into account the specific constraints and circumstances of each site. For example, site-specific harvest plans will be required, setting out the location of temporary roads and tracks, landing location, felling and haul directions, the location of seed trees or sites to be protected, riparian areas, etc.

These plans need to include the specific measures to be taken to meet any legal requirements, avoid environmental or social impacts on the particular site (see also *Module E14 Assessment of environmental resources and impacts*, *Module E15 Conservation and environmental protection* and *Module S18 Stakeholder analysis and social impact appraisal*) and to ensure workers' safety (see *Module S16 Health and safety*).

Operational planning is very often carried out through a combination of checklists and maps. The checklists help to ensure that all relevant issues have been considered in planning, while the maps are used to summarise the plans.

Implementation of operational plans can be considerably more challenging than the planning phase, especially in situations where there is a fast turnover of staff, inadequate equipment, or where there is a legacy of poor practice in the past which needs remedial work. It may be necessary to invest in training or new equipment and operations may need to be prioritised in order to focus on the most important ones first.

Successful implementation relies on planned activities being carried out effectively and consistently according to guidelines, plans and prescriptions by appropriately trained and supervised personnel. Careful control and supervision of operations is essential, particularly in situations where staff turnover is relatively high and continuity of management may be lacking.

Many operations need specific equipment in order that they can be carried out effectively, safely and to minimise negative impacts. It may be necessary to assess what equipment is available and what new equipment would be needed to implement the desired forest operations. Changes to operational techniques may need to be prioritised and phased where significant purchases of new equipment are needed.

Many forest managers will need to carry out remedial work where previous forest operations have not been carried out to current standards. This can present a serious challenge. Sites which do not meet current standards need to be inventoried and prioritised according to the scale of their impacts and the opportunities which exist for dealing with them.

4 Operational monitoring

It is essential to check that planned activities are actually being implemented (see *Module T9 Monitoring*). The more precisely and clearly operations are described in guidelines, plans or prescriptions, the easier it will be to monitor whether forest operations comply with them.

Small, low-impact and community forests

The detail of operational planning should be appropriate to the scale of the operations. Emphasis should be placed on ensuring operations in the forest are carried out properly rather than requiring extensive documented guidelines and written plans.

It is generally not feasible to expect small forest owners to develop their own written guidelines or

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standard operating procedures and so it is particularly important to provide references to existing operational methods. However, even in small forests it is often important to develop operational plans for specific operations, even if these are relatively simple or basic such as a hand-drawn sketch maps of a harvest site.

Further guidance

The FAO produce a range of practical guidance on forest operations including:

- the *FAO Model Code of Forest Harvesting Practice*
- regular updates on environmentally-appropriate road building in various forest types.

The FAO website is at www.fao.org

ILO (1998) *Safety and health in forestry work: An ILO code of practice* Geneva, International Labour Office. Available in English, French and Spanish.

Obtainable from local ILO offices, by post from ILO Publications, International Labour Office, CH-1211, Geneva 22, Switzerland, or onlinefrom www.ilo.org (go to Publications, then Publications available online, then Occupational safety and health)

Links to standards (see also Appendix 1)

FSC Principles and Criteria
4.2, 4.4, 5.2, 5.3, 5.5, 6.1, 6.2, 6.5, 6.6, 6.7, 7.1, 7.2, 7.3, 7.4, 8.1, 8.2 and 10.6

ITTO Guidelines for Natural Tropical Forests
1.6, 3.1, 4.4, 4.5, 4.10, 4.11, 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.8, 6.9 and 7.5

ITTO Guidelines for Planted Tropical Forests
28, 29, 30, 31, 32, 33, 36, 37, 40, 41, 42, 43, 44, 45, 58, 60, 61 and 62

World Bank-WWF Alliance Principles
5 and 7

T9 Monitoring

Monitoring is the collection of information about how effectively management plans and prescriptions are being implemented and what effect forest management activities are having on the forest. Monitoring is usually carried out at two levels:

Operational monitoring – checking that operations are being carried out properly in accordance with operational guidelines, plans and prescriptions (see also Module T8 Forest operations and operational planning).

Strategic monitoring – longer-term observation of the forest and the environmental and social effects of forest management to ensure that long-term management plans and objectives are being met.

Required outputs

1 Identify all forest management activities and impacts that need to be monitored in order to assess that:
   - objectives are being met
   - there is compliance with legislation and with internal plans and procedures for meeting requirements of the modules and underlying forestry standards
   - any identified high conservation values (HCVs) are being adequately maintained (see *Module E14 Assessment of environmental resources and impacts* and *Module S18 Stakeholder analysis and social impact appraisal*).
2 Decide how monitoring is to be carried out, including who is responsible, what will be done, when and how often monitoring is needed and how the information will be analysed and used.
3 Implement monitoring activities.
4 Analyse the results and feed into a periodic management review.

Guidance for national interpretation

Practical guidance

Experience has shown that there is often a lot of confusion about monitoring. Forest managers are often unsure what they are supposed to do, and national standards are often vague. This module provides an opportunity to improve this situation. Therefore, if possible, try to provide clear, practical guidance on what to monitor and, wherever possible, on how to monitor it, including:

- Identifying any local legislative requirements that require monitoring data to be collected
- Summarising the requirements in each module

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which are likely to need monitoring and suggest methods for monitoring each issue identified

- for operational monitoring, consider developing guidelines or checklists for the most important operations (see also *Module T8 Forest operations and operational planning*)
- identifying locally coordinated industry-wide monitoring programmes (e.g. for forest health assessment) or research underway in universities or research institutes that can be utilised.

Examples and useful support

Practical examples and case studies may be useful, together with information on where to get further support or guidance. For example, if it is likely that many forest managers will need to have an ecological survey then provide information such as where expertise can be found, information in the public domain which can be used, or whether any grants are available for covering costs. Information on training courses for particular types of monitoring may also be useful.

Guidance for forest managers

1 Identify the activities and impacts to be monitored

Operations and activities that require operational or strategic monitoring need to be identified.

- Operational monitoring involves day-to-day monitoring of operational activities against prescriptions or guidelines.
- Strategic or **outcome** monitoring collects information on the results of management activities, and feeds this back into management planning.

Operational monitoring Those activities that have the highest risk of being carried out incorrectly or most significant potential impact if things do go wrong have the highest priority for monitoring. These activities often include operations such as harvesting, road construction and maintenance and silvicultural activities.

Strategic monitoring Deciding what should be monitored is critical. The purpose of strategic monitoring is to provide you with the information you need to assess whether your activities are having the impact which you expect and want. In general, what this means in practice is that you are collecting information on an indicator which will tell you how well your objective is being achieved.

It can be tempting to decide to monitor everything – this is usually impossible. The best approach is usually to focus attention on a limited number of key issues. These should come from three sources:

- firstly, anything you are required to monitor by law or as part of a standard
- secondly, the management objectives and targets in your management plan (see *Module T4 Management planning*) which are obviously important or they would not merit inclusion
- thirdly, issues identified as important and requiring monitoring while completing other modules.

You may also wish to include topics where you are carrying out work that is innovative and has not been comprehensively researched, or topics within which there is a high degree of uncertainty or risk of potential impacts.

2 Plan how monitoring will be carried out

For each objective or requirement which you have identified, you need to consider how best to collect and use information on whether it is being achieved. This involves considering:

- what information do you need in order to know if you are meeting a particular objective or requirement. Wherever possible, use existing information, but avoid collecting information just because it is easy to collect or readily available if it is not what you need
- how will the information be collected in practice. This includes considering and resolving issues such as the methodology to be used, the locations, the personnel responsible and the provision of any necessary resources.

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- how the information will be stored and analysed: before starting any collection of information, make sure you know how you will store and analyse the information. Information which is lost, or which is simply stored but never analysed is useless and should not be collected.
- how you will react to the information: a key step in planning a monitoring programme is to decide how you will react to the information collected. If you do not react, then you may as well not be collecting the information in the first place.

The intensity of monitoring which should be carried out by an organisation will depend on its size, the complexity of operations and the performance standards as well as the resources available.

Operational monitoring Operational monitoring can be carried out using methods ranging from supervision of activities with informal record keeping, through to regular management visits with a more formal audit programme

In developing an operational monitoring programme, you will need to decide:

- **How often monitoring should take place** The more complex or dangerous the operation, or the more sensitive the site or greater the potential impacts, the more frequently monitoring should be carried out.
- **Who should carry out the monitoring** Monitoring of operations should be closely connected to the way you supervise your operations. You may already have supervisors on site who are required to complete daily progress records, or you may have supervision carried out on an intermittent basis by forest managers visiting operations, perhaps on a weekly basis. Your operational monitoring should aim to combine with these existing routine checks not duplicate them. Remember to include contractors within your operational monitoring programme.

A good way of ensuring that monitoring is carried out effectively is to prepare and use checklists. These can be very simple – just a list of issues to be considered. Your checklist can also be used to record the findings of monitoring.

Strategic monitoring Having identified what strategic monitoring should cover, consider how information can be cost-effectively collected, stored and analysed and how it will be fed back into management planning.

Long-term strategic monitoring can be very costly so it is worth spending time planning it well in advance. You will need to be sure that:

- the data collected really does provide you with information on the aspect of the forest that you need to monitor
- the data is collected in a consistent way, so that comparisons can be made over a long timescale
- the data is collected in a form which allows appropriate analysis
- sufficient data is collected for you to be able to detect important trends and changes.

It may be best to have some monitoring undertaken by external experts (e.g. an annual survey of the populations of rare species). Even if you intend to undertake the monitoring internally it may still be useful to involve external expertise in the planning phase.

3 Implementing monitoring

Effective and consistent implementation of a monitoring programme is essential to provide useful information for management. Consistently apply standard monitoring protocols such as operational monitoring checklists or specific methods for collecting strategic monitoring data on areas such as water quality.

Ensure effective feedback of operational monitoring to those carrying out operations, including where problems are found within operations and what action is necessary to rectify the situation.

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Keep monitoring records for both operational and strategic monitoring. Key monitoring records include:

- the schedule of monitoring activities
- monitoring checklists
- results or findings of monitoring activities (it is also often useful to prepare a summary of the findings of monitoring to allow easy exchange of information between interested parties),
- operational records – permanent records of what activities have been carried out, when and where, provide valuable information for review of practice and planning forest management in the future. Most forest organisations maintain a compartment records system which holds details of completed operations, costs and outputs.

4 Analysis and review

Monitoring results must be regularly analysed and fed back into ongoing review of the management plan.

Think about how often you need to compare management proposals and predictions with actual outputs. The frequency will depend on the subject matter with dynamic issues (e.g. financial control) requiring much more frequent review than less changeable issues (e.g. growth modelling). It is often useful to carry out annual reviews of progress to incorporate the results of monitoring into annual work programmes.

Operational monitoring results should be rapidly reported back to those undertaking the operations and any required improvements made. Operational monitoring results also need to be regularly summarised to identify issues such as regularly occurring problems that that need to be addressed through changes in management or workforce training etc. Strategic monitoring results may need to be analysed and reviewed less frequently.

Small, low-impact and community forests

Small forests and those with low-impact management would not normally be expected to collect and analyse detailed information. Managers need to focus on the issues which are the most relevant to small forests and to collecting information in a cost-effective way. There are a variety of ways this can be done, including:

- The owner or manager collects information during routine visits to the forest and keeps notes, ensuring this is reviewed once a year. This might include information on rare species (e.g. the location of nesting sites), water and soil (e.g. any evidence of damage and subsequent recovery), the impacts of operations (e.g. the response of seedlings and saplings to increased light). All of these can be checked easily and noted without any expert knowledge.
- Making use of relevant information collected in similar forests, for example on the impacts of a particular operation or on the type of habitat needed for a rare species.

Links to standards (see also Appendix 1)

FSC Principles and Criteria
7.1, 7.2, 8.1, 8.2, 8.3, 8.4, 8.5, 9.4 and 10.8

ITTO Guidelines for Natural Tropical Forests
2.5, 4.6, 4.9, 4.11, 4.12, 5.8 and 6.9

ITTO Guidelines for Planted Tropical Forests
8, 9, 29, 30, 32, 33, 35, 40, 41, 50, 53 and 57

World Bank-WWF Alliance Principles
7 and 8

T10 Training and capacity building

Proper training is critical to implementing good forest management. Trained and qualified personnel are essential at all levels from field staff to senior management whether they are owners, employees or contractors. Adequate training becomes even more important where changes to management and operations are being planned and implemented as part of a modular approach.

Required outputs

1 Identify all the tasks or activities undertaken by the organisation and the skills and training needed to undertake each one properly. This will need to be closely linked with the implementation of other modules.

2 Assess where these skills are already in place and where there are gaps including those arising as a result of changes being planned.

3 Formulate a plan to provide training, instructions and supervision which will ensure that all the identified gaps are addressed.

4 Implement the training plan, keeping records of all training undertaken

5 Monitor whether the training plan is being implemented, and whether it is successfully ensuring that all managers, supervisors and workers are carrying out their jobs in line with plans, procedures and the requirements of standard

Guidance for national interpretation

Training requirements

It is useful to provide forest managers with guidance on the operations or issues where they should consider providing training, and on the practical issues of carrying out the training required. In particular it is useful to consider providing guidance on:

- any specific national or regional requirements for training (e.g. in some countries it is obligatory to provide training for people using chemicals or operating certain types of heavy machinery)
- the types of operations which are likely to need training within your national context and the appropriate level of training to undertake. If national codes of practice exist, they may identify training needs.

Training resources available

Identify courses, training consultants and materials which are available to forest managers locally and provide contact details for:

- any existing national training programmes covering operations, health and safety, environmental management, consultation techniques or other forestry issues
- other training resources such as donor programmes, consultants, NGOs or documents.

Guidance for forest managers

The type and level of training required will vary enormously from one forest organisation to another depending on size, current level of management, the experience of staff and contractors, and the culture of the organisation. Some companies have a central training department and a sophisticated training

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programme. Others prefer to run training at an operational level, linking training to a specific operation and the people involved in carrying it out. There is no single 'right' approach but the guidance below may provide some useful ideas.

1 Identifying the skills and experience needed

There are a number of ways you can identify the skills and experience you need. If you are using an MIV approach, then a good way to do this is to identify the needs related to each module. Of particular importance will be the skills to:

- undertake adequate planning (see *Module T4 Management planning*)
- supervise and implement the operational guidelines developed (see *Module T8 Forest operations and operational planning*)
- implement safe and healthy working practices (see *Module S16 Health and safety*)
- undertake or supervise environmental and social impact assessments (see *Module E14 Assessment of environmental resources and impacts* and *Module S18 Stakeholder analysis and social impact appraisal*)
- implement conservation plans (see *Module E15 Conservation and environmental protection*)
- undertake consultation and implement social plans (see *Module S19 Rights and needs of forest users* and *Module S20 Employment and local development*).

There may be a whole range of other training needs, each of which should be identified as you go through the process of planning how you will comply with each module.

Many forestry organisations contract out key elements of forest management, including preparation of forest management plans, conducting forest inventory and supervising and carrying out forest operations. In such situations, it is very important that the forestry organisation has enough 'in house' expertise (permanent staff members with the qualifications, skills and experience) to adequately assess the quality of the work carried out by consultants and contractors.

2 Assessing where skills are already present and where the gaps are

Before you can start to identify what training you need to carry out you first have to establish what skills your staff already have. You may already hold records of qualifications or training your staff have undertaken. If you do not hold this kind of information this is a good opportunity to collect and record details of:

- relevant qualifications
- training and update courses
- length of experience performing specific tasks or operations.

Once you have an existing skills and qualifications profile for your staff you can compare this with the skills and qualifications that your organisation will need to implement good management. It is often useful to discuss with your staff their perceived training needs to carry out their responsibilities. This will help you to identify gaps in your organisation's skills and qualifications profile.

3 Developing a training plan

You now need to develop a programme of training and capacity building which will address the gaps you have identified. Unless your training needs are very limited you will probably have to prioritise what training you carry out first to allow you to spread the cost and minimise the disruption to normal working. Think about factors such as:

- the potential severity of impacts caused by a lack of training, e.g. health and safety issues arising from untrained people operating machines (see *Module S16 Health and safety*)
- organisational or operational needs, e.g. if you want to reduce damage from log extraction you may need to carry out training of the supervisors who mark the skid trails before training the skidder operators in new techniques (see *Module T8 Forest operations and operational planning*)
- finding funding or resources for training. Are there any organisations that can sponsor

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training or help to share costs of combined training courses? In many countries there may be existing systems for forest worker training run by appropriate authorities

- identifying the most appropriate methods of training for your needs. Training can be provided through a number of means such as:
  - on-the-job training by supervisors or external trainers
  - in-house courses specifically organised for your needs
  - public courses or workshops
  - full-time or part-time college or university courses.

It is unlikely that one method of training will be appropriate for all your needs, so make sure you select the methods which fit in best with your organisation, your workers and your budget.

4 Implementation

When implementing the programme it is important to:

- **Compile a schedule of training** This will help you make sure that people are provided with the training and skills at the right time. It will also help you to avoid problems such as disrupting normal work too much by having too many key workers involved in training at the same time. Scheduling will also help you identify and incorporate training costs into your budget (see *Module T7 Economic viability*)
- **Keep training records** It is important that you keep records of how you have assessed and addressed your training needs. These may include training records for each worker, detailing what training they have received, when it was carried out and when an updating course is required if necessary.

5 Monitoring effectiveness

Once your training programme is underway it is important that you assess whether the aims of training were met and how training could be improved (see *Module T9 Monitoring*).

Small, low-impact and community forests

Adequate training is often a problem for small-scale forestry organisations where the owner either undertakes work himself or has an informal arrangement with a contractor. However, forest operations in a small forest are just as dangerous and potentially damaging as those in a larger forest, so it is still important that adequate training or supervision are in place. The focus, though, should be on practical skills, rather than the development and implementation of a training programme.

Where contractors are used, it may not be possible for small forest owners to insist on adequate training, in which case careful briefing at the beginning of each operation together with close supervision may provide an adequate alternative. However, where there are statutory requirements for training for particular activities (e.g. chainsaw use, chemical application) these need to be met and managers should ask to see evidence of adequate training.

Links to standards (see also Appendix 1)

FSC Principles and Criteria
4.1 and 7.3

ITTO Guidelines for Natural Tropical Forests
1.5

ITTO Guidelines for Planted Tropical Forests
24, 46 and 51

T11 Forest protection

Forests can often be subject to damage from a number of *natural hazards* such as pests and diseases, fire and wind. It is therefore important for forest managers to prevent or minimise the risks posed by these hazards through good forest design, choice of silvicultural system and operational techniques. Where significant risks remain, plans or systems will be needed to respond to damaging events.

Required outputs

1 Identify and characterise all potential natural threats including pests, diseases, fire and wind.

2 Develop adequate plans, prescriptions and procedures to minimise risks and mitigate impacts including a system to quickly identify threats to the forest and initiate appropriate control measures.

3 Implement the plans and monitor their effectiveness.

Guidance for national interpretation

Identify threats

Identify nationally or locally important natural threats which forest managers should consider. This may differ depending on the forest type (for example natural or plantation) and location. This should include information on anything which is covered by national requirements for notification or control.

Best practice

Provide guidance on best practice for prevention and control methods or references to accepted sources. It may also be useful to provide contact details of appropriate organisations who can provide help, information or training.

Guidance for forest managers

1 Characterising potential threats to the forest

You will need to identify all the potential risks to the forest and to assess how serious each one is. You can begin by identifying all potential threats to the forest including both living and non-living agents such as pests, diseases, invasive weeds, fire, browsers, drought, flood and wind damage. Next assess the risk based on how susceptible your forest is, how likely the threat is to occur and the potential consequences if it does.

Some problems may be the result of unauthorised activities by other people, for example deliberate setting of fires to improve grazing or hunting. This is addressed in *Module L3 Control of unauthorised activities*.

2 Planning to minimise and mitigate threats

For each of the potential threats you have identified, you need to decide how you are going to:

- **minimise** the risk of it happening (e.g. having firebreaks to minimise the risk of a fire, mixing species to minimise the risk of a disease)
- **mitigate** the effects if it does happen (e.g. a fire plan in case there is a fire, a plan to deal with an outbreak of a particular disease).

In many cases this will require an ongoing programme to assess whether or not the problem is occurring. For example, you may need manned

fire towers to keep a look out for fire, or conduct regular surveys to look for signs of pests.

In many countries there are legal requirements which must be fully complied with. There may also be useful guidance such as codes of practice setting out how to deal with many threats to forests. If these do not exist, try to get information from other sources.

3 Monitoring progress

You also need to develop a system of monitoring (see *Module T9 Monitoring*) which will:

- keep up to date with issues relating to actual and potential threats to forests
- check the efficacy of any measures you have introduced to avoid or control problems.

Small, low-impact and community forests

Reacting to some risks in small forests may be very difficult individually, while there is greater scope if several small forest managers act cooperatively. In many cases it will not be feasible for small-scale forest operations to resource forest protection strategies alone. It will therefore be critical for small-scale forest owners or managers to collaborate with neighbours and relevant organisations in order to ensure their forests receive adequate protection.

Further guidance

ITTO Guidelines on Fire Management in Tropical Forests are available from the ITTO website, www.itto.or.jp

Links to standards (see also Appendix 1)

FSC Principles and Criteria
6.5, 6.6, 10.3, 10.4 and 10.7

ITTO Guidelines for Natural Tropical Forests
2.5, 3.3 and 3.4

ITTO Guidelines for Planted Tropical Forests
33, 34, 38, 39, 64 and 65

World Bank-WWF Alliance Principles
6

T12 Chemicals and biological controls

Chemicals include fertilisers, insecticides, herbicides and fungicides. *Biological control agents* include hormones and natural predators. Chemicals and biological control agents are often very useful management tools, but they can have damaging effects on the environment and people so their use requires careful control. They are also often expensive, and good practice and carefully targeted use can reduce costs.

Required outputs

1 Identify the situations where chemicals or biological control agents are currently used or where there are plans that they might be used.

2 For each situation, identify the most appropriate approach which precludes the use of prohibited chemicals and minimises the use of permitted chemicals and biological control agents.

3 For every chemical or biological control agent which is used ensure such use is controlled, minimised, safe, environmentally appropriate and in accordance with all relevant laws and guidelines. This should normally include use of written operational guidelines (see Module T8 Forest operations and operational planning).

4 Ensure that all operations using chemicals or biological control agents are carried out in accordance with plans and guidelines by adequately trained and skilled operators using appropriate equipment and maintaining proper records.

Guidance for national interpretation

Prohibited chemicals

Some chemicals are prohibited by international, national or local legislation and the use of others is restricted to very specific situations. In addition, some standards have specific requirements relating to chemicals. It is helpful to provide information on which chemicals are internationally, nationally and/or locally prohibited or are prohibited by the standard (for example, the FSC explicitly prohibits the use of World Health Organisation (WHO) Type 1A and 1B chemicals, chlorinated hydrocarbons and persistent, accumulating and toxic chemicals). Make sure you provide not only the chemical name but also the local or commercial names under which the chemical is used.

Planning chemical use

Most standards encourage minimising the use of chemicals and making sure any use is safe, appropriate and environmentally acceptable. Therefore it is helpful to provide guidance on:

- situations where chemical use is appropriate and which chemicals can be used. Refer to any national guidelines or decision support mechanisms that exist

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- alternatives for situations where chemicals are currently used. In particular, provide guidance on opportunities for integrated pest management or use of biological control methods
- best practice for storing, using and disposing of chemicals. If guidance exists, for example in the form of a code of practice or manufacturers' recommendations, this can be cited. However, be sure that it is appropriate for the local situation.

Biological control

If biological control mechanisms exist identify any important risks, and provide information or sources of guidance on best practice and monitoring. In many countries there are legal requirements relating to many biological control agents. These should be noted or reference made to sources of further information.

Guidance for forest managers

1 Current and planned activities

In many countries it is a requirement to keep records of all use of chemicals and biological control agents. If you have this type of record, it should be relatively easy to assess how they are currently used. If no records have been kept then you may need to collect information from staff, contractors, suppliers or purchasing records.

2 Developing an appropriate approach

The key to meeting most standards is to:

- ensure that no prohibited chemicals are being used. This includes anything prohibited by law and anything excluded by the standard. In general, laws on chemical use are constantly being tightened, so it is important to check regularly whether any chemicals being used are no longer approved
- develop strategies which minimise the use of chemicals in favour of approaches such as biological control and integrated pest management. It is important to have sufficient expertise, either within or outside your organisation, to ensure that the most environmentally appropriate approach is adopted without threatening the economic viability of the operation.

In order to ensure that chemical use is minimised, it is generally necessary to:

- identify all **recent and current use** of chemicals and biological control agents
- decide for each situation in which chemicals or biological control agents are used whether this use is **appropriate** or whether there is a lower-impact approach
- for situations where chemical use is planned, **develop guidelines** that ensure that it will be used only when absolutely necessary and that use will be minimised
- **maintain records** of all use of chemicals and biological control agents and analyse the data regularly to monitor trends.

3 Operational planning

Because there are so many issues to consider in chemical use ranging from technical through environmental to health and safety, it is particularly important to have proper planning to make sure that all use is:

- **technically appropriate** – the right chemical or biological control agent is used in the right place at the right time
- **safe** – that the personnel involved are properly protected from the chemical
- **environmentally appropriate** – that neither the application of the chemical or use of the biological control agent nor the disposal of empty containers or left-over chemicals damages the environment.

4 Implementation

To ensure that plans are adequately implemented, you must consider issues such as training, equipment, supervision and monitoring.

If chemicals or biological control agents are used, ensure that they are purchased, stored, transported, used and disposed of with minimum risk to the environment and to workers' health. This usually requires special storage areas, customised transport (e.g. locked boxes on

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trucks), training and provision of safety equipment for operators and guidelines for disposing of empty containers and unused chemicals.

Information on chemical use should be available from manufacturers. Many countries also have chemical codes of practice or similar guidelines which are very useful. If there is one in your country then use it. If not, see if you can get hold of versions from other countries with similar forest types.

Small, low-impact and community forests

Requirements relating to chemicals apply to any operation where they are used whatever the forest size or type. It is very important that small forest managers use chemicals safely and appropriately.

Further guidance

The *WHO Recommended Classification of Pesticides by Hazard* (which includes Type 1A and 1B classifications) is available free in pdf format from the online bookshop on the WHO website, www.who.int

Links to standards (see also Appendix 1)

FSC Principles and Criteria
1.3, 6.1,6.5, 6.6, 6.7, 6.8 and 10.7

ITTO Guidelines for Natural Tropical Forests
3.5

ITTO Guidelines for Planted Tropical Forests
22, 32, 33, 34, 41, 43, 44, 45, 46 and 59

E13 Waste management

All forestry operations will produce some waste material including litter, chemical containers, old or used lubricants, fuels and other fluids, used tyres and broken vehicle parts. If temporary camps or permanent communities are established within the forest, this produces additional waste. Responsible forestry standards specifically require the *proper disposal* of such waste in order to avoid negative environmental and social impacts.

Required outputs

1 Identify all current sources of waste from operations and workers' camps or settlements.

2 Develop a plan for collection and disposal of waste including identification of opportunities for recycling, reuse and minimisation.

3 Implement the plan and monitor its implementation and effectiveness.

Guidance for national interpretation

Best practice

Provide national guidance or best practice on waste minimisation, recycling and reuse options for a range of items commonly disposed of by forest organisations. If possible provide contact details for relevant organisations such as companies which recycle products.

On-site disposal

Where it is likely that forest operations will need to dispose of waste on site, provide guidance or sources of information on best practice for burning or landfill, including information on any legal requirements.

Guidance for forest managers

1 **Identify waste sources**

Identify sources of organic and inorganic waste resulting from forest operations. This can include:

- used oils, surplus or outdated chemicals
- containers for lubricants, chemicals, fuels etc
- used parts of vehicles or other machinery, tyres and old equipment
- rubbish produced on site by the forestry operation staff
- household rubbish produced from logging camps or more permanent settlements including sewage.

2 **Developing a plan for minimising and disposing of waste**

One of the best ways of minimising the impact of waste is to minimise the quantities produced. Therefore for all waste identified it is important to assess any possibility to reduce, reuse or recycle:

- **reduce** – careful planning can reduce the amount of waste produced. For example, purchasing only the exact amount of chemicals needed or switching to products with lower impacts such as bio oils
- **reuse** – sometimes it is possible to use a waste product elsewhere. For example, old fuel oil is sometimes used to protect wooden fence posts

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- **recycle** – in many countries there are opportunities to recycle paper, metal, glass, used oils and other products. Organic waste from settlements can also be composted.

Set up systems to maximise opportunities for reducing, reusing and recycling including appropriate training of workers and anyone living in camps or settlements in the forest.

For other waste which needs to be disposed of, consider which disposal mechanism will have the lowest impact. Possibilities include burning, landfill or handing over to the local waste disposal authorities where available. In all cases any legal requirements or national guidelines must be met and particular attention should be paid to toxic waste.

3 Monitoring

The level of monitoring needed will depend on the size and complexity of the organisation (see also *Module T9 Monitoring*). For small operations it may be fairly informal while for larger organisations it may include:

- on-site control visits to ensure the proper implementation and effectiveness of current procedures
- the regular review of current procedures and integration of new opportunities, techniques and knowledge for minimisation, recycling and reuse of waste.

Links to standards (see also Appendix 1)

FSC Principles and Criteria
5.3, 6.6 and 6.7

ITTO Guidelines for Natural Tropical Forests
3.5

E14 Assessment of environmental resources and impacts

Forestry can have a major impact on the environment, both within and outside the forest management unit (FMU). In order to ensure that the environmental values and services of forests and the areas surrounding them are protected or enhanced, and negative impacts avoided or minimised, it is important to understand *what resources exist* and what the *potential impacts* of management may be.

Required outputs

In conjunction with *Module S18 Stakeholder analysis and social impact appraisal*, this module requires that you:

1 Identify all forest environmental resources and services including:
- environmental high conservation values (HCVs) – see Box 6.3, page 59
- biodiversity resources such as flora and fauna species, different habitats, natural vegetation types and ecosystems
- forest services such as watershed protection, fisheries, soil protection, riparian protection areas
- sites of particular environmental importance for local people or other stakeholders (see also *Module S18 Stakeholder analysis and social impact appraisal*).

2 Understand the potential on- and off-site environmental impacts of planned forest operations on all the identified services and features.

Guidance for national interpretation

Environmental impact assessments (EIAs)

In many countries, there are legal requirements relating to environmental impact assessments. It is useful to provide references to this, and if appropriate either to provide guidance on best practice or to provide information on where such guidance can be found.

In some countries legal requirements for EIAs on their own may not be sufficient to meet the standard. If so, it is also important to clarify what is needed in addition to legal compliance.

Level of detail

Provide information or guidance on the extent of environmental assessment, which is likely to be appropriate for different sizes and types of forest. If possible, provide specific details on what is needed.

Information and support

Provide guidance on where more information or support can be found. Government departments sometimes provide guidance, training or expertise. EIAs are often carried out by consultants in which case it may be useful to provide advice on which ones are familiar with the standard and able to provide an EIA which meets both legal requirements and those of the standard.

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Environmental high conservation values (HCVs)

If appropriate, guidance or references to information should be given on the identification of the four environmental HCVs as discussed in Box 6.3.

Forest operations

It may be useful to provide generic environmental assessments for common forest management operations, which can be developed for specific operations by forest organisations, including reference to specific legal requirements where applicable.

Guidance for forest managers

It is important that this work is carried out at a level appropriate to the scale and intensity of the forest operations and the sensitivity of the site. In some countries an EIA is a legal requirement for certain types of operation. The following points give some general guidance:

1 **Identifying all forest environmental resources and services**

It is necessary to identify and collate all relevant, available baseline environmental information, as the basis for evaluating the effects of forestry activities and determining appropriate management measures and constraints. The collection of baseline information is likely to include, in some form:

- **species and genetic diversity** of the forest area, including rare, threatened and endangered species. This will require a combination of document review and probably field survey
- **ecosystem and vegetative community diversity**, as well as rare ecosystem types and other notable habitat features. Special ecological sites may also have been identified by indigenous peoples (see *Module S18 Stakeholder analysis and social impact appraisal*)
- **important ecological processes** in the area, e.g. the role of natural fires, seasonal flooding, periodic cyclones and windthrow
- **degraded areas**, e.g. heavily logged forest, abandoned open cast quarries

Box 6.3 **Environmental high conservation values (HCVs)**

Several standards now include the concept of high conservation value forest (HCVF) which are forests that contain one or more high conservation values (HCVs). Four of these values relate to environmental aspects of the forest:

- **HCV1** Forest areas containing globally, regionally or nationally significant concentrations of biodiversity values (e.g. endemism, endangered species, refugia).
- **HCV2** Forest areas containing globally, regionally or nationally significant 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.
- **HCV3** Forest areas that are in or contain rare, threatened or endangered ecosystems.
- **HCV4** Forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control).

If the forest contains one or more high conservation value (HCV), then all management activities must be planned and implemented in a way which ensures that the values are maintained or enhanced, and monitoring must be in place to ensure that this is occurring in practice.

- **landscape-level forest services**, including the protection role for watersheds and fisheries. The identification of sensitive areas such as riparian zones, areas of those with steep slopes and erodible soils is important. The role of the forest unit in the wider landscape must also be considered with regard to wildlife (both individually and in terms of forming wildlife corridors) and visual values
- **high conservation values (HCVs)**, where the environmental values are of outstanding significance or critical importance, the forest area or

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part of it can be defined as a high conservation value forest (HCVF) – see Box 6.3.

The extent and the detail of the information to be collected will depend on the forest type, size and location as well as legal requirements and the management activities planned. In general, it must be sufficient to:

- **ensure compliance** with relevant environmental legislation including both national legislation and international conventions (see *Module L2 Operating legally*)
- understand current external **environmental threats and opportunities**
- be able to **monitor the impacts** of operations on the environment (see below).

Collection of information such as that on biodiversity will often be an ongoing process since it will be required for conservation planning and monitoring (see *Module E15 Conservation and environmental protection* and *Module T9 Monitoring*). Baseline information should be collected, recorded and documented bearing this in mind, to ensure that it provides a useful basis for further work.

It is important to ensure **adequate consultation** with external stakeholder groups as set out in *Module S18 Stakeholder analysis and social impact appraisal*.

Where applicable and possible, it is always important to map environmental values, or otherwise delineate their location and extent.

2 Understanding the potential environmental impacts of forest operations

The collation of baseline information enables the impacts of planned activities on the identified environmental values to be analysed. This process is known as environmental impact appraisal, and can also be integrated to various extents with social impact assessment (see *Module S18 Stakeholder analysis and social impact appraisal*). This appraisal aims to look at forest management and to identify actual and potential impacts on the environment as a result of operations, and then assist planning to minimise or avoid negative environmental impacts and maximise positive environmental impacts.

Any potential impacts from operations or other activities in the forest will need to be identified and documented. This analysis should include all potential effects, both direct (e.g. harvesting operations or the use of chemicals) and indirect (e.g. increased hunting as a result of better access along logging roads).

Unless forestry activities are commencing in previously unmanaged forest, some elements of the environmental appraisal process will almost certainly have already been addressed as a part of ongoing forest management planning processes or specific conservation planning. It is necessary to bring these together as a full and coherent analysis of the environmental impacts of forest management.

The analysis of impacts should also begin the process of identifying measures to protect the environmental values of the forest, including:

- adequate safeguards to protect rare, threatened and endangered (RTE) species, including establishing or maintaining conservation zones
- maintenance or enhancement of forest services such as watersheds and fisheries
- maintenance, enhancement or restoration of ecological processes, such as regeneration and succession.

These protection measures will need to be incorporated into conservation planning (*Module E15 Conservation and environmental protection*) and operational planning and implementation (*Module T4 Management planning* and *Module T8 Forest operations and operational planning*).

For site-specific impacts of operations it is also important that, in addition to assessments of the impact of each type of operation in general terms, site-specific assessments of environmental values and services and planning of measures to protect them is carried out before each operation takes place (*Module T8 Forest operations and operational planning*). These site-specific assessments

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can be carried out by supervisors or managers but you may need to develop checklists, maps or other tools to help them. For the most potentially damaging operations, e.g. harvesting, it is recommended that a post-operation environmental assessment is also carried out.

Small, low-impact and community forests

Generally, the focus for small-scale forests and those with low impacts will be operational and site-specific assessments of potential environmental impact (*Module T8 Forest operations and operational planning*). However, it is also important to ensure that protection measures such as riparian reserves and set-aside of fragile or environmentally important areas is included in planning (*Module T4 Management planning*).

Where large areas of forest are owned by many small forest owners the overall environmental impacts of management in each individual unit can be significant. In this situation small forest owners will need to consider this issue.

Further guidance

ITTO Guidelines on the Conservation of Biological Diversity in Tropical Production Forests available from the ITTO website, www.itto.or.jp

Jennings et al (2003) *The High Conservation Value Forest Toolkit* (www.proforest.net)

Links to standards (see also Appendix 1)

FSC Principles and Criteria
3.3, 5.5, 6.1, 6.2, 6.5, 6.6, 6.8, 6.9, 6.10, 7.1, 7.2, 8.2, 9.1, 9.2 and 10.8

ITTO Guidelines for Natural Tropical Forests
5.1, 5.2, 5.4, 5.5, 6.1, 6.3 and 7.13

ITTO Guidelines for Planted Tropical Forests
17, 18, 19, 20, 21, 22, 28, 29, 30, 31, 32, 40, 41 and 42

World Bank-WWF Alliance Principles
6 and 9

E15 Conservation and environmental protection

In order to conserve the environmental values and services of the forest, the forest manager will need to determine the *conservation* and *environmental protection* measures to be implemented and ensure that these measures are adequately integrated into management plans and operations.

Required outputs

This module builds on the outputs of *Module E14 Assessment of environmental resources and impacts*, which identified the forest values and services which need to be adequately protected. To do this, the forest manager needs to:

1. Formulate plans and develop prescriptions to protect and/or enhance these values and services. This is a key part of the development of the long-term element of the management plan (*Module T4 Management planning*) and should include:
   - landscape level planning including demarcation of protected areas and other zoning and the protection of high conservation values (HCVs), rare and endangered species, soil and water and other forest resources
   - operational planning to ensure that operations minimise any negative environmental impacts.
2. Implement the plans and prescriptions, including adequate training of anyone working in the forest.
3. Monitor the implementation and the effectiveness of the plans.

Guidance for national interpretation

Biodiversity and conservation

Understanding the requirements of standards in relation to biodiversity and conservation is often challenging for forest managers. Therefore it is very useful to provide practical straightforward information on what is required.

For example, rather than require 'rare, threatened and endangered species' to be protected, you can provide a list of the species in question or a reference to where such a list can be found. Similarly, rather than require 'adequate protection' of a particular species, provide guidance or sources of information on how the species is best protected in practice.

If appropriate, it may also be useful to provide guidance on how much forest area should be set aside or managed primarily for biodiversity conservation.

Legislation

It is often useful to provide a summary of legislative requirements or information on where these can be found.

High conservation values (HCVs)

Provide guidance or references to guidance or processes for the identification and management of environmental HCVs (see Box 6.3, page 59).

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Best practice

Provide national guidance and best practice on specific protection and management approaches for important conservation values and habitats, or references to accepted sources.

Training and capacity building

In many countries there are training courses or workshops to help people understand and implement conservation run by governments, NGOs or academic institutions. Provide information on any which are available.

Sources of information and assistance

Reference any useful sources of information, particularly locally applicable information. Provide contact details for organisations able to provide information or support.

Guidance for forest managers

1 Developing a strategy

Protection measures must be adequately integrated within overall management prescriptions and planning documents. One approach that can be used to ensure that the protection measures are given sufficient emphasis is to summarise the key points in a conservation strategy for the forest unit. The main elements of this strategy would be:

- specific measures to protect rare, threatened and endangered species
- identification of protection zones
- measures to control unauthorised hunting and other activities (see *Module L3 Control of unauthorised activities*)
- constraints on forest activities and operations, or cross-references to other documents such as codes of practice.

Depending on the nature of the environmental values and services which are identified, there are two types of general approach to management:

- For **specific known values** (e.g. a rare bird species is present in the forest), and where management requirements are known (e.g. leave one hectare of forest around a nesting site), there should be specific **'fine-filter'** protection measures or management regimes. These should identify the specific sites where management will be implemented and exactly what the management regime is.
- Alternatively, the objective may be to **maintain or enhance values** that are only broadly defined in terms of overall scale and naturalness (such as high biodiversity interest) and management requirements may be poorly understood. A suitable approach in this case is to implement a range of **'coarse-filter'** management actions at both the landscape and stand levels. These are typically designed to maintain or enhance the overall quality of the forest, as measured by factors such as the amount, distribution, representativeness and heterogeneity of habitats.

2 Implementation

The main types of options for the management and protection of environmental values and services are:

- **Protection of zones** within the forest unit, particularly to ensure that representative samples of the forest types or ecosystems are conserved. This is implemented through establishing reserves and buffer zones, marking boundaries and controlling activities that degrade the protected area (e.g. the hunting of rare species). However, it is important to allow for the fact that some of these activities, like hunting or collection of other food or fuel, may reflect the rights or needs of local communities (see *Module S19 Rights and needs of forest users*).
- **Modifications or constraints** on operations such as harvesting and extraction, or specific operational prescriptions or systems. The constraints that this will put on operations and other activities should also be examined. Best practice should be formalised as documented procedures or by reference to existing manuals or codes of practice, and implementation must be adequately supervised and monitored (see *Module T8 Forest operations and operational planning*).

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- **Active management** to specifically maintain particular environmental values, such as implementation of appropriate cutting cycles, retention of named species or maximising notable habitat features such as areas suitable for nesting or feeding.
- For high conservation values (HCVs), the **specific management regime** for each identified HCV value must be detailed. This must fulfil the site-specific objective of maintaining or enhancing the HCV. This will first require the forest manager to determine the area of the forest necessary to maintain or enhance the HCV (i.e. the area which is high conservation value forest, or HCVF) and then identify the management actions that are appropriate to fulfilling the objective of maintaining or enhancing the value. Adequate consultation with appropriate stakeholders in the identification and management planning stages is particularly important.
- **Restoration activities** where the forest area requires some remedial action, such as removal of alien species or enrichment planting in heavily logged areas or in restoration of degraded of riparian functionsareas (including restoration to non-forest land if this is the natural ecosystem). This is particularly applicable to plantations.

The optimal management regime for the forest management unit (FMU) as a whole will include some combination of these approaches. The most important issue is that the rationale for the adopted measures is clear, and is appropriate for the values and objectives of the specific site. It is essential that these measures are integrated into the broader forest management system, and become part of routine practices. The management planning documents should set out the details of the measures and operations to be undertaken. It is also important to remember that management regimes may include measures that are taken at a range of scales (e.g. landscape or stand level), depending on the specific value.

3 Monitoring

The forestry organisation must develop a system which will allow it to monitor the success of its conservation and environmental protection measures. This should include provision to revise plans and operation, and take corrective measures to address any deviation from predictions. The monitoring system may be based on regular internal checks or audits of compliance. See also *Module T9 Monitoring*.

When the forest contains one or more HCVs, a specific monitoring programme will be needed to ensure that the management objectives (to maintain and enhance the value) are being met.

Small, low-impact and community forests

For small forests, the element of landscape level planning may be largely inappropriate and conservation will focus on site-specific measures such as riparian reserves or minimum intervention areas and minimising operational impacts. It may not be practical or useful for the owner of a small forest with little or no environmental value to set aside a proportion of the area for conservation. However, any significant environmental values (e.g. a population of rare species) and services (e.g. where forest is part of a critical watershed) will need to be protected.

Further guidance

ITTO Guidelines on the Conservation of Biological Diversity in Tropical Production Forests Available from www.itto.or.jp

Jennings et al (2003) *The High Conservation Value Forest Toolkit* (www.proforest.net)

Higman et al (1999) *The Sustainable Forestry Handbook* Earthscan Publications Limited, UK. Chapters 5.4, 6, 8, 15.1 and 16
Available from www.earthscan.co.uk

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Links to standards (see also Appendix 1)

FSC Principles and Criteria
3.3, 5.1, 5.5, 6.2, 6.3, 6.4, 6.5, 6.10, 7.1, 8.2, 9.2, 9.3, 9.4, 10.1, 10.2, 10.5 and 10.6

ITTO Guidelines for Natural Tropical Forests
5.3, 5.6, 5.7, 5.8 and 6.5

ITTO Guidelines for Planted Tropical Forests
1, 8, 9, 10, 12, 13, 17, 18, 19, 20, 21, 27, 30, 31, 32, 33, 34, 36, 37, 54, 58, 63 and 66

World Bank-WWF Alliance Principles
6 and 9

S16 Health and safety

Forestry is recognised as a relatively high risk activity so *proper management* of health and safety is particularly important. It is usually a requirement of national law, as well as international standards and ILO Convention 155. Forests are often in isolated locations where there is limited access to appropriate *healthcare*, so that the health of both the workers and their families is also an issue which must be addressed by forest managers.

Required outputs

1. Identify all operations and activities which involve a safety risk or where safety hazards already exist.
2. Develop plans to ensure that all activities comply with relevant legislation and best safe working practice. This needs to be closely linked to *Module T8 Forest operations and operational planning*.
3. Undertake training and capacity building so that managers, supervisors and workers all understand their responsibilities with respect to health and safety. This needs to be linked to *Module T10 Training and capacity building*.
4. Implement the plan including ensuring that contractors also meet health and safety requirements. This may involve requiring contractors to implement their own planning and training programme, or may rely on adequate supervision of contractors working in the forest.
5. Monitor compliance including maintaining records of accidents and undertake regular management reviews.
6. Identify all healthcare needs of workers and their families which are not being met by existing state or other available healthcare providers.
7. Ensure that workers and their families all have access to adequate healthcare.

Guidance for national interpretation

Legislation and best practice

Most countries have extensive legislation relating to health and safety. It is useful to summarise this or to provide a reference to where the requirements can be found (see also *Module L2 Operating legally*). If health and safety legislation is not adequate, or not detailed enough, it is also very useful to provide information on any code of practice or other document setting out best practice. Very useful information on safety and health in forestry work has been developed by the International Labour Office (ILO) (see *Further guidance* for details).

Training

If there is any training available on safe working practices, provide details. Government departments,

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industry associations and private companies often provide this type of training.

Guidance for forest managers

1 Identifying safety risks

If this has not already been done in a systematic way in your organisation, then it is important to do it now, even if you are already implementing some safe working practices.

Safety risks need to be identified for:

- each operation carried out (this needs to be closely linked to the activities of *Module T8 Forest operations and operational planning*)
- all other activities, both for company staff and contractors and for third parties. This needs to include issues such as the safety risk created by logging trucks going through villages or the possibility of local people inadvertently entering a logging area.

You also need to review health and safety legislation (see also *Module L2 Operating legally*) to ensure that you are in full compliance with the law.

It is a good idea to involve staff and, if appropriate, local communities in the process of identification as this makes it much easier to involve them subsequently in minimising the risks.

If you do not have internal expertise in health and safety, it may be useful to seek external help in the identification of safety risks and the development of a plan and procedures.

2 Develop a plan or procedures

For every risk identified you need to develop a plan or procedures to minimise the risk. For operations, this will require incorporating all legal requirements, regulations and best safe working practice into the operating procedures you use for each forest operation (see *Module T8 Forest operations and operational planning*). For other safety risks identified it may be useful to develop a plan to minimise the risks identified.

3 Training and capacity building

Proper training is essential to safe working. You need to plan how you will train people at all levels, including new staff. Training can range from technical training provided through formal training courses through to informal on-the-job training carried out by supervisors (see also *Module T10 Training and capacity building*).

4 Implementation

The aim of all the planning and training is to ensure safe working practice in the forest. Implementation may require the provision of new safety equipment, different equipment or changed working practices. You may also need to consider rewards for those who comply and penalties for those, either staff or contractors, who do not implement safe working practice.

5 Monitoring

Ongoing monitoring of safety is absolutely essential to ensure that a high standard is maintained. This should include recording of all accidents and incidents and on-site assessments of working practice. Monitoring should be linked to a regular management review.

6 Assess health needs

The level of support forest organisations need to provide for healthcare is very variable depending on what is already available through the state and the location of the organisation. You need to assess to what extent your workers and their families have access to adequate healthcare. If there are shortfalls, either because state provision is inadequate, or because of the isolated location of your operation, then you need to identify these.

7 Develop and implement a health plan

Based on the findings of the assessment of healthcare needs, you need to develop and implement a plan to ensure that your workers and their families have access to adequate healthcare. You also need to consider the needs of contractors and their families, particularly if you rely on contractors on a regular basis.

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Small, low-impact and community forests

For small forests, the main focus should be on ensuring that all operations, particularly high risk ones such as harvesting or chemical application, are carried out safely. There does not need to be so much focus on a system for most small and low-impact forests, but it is equally important that all operations are carried out safely and in accordance with legislation and best practice.

Further guidance

ILO (1998) *Safety and health in forestry work: An ILO code of practice* Geneva, International Labour Office. Available in English, French and Spanish.

Obtainable from local ILO offices, by post from ILO Publications, International Labour Office, CH-1211, Geneva 22, Switzerland, or onlinefrom www.ilo.org (go to Publications then Publications available online, then Occupational safety and health)

Links to standards (see also Appendix 1)

FSC Principles and Criteria 1.3, 4.2, 6.6, 6.7 and 7.3

ITTO Guidelines for Natural Tropical Forests 1.1, 1.5, 7.7 and 7.8

ITTO Guidelines for Planted Tropical Forests 46

World Bank-WWF Alliance Principles 4

S17 Workers' rights

Responsible forestry standards require forest managers to comply with the requirements of all relevant ILO Conventions and national legislation relevant to *workers' rights* including issues such as fair pay, the right to organise, control of child labour, and health and safety (see Module S16 Health and safety). Forest workers, as defined by the ILO, include salaried workers, contractors, self-employed workers and migrant workers. Migrant workers are nationals of another country who have migrated to their country of residence in search of employment.

Required outputs

1. Ensure that the organisation has a clear understanding of all rights which workers have (relevant national legislation and ILO Conventions) and that workers understand their rights sufficiently well to ensure that they are protected.
2. Assess whether all rights are delivered in practice and, if not, take action to resolve the gaps. Where contractors are used on a regular basis, these requirements apply equally to contract staff.
3. Monitor whether action is being taken as planned, and whether it is adequate to deliver all rights. This monitoring should continue to ensure that rights are maintained in the long term.

This module is often not relevant to small forests where owners and their families undertake most activities or where operations are carried out on an occasional basis by contractors who are employed so rarely within an individual forest that the forest manager can have no influence over them.

Guidance for national interpretation

Legislation and regulations

Provide information on legal requirements and rights in the national context. It may also be useful to provide details of organisations involved in workers' rights such as relevant government departments, trade unions and NGOs.

ILO Conventions

Provide information on the relevant ILO Conventions, including a summary of requirements or guidance on where this information can be obtained. It is important that forest managers understand what the Conventions require within the national context (see Box 6.4).

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Guidance for forest managers

1 Understanding workers' rights

Make sure that you are familiar with all legal rights and protection for workers in your country. This will include things like minimum working age, working hours, salaries, holidays, pensions, safety, discrimination and the right to collective bargaining.

As well as legal requirements, you need to be familiar with the requirements of the relevant ILO Conventions. These are listed in Box 6.4 and further information can be obtained from ILO and the IFBWW (see *Further guidance* for details).

2 Identifying and addressing gaps in current provision

Once you are clear what workers' rights there are, you need to assess whether or not these rights are being provided within your organisation or whether there are gaps.

Where trade unions or other workers' organisations exist, you should consider involving them in this process.

You will need to consider not only your own staff, but also any contractors used on a regular basis. This may mean requiring contract companies to go through a similar process or stopping using contractors who do not respect their workers' rights.

3 Monitoring and review

Adequate provision of workers' rights needs to be monitored, and action taken to address any gaps. It may be the case that your organisation is already regularly assessed for compliance by a government agency or inspectorate. If this is not the case, or the existing assessment is not sufficiently effective, you will need to carry out your own monitoring or contract a specialist to do it for you. This is likely to involve consultation with workers, site and document inspections, as well as contacts with unions.

In addition, it is important to have a system for dealing with complaints or grievances of workers.

Box 6.4 **ILO and the ILO Conventions**

The International Labour Organisation (ILO) is an organisation comprising representatives of governments, employers and workers from more than 170 countries. ILO Conventions are formal legal instruments that, once ratified by ILO member countries, become legally binding on them. The governments of countries that ratify the Conventions are then obliged to bring national legislation and practice into line with the requirements of the Conventions.

The following ILO Conventions have been widely ratified, in all cases by well over 100 countries. Each has a particular relevance in forestry:

- Forced Labour Convention 29 (1930)
- Abolition of Forced Labour Convention 105 (1957)
- Equal Remuneration Convention 100 (1951)
- Discrimination (Occupation and Employment) Convention 111 (1958)
- Minimum Age Convention 138 (1973)
- Worst Forms of Child Labour Convention 182 (1999)
- Freedom of Association and Protection of the Right to Organise Convention 87 (1948)
- Right to Organise and Collective Bargaining Convention 98 (1949)
- Migration for Employment (Revised) Convention 97 (1949)
- Migrant Workers (Supplementary Provisions) Convention 143 (1975)
- Indigenous and Tribal People's Convention 169 (1989)
- Rural Worker's Organisations Convention 141 (1975)
- Occupational Safety and Health Convention 155 (1981)

This is covered in *Module S19 Rights and needs of forest users* but in summary you need to ensure that:

- there is consultation with workers in the development of the internal complaints and appeals system

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- complaints and disputes are dealt with fairly, constructively, appropriately and in a timely fashion
- there is a process for a worker to appeal against a decision.

Small, low-impact and community forests

In small forests where all work is undertaken by the owner either alone or with occasional input from contractors, this module is not applicable. Similarly, in community forests where work is carried out communally, workers' rights are not relevant.

However, in small or community forests where anyone is regularly employed either directly or as a contractor, their rights must be respected as outlined above.

Further guidance

ILO Conventions are all available online from the ILO website, www.ilo.org (go to International Labour Standards). The ILO is currently in the process of producing a guide to the implementation of its Conventions in standards

IFBWW (International Federation of Building and Wood Workers) 1999 *Social standards for forest workers in forest certification: the application of International Labour Organisation (ILO) Conventions* Available in English, French or Spanish from: IFBWW, PO Box 1412, CH-1227 Carouge GE, Switzerland. Email info@ifbww.org

Links to standards (see also Appendix 1)

FSC Principles and Criteria
1.3, 4.2, 4.3

ITTO Guidelines for Planted Tropical Forests
46

World Bank-WWF Alliance Principles
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S18 Stakeholder analysis and social impact appraisal

Forestry can have a *major impact* on the people living within and around the forest management unit (FMU). In order to ensure that forest operations have a beneficial impact and that negative impacts are avoided or minimised it is important to know the identity of the relevant people, what their rights, needs and expectations are, and how forest management might potentially impact upon these.

Required outputs

This module collects the baseline information needed for *Module S19 Rights and needs of forest users*, and *Module S20 Employment and local development*, as well as providing a list of stakeholders with whom the forest manager will need to maintain communication in planning and implementing forest management activities (*Module T4 Management planning*). It requires that you:

1 Identify all forest stakeholders including:

- indigenous people, forest-dependent communities and other local communities and individuals with legal or customary rights
- all individuals and groups critically dependent on the forest for their survival or cultural identity (see below for more information about social high conservation values, or HCVs)
- all individuals and groups using or having an interest in the forest.

2 In consultation with these communities and individuals, identify and understand:

- all existing legal and customary rights
- all current uses of the forest and its resources including all sites of particular importance or significance (see also *Module E14 Assessment of environmental resources and impacts*)
- expectations and opportunities for employment, training or other support for the development of local communities.

3 Assess the current and potential impact of forest management activities on these rights, interests, and expectations.

For small forests, this is likely to be restricted to discussions with immediate neighbours, anyone actually using the forest and, if necessary, regulatory bodies.

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Guidance for national interpretation

Legal requirements

There may be legal requirements for some form of social impact assessment or particular requirements for consultation associated with particular operations or activities. If so, these must be complied with. However, meeting legal requirements alone may not be sufficient to ensure compliance with the standard, so guidance should be given on additional requirements.

Identification and consultation

It is particularly useful to provide guidance on:

- who the important stakeholders or stakeholder groups are in the national, regional and local context. This might be in the form of a list of groups or a set of stakeholder categories;
- how forest managers should undertake consultation with each of the groups or categories identified including information such as contact details, consultation methodologies, sources of information or specialists able to provide support or help with planning or undertaking consultation.

If stakeholder groups include indigenous or forest-dependent people, it is important to ensure that their representatives are involved in developing any advice or guidance on approaches to consultation.

If some national stakeholder groups are likely to be consulted by large numbers of forest owners, it may be useful to agree a protocol for consultation to ensure that they are not overwhelmed by requests from forest organisations.

Social high conservation values (HCVs)

The two social HCVs are discussed in Box 6.5. Defining what constitutes a 'fundamental basic need' (HCV5) and 'critical to cultural identity' (HCV6) will enable forest managers to decide whether their forest contains one or more of these HCVs. In addition, because both of these HCVs can only be identified in consultation with local communities, guidance on appropriate consultation techniques is likely to prove very useful for forest managers.

Box 6.5 **Social high conservation values (HCVs)**

Several standards now include the concept of a high conservation value forest (HCVF), which is a forest containing one or more high conservation values (HCVs). Two of these values relate to social aspects of the forest:

- HCV5. Forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health)
- HCV6. Forest areas critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

If the forest contains an HCV, then all management activities must be planned and implemented in a way that ensures that the values are maintained or enhanced, and monitoring must be in place to ensure that this is occurring in practice.

Guidance for forest managers

1 Identify stakeholders

Stakeholders include all people who are interested in or affected directly or indirectly by your forest management. Stakeholder identification should provide you with a list of key groups and individuals interested in your forest management and with whom you will have to establish a working relationship. In attempting to identify stakeholders, there will often be two distinct groups:

- **Those who have rights in the forest or forest organisation** This will include stakeholders who are dependent on the forest or the forest land for their survival. They may have few other ways of making their livelihood, so they may be strongly affected by forestry operations. These stakeholders can include:
  - indigenous people and forest-dependent communities
  - other local communities

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- neighbouring landowners
- your own employees and contractors
- government departments and regulatory bodies involved in forestry.

These stakeholders may include groups whose use of the forest constitutes a social HCV. These should be explicitly identified as discussed above.

- **Those who have interests in the forest or forest organisation, but not necessarily any rights** This includes other people who have a stake or interest in the forest or area. Various people may have the means to influence forestry operations either positively or negatively. These stakeholders include:
  - technical and scientific institutions and donors
  - social and environmental NGOs
  - local and national interest groups.

  Even if your forest is relatively small, it is still important to go through the process of identifying important stakeholders such as your neighbours.

  For larger forests it is important to ensure that you identify representatives of all stakeholder interests. Broader groupings of stakeholders, for example, 'people who live in the forest', in practice consist of smaller and less cohesive groups with different interests. For example, men frequently make different use of and may have different interests in forests to women. It is important throughout the stakeholder analysis process that you ensure that you identify the interests of marginalised groups or individuals as well as those of better connected, more influential and communicative people or organisations.

2 Understanding needs and rights in consultation with stakeholders

Once the key stakeholders have been identified, you need to make sure that you understand their rights, needs, issues and opinions to establish a basic understanding of the current situation and to provide information for future planning.

The way in which you do this will vary greatly depending on your forest size and location, the type of stakeholders and the local culture. Some general points are set out below.

Start by thinking about the information you will need in order to achieve the outcomes required for *Module S19 Rights and needs of forest users* and *Module S20 Employment and local development* which use the information collected in this module.

You may well already have a lot of information if you have been in regular contact with different groups for some time, in which case it is useful to collate and review what you have.

If you need to contact stakeholder groups in order to collect information then you need to plan carefully before you begin. If you do not have experience in consultation then it is probably a good idea to seek external advice, assistance or information. This is the beginning of a process which will develop into the ongoing consultation required as part of management and operational planning (*Module T4 Management planning* and *Module T8 Forest operations and operational planning*) and in working with communities (*Module S19 Rights and needs of forest users* and *Module S20 Employment and local development*) so getting it right from the beginning is very important. Issues to consider include:

- Who will undertake the initial collection of information, internal staff or an external specialist such as a consultant, academic, NGO or community representative?
- How will the information be collected?
- What information will be given to the stakeholders being consulted both before and after the appraisal?

For large organisations the process of stakeholder analysis and social impact appraisal will often benefit from specialist inputs as the issues will be complex and the consequences of misunderstandings may be severe. It is particularly important not to raise peoples' expectations of what the organi-

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sation may be able to provide if you will be unable to fulfil these expectations. This type of expertise might be found in local or national universities or research institutes.

It is important to ensure that the appraisal process identifies:

- all legal and customary resource rights as required by *Module L1 Resource rights* and *Module S19 Rights and needs of forest users*
- social high conservation values (HCVs) as discussed in Box 6.5 and required to complete *Module S19 Rights and needs of forest users*.

3 Identifying social impacts of forest management activities

The identification of stakeholders and understanding of issues is essential to allow assessment of the social impacts of forest management activities. For each of the stakeholder groups identified this involves:

- examining the current and potential impacts of forest management activities (both positive and negative) in communication with these stakeholders
- where necessary, developing alternative approaches to forest management activities and examining the relative impacts of these.

Social high conservation values (HCVs) If one or more stakeholder groups is critically dependent on the forest to meet their basic needs or for their cultural identify, then you have identified an HCV and have a high conservation value forest (HCVF), as discussed in Box 6.5. If this is the case, you will need to ensure that any management activities are going to maintain or enhance the value identified.

Small, low-impact and community forests

In the case of small forests with low impacts or forests owned and run by communities, stakeholder consultation can normally be relatively limited. Small forest owners and managers should try to discuss any plans with:

- anyone with legal or customary rights, with neighbours and with other users of land, especially regarding questions of access to land and forest resources
- appropriate local or regional authorities.

Where consultation is undertaken, it is a good idea to note the outcomes for future reference.

Further guidance

Jennings et al (2003) *Defining High Conservation Value Forest Toolkit* (www.proforest.net)

Pathfinder (see footnote on page 10)

Links to standards (see also Appendix 1)

FSC Principles and Criteria
1.5, 2.1, 2.2, 3.1, 3.2, 4.1, 4.4, 5.4, 5.5, 7.2, 8.2, 9.1, 9.2 and 10.8

ITTO Guidelines for Natural Tropical Forests
7.14, 7.16, 7.17 and 7.18

ITTO Guidelines for Planted Tropical Forests
5 and 27

World Bank-WWF Alliance Principles
2, 3, 4 and 9

S19 Rights and needs of forest users

Forest operations can directly impact upon the livelihoods of people who use the forest which might include indigenous people, forest-dependent people and other communities and individuals living in or near the forest. By law or tradition, these groups often have *rights* to the forest area and resources, which must be maintained and protected. This is also addressed in Module L1 Resource rights. These stakeholders also have a range of *needs*, which must also be addressed. Module S18 Stakeholder analysis and social impact appraisal dealt with the identification of these groups or individuals and their rights and needs. This module deals with ensuring that these rights are maintained in practice.

Required outputs

This module builds on the information collected and consultations carried out as part of *Module S18 Stakeholder analysis and social impact appraisal*. This module requires that you:

1. Ensure that legal and customary rights of indigenous people, forest-dependent communities and others are fully maintained (see also *Module L1 Resource rights*).
2. Maintain and protect any resources that are fundamental to meeting the basic needs or maintaining the cultural identity of any group (social high conservation values, or HCVs, see Box 6.5, page 73).
3. Agree how to protect sites of particular importance to local communities and other interested parties.
4. Find ways to meet the identified needs of other forest users.
5. Develop a mechanism for ongoing consultation with all affected parties (this is also required by *Module S20 Employment and local development*).
6. Develop a mechanism for constructively resolving any grievances and responding to any complaints which arise (this is also required by *Module S20 Employment and local development*).
7. Implement and monitor all plans and systems.

S19

Guidance for national interpretation

Legislation

Provide guidance on any requirements of local or national legislation such as protection of rights, resolution of grievances, protection of special sites and so on.

Social high conservation values (HCVs)

It is useful to provide guidance on how social HCVs should be managed within the national context.

Consultation

Forest managers often find consultation a difficult matter to deal with, so provision of guidance and information on what it is and how to do it is very useful. This might include information on methodologies, available expertise, training courses and practical examples.

Guidance for forest managers

The process of stakeholder identification and social impact appraisal required for *Module S18 Stakeholder analysis and social impact appraisal* should provide you with the baseline information needed for this module. The way the information is used to achieve the required outcomes will vary greatly depending on the size and location of the forest and the local and national culture.

1 **Legal and customary rights**

Legal and customary rights to resources need to be identified as part of *Module L1 Resource rights*. It is probably useful to link any activities being undertaken for *Module L1 Resource rights* to the activities needed to achieve full compliance with this module.

2 **Social high conservation values (HCVs)**

If you have identified any social high conservation values, or HCVs (see Box 6.5, page 73), you will need to be sure that you plan, in collaboration with the stakeholders concerned, management which will maintain or enhance the values identified.

3 **Sites of importance**

The baseline appraisal carried out for *Module S18 Stakeholder analysis and social impact appraisal* should have identified any sites of particular importance for stakeholders. These may include areas important for cultural reasons, such as sacred sites or burial grounds or from a subsistence point of view, such as water sources, hunting areas or areas used to collect medicinal plants.

For each site identified you need to agree with the affected stakeholder group how it can be protected during forest operations. Sometimes this is relatively straightforward (e.g. designating a burial site and the forest around it as a non-operational area). In other cases there may be some difficulty both in identifying areas of importance (e.g. because they are considered secret) or in agreeing on acceptable management. Where the process is not easy, it may be important to get expert advice or help on how best to undertake the process and reach a solution.

Once sites have been identified and management agreed, the locations need to be marked on management planning maps (see *Module T4 Management planning*) and management and operational plans (see *Module T8 Forest operations and operational planning*) need to reflect the management regime agreed. This may include co-management in some cases, with stakeholders playing an active part in both managing and monitoring the sites.

4 **Meeting the needs of forest users**

Meeting the needs of stakeholder groups for forest goods and services is a complex area for many forest managers because it is often unclear exactly what is expected. In addition, particularly for forest-dependent people and other local communities, meeting needs for forest goods and services is closely linked to meeting other wider needs of the communities which is covered in *Module S20 Employment and local development*.

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Therefore, you need to plan carefully taking into account:

- what needs for forest goods and services have been identified and how do they relate to the wider needs covered in *Module S20 Employment and local development*
- what is required by national or local law, or strongly encouraged by government
- what is considered national and regional best practice
- what resources do you have available
- what the impact is of failing or succeeding in meeting a particular need.

5 Consultation

Ongoing consultation is very important but building relationships with stakeholders is often a time-consuming and long-term process so be prepared for this. There are generally two types of consultation, and you will need to plan for both types:

- a long-term process of consultation with a range of stakeholders which aims to improve understanding on both sides and to inform forest management planning
- specific consultation with communities or individuals about particular plans or operations likely to have a direct impact (e.g. a harvesting operation near a village or the use of a road past a house for extracting logs).

The way consultation is undertaken will vary enormously depending on the type of stakeholder group, the size and type of forest organisation and national cultural norms. However, here are some points for you to consider:

- You need to establish effective two-way communication and trust. This is often helped by trying to be as transparent as possible, for instance by documenting things clearly to provide a common record of what has been discussed and agreed.
- You should try to develop an understanding and appreciation of other stakeholders' resource management and decision-making traditions.
- There will sometimes be conflicts between what you want to do and what stakeholders want. You need to consider in advance how you will deal with such situations when they occur.
- You need to employ staff or consultants who understand, and are respected by other stakeholders, which often means someone who comes themselves from these groups.

6 Complaints and grievances

You need to develop a mechanism for resolving complaints and grievances from stakeholders. This can range from a relatively informal approach which is probably appropriate for small forests to a formal complaints procedure including recourse to the law. While the exact way complaints procedures work varies, there are some commonly-accepted requirements including:

- keeping records of all complaints and designating a specific person to take responsibility for the resolution of each complaint received
- always aiming to resolve the complaint or grievance, and never threatening or intimidate the complainant
- communicating clearly and honestly with the complainant
- having a timetable for resolution including a maximum time for each phase.

7 **Implementation and monitoring** As you implement plans make sure that they are regularly monitored. This may need to be quite frequent in the beginning while everyone is learning new skills and approaches, but can become less frequent once things are working (see *Module T9 Monitoring*). In some situations it may be useful to develop joint monitoring programmes with stakeholders as a means of improving feedback and building trust.

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Small, low-impact and community forests

In general, small and community forests are likely on the whole to be meeting the requirements of this module since they are owned and often run by local individuals or communities. However, it is still important that the owners or managers are committed to constructive interaction with neighbours and resolution of any complaints or grievances.

One exception is where large areas of forest are owned by many small forest owners but other stakeholders also have rights or needs. In this case, while the impact of an individual owner is small, the cumulative impact, if other rights and needs are not respected, is very significant. Therefore, even small forest owners will need to recognise and maintain the rights. This may best be addressed collectively through local associations or other organisations.

Links to standards (see also Appendix 1)

FSC Principles and Criteria
2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 4.1, 4.4, 4.5, 5.1, 5.4, 5.5, 7.1, 7.4, 8.2, 9.2, 9.3 and 10.8

ITTO Guidelines for Natural Tropical Forests
7.14, 7.15and 7.16

ITTO Guidelines for Planted Tropical Forests
1, 8, 9, 11,15, 20, 27, 33, 34, 52, 54, 55 and 66

World Bank-WWF Alliance Principles
4

S20 Employment and local development

Forest organisations can make a *significant contribution* to the local economy through training and by employing local people and sourcing goods and services locally. Additional development can be fostered by processing forest products locally whenever possible.

Required outputs

This module builds on information about the expectations and opportunities for employment, training and development in local communities collected as part of *Module S18 Stakeholder analysis and social impact appraisal*. This module requires that you:

1. Develop plans with local communities to support and contribute to local development.
2. Implement the plans, where appropriate in collaboration with local organisations or government bodies.
3. Ensure that mechanisms for consultation and resolving complaints and grievances are adequate (see *Module S19 Rights and needs of forest users*).
4. Monitor implementation and effectiveness, where appropriate in collaboration with the community. Where large community programmes are developed, it may be appropriate to involve an independent body in monitoring.

Guidance for national interpretation

Legislation

Provide guidance on any legal requirements for provision of development opportunities for local communities (see also *Module L2 Operating legally*).

National development goals

Ensure that relevant nationally important development and employment issues are included. In some countries there are government departments offering information, support or funding to companies providing development opportunities for rural communities. Where these are available information should be provided.

Good practice

It is very useful to provide guidance on best practice for companies since the process of supporting local development is a complex one, and not always something in which forestry companies are expert.

Expertise and examples

Because this is often a relatively unknown area for forest managers, it is particularly useful to provide information on where expert assistance can be found, or to give some practical examples of how forest companies have addressed these requirements.

Guidance for forest managers

1 **Plans to support local development**

The way in which forest organisations support local development varies enormously depending on the context in which they are operating. In

S20

some countries large companies provide hospitals, schools, roads and transport because these are not provided by the state. In other countries the contribution is through the provision of training or employment, the use of local companies to provide goods and services and the sale or processing of forest products locally.

In completing *Module S18 Stakeholder analysis and social impact appraisal* you should have assessed, in consultation with local communities, what their perceived development needs are. This provides part of the basis for developing your plans for local support.

In addition, you need to:

- review what you are already doing – most companies are already involved in some form of community support, either formal or informal
- make an internal assessment of the resources which you have available to ensure that you are realistic in your commitments
- where appropriate, discuss ideas with local government agencies to ensure that there is good cooperation
- if necessary, talk to other organisations or specialists in local development to get their input.

With this and any other relevant information, you need to work with the local community to plan how you can best address community development.

2 Implementation

The way in which development plans are implemented will depend on what is being done. Different people or departments within your organisation are likely to be responsible for different activities. For example:

- provision of training or employment for local people is likely to be the responsibility of operational staff or, for larger organisations, the human resources department
- using local goods and services will involve whoever within your organisation is responsible for purchasing
- development of schools, clinics or other services usually involves people with different skills from forest management staff.

You will need to think carefully about who should be responsible for implementing each component of your community development plan, and again, if necessary, seek external advice and assistance.

3 Complaints and grievances

This was covered in *Module S19 Rights and needs of forest users* in Section 6.

4 Monitoring and review

Monitoring is particularly important for community development programmes for two reasons:

- firstly, you need to ensure that the plans are being properly implemented. For example, if one component of the plan is to build local capacity through training in forestry operations, you need to check that local people really are being recruited and trained
- secondly, development programmes need to be dynamic since the needs of the community will change.

For larger companies with substantial community development programmes, it is often very useful to have some independent monitoring and review to allow communities to comment confidentially and to provide an objective assessment of the success of the programme.

Small, low-impact and community forests

This module will probably not apply to small-scale and low-impact forests since they do not have the resources to contribute actively to the surrounding communities. In general, small forests and their managers are not expected to make any contribution to the local economy other than that which results from their existence in the community.

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Links to standards (see also Appendix 1)

FSC Principles and Criteria
2.2, 2.3, 3.1, 3.4, 4.1, 4.3, 4.4, 4.5, 5.2, 5.4 and 7.3

ITTO Guidelines for Natural Tropical Forests
1.8, 1.9, 7.2, 7.6, 7.17 and 7.18

ITTO Guidelines for Planted Tropical Forests
1, 5, 8, 9, 12, 13, 17, 18, 22, 25, 27, 33, 34, 46, 52, 53 and 54

World Bank-WWF Alliance Principles 4

C21 Chain of custody

A *chain of custody* system provides the mechanism for tracing forest products from the forest through the production to the point of sale of the final product. Forest managers usually only need to be concerned with chain of custody from the point where a tree is felled to the point of sale or transfer of the log (or timber products if primary processing is in the forest) to the next owner or enterprise in the processing chain.

A secure chain of custody system requires that forest products can reliably be identified at all times from felling to the point of transfer to the new owner.

Required outputs

1. Develop a reliable system to identify and track logs or other forest products from the forest of origin to the point of sale.
2. If logs or products from another source are mixed with those originating from the forest management unit (FMU) this can only be carried out under controlled conditions where the other logs or products are also covered by a reliable chain of custody system.
3. Implement and monitor the system including an adequate record-keeping system.

Guidance for national interpretation

Existing systems

Many countries already have requirements for both felling, storing and transporting logs. In some countries these are sufficiently robust to provide an adequate chain of custody. If so, this should be made clear. In other countries there is not an adequate system or abuse of the system is so widespread that it is no longer considered trustworthy. In this case make it clear that an alternative is needed.

Practical advice

Provide practical advice and information on technologies available, systems which can be used and organisations which can help to implement and/or monitor chain of custody.

Guidance for forest managers

It is important to make your chain of custody system as simple and easy to operate as possible while at the same time ensuring that it is robust and trustworthy. Many forestry organisations will already have procedures controlling movement and sale of forest products. In many countries there are requirements for identification of logs through stamps or numbering, and requirements for documentation when timber is transported such as timber transfer licences or timber transportation permits. Where such arrangements are already in place and in operation, you should ensure your system complies with them. Where possible you should use this module to enhance rather than replace existing systems.

C21

1 A system to identify and track forest products

To implement a secure chain of custody you must have a robust method for tracking your forest products from the forest to the point where ownership is transferred to a buyer. If you purchase some of your timber from a third party, reliable tracking methods (implemented by them or you) must also cover forest products from their forest to the point where ownership is transferred to you. To ensure this, it is useful to develop a series of written procedures which clearly describes the way in which forest products will be dealt with. Given the importance of chain of custody controls, a management representative should be identified who is given ultimate responsibility and authority to implement and maintain the chain of custody.

2 Preventing mixing with forest products from unknown sources

The first step for any organisation seeking to develop and implement a chain of custody system is to review existing arrangements and identify weaknesses or gaps which could allow the chain of custody to be breached. A key step in developing your chain of custody system will be to identify critical control points. Critical control points are points in the process where there is a possibility for mixing forest products of known origin and unknown origin. These commonly arise during storage or transportation of timber. For each of the points you identify you will need to develop and implement controls to ensure mixing does not occur. The likelihood of mixing will depend to a large extent on the method you use to sell your timber.

The way that mixing can be prevented at critical control points is through a combination of identification, segregation and appropriate documentation, backed up by adequate training of your workers. You must use these elements together with your existing processes to develop a system which suits your situation and ensures the chain of custody's security. You need to think about how you can do this. Some common solutions are:

- **Product identification** One of the simplest ways to ensure known and unknown products are not mixed is through physical marking of the product. Practical examples include hammer or stamp marks, identification numbers or tags.
- **Product segregation** Another way of preventing mixing is by ensuring that all forest products from known origin are segregated, by separating them from products of unknown origin physically or in time. Practical examples include separate storage areas in a log handling yard, separating products during transportation by using different trucks or sending consignments at different times.

3 Documentation

All forest organisations will have to ensure that when timber is sold from the forest the origin of the timber is clearly stated on sales invoices or other sales documentation. To allow tracking of timber through the chain of custody it is important that you can match up the timber to the supporting documentation and trace the timber through records. This can include:

- log identification numbers and dimensions
- species
- volume or weight of consignment.

Depending on the methods you use for harvesting and selling timber you may also have to develop procedures which cover:

- transportation to a log yard, sawmill or processing plant
- storage in a log yard.

Good documentation is an essential part of good chain of custody. In particular:

- records should be maintained relating to harvesting, delivery, shipment, forwarding and invoicing of timber products (see *Module T9 Monitoring*)
- documented procedures should be in place for implementing and maintaining control at all identified critical control points throughout the process where timber from know origins could be mixed with timber from unknown sources

C21

- accurate production records should be kept, from which it is possible to identify source and quantity, volume or number of products.

Small, low-impact and community forests

For small-scale forestry operations with simple production chains, it may be sufficient to maintain felling records and sales documentation.

Further guidance

Dykstra et al (2002) *Technologies for Wood Tracking: Verifying and Monitoring the Chain of Custody and Legal Compliance in the Timber Industry* A World Bank-WWF Alliance report available in pdf format from the Publications page of the ProForest website, www.proforest.net

Links to standards (see also Appendix 1)

FSC Principles and Criteria
8.3

World Bank-WWF Alliance Principles
8

APPENDIX 1

LINKS BETWEEN STANDARDS AND MIV MODULES

The full names of these standards and details of how to access them are listed in Section 5 on page 20.

Appendix 1.1 **Links between Forest Stewardship Council Principles and Criteria and MIV modules**

	MIV modules																			
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
Principle 1 **Compliance with laws and Forest Stewardship Council Principles**																					
1.1	●	●	●																		
1.2	●	●																			
1.3		●										●				●	●				
1.4																					
1.5			●															●			
1.6				●																	
Principle 2 **Tenure and use rights and responsibilities**																					
2.1	●	●																●	●		
2.2	●	●																●	●	●	
2.3	●																		●	●	
Principle 3 **Indigenous peoples' rights**																					
3.1	●																	●	●	●	
3.2	●																	●	●		
3.3	●													●	●				●		
3.4																			●	●	
Principle 4 **Community relations and worker's rights**																					
4.1										●								●	●	●	
4.2		●						●								●	●				
4.3																	●			●	
4.4				●		●		●										●	●	●	
4.5																			●	●	
Principle 5 **Benefits from the forest**																					
5.1					●		●								●				●		
5.2							●	●												●	
5.3							●	●					●								
5.4					●		●											●	●	●	
5.5						●		●						●	●			●	●		
5.6					●		●														

Appendix 1.1 **Links between Forest Stewardship Council Principles and Criteria and MIV modules** (continued)

	MIV modules																				
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
Principle 6 **Environmental impact**																					
6.1				●		●		●				●		●							
6.2								●						●	●						
6.3					●										●						
6.4															●						
6.5						●		●			●	●		●	●						
6.6		●			●			●			●	●	●	●		●					
6.7								●				●	●			●					
6.8		●										●		●							
6.9					●	●								●							
6.10						●								●	●						
Principle 7 **Management plan**																					
7.1				●	●		●	●	●					●	●				●		
7.2				●			●	●	●					●				●			
7.3				●				●		●						●				●	
7.4				●				●											●		
Principle 8 **Monitoring and assessment**																					
8.1								●	●												
8.2					●		●	●	●					●	●			●	●		
8.3		●			●				●												●
8.4				●					●												
8.5				●					●												
Principle 9 **Maintainence of high conservation value forests (HCVFs)**																					
9.1														●				●			
9.2														●	●			●	●		
9.3				●											●				●		
9.4									●						●						
Principle 10 **Plantations**																					
10.1				●		●									●						
10.2					●	●									●						
10.3					●	●	●				●										
10.4				●	●	●					●										
10.5						●									●						
10.6					●	●		●							●						
10.7						●					●	●									
10.8	●			●		●			●					●				●	●		
10.9						●															

Appendix 1.2 **Links between ITTO Guidelines for Natural Tropical Forests and MIV modules**

	MIV modules																			
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
Criterion 1 **Enabling conditions for sustainable forest management**																					
1.1	●	●	●													●					
1.2							●														
1.3							●														
1.4																					
1.5										●						●					
1.6								●													
1.7				●																	
1.8																				●	
1.9																				●	
Criterion 2 **Forest resource security**																					
2.1				●		●															
2.2				●																	
2.3				●																	
2.4			●	●																	
2.5			●						●		●										
Criterion 3 **Forest ecosystem health and condition**																					
3.1			●					●													
3.2																					
3.3											●										
3.4											●										
3.5												●	●								
Criterion 4 **Flow of forest produce**																					
4.1	●																				
4.2					●																
4.3					●																
4.4				●				●													
4.5				●				●													
4.6				●	●		●		●												
4.7				●																	
4.8					●																
4.9									●												
4.10								●													
4.11								●	●												
4.12									●												

Appendix 1.2 **Links between ITTO Guidelines for Natural Tropical Forests and MIV modules** (continued)

	MIV modules																			
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
Criterion 5 **Biological diversity**																					
5.1		●												●							
5.2		●												●							
5.3		●													●						
5.4		●												●							
5.5														●							
5.6															●						
5.7															●						
5.8									●						●						
Criterion 6 **Soil and water**																					
6.1								●						●							
6.2								●													
6.3								●						●							
6.4								●													
6.5								●							●						
6.6								●													
6.7								●													
6.8								●													
6.9								●	●												
Criterion 7 **Economic, social and cultural aspects**																					
7.1																					
7.2																				●	
7.3					●																
7.4																					
7.5								●													
7.6																				●	
7.7																●					
7.8																●					
7.9																					
7.10																					
7.11																					
7.12																					
7.13														●							
7.14	●																	●	●		
7.15	●																		●		
7.16																		●	●		
7.17																		●		●	
7.18																		●		●	

Appendix 1.3 **Links between ITTO Guidelines for Planted Tropical Forests and MIV modules**

	MIV modules																			
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
2 Policy and legislation																					
2.1 Forest policy																					
1						●	●								●				●	●	
2	●																				
3				●																	
4																					
5																		●		●	
2.2 Legislation																					
6	●	●																			
7		●																			
2.3 National forest inventory in relation to land assessment surveys																					
8	●			●	●	●	●		●						●				●	●	
9				●	●	●	●		●						●				●	●	
2.4 Permanent forest estate																					
10						●									●						
11						●													●		
12						●									●					●	
13						●									●					●	
2.5 Land ownership																					
14	●																				
15	●	●				●													●		
2.6 National forest service																					
16																					
3 Feasibility assessment																					
3.1 Environmental considerations																					
17				●		●								●	●					●	
18				●		●								●	●					●	
19						●								●	●						
20						●								●	●				●		
21														●	●						
3.2 Socio-economic considerations																					
22				●		●						●		●						●	

Appendix 1.3 **Links between ITTO Guidelines for Planted Tropical Forests and MIV modules** (continued)

	MIV modules																			
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
3.3 Institutional considerations																					
23																					
24										●											
25																				●	
4 **Planted forest establishments** 4.1 Management plan preparation 4.1.1 The importance of management planning																					
26				●																	
27				●											●			●	●	●	
4.1.2 Soil and site considerations																					
28				●	●	●		●						●							
29					●	●		●	●					●							
30						●		●	●					●	●						
31						●		●						●	●						
32				●		●		●	●			●		●	●						
4.1.3 Research needs																					
33				●	●	●		●	●		●	●			●				●	●	
4.2 Technical requirements 4.2.1 Choice of site, tree species and planting materials																					
34				●	●	●	●				●	●			●				●	●	
35				●	●	●	●		●												
4.2.2 Roads and site protection																					
36				●		●		●							●						
37						●		●							●						
38						●					●										
39						●					●										
4.2.3 Site preparation																					
40				●		●		●	●					●							
41				●				●	●			●		●							
4.2.4 Approach to planting																					
42				●	●	●		●						●							
4.2.5 Fertilisation																					
43				●	●	●		●				●									

Appendix 1.3 **Links between ITTO Guidelines for Planted Tropical Forests and MIV modules** (continued)

	MIV modules																			
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
4.2.6 Tending and weed control																					
44				●	●			●				●									
4.2.7 Pest control and disease management																					
45				●	●			●				●									
4.2.8 Staff development																					
46										●		●				●	●			●	
5 **Post-establishment management** 5.1 Operational planning 5.1.1 Preparation of work plans																					
47				●	●																
48				●																	
5.1.2 Institutional considerations																					
49							●														
50				●			●		●												
51				●						●											
5.1.3 Social considerations																					
52																			●	●	
5.1.4 Economic considerations																					
53				●			●		●											●	
5.2 Forest monitoring, growth and yield prediction 5.2.1 Integrated resource inventories																					
54					●	●									●				●	●	
55	●					●	●												●		
56					●		●														
5.2.2 Timber production																					
57					●				●												
5.3 Silvicultural operation 5.3.1 Restoration and maintenance of soil fertility																					
58						●		●							●						
5.3.2 Tending operation and weed control																					
59				●	●							●									

Appendix 1.3 **Links between ITTO Guidelines for Planted Tropical Forests and MIV modules** (continued)

	MIV modules																			
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
5.3.3 Thinning and pruning																					
60					●			●													
5.3.4 Roading																					
61				●		●		●													
62						●		●													
5.4 Forest protection 5.4.1 Control of access																					
63			●												●						
5.4.2 Protection from fire																					
64											●										
5.4.3 Pest disease and fire management																					
65						●					●										
5.4.4 Harvesting and planning of the subsequent rotation																					
66						●									●				●		

Appendix 1.4 **Links between World Bank-WWF Alliance Principles and modules**

	MIV modules																			
	L1	L2	L3	T4	T5	T6	T7	T8	T9	T10	T11	T12	E13	E14	E15	S16	S17	S18	S19	S20	C21
Principles																					
1		●	●																		
2	●	●	●															●			
3	●	●																●			
4																●	●	●	●	●	
5					●		●	●													
6					●						●			●	●						
7				●	●			●	●												
8				●	●				●												●
9														●	●			●			
10						●															