

Forest Stewardship Council

**NATIONAL FOREST MANAGEMENT
STANDARDS FOR
PAPUA NEW GUINEA**

Version 1.1

May 2010

Acknowledgements

These National Forest Management Standards have been evolved through a broad participatory process that has involved a large team of people, both locally and internationally, drawn from a wide variety of backgrounds and specialisations including representatives from the Forest Industry, National Forest Authority, Research Institutions, community organisations, educational institutions, commercial businesses, government bodies and non-government organisations. The process started in February 1996 and has culminated in the production of this document.

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 PNG Eco-Forestry Programme

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Greenpeace Pacific
 EU IRECDP
 NRI
 Unitech Forestry
 SGS PNG Ltd
 PNG Eco-Forestry Forum
 DEC
 WWF Pacific

Working Group Coordinator: Yati A. Bun

Future Development

These National Forest Management Standards will be reviewed, revised and amended in the future to take into account Forest Stewardship Council (FSC) policy developments. Further, there may be a need to review these standards as a result of their use in certification evaluations and as knowledge and experience evolves. The schedule for these reviews and (possible) revisions can be found in the Introduction (Regular standards review and revision).

If you have any comments or suggestions on these National Forest Management Standards then please forward them to:

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Introduction

It is widely accepted that forest resources and associated lands should be managed to meet the social, economic, ecological, cultural and spiritual needs of present and future generations. Furthermore, growing public awareness of forest destruction and degradation has led consumers to demand that their purchases of wood and other forest products will not contribute to this destruction but rather help to secure forest resources for the future. In response to these demands, certification and self-certification programs of wood products have proliferated in the market-place.

Certification is fast becoming the world's most successful forest conservation and sustainable management initiative. The only certification system operating internationally with broad global support from key environmental, social and economic sector stakeholders is that of the Forest Stewardship Council (FSC).

The Forest Stewardship Council

The goal of FSC is to promote environmentally responsible, socially beneficial and economically viable management of the world's forests. The basis for this is provided through a genuine global standard of recognised and respected principles of forest management known as the 'FSC Principles and Criteria for Forest Stewardship'. The FSC is an independent, non-profit, non-government, membership organisation formed in 1993.

The Forest Stewardship Council accredits and regularly monitors independent forest certification bodies, who in turn, carry out systematic audits in the field to assess whether a forest is managed in accordance with FSC standards. It is a process that results in a certificate being issued by the certification body verifying that a forest is 'well managed' according to the Forest Stewardship Standards. In all cases the process of certification will be initiated voluntarily by forest owners and managers who request the services of a certification organization.

Key major forest product buyers and markets, in particular Europe and the United States of America, are now demanding FSC certified products. From 1994 to 2008 the FSC's certified forest area grew to more than 100 million hectares. FSC certification is a voluntary, market based and multi-stakeholder initiative to improve forest management and to ensure that forest products are available to the public without detriment to the forest environment. It aims to link together the protection of the environment with economically productive resource use.

A key strength of the FSC is the requirement that its international set of Principles and Criteria are modified for the national/regional situation.

PNG FSC National Initiative

The Papua New Guinea (PNG) FSC National Initiative was officially started in October 1996, with the establishment of the PNG FSC National Working Group. This National Working Group has been the body overseeing the development of the National Standards. The current composition of the PNG FSC Working Group is:

Sector	Organisation	Contact Person
Economic	Tavilo Timbers, PO Box 12, Rabaul ENBP	Petra Buskens
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Environment	Forest Research Institute, PO Box 314, Lae	Forova Oavika
	Foundation for People and Community Development, PO Box 297, Madang	Caroline Imun
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Social	FORCERT, PO Box 772 Kimbe WNBP	Cosmas Makamat
	East Sepik Council of Women, PO Box 75 Wewak, ESP	Sophia Mangai
	Ecoforestry Forum, PO Box 3217 Boroko, NCD	Thomas Paka

Yati Bun (Foundation for People & Community Development, PO Box 1119, Boroko, NCD) is the PNG FSC Working Group Coordinator. The PNG NWG was registered as an independent legal entity (Association) on 28 May 2003 and officially endorsed by the FSC in December 2007.

National Forest Management Standards for Papua New Guinea

The FSC National Forest Management Standards for Papua New Guinea (PNG) are an adaptation of the FSC Principles and Criteria in relation to the specific conditions in PNG.

These National Standards have been developed by the PNG FSC National Standards Working Group through a broad participatory and consultative process. The process has been open and transparent and has involved representation of all key stakeholder groups who have an interest in forest management and conservation in PNG. The Standards Working Group was formed in March 1997 after meetings of the FSC National Initiative. Meetings and drafting continued through until the Principles and Criteria level of the Standards were approved in March 2000 and the Indicators and Verifiers agreed in August 2000. The final draft National Standards was endorsed by the PNG FSC National Working Group in February 2001 and sent off to the FSC Secretariat for review in April 2001. The final version of the standards was submitted to the FSC Board in October 2003 and, after official accreditation of the PNG NWG in December 2007 and processing last required changes to bring them fully up to date, the standards were endorsed on 8 December 2008.

The FSC National Forest Management Standards for PNG set the Principles, Criteria, Indicators and Verifiers by which all forest operations in PNG can be judged. They are uniquely tailored to reflect the social, economic and environmental situation in PNG.

Version 1.1 (May 2010) of the FSC National Forest Management Standards for PNG incorporates the result of 12 Conditions given with a deadline of 8 December 2009, by the FSC Policy & Standards Unit at the time of endorsement of Version 1 of the National Standards. Version 1.1 was endorsed by the FSC Executive Director on 26 May 2010. It became effective on 1 September 2010.

Regular standards review and revision

The National Forest Management Standards will continued to be reviewed, revised and amended in the future to take into account feed back resulting from the use of the standards for certification activities, new knowledge and experience, and new Forest Stewardship Council (FSC) policy developments. These regular reviews by the PNG FSC National Standards Working Group will take place at least once every two years, according to the following schedule.

Period	Activity	Responsible	Remarks
2009 -2010	• Field testing	<ul style="list-style-type: none"> • CB's • NWG • NWG 	<ul style="list-style-type: none"> • Assessments & evaluations • Participation in tests and collection and processing of data • Addressing Conditions
End of 2010	<ul style="list-style-type: none"> • First review NS • Revision of NS (if necessary) 	<ul style="list-style-type: none"> • NWG • NWG • NWG 	<ul style="list-style-type: none"> • Field test data presentation & discussion • Closing out of Conditions • Renew FSC Endorsement & distribution of new NS
2011-2012	• Field testing	<ul style="list-style-type: none"> • CB's • NWG 	<ul style="list-style-type: none"> • Assessments & evaluations • Participation in tests and collection and processing of data
End of 2012	<ul style="list-style-type: none"> • Second review NS • Revision of NS (if necessary) 	<ul style="list-style-type: none"> • NWG • NWG 	<ul style="list-style-type: none"> • Field test data presentation & discussion • Renew FSC Endorsement & distribution of new NS

NB: Review and revision of the NS will continue to take place at least every 2 years

In each revision process of the PNG National Standards, PNG FC Inc shall evaluate if further national FSC standards in the South Pacific Region, including the Indonesian part of New Guinea, have been developed and will induce a harmonisation process (if applicable).

Consultation on any future revision of the FSC National Forest Management Standards for PNG shall be done in accordance with FSC-STD-60-006 Process Requirements for the Development and Maintenance of Forest Stewardship Standards.

Content and layout of the Standards

These National Forest Management Standards for Papua New Guinea contain Principles, Criteria, Indicators and Verifiers.

A Principle is an essential rule or element, a Criterion, a means of judging whether or not a Principle has been fulfilled, an Indicator, a variable or component of compliance to Principles and Criteria, and a Verifier, data or information used for assessment.

The Principles and Criteria set out the fundamental rules for responsible forest management in PNG and how they should be adhered to in practice.

The Indicators and Verifiers are specifications to the Principles and Criteria, meant to guide and assist both the forest manager and the FSC-accredited certification organisation (certifier) in the forest certification process and should serve as an aid to achieve well managed forests.

In general the Indicators and Verifiers outline the type of evidence that should be provided by the forest manager and checked by the certifier to ensure the operation meets all the Criteria and complies with all the Principles. However, for some Criteria they only indicate the procedures to be followed, as the local circumstances will dictate the type of appropriate evidence.

Wherever the Indicators and Verifiers lack detail or where no Verifiers are given, it is up to the forest manager in consultation with the certifier to determine the steps necessary to obtain the adequate evidence to show the operation meets the Criterion and complies with the overall Principle. The Verifiers listed are the most important and typical examples of evidence a certifier should look for to verify compliance with the Standards, but they do not form an exhaustive or total list of all required evidence.

For certain Criteria, Indicators or Verifiers different requirements depending on the scale of the operation are given. For others the possible variations in requirements that depend on the scale of the operation are not specified, but left for the certifier to determine, based on the particular situation of the operation.

The FSC and Certifiers will not insist in perfection in satisfying the Principle's and Criteria. However, a major non-compliance with any of the Criteria will lead to a Pre-Condition for a company wanting to become certified, which will need to be addressed before they can qualify for FSC certification. Once certified, FSC accredited Certification Bodies will monitor the operation on an annual basis to check on continuation of the compliance with all Principle's and Criteria.

The numbering and lay out system used to differentiate between principle's, criteria, indicators and verifiers is:

1. Principle

1.1 Criterion

1.1.1 Indicator

1.1.1.1 Verifier

Abbreviations used

CITES	- Convention on the International Trade in Endangered Species
DEC	- Department of Environment and Conservation
FSC	- Forest Stewardship Council
ILO	- International Labour Organisation
ITTA	- International Tropical Timber Agreement
LCOP	- Logging Code Of Practice
PNG	- Papua New Guinea

Forest Stewardship Council

**NATIONAL FOREST MANAGEMENT STANDARDS
FOR PAPUA NEW GUINEA**

Principles and Criteria
Indicators and Verifiers

Version 1.1

May 2010

Principle 1: Compliance with Laws and FSC Principles

Forest Management shall comply with all the applicable laws of Papua New Guinea including customary laws, international treaties and conventions, and these National Forest Management Standards.

1.1 Forest management shall respect all national, provincial and customary laws and administrative requirements

1.1.1 All forest management units have in their:

- (a) Headquarters, and
- (b) In their site offices; or in the case of small-scale operations
- (c) Have access to

complete copies of:

- Forestry Act 1991 and amendments
- Forestry Regulations and any amendments
- Papua New Guinea Logging Code of Practice April 1996 and any amendments
- FSC National Forest Management Standards for Papua New Guinea

or any new Acts, Regulations, Codes or Standards superseding these mentioned documents.

1.1.2 In addition to the requirements of 1.1.1, forest management units which produce or are likely to produce more than 5000 cubic meters of timber in any 12 month period shall have in their site offices complete copies of:

- Conservation Areas Act
- The Public Health Act
- The Companies Act
- Environmental Planning Act
- Land Groups Incorporation Act
- Water Resources Act
- Environmental Contaminants Act
- Employment Act and Regulations
- Industrial Relations Act and Regulations
- Industrial Organizations Act and Regulations
- Industrial Safety, Health and Welfare Act and Regulations
- Worker's Compensation Act and Regulations
- Planning, Monitoring and Control Procedures for Natural Forest Logging Operations under Timber Permit November 1995 and any amendment
- Procedures for the Identification, Scaling and Reporting (including Royalty Self-Assessment) on Logs Harvested from Natural Forest Logging Operations since September 1996 and any amendment
- Procedures for Assessing Post-Logging Waste Within a Set-up, May 1996 and any amendment
- Procedures for Exporting Logs April 1996, and any amendment
- Land Dispute Settlement Act

or any other relevant or new Acts, Regulations, Codes or Standards superseding these mentioned documents.

1.1.3 Forest Managers are well informed on the relevant provisions of all relevant legislation, regulations and procedures, and employers and contractors are aware of the implications of all relevant legislation, regulations and procedures.

1.1.3.1 Interviews with Forest Managers

1.1.3.2 Relevant provisions of all relevant legislation, regulations and procedures.

1.1.3.3 Interviews with employers and contractor

1.1.4 Operational guidelines and procedures are in place applying the requirements of all relevant legislation and regulations.

- 1.1.5 Procedures and clear assignment of responsibilities are in place to ensure that all copies of legislation, regulations and procedures are up to date and that changes are communicated throughout the forest management organisation.
- 1.1.6 Copies of all licenses, permits and other documents issued under statute or regulation and relating to the forest management unit are kept in the site office and made available to forest managers and other stakeholders.
- 1.1.7 Proof is put forward that where they exist in relation to the forest management unit landowner companies comply with the law.
Landowner companies shall:
- Hold annual general meetings, and other general meetings,
 - Elect members of the board
 - Distribute shares to landholders
 - Keep independently audited accounts
 - Control unauthorized expenditures
 - Prevent unlawful enrichment of directors
 - Avoid conflicts of interest
- 1.1.8 Proof is put forward that all forest management companies, associations or other organisations and their contractors, subsidiaries and affiliates:
- Comply with all applicable laws
 - Comply with their constitution or other governing management and financial rules
 - Keep independently audited accounts
 - Control unauthorized expenditures
 - Prevent unlawful enrichment of directors, officers and employees
 - Avoid conflicts of interest
- 1.2 All applicable and legally prescribed fees, royalties, taxes and other charges shall be paid.**
- 1.2.1 There is evidence that required payments of all legally prescribed fees, royalties, levies, taxes and other charges have been made openly and transparently and to the appropriate recipient.
- 1.2.1.1 There is an up-to-date list of applicable and legally prescribed fees, royalties, levies, taxes and other charges.*
- 1.2.1.2 Written evidence that where required the reforestation levies have been paid and a plan is in place to draw on the reforestation levies.*
- 1.2.1.3 Written evidence that payment in kind by way of goods and services was expressly agreed to in writing by all landholders, including women.*
- 1.2.1.4 Evidence that a written description of any goods and services provided to the landholders was made available to all of them, including women.*
- 1.2.1.5 Evidence that an independent valuation, in writing, of the goods and services was provided to all of the landholders, including women.*
- 1.2.1.6 Copies of all written contracts, including Forest Management Agreements, and accompanying maps, Timber Permits, Logging and Marketing Agreements, Project Agreements, Timber Authorities and other documents that regulate the pricing of logs, royalties, and other social and economic benefits flowing from the logging operation, are available free of cost to all the landholders, including women, and their legal and financial advisers.*
- 1.2.1.7 Evidence that where forest management has paid a re-forestation levy, an account of the levy has been made publicly available to landholders.*
- 1.2.2 There is evidence that provisions have been made to meet the costs of future fees.
- 1.3 The provisions of all binding international agreements such as CITES, ILO conventions, ITTA, and the Convention on Biological Diversity, shall be respected in so far as Papua New Guinea is a signatory to these agreements.**
- 1.3.1 Forest managers are aware of the requirements of relevant international agreements.

1.3.1.1 Interviews with Forest Managers shows they are aware of the requirements of relevant international agreements.

1.3.2 The requirements of international agreements are applied to operational activities.

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

1.5 Forest management units shall be protected from illegal harvesting, settlement, and other unauthorised activities.

1.5.1 The rights, duties, and responsibilities of all stakeholders in relation to

- illegal harvesting,
- illegal settlement on traditional land, and
- other unauthorised activities

are defined in writing.

1.5.2 Mechanisms are in place to monitor and prevent such activities.

1.5.3 If any illegal or unauthorised activity is detected, action is taken by the forest manager to ensure this activity ceases and any relevant legal procedures followed.

1.5.4 There is no evidence of an outstanding genuine dispute or court case in relation to the activities mentioned under 1.5.1

1.6 Forest managers shall demonstrate a long-term commitment to adhere to these National Forest Management Standards.

1.6.1 There is a public statement and written policy endorsed by the most senior management that they adhere to the FSC National Forest Management Standards for Papua New Guinea and are committed to the implementation of each of the individual principles.

1.6.2 The public statement and written policy is communicated throughout the organisation and to other stakeholders and is publicly available on request. A Tok Pisin or a Hiri Motu translation, or translation into another widely used regional language such as Kuanua or Dobuan is made.

1.6.2.1 There is evidence that the public statement has been communicated.

1.6.2.2 There is evidence that the public statement is publicly available on request.

1.6.3 The policy is reviewed and updated regularly.

1.6.4 The forest manager has committed to promoting these FSC National Standards for Papua New Guinea through a programme of awareness and education in the communities within and adjacent to the forest management unit.

1.6.5 The forest management organisation agrees that it will not implement activities that constitute a major failure of the FSC Principles in forest areas outside of the forest area under current assessment.

1.6.5.1 The forest manager has declared all areas of forest under their control or management.

1.6.5.2 The forest manager has provided justification and an explanation as to why not all FMUs under its management or control are being certified.

Principle 2: Tenure and Use Rights and Responsibilities

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

- 2.1 Clear evidence of long-term forest use rights to the land (e.g. land title, customary rights, or lease agreements) shall be demonstrated.**
 - 2.1.1 There is evidence showing the legal status of all land and forest that demonstrates legal, long-term rights to manage the land and/or utilize its forest resources.
 - 2.1.2 Copies of the tenure and use-rights documents are available for public inspection at a site within the forest management unit.
 - 2.1.3 There is evidence from the relevant authorities and/or stakeholders that there are no pre-existing timber rights granted in respect of the same land and forest.

- 2.2 Local communities with legal or customary tenure or use rights shall maintain control, to the extent necessary to protect their rights or resources, over forest operations unless they delegate control with free and informed consent to other agencies.**
 - 2.2.1 All legal and/or customary tenure or use rights to the forest resource identified by the local communities shall be clearly documented, recognized, respected and mapped by the forest managers.
 - 2.2.2 All legal or customary tenure or use rights to the forest resource of all local communities shall be recognized and respected in forest management planning and practice.
 - 2.2.3 The rights-holders (or their legitimate representatives) and the managers shall have identified together the possible impacts of the operation on the rights and resources of the local communities; the rights holders shall have then given free and informed consent for such activities through documented agreements.
 - 2.2.4 Local communities are able to exercise their tenure and use rights to the extent that they choose, compatible with all provisions of the FSC Principles & Criteria.

- 2.2 Appropriate mechanisms shall be employed to resolve disputes over tenure claims and use rights. The circumstances and status of any outstanding disputes will be explicitly considered in the certification evaluation. Disputes of substantial magnitude involving a significant number of interests will normally disqualify an operation from being certified.**
 - 2.3.1 Genuine disputes over customary land tenure, customary rights to use the forests, and customary rights to alienate forest resources are to be settled under the Land Dispute Settlement Act.
 - 2.3.2 The certifier will evaluate the process of the resolution of a conflict or an outstanding conflict. and the results will be incorporated into the assessment or surveillance reports.
 - 2.3.3 Records exist of all previous and on-going genuine disputes over tenure and use rights.

Principle 3: Indigenous Peoples' Rights

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

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

3.1.1 Where landholders are represented through Incorporated Land Groups or any other body, the group or body shall be formed transparently, with the free and informed consent of clan members, including the free and informed consent of women:

- on the genealogy of the group
- on the customary rules that apply to the disposition of land rights and rights over timber
- on the written constitution of the group, which should reflect their customary rules and laws and may refer to general verbal agreements on these in case of low literacy rates within the group
- to confirm whether or not free and informed consent has been given with respect to alienation of any forest rights
- on the appointment of the groups dispute resolution authority

3.1.1.1 Interviews at the village level confirm public and specific meetings with different groups (e.g. women) were held and evidence of understanding, critical comment and general consensus was reached on the ILG formation.

3.1.2 If no ILG or other representative body exists delegation of control on forest management has to be given with free and informed consent of all traditionally recognised landholder groups (at the minimum at clan level representation) through public meetings at the village level.

3.1.2.1 Interviews with landholders at village level confirm that public meetings at the village level have been held and delegation of control on forest management has been given with free and informed consent.

3.1.3 There shall be no evidence of a genuine dispute over the authenticity of the Incorporated Land Groups representation or of any other body representing the customary owners within the forest management unit.

3.1.4 Where there is a Forest Management Agreement, timber authority or other forest contract, there shall be clear evidence that the members of the Incorporated Land Group(s) or identified landholder groups involved gave their free and informed consent.

3.1.5 There shall be no evidence of a genuine dispute over the authenticity of the free and informed consent of the members group to a Forest Management Agreement, Timber Authority, or other forest contract.

3.1.6 In all contracts affecting the alienation of forest rights from traditional landholders, the landholders retains the right:

- to be consulted and agree upon substantial changes in forest management altering the practices agreed upon at the start of the contract, and
- to require that an investigation takes place into any substantial proven breach of the FSC National Standards for PNG, and to require that appropriate measures are taken to either undo this breach or to prevent it from reoccurring. Investigations are carried out by either the certifier (where the breach forms a non-compliance with the certification standards) or another expert independent third party, agreed upon by both the landholders and the forest manager.

No agreement shall prevent any stakeholder from exercising any rights to make use of FSC complaint or dispute resolution procedures.

3.1.6.1 Copies of written reports of any investigations carried out are available at the office of the forest manager and are publicly available to landholders.

3.1.7 The landholder groups as identified under 3.1 are consulted at the planning stage of the harvesting on their customary land on the implications of the forest operations and forest management and their comments are taken into account.

- 3.1.8 All contracts affecting the alienation of forest rights from landholders shall have either a Tok Pisin or a Hiri Motu translation, or there should be a translation into another widely used regional language such as Kuanua or Dobuan and communicated, as may be appropriate in the circumstances.
- 3.1.8.1 Copies of translated contracts are available at the village level.*
- 3.1.8.2 There is evidence that contracts have been communicated and are understood.*
- 3.1.9 Appropriate mechanisms are employed to resolve disputes, including legal requirements and internal procedures, and there is a commitment to resolution of on-going disputes.
- 3.1.9.1 Evidence exists of dispute resolution mechanisms.*
- 3.1.9.2 Evidence exists of dispute resolution meetings and of ongoing efforts to resolve non-resolved disputes in the form of recent meetings or deferral of the dispute resolution to an appropriate higher authority.*
- 3.2 Forest management shall not threaten or diminish, either directly or indirectly, the resources or tenure rights of indigenous peoples.**
- 3.2.1 A monitoring system (as under Principle 8) is developed and put in place, which evaluates and respond to possible adverse impact the forest operation may have on the direct or indirect forest or land rights of the Landholders. Appropriate measures are taken to either undo any such threat or diminishment or to prevent it from reoccurring.
- 3.3 Sites of special cultural, ecological, economic or religious significance to indigenous peoples shall be clearly identified in cooperation with such peoples, and recognized and protected by forest managers.**
- 3.3.1 Identified sites, artefacts and knowledge are documented with recognition given to any confidentiality aspects in order to protect them. This information is kept by the forest manager.
- 3.3.2 There is a clearly defined process for determining these sites, artefacts and knowledge.
- 3.3.3 Forest managers shall develop management objectives and prescriptions in response to landowner wishes on the protection of their knowledge, artefacts and sites.
- 3.3.4 Forest managers shall ensure operators and contractors are notified of special sites in the field and do not disturb them.
- 3.4 Indigenous peoples shall be compensated for the application of their traditional knowledge regarding the use of forest species or management systems in forest operations. This compensation shall be formally agreed upon with their free and informed consent before forest operations commence.**
- 3.4.1 Landholder's traditional practices or knowledge related to the forest management unit that has or may have potential commercial value are documented.
- 3.4.2 If such traditional practice or knowledge is used for profit by the assessed organisation (or any other organisation under agreement with the assessed organisation) the landholders concerned are compensated for the fair market value of such knowledge.

Principle 4: Community Relations and Workers' Rights

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

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

4.1.1 There are staff members, trade union representatives and community leaders who have defined responsibilities to liaise on community, industrial and training matters.

4.1.1.1 Job description of staff liaison officers and trade union reps.

4.1.1.2 List of community leaders with liaison responsibilities.

4.1.2 There is evidence of community involvement in identification of training, social and economic needs.

4.1.2.2 Interviews with the responsible community leaders confirm that consultation takes place on a regular basis.

4.1.3 Prior to the start of the operation an assessment is done to identify training, education and employment needs and how these needs may be satisfied.

4.1.3.1 Records exist that show training and employment have been offered to members of local communities.

4.1.4 Local workers and contractors shall be given priority for employment, training and other services. Demonstrable efforts shall be made to employ, and/or if necessary provide training, for workers from local communities before workers are sought from outside of the local area or the region.

4.1.5 Support is provided for local infrastructure, facilities and social programmes. The extent and quality of support, including the management of the infrastructure, is agreed between the forest management operation and the landholders prior to the start of the operation. Landholders are involved in the identification of social and economic needs.

4.1.5.1 A plan exists, agreed upon between the forest management operation and the landholders affected by the forest operation, that specifies the support for the social and economic development of communities within the forest management area and those other communities directly affected by the forest operation. This programme shall specifically address preferential opportunities for women.

4.1.5.2 The plan mentioned in 4.1.5.1 is accompanied by a clear development support output summary, specifying the type of support and its qualifications plus the time frame for implementation and completion of the individual support components.

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

4.2.1 There shall be a written health and safety policy with operational procedures covering all workplace health and safety requirements.

4.2.2 For large and medium scale operations; identified staff members have the responsibility for implementing health and safety policies, including maintenance of a pro-active accident prevention and audit system.

4.2.3 All employees will have access to appropriate health and safety training and equipment.

4.2.4 For large and medium scale operations; all equipment is subject to periodic inspection, testing and maintenance with regard to safety, as appropriate, and only equipment which has passed such tests is used.

4.2.5 For large and medium scale operations; hazardous areas and hazardous substances are identified, documented and demarcated.

4.2.6 Medical assistance is available in case of accidents and the forest manager provides full insurance coverage and full pay and benefits while the worker recovers and provides compensation for resulting health problems, following local legislation and custom.

- 4.2.7.a For large scale operations the forest manager shall ensure access to a health clinic at the operations main camp site for all landholders and transport to nearest hospital if required for forest workers.
- 4.2.7.b For medium scale operations the forest manager shall ensure access to nearest health clinic and transport to nearest hospital if required for forest workers.
- 4.2.7.c For small scale operations and low intensity operations the forest manager shall ensure transport to nearest health clinic if required for forest workers.
- 4.2.8.a For large scale operations the forest manager shall ensure (re)training for key workers and landholders in first aid and community health awareness is done at least once a year.
- 4.2.8.b For medium scale operations the forest manager shall ensure (re)training for key workers and landholders in first aid and community health awareness is done at least once every two years.
- 4.2.8.c For small scale operations and low intensity operations the forest manager shall ensure two permanent staff members are trained to act as first aid officers and receive refresher training at least once every two years.
- 4.3 The rights of workers to organize and voluntarily negotiate with their employers shall be guaranteed as outlined in Conventions 87 and 98 of the International Labour Organisation (ILO).**
- 4.3.1 There are staff members with responsibilities for liaison with workers, trade unions and staff associations.
- 4.3.2 Workers and their representatives are free to negotiate employment conditions.
- 4.3.2.1 Interviews with workers and their representatives confirm the right to free negotiation of employment conditions.*
- 4.3.3 It can be demonstrated that workers requests are heard objectively and dealt with to the satisfaction of both parties.
- 4.3.3.1 Interviews with workers confirm requests are dealt with to the satisfaction of both parties.*
- 4.3.4 A mechanism exists in which grievances related to working conditions (pay, accommodation, health, safety and training) are being recorded and that facilitates an appropriate resolution mechanism.
- 4.3.5 All employees of large and medium scale operations shall have a written contract. When required this contract shall be translated in an appropriate local language and made available to the employee.
- 4.3.6 There are procedures for assessing the effectiveness of any training to forest workers.
- 4.4 Management planning and operations shall incorporate the results of evaluations of social and economic impacts. Consultations shall be maintained with people and groups directly affected by management operations.**
- 4.4.1 As part of the planning stage prior to any forest operation a general evaluation shall be made of the likely socio-economic impacts of the proposed forest activities and as a result of this evaluation the management plans shall be modified where necessary to mitigate expected negative socio-economic effects.
- 4.4.1.a For large scale operations a socio-economic impact assessment is done by an independent qualified contractor.
- 4.4.1.b For medium scale operations a socio-economic impact assessment is done by qualified staff or a qualified contractor, engaging (further) external expertise wherever necessary to be able to conduct a comprehensive impact assessment.
- 4.4.1.c For small scale operations and low intensity operations basic clear socio-economic indicators are used, which can be directly translated and incorporated into the management plan.
- 4.4.1.1 For large and medium scale operations: Socio-economic impact assessment report, for which confirmation is sought to determine if the authors are qualified, have consulted the landholders and other relevant stakeholders and have verified their used data in the field.*
- 4.4.1.2 For small scale operations and low intensity operations: Management plan and operational procedures clearly show considerations.*

- 4.4.1 Identified and appropriately trained staff members are responsible for consultations on social impact issues.
- 4.4.2 There is an up to date list of stakeholders, likely to be affected by the social impact.
- 4.4.3 There are on-going, pro-active consultations, communications and meetings with stakeholders on social impact. For all scales of operations these actions should focus on the village level and include general village meetings.
- 4.4.4 Corrective actions are taken, in consultation with stakeholders, to prevent and mitigate any negative social impacts.

- 4.5 Appropriate mechanisms shall be employed for resolving grievances and for providing fair compensation in the case of loss or damage affecting the legal or customary rights, property, resources, or livelihoods of local peoples. Measures shall be taken to avoid such loss or damage.**
- 4.5.1 Procedures are in place to resolve grievances involving claimed loss or damage to property, health and/or rights, caused by the forest operation. Existing local type dispute resolution mechanisms (e.g. land mediator, ward councillors) are exhausted first. Claiming parties may chose to be supported and/or represented by a third party.
- 4.5.2 Measures are taken to avoid such loss or damage, especially preventing subsequent occurrences.

- 4.6 The rights and interests of women shall be fully respected in all forest management decisions.**
- 4.6.1 There shall be evidence that the rights and interests of women have been considered at every stage of the forest management process and that positive efforts have been made to include their opinions and respect their rights and interests. In particular, women shall receive equal or preferential consideration in respect to:
 - 4.6.1.1 *Representation and consideration in the Incorporated Land Group or other landholder representation process..*
 - 4.6.1.2 *Representation and consideration in the (Landowner) Company formation process.*
 - 4.6.1.3 *Meetings & other consultations*
 - 4.6.1.4 *Equal distribution of landholder income*
 - 4.6.1.5 *Equal or preferential consideration for training and employment*

Principle 5: Benefits from the Forest

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

5.1 Forest Management should strive towards economic viability, while taking in to account the full environmental, social, and operational cost of production, and ensuring the investments necessary to maintain the ecological productivity of the forest.

5.1.1 For all operations the full costs of forest management, including environmental and social impacts, are estimated or calculated and included in current and future budgets.

5.1.1.1 For large and medium scale operations; evidence of current and future budgets that include all costs of forest management.

5.1.1.2 For small scale operations and low intensity operations; evidence of consideration of the costs of impacts on the operation's current and future budget

5.1.1.3 For all operations; management track record

5.1.2 The distribution of benefits and the way it is arrived at should be transparent and communicated to the stakeholders in a comprehensive manner.

5.1.2.1 Written agreement showing the agreed benefit distribution.

5.1.2.2 Interviews confirm the different stakeholder groups are aware of this agreement and the way it was arrived at.

5.1.2.3 If benefit distribution to landholders is done through Landowner Companies, these companies shall ensure that the benefits are distributed following the agreement and in accordance with the landholders representation as specified in 3.1.

5.1.2.4 Evidence exists of regular updates in the form of public stakeholder communications regarding the distribution of benefits.

5.1.3 Awareness and education shall be conducted to ensure an understanding with all stakeholders of the budgeting and accounting of the operation.

5.1.3.1 Evidence exists of awareness and education activities aimed at ensure an understanding with all stakeholders of the budgeting and accounting of the operation.

5.1.3.2 Interviews confirm the implementation and effectiveness of these activities.

5.1.4 When the Landowner Company or similar organization represents the landowning groups, there has to be a fair representation structure and benefit distribution though the organization has to be transparent and accounted for. Fair in this respect means; which reflects the importance of the different landholder groups within the management area and ensures all groups are included through a representative chosen with free and informed consent.

5.1.4.1 Written records of benefit distribution, with interviews at the village level confirming these records.

5.1.5 Investments necessary to maintain the range of (potential) forest products and the level of productivity of the forest are made.

5.1.5.1 Evidence of regular monitoring and review and update of the management plan regarding the range of (potential) forest products and the level of forest productivity.

5.1.5.2 Record of staff time or resources on maintenance of productivity.

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

5.2.1 There are efforts to locally process and market forest products. When local processing is not undertaken, there shall be clear evidence of the motivation and justification of such a decision.

For large and medium scale operations:

5.2.1.1 Evidence of studies undertaken assessing the feasibility of additional forest products.

5.2.1.2 Evidence of studies undertaken assessing the feasibility of minor commercial and lesser known timber species.

5.2.1.3 Evidence of studies assessing the feasibility of downstream processing of timber and non-timber products.

For small scale operations and low intensity operations:

5.2.1.4 Evidence of consideration of other forest products.

5.2.1.5 Evidence of attempts to market minor commercial and lesser known species

5.2.1.6 Evidence of consideration of downstream processing of timber and non-timber products.

5.2.2 Support is offered for initiatives from the communities within the forest management unit and surrounding communities for the processing of forest products and the utilisation of services that enhance the degree of benefit obtained from the use of resources that originate from the unit.

5.2.2.1 Evidence exists that technical and/or financial support is given to such local initiatives.

5.2.3 Forest management respects the requirements of local communities within or adjacent to the forest management unit to utilize forest products for domestic purposes, following local customary practices and the Forestry Act 1991 and amendments.

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

5.3.1 Forest management has in place a policy that sets rates of waste for each stage of the forest operation and that there is a formal procedure for recording and monitoring compliance with these rates.

5.3.2 Forest workers are properly trained and supervised so that waste on-site, and during on-site processing is minimised.

5.3.2.1 Training records of specific training for forest workers aimed at ensuring minimum waste production.

5.3.2.2 Interviews with forest workers confirm training and supervision aimed at ensuring minimum waste production.

5.3.2.3 Field visits confirm the effectiveness of training and supervision.

5.3.3 Post harvesting waste inspection forms part of the monitoring and review process.

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

5.4.1 There is an inventory of non-timber forest products and uses of the forest by local communities.

5.4.2 There is evidence that efforts are made to research, promote and market the non-timber uses of the forest.

5.4.3 There is evidence that local initiatives involving the use and/or processing and/or marketing of forest products are encouraged.

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

5.5.1 The full range of forest services and resources and the potential impact of the forest management on these services and resources is recognised and described.

5.5.1.1 The forest management plan of large and medium scale operations includes an overview of all services and resources.

5.5.1.2 The managers of small scale operations and low intensity operations are aware of the range of services and resources the forest area provides.

- 5.5.1.3 *Interviews confirm forest managers are aware of the potential impact of their management.*
- 5.5.2 Forest management practices are planned and implemented so as to minimise negative impacts on services and resources.
- 5.5.2.1 *Prescriptions in management plans and operational guidelines aimed at minimising impact.*
- 5.5.2.2 *Field inspections of harvesting areas, log ponds and milling sites confirm prescriptions and guidelines are followed.*
- 5.5.3 Training and supervision is provided to forest workers in order to prevent negative impacts on these services.
- 5.5.4 Inspection of effects of the operation on forest services and resources is included in the monitoring and review processes.
- 5.5.4.1 *The overview of identified services and resources is used in the monitoring and review process as defined under Principle 8, and field inspections to evaluate the impact on them are part of this process.*
- 5.6 The rate of harvest of forest products shall not exceed levels that can be permanently sustained.**
- 5.6.1 There is a stratified forest resource inventory, representative of the overall forest management unit. At the set-up level the requirements of the LCOP will be met or exceeded.
- 5.6.2 The replenishment rates of individual species have been determined.
- 5.6.2.1 *Evidence of the use of the latest available data on growth and yield. Where such data is lacking there is clear rationale for the chosen rate of harvest, which follows a precautionary approach.*
- 5.6.3 The rate of harvest does not change the diversity of the species harvested.
- 5.6.3.1 *Evidence of the use of the latest available data on species diversity. Where such data is limited or lacking there is clear rationale for the chosen rate of harvest, which follows a precautionary approach.*
- 5.6.4 Harvests are reported regularly, and accurately, and documented by a volume and geographic locality.
- 5.6.4.1 *The Chain of Custody system as described in Criteria 8.3 guarantees that the forest manager has available accurate monthly summaries of harvested volumes with clear geographic locality.*
- 5.6.5 Guidelines and procedures are in place, and are being used, for correlating harvests, replenishment and maintenance of species diversity, taking into account the most up-to-date information on harvest levels that can be permanently sustained.
- 5.6.6 Action is taken to assist natural regeneration and ensure replenishment
- 5.6.6.1 *The management plan contains a clear section on natural regeneration and replenishment.*
- 5.6.6.2 *Operational procedures on this are in place, including post harvest surveys and monitoring of natural regeneration.*
- 5.6.6.3 *Field staff is trained to implement the operational procedures.*
- 5.6.6.4 *Management practices are revised following results of post harvest surveys and monitoring of natural regeneration*

Principle 6: Environmental Impact

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

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

6.1.1 For all harvesting and processing operations an evaluation of the environmental impacts of the operation has been completed, prior to commencement of site-disturbing operations, that includes the following aspects:

- Characterisation of ecosystems in the forest management area using biological and geo-physical information,
- Impact on:
 - native plants, animals and ecosystems,
 - habitats of rare and endangered species,
 - forest connectivity and fragmentation,
 - tambu or culturally significant sites,
 - physical and chemical soil stability,
 - water resources including water quality and quantity in catchments,
 - downstream river and coastal systems,
 - Visual and aesthetic aspects, and
 - both larger scale landscape level and smaller stand level.
- Impacts of:
 - Use and disposal of fuel, oil, chemicals, preservatives and non-organic waste.
- field assessments, available published and local landowner, and
- consideration of timber species on either local and /or international endangered or threatened species of flora and fauna lists (e.g. CITES Appendix 1, World Conservation Monitoring Centre list, any national registry).
- High Conservation Values

6.1.1.a For large scale operations an Environmental Impact Assessment is done by an independent qualified contractor.

6.1.1.b For medium scale operations an Environmental Impact Assessment is done by qualified staff or a qualified contractor, engaging (further) external expertise wherever necessary to be able to assess all listed aspects.

6.1.1.c For small scale operations and low intensity operations the environmental impact considerations are directly translated and incorporated into the management plan and are reflected in the operational procedures.

6.1.1.1 For large and medium scale operations: Environmental Impact Assessment report, for which confirmation is sought to determine if the authors are qualified, have consulted the landholders and other relevant stakeholders and have verified their used data in the field.

6.1.1.2 For small scale operations and low intensity operations: Management plan and operational procedures clearly show considerations.

6.1.2 For large scale operations the Environmental Impact assessment is independently audited.

6.1.3 All environmental impacts identified during assessments are considered in plans and operations are designed to avoid or mitigate adverse impacts.

For large and medium scale operations

6.1.3.1 Management plan shows how EIA has been considered.

6.1.3.2 Operational procedures exist aimed at mitigating or avoiding adverse environmental impacts.

For small scale operations and low intensity operations; see 6.1.1.2

- 6.2 Safeguards shall exist which protect rare, endemic, threatened and endangered species and their habitats (e.g., nesting and feeding areas). Conservation zones and protection areas shall be established, appropriate to the scale and the intensity of forest management and the uniqueness of the affected resources. Inappropriate hunting, fishing, trapping and collecting shall be controlled.**
- 6.2.1 Prior to the start of the operation, an assessment has been carried out for any endemic, rare, threatened and endangered species of fauna and flora and their habitat (emphasising local anecdotal information as well as scientific inventories).
- 6.2.2.a For large and medium scale operations employees, surrounding communities and contractors are trained in recognising rare, threatened and endangered species of fauna and flora and are made aware of areas or zones set aside for their protection.
- 6.2.2.1 Training records for employees, surrounding communities and contractors, and knowledge of protected areas, both verified by interviews.*
- 6.2.2.b For small scale operations and low intensity operations employees and the involved communities are aware of rare, threatened and endangered species of fauna and flora and know which areas or zones are set aside for their protection.
- 6.2.2.2 Interviews at the village level confirm knowledge of protected species and areas.*
- 6.2.3 Conservation areas and/or habitat zones have been identified, mapped, and established for refuge, feeding and reproduction of threatened, endangered or rare species of flora and fauna. These areas or zones should be structured to avoid forest fragmentation, and are demarcated on operational and Land Use Plan maps. If small areas are used they have to be linked by undisturbed forest corridors. For large and medium scale operations conservation biology expert assistance is used.
- 6.2.3.1 Maps of conservation areas and/or habitat zones.*
- 6.2.3.2 Knowledge of their existence, location and status verified by field visits and staff and landholder interviews.*
- 6.2.4 Consideration should be given to the configuration of the areas under management (e.g. harvest block shape and size) so that it follows the landforms, favours the movement of fauna and aims to minimise forest fragmentation.
- 6.2.4.1 For large and medium scale operations the management plan and associated operational guidelines show this consideration.*
- 6.2.4.2 For small scale operations and low intensity operations the boundaries of felling blocks, etc. as marked in the field show this consideration.*
- 6.2.5 Measures are taken to prevent hunting, trapping, fishing, poaching or collecting of rare, endangered or threatened species of fauna and flora.
- 6.2.5.1 Evidence of awareness given to employees, surrounding communities and contractors, confirmed by interviews.*
- 6.2.5.2 Corrective action taken on reported breaches.*
- 6.2.6 Regular monitoring verifies the effectiveness of these protective activities.
- 6.2.6.1 Interviews with employees, surrounding communities and contractors confirming enforcement of protective activities and impact of corrective action taken.*
- 6.3 Ecosystem functions and benefits such as forest regeneration and succession, genetic, species and ecosystem diversity and the natural cycle that affect the productivity of the forest ecosystem, shall be maintained intact, enhanced or restored.**
- 6.3.1 Key ecosystem functions and values and natural cycles have been identified and described with participation of the landowners.
- 6.3.2 Forest resource structure and composition surveys/inventories have been completed for any areas to be harvested.
- 6.3.3 Silviculture and management systems aim to maintain forest composition, structure and dynamics.
- 6.3.3.1 The management plan contains a justification of the chosen silvicultural and management system, using the EIA information as described in 6.1.*

- 6.3.4 Long-term data on forest dynamics is gathered to assist forest management system audit and review.
- 6.3.4.1 *Data on total standing stem volume over time from management areas and reference sites.*
 - 6.3.4.2 *Changes in tree species composition (number and volume).*
 - 6.3.4.3 *Data on age/size class distribution over time from management areas and reference sites.*
 - 6.3.4.4 *Data on natural regeneration.*
 - 6.3.4.5 *Data on fauna composition, density and distribution.*
- 6.3.5 The selection of tree species for harvest is based on the composition of the natural forest to prevent high-grading or species reduction.
- 6.3.5.1 *Harvest plans*
 - 6.3.5.2 *Forest inventory information*
- 6.3.6 Natural regeneration is given priority to maintain the forest, with seedling trans-location as a secondary option, and as a last resort replanting with locally grown genetic stock.
- 6.3.6.1 *Management plan*
 - 6.3.6.2 *Post harvest monitoring reports*
 - 6.3.6.3 *Site visits*
- 6.3.7 In order to ensure reproduction of the species in the forest management unit, parent or seed trees are retained, with due consideration of their density and distribution.
- 6.3.7.1 *Management plan*
 - 6.3.7.2 *Post harvest monitoring reports*
 - 6.3.7.3 *Site visits*
- 6.3.8 Within the management unit, species that have a population structure that does not favour their regeneration, are spared during harvest or become part of silviculture treatments that ensure maintenance of their natural population.
- 6.4 Representative samples of existing ecosystems within the landscape shall be protected in their natural state and recorded on maps, appropriate to the scale and intensity of operations and the uniqueness of the affected resources**
- 6.4.1 As part of the Land Use Planning process (see 7.1) representative samples of existing ecosystems within the landscape are identified and protected through a participatory process with genuine landholder involvement and are demarcated on maps and where possible in the field.
- 6.4.1.1 *Meetings at the village level with representation of all recognised landholding groups as identified in Principle 3.*
 - 6.4.1.2 *Knowledge with landholder groups of sample areas and their location*
 - 6.4.1.3 *Land Use Plan*
- 6.4.2 For large and medium scale operations only: Methodologies for characterising ecosystems found in the landscape and for determining representative samples, are based on conservation science, and utilise existing methodologies and databases such as Conservation Needs Assessment and Fragile Forest Types.
- 6.4.2.1 *Clear justification of the selection criteria and process for selection of representative ecosystem samples is given.*
- 6.4.3 Representative reserve areas are to be contiguous or connected rather than fragmented. When this is not possible, clear justifications must be presented for their fragmentation.
- 6.4.4 Continuous corridors for fauna refuge are maintained in the management unit.

- 6.5 Written guidelines shall be prepared and implemented to; control erosion; minimize forest damage during harvesting, road construction, and all other mechanical disturbances; and protect water resources. The operation shall meet or exceed all the standards as contained in the PNG Logging Code of Practice.**
- 6.5.1 There are written guidelines which include;
- roads that are not aligned through identified conservation or other protected areas
 - culverts that are designed so they do not obstruct the migration of fish, create increased water velocities or streambeds unsuitable to existing aquatic life, drains do not drain into natural watercourses. Where this is unavoidable, regularly emptied silt traps are installed.
- 6.5.2 Minimal impact harvest guidelines exist that use techniques such as directional felling, residual marking, vine cutting, suspension of log base when dragging single tree or small group felling to minimize canopy disruption, and minimal and planned access.
- 6.5.3 For water transport, rafts are used that are appropriate to the dimensions of the rivers and water bodies, and that are made of species that are not poisonous to aquatic life.
- 6.5.4 Measures are taken to protect the forest from fire.
- 6.5.4.1 If fire forms an expected risk for the management area, for large and medium scale operations a fire protection plan and identified necessary tools are in place.*
- 6.5.5 Workers have received training and are able to implement plans, guidelines and instructions associated with the requirements mentioned in 6.5.1 – 6.5.4.
- 6.5.5.1 Training records and tasks assignments, confirmed by staff interviews.*
- 6.6 Management systems shall promote the development and adoption of environmentally friendly non-chemical methods of pest management and strive to avoid the use of chemical pesticides. World Health Organization Type 1A and 1B and chlorinated hydrocarbon pesticides; pesticides that are persistent, toxic or whose derivatives remain biologically active and accumulate in the food chain beyond their intended use; as well as any pesticides banned by international agreement, shall be prohibited. If chemicals are used, proper equipment and training shall be provided to minimize health and environmental risks.**
- 6.6.1 The use of chemical pesticides is prohibited in natural forest management with the exception of those outlined in 6.6.2, and in plantation operations a goal of minimising and phasing out chemical pesticide use is adopted. Where complete phasing out is not possible, a clear motivation is given.
- 6.6.2 Chemical pesticides that are not listed as highly hazardous by the FSC can be used only in very limited and exceptional cases, where the need for their use is fully justified and it can be shown that there is no other management strategy non-toxic alternative available, and are subject to the strictest handling.
- 6.6.2.1 Documentation of strategies, experiments and trials of non-chemical weed, pest and disease control.*
- 6.6.3 There are procedures for the handling of any chemicals including those for spillages and accidents.
- 6.6.3.1 Evidence of appropriate equipment, protective clothing, adequate training and recognised procedures for any chemical product use.*
- 6.6.3.2 Records of all chemical use and incidents involving chemicals, including evidence of plantation worker health effects as a result of chemical exposure.*
- 6.7 Chemicals, containers, liquid and solid non-organic wastes, including fuel and oil, shall be disposed of in an environmentally appropriate manner at off-site locations.**
- 6.7.1 All non-organic waste products are identified and categorised.
- 6.7.2 All non-organic wastes (such as oil, tires, containers etc) are reused, recycled or disposed off as described under 6.7.3. Their production is kept to the lowest possible level.
- 6.7.3 Environmentally appropriate methods for the disposal of non-biodegradable wastes that cannot be reused or recycled, are set out at identified appropriate locations. The methods as described in the PNG LCOP are used or if feasible methods of a higher environmental standard.

- 6.7.4 The forest manager ensures training is given to employees and contractors in non-organic waste management to enable them to carry out the activities resulting from this Criteria.
- 6.7.5 Waste disposal activities and practices are monitored.
- 6.7.5.1 *Checks on waste disposal activities and practices are incorporated in the monitoring and review process as defined in Principle 8, and field inspections to evaluate their impact are part of this process.*
- 6.8 Use of biological control agents shall be documented, minimized, monitored and strictly controlled in accordance with national laws and internationally accepted scientific protocols. Use of genetically modified organisms shall be prohibited.**
- 6.8.1 Procedures are in place for the minimisation of the use of biological control agents.
- 6.8.2 Procedures are in place for the use, documentation and monitoring of biological control agents.
- 6.8.3 Identified staff members have been trained to implement biological control agent procedures.
- 6.8.3.1 *Training records and tasks assignments.*
- 6.8.4 Field tests, trials or use of genetically modified organisms are prohibited.
- 6.8.4.1 *Documentation on provenance and propagation methods of used species.*
- 6.9 The use of exotic species shall be controlled and actively monitored to avoid adverse ecological impacts.**
- 6.9.1 In natural forest management, the use of exotic species is generally prohibited. Very limited exceptions are made when there are no other local species with sufficient performance to restore impoverished or degraded sites and any use shall be carefully controlled and monitored.
- 6.9.1.1 *Written justification for the use of any exotic species, based on scientific data.*
- 6.9.1.2 *Species specific monitoring and control system.*
- 6.9.1.3 *Staff specifically trained and assigned to monitor and control exotic species.*
- 6.9.2 Measures are taken to avoid the unintentional invasion of exotic species through ensuring any equipment arriving from other forest regions is thoroughly clean and free of soil, seed and vegetative matter.
- 6.9.2.1 *Procedures for checking and cleaning arriving equipment.*
- 6.9.2.2 *Staff specifically trained for and assigned to this task*
- 6.10 Forest conversion to plantations or non-forest land uses shall not occur, except in circumstances where conversion;**
- i. entails a very limited portion of the forest management unit; and**
- ii. does not occur in high conservation value forest areas; and**
- iii. will enable clear, substantial, additional, secure, long-term conservation benefits across the forest management unit.**
- 6.10.1 The selection of sites for forest management infrastructure and/or agricultural subsistence areas clearly takes into consideration the conditions (i) and (ii) of this criterion.
- 6.10.2 Conservation benefits of conversion have been identified and assessed in cooperation with acknowledged experts.
- 6.10.3 Following the requirements under 6.10.1 and 6.10.2, the portion of the forest management unit that may be converted to other land uses will not exceed
- 5% for medium and large scale operations
 - 20% for small scale operations
- of the forest management unit.

Principle 7: Management Plan

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

7.1 The forest management plan shall be derived from an overall land use plan that has been completed with genuine community participation with proper knowledge and understanding.

7.1.1 Participatory Land use planning by the landholders and rights holders has been completed and recorded on maps that include:

- garden and village plantation areas (present and future),
- cash crop areas,
- village sites,
- forest types and ecosystems,
- production forest areas,
- conservation areas, including habitat for rare, threatened and endangered species, representative samples of forest ecosystems, and any areas identified in the Conservation Needs Assessment and Fragile Forest Types,
- tambu and culturally significant areas,
- dedicated non-timber forest product use areas if identified,
- watershed protection areas if identified,
- ecologically sensitive areas if identified,
- any other identified land uses.

The size of each area is recorded in writing.

7.1.2 Forest conservation areas shall be established and indicated on the Land Use Plan. Forest conservation area geographical and biological variation is representative of the total forest area, including the accessible production forest. The required minimum size will depend on intensity of harvest operations, diversity of ecosystems, scale of landscape, and degree to which protection has been achieved in other set aside areas. Customary uses of conservation areas are allowed.

Forest conservation areas must be:

- for mechanised operations involving roading, tractor and skidder extraction not less than 20% of the accessible forest production area.
- for portable sawmilling operations not be less than 10% of the accessible forest production area.

7.1.3 Records are kept of the participatory land use planning process and any subsequent land use planning meetings.

7.1.3.1 Interviews at the village level confirm participatory process.

7.2 The management plan and supporting documents shall provide:

- i. Management objective**
- ii. Description of the forest resources to be managed, environmental limitations, land use and ownership status, socio-economic conditions, and a profile of adjacent lands.**
- iii. Description of silviculture and/or other management system based on the ecology of the forest in question and information gathered through resource inventories.**
- iv. Rationale for rate of annual harvest and species selection.**
- v. Provisions for monitoring of forest growth and dynamics**
- vi. Environmental safeguards based on environmental assessments**
- vii. Plans for the identification and protection of rare, endemic, threatened and endangered species.**
- viii. Maps describing the forest resource base including protected areas, planned management activities and land ownership.**
- ix. Description and justification of harvesting techniques and equipment to be used**

7.2.1 Considering scale and intensity of the operation, the management plan and supporting documents, provide at least the following:

- Resource inventories of an intensity appropriate to the scale of the operation (all scales of operation).

- Construction and maintenance guidelines and procedures for roads and other access and extraction networks (all scales).
- Operational guidelines and rules for harvesting and extraction (all scales).
- Environmental safeguards based on environmental assessments that meet or exceed the PNG Logging Code of Practice, and guidelines of the Department of Environment and Conservation (large & medium scale).
- Description of the forest resource base (all scales).
- Description and justification of harvesting and extraction techniques and equipment to be used, clearly showing standards meeting or exceeding those of the PNG Logging Code of Practice (all scales).
- Records of village meetings, consultations, visits and any negotiations involving forest management activities (all scales).
- Health and safety provisions (all scales).
- Any rules for hunting, fishing, collection and occupation (all scales).

For medium and large scale operations:

7.2.1.1 Resource inventories including details of species composition, abundance, diameter distribution and volume.

7.2.1.2 Written operational guidelines and procedures for the layout, design and maintenance of roads and other access and extraction networks in accordance with 6.5 above.

7.2.1.3 Written operational guidelines and rules for harvesting and extraction in accordance with 6.5 above.

7.2.1.4 Maps describing the forest resource base including all the information of the land use plan(s), buffer zones, road alignments, planned management activities and land ownership

For small scale operations and low intensity operations:

7.2.1.5 General resource inventory information on species and volumes

7.2.1.6 Operational guidelines for harvesting and access road construction

7.2.1.7 Land Use Plan map, clearly showing the production forest and other identified areas

7.2.2 A clear rationale is shown for rate of annual harvest, species selection, minimum felling diameters, regeneration strategies and felling cycles. 100% inventories of all trees 50 cm DBH and above should be completed for blocks to be harvested. Annual harvest should reflect rates, which shall not exceed levels that can be permanently sustained and are based on PNG growth and yield studies, and are precautionary. Annual harvest rate calculations should take into account loss of productive forest land from roading and skidding tracks, and losses from felling and skidding damage to the residuals.

7.2.2.1 Evidence in management plan of rational and used studies for harvest rate and felling cycles, species selection and minimum felling diameters and regeneration strategies.

7.2.3 Subject to scale and type of operation, field level topographic maps have been prepared before logging or road construction occurs. These maps specify areas suitable for all-weather harvesting or dry-weather only. They also plan locations for extraction (or haul) roads, log yards or ponds, main skid trails and drainage structures, as well as show all set aside areas (i.e. buffer zones, protected areas, etc).

7.2.4 Non-timber forest products or uses have been inventoried and their management, in accordance with 5.6, explicitly considered during planning.

7.2.4.1 Evidence of the use during management planning of the inventories and studies as specified in 5.2 and 5.4.

7.2.5 For large and medium scale operations, the need for fire management and control has been properly evaluated and documented. In fire-prone areas there is a fire management plan.

7.2.5.1 Fire management plan with resulting operational procedures.

7.2.6 Plans for enforcement of the rules for hunting, fishing, collection and occupation are available.

- 7.3 The management plan shall be periodically revised to incorporate the results of monitoring or new scientific and technical information, as well as to respond to changing legal, environmental, social and economic circumstances.**
- 7.3.1 The management plan is revised at least every 5 years and there are procedures for incorporation of monitoring data into the management planning process.
- 7.3.2 Forest managers are aware of and/or are supporting research being undertaken or planned in areas that are relevant to management planning.
- 7.3.2.1 Information received from relevant research institutions (e.g. Forest Research Institute, CIFOR).*
- 7.3.3 New findings from local experience, science and technical research are incorporated into the management planning.
- 7.3.3.1 Use of up-to-date reports, studies and research results for initial management plan development and revisions.*
- 7.3.4 Ongoing socio-economic information and research results are, incorporated into management planning.
- 7.3.4.1 Results from monitoring as described in 8.2 are used for management planning and revision, following the revision process as described in 8.4 .*
- 7.3.5 Staff is made aware of changes in the management plan and receives additional training to ensure proper implementation.
- 7.3.1.1 Revision of management plans with evidence of the use of monitoring data*
- 7.3.2.2 Evidence in revised management plan of use of the information received*
- 7.3.3.3 Evidence in revised management plan of use of the results of these reports, studies and research*
- 7.4 Forest workers shall receive adequate training and supervision to ensure proper implementation of the management plan.**
- 7.4.1 Staff members with responsibility for training are identified.
- 7.4.2 All workers (including contractors and their workers and self-employed persons) shall be sufficiently qualified/ trained, to implement the tasks they are assigned effectively and safely.
- 7.4.2.1 Employee records show promotion resulting from enhanced performance following training.*
- 7.4.3 For large and medium scale operations there shall be a written training programme with a specific named person responsible for all issues regarding education and training of employees.
- 7.4.4 There are up-to-date records of all training provided to forest workers, with individual training records for each employee.
- 7.5 While respecting the confidentiality of information, forest managers shall make publicly available a summary of the primary elements of the management plan, including those listed in Criterion 7.2**
- 7.5.1 An additional public summary is not required if the main management plan itself is made publicly available.
- 7.5.2 For medium and large scale operations the public summary is revised at least annually
- 7.5.3 For small scale operations and low intensity operations a simple public summary report suffices, which is revised at re-certification (every 5 years)
- 7.5.4 The summary shall have either a Tok Pisin or a Hiri Motu translation, or there should be a translation into another widely used regional language such as Kuanua or Dobuan.

Principle 8: Monitoring and Assessment

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

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

8.1.1.a For large and medium scale operations: A written monitoring and assessment plan shall be implemented and kept up to date. The long-term objectives of monitoring and assessment, the means of achieving them, and the justification for its frequency and intensity shall be clearly stated. Monitoring and assessment is done at least once every year.

8.1.1.b For small scale operations and low intensity operations: Monitoring and assessment, using the following basic indicators is done on a regular basis, at least once every two years:

- volume and species harvested
- business operation and costs
- compliance with operational guidelines
- compliance with Land Use Plan
- environmental impact indicators
- socio-economic indicators

8.1.1.c For all scales of operation: Monitoring includes evaluation of annual surveillance reports and issued Corrective Action Requests.

8.1.2 The monitoring system is in a form that can be easily cross-referenced to the management plan and facilitates efficient external audits by third parties.

8.1.2.1 Standardised forms and/or checklist systems are used including references to main management plan components and features.

8.1.3 Staff members with responsibility for implementing monitoring programmes are identified.

8.1.4 Records of monitoring activities are available.

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

- i. Yield of all forest products harvested.**
- ii. Growth rates, regeneration and condition of the forest.**
- iii. Composition and observed changes in the flora and fauna.**
- iv. Environmental impacts of harvesting and other operations.**
- v. Social and economic impacts of harvesting and related operations.**
- vi. Costs, productivity and efficiency of forest management.**

8.2.1 A base line survey will be taken prior to the commencement of the planning of the harvesting operation to determine:

- plant and animal species composition in the forest.
- occurrence of endangered plant and animal species.
- socio-economic situation.

8.2.2 Forest dynamics are studied in harvested and unharvested forest to monitor changes in plant and animal species composition. All vegetation types being harvested are being monitored. Monitoring information is gathered on total stem volume, tree species composition (number, volume and frequency), age/size distribution and regeneration.

8.2.2.a For medium and large scale operations studies as mentioned in 8.2.2 are undertaken.

8.2.2.b For small scale operations and low intensity operations results of external studies in comparable vegetation types can be used.

8.2.3 Species composition and occurrence of conservation and other protected areas is regularly monitored to ensure these areas are not being negatively impacted by forest management activities.

- 8.2.4 Any identified rare, threatened or endangered species and their habitat should be monitored for changes in distribution, abundance and behaviour.
- 8.2.5 Degraded areas resulting from forest management activities should be monitored to assess restoration.
- 8.2.6 Socio-economic changes in local communities within the forest management unit or directly affected by the operation are surveyed and assessed. These include:
- population and demographic changes.
 - health status.
 - educational status.
 - social structures .
 - economic status, including household income and economic activities.
 - equity and distribution of any benefits.
 - level of employment and training received.

When the FMU comprises of a large number of communities a risk based selection of communities may be used.

- 8.2.7 Monitoring of environmental impact includes waste management.

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

- 8.3.1 An identification system exists that physically marks forest products leaving certified forest areas. The marks and associated documentation allow these forest products, at any point along the transfer to the end buyer, to be traced to the harvest area.

- 8.3.2 Documentation and invoices for all certified products are available that specify the source of the certified forest product, the date of sale, quantity, specifications, and the point at which the buyer takes control of the chain-of-custody.

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

- 8.4.1 Monitoring data is analysed, reviewed and resulting action to mitigate the negative impacts and reinforce the positive impacts of forest management activities and harvest of forest products must be demonstrated.

8.4.1.1 There is evidence in the field that alterations in the management plan have been implemented.

- 8.4.2 The management plan includes a list of all alterations made.

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

- 8.5.1 An additional public summary is not required if the main monitoring report itself is made publicly available.

- 8.5.2 For medium and large scale operations the public summary is updated at least annually

- 8.5.3 For small scale operations and low intensity operations a simple public summary report suffices, which is updated at re-certification (every 5 years)

- 8.5.4 The summary shall have either a Tok Pisin or a Hiri Motu translation, or there should be a translation into another widely used regional language such as Kuanua or Dobuan.

Principle 9: Maintenance of High Conservation Value Forests

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

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

9.1.1 The management plan identifies any potential High Conservation Value Forests and the locations where they are found. Guidance for identification of the attributes consistent with HCVF and determining HCV presence will be taken from the HCVF Toolkit for Papua New Guinea, as well as from relevant data sources and input from key expert stakeholders. The Toolkit is available from the WWF-PNG website.

9.1.1.1 A documented methodology for assessment of high conservation value forests.

9.1.1.2 Participatory meetings with landholders and stakeholders to identify any high conservation attributes.

9.1.1.3 Use of available data sources, like;

- fragile forest types*
- threatened endemic species list*
- LCOP*
- CITES Appendix 1 and 2*

9.2 The consultative portion of the certification process must place emphasis on the identified conservation attributes, and options for their maintenance.

9.3 The management plan shall include and implement specific measures that ensure the maintenance and/or enhancement of the applicable conservation attributes consistent with the precautionary approach. These measures shall be specifically included in the publicly available management plan summary.

9.3.1 The forest manager has identified options with the participation of stakeholders and appropriate experts for the maintenance of any high conservation attributes, based on the assessment as specified under 6.1.1.

9.3.1.1 Documentation of options considered by the forest manager for the maintenance of high conservation attributes.

9.3.1.2 Records of participatory meetings with landholders, stakeholders, and appropriate experts as part of the land use planning process to consider options for maintenance of any high conservation values identified.

9.3.2 The management plan describes any high conservation values identified in the forest and the management measures ensure the maintenance and/or enhancement of any high conservation attributes identified under 9.1 in accordance with the guidance as provided by the HCVF Toolkit for PNG.

9.3.3 These measures are included in the public available management plan summary

9.4 Annual monitoring shall be conducted to assess the effectiveness of the measures employed to maintain or enhance the applicable conservation attributes.

9.4.1 Indicators are defined to monitor effectiveness of each measure described in the plan.

9.4.2 Records of monitoring are kept and used to adapt future management.

9.4.3 For the development and implementation of the annual monitoring system and future review of the indicators and verifiers under Principle 9, the guidelines from the HCVF Toolkit for Papua New Guinea will be followed.

Principle 10: Plantations

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

10.1 The management objectives of the plantation, including natural forest conservation and restoration objectives, shall be explicitly stated in the management plan, and clearly demonstrated in the implementation of the plan.

10.1.1 There is evidence in the field that management objectives are being achieved, and records show progress is being monitored and reviewed.

10.1.1.1 Monitoring results, progress reports and other periodical reports confirm the set objectives are being met, and progress is monitored and reviewed.

10.1.1.2 Field visits confirm these claims.

10.2 The design and layout of plantations should promote the protection, restoration and conservation of natural forests, and not increase pressures on natural forests. Wildlife corridors, streamside zones and a mosaic of stands of different ages and rotation periods, shall be used in the layout of the plantation, consistent with the scale of the operation. The scale and layout of plantation blocks shall be consistent with the patterns of forest stands within the natural landscape.

10.2.1 Natural vegetation areas within and adjacent to the forest management area are identified and protected.

10.2.2 Restoration aims at connecting existing natural forest areas with each other and with other restored forest areas.

10.2.3 Wildlife corridors, habitat zones, and prescribed buffer zones are protected, and if degraded, restored.

10.2.3.1 Wildlife corridors, habitat zones and buffer zones consisting of natural vegetation and of sufficient width and length to be of use to all local wildlife types.

10.2.3.2 Restoration of the natural vegetation cover for degraded or formerly converted parts of wildlife corridors, habitat zones and buffer zones

10.2.4 Species and/or silvicultural regimes selection allow for the use of a range of different age class and rotation periods, resulting in a mosaic of stands.

10.2.5 The design and management of plantations established on degraded or deforested land is assisting the restoration of habitat and indigenous vegetation.

10.2.6 Distribution and proportion of planted areas is based on the landscape features and characteristics of the native vegetation.

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

10.3.1 Several species and provenances are used within the management unit.

10.3.2 Several age-classes, rotation periods and clear-cut patch sizes are used within management units.

10.3.3 Local community needs regarding the use of the plantation area resources are identified and provisions are made in the design and layout to provide for those needs.

- 10.4 The selection of species for planting shall be based on their overall suitability for the site and their appropriateness to the management objectives. In order to enhance the conservation of biological diversity, native species are preferred over exotic species in the establishment of plantations and the restoration of degraded ecosystems. Exotic species, which shall be used only when their performance is greater than that of native species, shall be carefully monitored to detect unusual mortality, disease, or insect outbreaks and adverse ecological impacts.**
- 10.4.1 Selection of species and provenances is based on documented trails that demonstrate their suitability to the site.
- 10.4.2 Species and provenance selection is based on performance to the range of ecological, social and economic management objectives.
- 10.4.3 There is evidence of a preference for native species.
- 10.4.4 Exotic species fully assessed for invasiveness and local suitability before being used.
- 10.4.5 Information on source and provenance of all planting material is available.
- 10.5 A proportion of the overall forest management area, appropriate to the scale of the plantation and to be determined in regional standards, shall be managed so as to restore the site to a natural forest cover. Restoration efforts shall be supported by the results of 8.2.2.**
- 10.5.1 Plantation planning and practice sets aside areas for the conservation or restoration of natural vegetation cover.
- 10.5.2 Proportion and placement of conservation set asides contributes to the requirements determined in Principles 6 and 7, including representative areas, wildlife areas, buffer zones, ecologically sensitive areas and other special sites.
- 10.6 Measures shall be taken to maintain or improve soil structure, fertility and biological activity. The techniques and rate of harvesting, road and trail construction and maintenance, and the choice of species shall not result in long term soil degradation or adverse impacts on water quality, quantity or substantial deviation from stream course drainage patterns.**
- 10.6.1 Data on all soil types in the plantation area and susceptibility to degradation and erosion, including records of areas where soils have been degraded from previous activities has been documented.
- 10.6.2 Adoption of a goal of minimising soil disturbance and loss as a result of management activities.
- 10.6.3 There are operational prescriptions for minimising erosion, compaction, disturbance and exposure of soils.
- 10.6.4 Evidence of a protection strategy for water and soil resources, including erosion and pollution control, and monitoring of any impacts.
- 10.6.5 Operations with potential impacts on the soil are identified and monitored with quantified measurements of impacts taken.
- 10.6.6 There are operational prescriptions and practices for the protection of water bodies including buffer zones, soil conservation measures, and low-impact harvest techniques.
- 10.6.7 Where soil structure, fertility and/or biological activity has been degraded, measures are taken to restore them.
- 10.7 Measures shall be taken to prevent and minimize outbreaks of pests, diseases, fire and invasive plant introductions. Integrated pest management shall form an essential part of the management plan, with primary reliance on prevention and biological control methods rather than chemical pesticides and fertilizers. Plantation management should make every effort to move away from chemical pesticides and fertilizers, including their use in nurseries. The use of chemicals is also covered in Criteria 6.6 and 6.7.**

- 10.7.1 The use of chemical pesticides and fertilisers in forest management and nurseries will be phased out within five years. Any continued use has to be fully socially, environmentally and economically justified and will only be allowed after it is clearly proven that no non-chemical alternative exists.
- 10.7.1.1 Plans to reduce and replace use of chemical pesticides and chemical fertilisers.*
- 10.7.1.2 Records of reduced use and replacement use by lower toxicity pesticides, confirmed by field visits.*
- 10.7.1.3 Documentation of trials and research into alternative pest control measures.*
- 10.7.2 Where pesticides and fertilisers are required preference should be given to those approved by international 'organic' standards.
- 10.7.3 Where chemical pesticides and chemical fertilisers are used there is monitoring of their impacts on the environment.
- 10.7.4 There is a documented integrated management strategy and set of procedures for the control of pests, diseases, fire and invasive plant introductions
- 10.7.5 Specialist staff or external experts, trained in integrated pest management, are used to monitor and report on pest and disease status.
- 10.7.6 Where chemical pesticides and chemical fertilisers are used, trials and experimentation of alternative non-chemical methods are being carried out.
- 10.7.7 Measures are taken to eradicate exotic invasive flora and fauna within a clear set timeframe.
- 10.7.8 Biological control methods are used only when shown to be harmless to non-target species through controlled trials.
- 10.7.9 There is a documented fire surveillance, prevention and control system.
- 10.8 Appropriate to the scale and diversity of the operation, monitoring of plantations shall include regular assessment of potential on-site and off-site ecological and social impacts, (e.g. natural regeneration, effects on water resources and soil fertility, and impacts on local welfare and social well-being), in addition to those elements addressed in principles 8, 6 and 4. No species should be planted on a large scale until local trials and/or experience have shown that they are ecologically well-adapted to the site, are not invasive, and do not have significant negative ecological impacts on other ecosystems. Special attention will be paid to social issues of land acquisition for plantations, especially the protection of local rights of ownership, use or access.**
- 10.8.1 Offsite effects of plantations have been identified, including on water quality and quantity, invasive flora and fauna, and local community welfare and access to resources.
- 10.8.2 Elements to be monitored additional to those mentioned in Principle's 8, 6 and 4 are:
- Suitability of species to meet the identified management and local needs
 - Effect on their environment of the different species used, extended to the immediate surrounding areas of the plantation.
 - Potential invasiveness behaviour of exotic species.
 - Environmental impact of the chemical pesticides and fertilisers used.
- 10.8.3 Monitoring of socio-economic impacts covers the communities within or adjacent to the plantation and directly affected by the operation. Specific attention is paid to user and access rights and distribution of benefits associated with the plantation.
- 10.9 Plantations established in areas converted from natural forest after November 1994 normally shall not qualify for certification. Certification may be allowed in circumstances where sufficient evidence is submitted to the certification body that the manager/owner is not responsible, directly or indirectly, for such conversion.**
- 10.9.1 Date of plantation establishment, former vegetative cover, and who was responsible for any conversion of forest to non-forest or plantation.*

- 10.10 All ownership and use rights pertaining to the land on which the plantation is located, and the trees located on the land, shall be clearly defined, documented and legally established. Furthermore, the economic benefits and responsibilities of the landholders, forest developers, and other stakeholders involved in the plantation shall be clearly defined, documented, and legally established.**
- 10.10.1 Prior local rights of ownership, use and access are protected, or have been compensated with the full informed agreement of the rightful representatives of all parties that previously enjoyed such rights.
- 10.10.2 Documentation of agreements in relation to responsibilities and benefits associated with the plantation.

Glossary

Words in this document are used as defined in most standard English language dictionaries. The precise meaning and interpretation of certain phrases should be decided in the local context by forest managers and certifiers.

In this document, the words below are understood as follows:

Biological diversity: The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part; this includes diversity within species, between species and of ecosystems (see the Convention on Biological Diversity, 1992).

Biological diversity values: The intrinsic, ecological, genetical, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components (see the Convention on Biological Diversity, 1992).

Biological control agents: Living organisms used to eliminate or regulate the population of other living organisms.

Chain of custody: The channel through which products are distributed from their origin in the forest to their end-use.

Chemicals: The range of fertilizers, insecticides, fungicides and hormones, which are used in forest management operations.

Conservation science: Includes the fields of conservation biology or studies of the dynamics of diversity, scarcity and extinction, biogeography or the study of the geographic distribution of organisms, and nature conservation or the study and practice of protecting in perpetuity the ecological and genetic diversity of the earth.

Criterion (pl. Criteria): A means of judging whether or not a Principle has been fulfilled.

Customary rights: Rights, which result from a long series of habitual or customary actions, constantly repeated, which have, by such repetition and by uninterrupted acquiescence, acquired the force of a law within a geographical or sociological unit.

Customary uses: Traditional uses of the forest resources to satisfy local needs following from the accepted culture and tradition of the landholder groups exercising customary rights over the area.

Ecosystem: A community of all plant and animals and their physical environment, functioning together as an interdependent unit.

Endangered species: Any species, which is in danger of extinction throughout all, or a significant portion of its range.

Environmental impacts: Any changes in the natural environment (which includes both the physical area and anything living within it).

Exotic species: An introduced species not native or endemic to the area in question.

Forest integrity: The composition, dynamics, functions and structural attributes of a natural forest.

Forest manager: The people responsible for the operational management of the forest resource and of the enterprise, as well as the management system and structure, and the planning and field operations.

Forest management: The operational management of the forest resource and of the enterprise, as well as the management system and structure, and the planning and field operations.

Forest management area: The physical area in which forest management operations take place and including areas that are not necessarily forest.

Free and informed consent: Consent to the understood terms of an agreement, written in a language understood by the landholders, through an informed decision, after receiving advice from an independent, self-chosen lawyer. The decision should be made at the clan level, through discussion and agreement in meetings of all clan members, held at the community, and should not be the result of misrepresentation or undue pressure.

Genetically modified organisms: Biological organisms that have been induced by various means to consist of genetic structural changes.

Geophysical: The earth's physical properties and the physical processes acting upon, above and within the earth

Genuine dispute: A real and serious dispute recognised as such at the village level, involving a second party consisting of a group at least at sub-clan level.

Indigenous lands and territories: The total environment of the lands, air, water, sea, sea-ice, flora and fauna, and other resources which indigenous peoples have traditionally owned or otherwise occupied or used. (Draft Declaration of the Rights of Indigenous Peoples: Part VI)

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

High Conservation Value Forests: Those forests that possess one or more of the following attributes:

- i. forest areas containing globally, regionally or nationally significant;
 - concentrations of bio-diversity values (e.g. endemism, endangered species, refugia)
 - 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
- ii. forest areas that are in or contain rare, threatened or endangered ecosystems
- iii. forest areas that provide basic services of nature in critical situations (e.g. watershed protection, erosion control)
- iv. forest areas fundamental to meeting basic needs of local communities (e.g. subsistence, health) and/or critical to local communities' traditional cultural identity (areas of cultural, ecological, economic or religious significance identified in cooperation with such local communities).

High grading: The process of selectively cutting or harvesting high value or premium grade tree species at a rate above their natural distribution within the forest area

Incorporated Land Group: Land group as incorporated under the Land Groups Incorporation Act (1974)

Indicator: Any variable or component that is used to show compliance with the Principles and Criteria

Landholder: Person with customary rights to use or occupy an area of land

Land title: A certificate of title, being leasehold or freehold, issued under the Lands Registration Act (1974).

Landscape: A geographical mosaic composed of interacting ecosystems resulting from the influence of geological, topographical, soil, climatic, biotic and human interactions in a given area.

Large scale operation: any forest management operation harvesting more than 5000m³ of round logs in any 12 month period.

Logging Code of Practice (LCOP): Papua New Guinea Logging of Practice, PNG Forest Authority, April 1996.

Local laws: Includes all legal norms given by organisms of government whose jurisdiction is less than the national level, such as departmental, municipal and customary norms.

Long term: The time scale of the forest owner or manager as manifested by the objectives of the management plan, the rate of harvesting, and the commitment to maintain permanent forest cover. The length of time involved will vary according to the context and ecological conditions, and will be a function of how long it takes a given ecosystem to recover its natural structure and composition following harvesting or disturbance, or to produce mature or primary conditions.

Low intensity operation:

- a) the rate of harvesting is less than 20% of the mean annual increment (MAI) within the total production forest area of the unit, AND
- b) EITHER the annual harvest from the total production forest area is less than 5000 cubic metres,
- c) OR the average annual harvest from the total production forest is less than 5000 m³ / year during the period of validity of the certificate as verified by harvest reports and surveillance audits.

Forest management units from which non-timber forest products (NTFPs) are collected or harvested shall be evaluated as 'low intensity' on the basis of the timber harvest rate.

A forest management unit consisting of natural forest in which only NTFPs are harvested would, therefore, qualify as a 'low intensity' FMU.

Plantations of non-timber forest products (e.g. oil palm plantations, cocoa plantations) shall not be considered low intensity forest management units within the meaning of this standard.

Medium scale operation: any forest management operation harvesting between 1000 and 5000m³ of round logs in any 12 month period, and which does not qualify as a SLIMF low intensity operation.

Native species: A species that occurs naturally in the region; endemic to the area.

Natural cycles: Nutrient and mineral cycling as a result of interactions between soils, water, plants and animals in forest environments that affect the ecological productivity of a given site.

Natural forest: Forest areas where many of the principal characteristics and key elements of native ecosystems such as complexity, structure and diversity are present.

Non-timber forest products: All forest products except timber, including other materials obtained from trees such as resins and leaves, as well as any other plant and animal products.

Other forest types: Forest areas that do not fit the criteria for plantation or natural forests and which are defined more specifically by FSC-approved national and regional standards of forest stewardship.

Plantation: Forest areas lacking most of the principle characteristics and key elements of native ecosystems, which result from the human activities of either planting, sowing or intensive silvicultural treatments.

Precautionary approach: Tool for the implementation of the precautionary principle.

Principle: An essential rule or element.

Rights-holder: Holder of land tenure and/or use rights.

Silviculture: The art of producing and tending a forest by manipulating its establishment, composition and growth to best fulfill the objectives of the owner. This may, or may not, include timber production.

Small scale operation: any forest management operation harvesting up to 1000m³ of round logs in any 12 month period.

Succession: Progressive changes in species composition and forest community structure caused by natural processes (non-human) over time.

Tenure: Socially defined agreements held by individuals or groups, recognised by legal statutes or customary practice, regarding the "bundle of rights and duties" of ownership, holding, access and/or usage of a particular land unit or the associated resources there within (such as individual trees, plant species, water, minerals, etc).

Threatened species: Any species which is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Timber authority: A timber authority as defined in and granted under the PNG Forestry Acts

Use rights: Rights for the use of forest resources that can be defined by local custom, mutual agreements, or prescribed by other entities holding access rights. These rights may restrict the use of particular resources to specific levels of consumption or particular harvesting techniques.

Verifier: Data or information that enhances the specificity or the ease of assessment of an indicator.

Annex 1. List of relevant legislation, international agreements and other mentioned documents

National legislation

- Companies Act
- Conservation Areas Act
- Employment Act and Regulations
- Environmental Contaminants Act
- Environmental Planning Act
- Forestry Act 1991
- Forestry (Amended) Act 1993
- Forestry (Amended) Act 1996
- Forestry (Amended) Act 2000
- Forestry Regulations 1998
- Forestry (Amended) Regulations 2000
- Industrial Organizations Act and Regulations
- Industrial Relations Act and Regulations
- Industrial Safety, Health and Welfare Act and Regulations
- Land Dispute Settlement Act
- Land Groups Incorporation Act
- Logging Code Of Practice 1996
- Planning, Monitoring and Control Procedures for Natural Forest Logging Operations under Timber Permit November 1995
- Procedures for Assessing Post-Logging Waste Within a Set-up, May 1996
- Procedures for Exporting Logs April 1996
- Procedures for the Identification, Scaling and Reporting (including Royalty Self-Assessment) on Logs Harvested from Natural Forest Logging Operations since September 1996
- Public Health Act
- Water Resources Act
- Worker's Compensation Act and Regulations

International agreements

- CITES
- Convention on Biological Diversity
- ILO conventions
- International Timber Trade Agreement

Other mentioned documents

- Fragile forest types (Report & map; DEC)
- HCVF Toolkit for PNG
- Threatened endemic species list (DEC)