

Lao People's Democratic Republic
Peace Independence Democracy Unity Prosperity

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Ministry of Agriculture and Forestry

No. 0112/MAF

Vientiane Capital, date: 25 Nov. 2008

**Regulation
regarding the logging and post logging cleaning
in the reservoir area of a hydropower dam**

- Pursuant to the Forest Law No. 06/NA, dated on 24 November 2007;
- Pursuant to the Prime Minister's Decree No.148/PM, dated on 10 May 2007, regarding the Organization and Functions of MAF;
- Pursuant to the Prime Minister's Instruction Order No.17/PM, dated on 22 September 2008, regarding the Enhancement of stricter forest management, forest preservation and coordination in forest and timber business management;
- Pursuant to MAF Regulation No. 0221/MAF, dated on 13 October 2000, regarding the harvest of timber and forest products.

The Minister of Agriculture and Forestry issues the regulation as follows:

CHAPTER I

General principles

Article 1. Purpose

To ensure that logging, collection of NTFP and management of wildlife and aquatic animals in the reservoir area at the level susceptible to a flood are undertaken in accordance with the prescribed technical requirements and, under vigilant management and monitoring of timber and NTFP harvest so that it will not invade the areas susceptible to islands and outside of the reservoir area.

To ensure that post logging cleaning of the waste of timber and NTFP harvesting from the allocated area can be undertaken in accordance with technical criteria and create convenient conditions for carrying out the reservoir cleaning on the set time.

To enable logging, NTFP harvesting, wildlife and aquatic animal management, and post logging cleaning in the reservoir generate maximum benefits to the State and population.

Article 2. Explanation of terms

1. **Logging area** means: the area highly susceptible to a flood that is at 5m to 10m under the elevation line above the sea level (masl). In case of large area, it can be divided into several sub-logging areas.
2. **Sub-logging area** means: part of reservoir area susceptible to a flood that is divided into smaller blocks based on geographic particularities and timber volume density.
3. **Logging** means: actions consisting of delineation survey, assessment survey of volume of all tree species with a diameter over 10cm, including logging planning such as: construction of forest road-bridges, log yards, felling trees, cutting logs, hauling logs, piling logs in the yard, measuring, grading, and making log list in the log yard II.
4. **Logging by clear cutting** or briefly called **Clear cutting** in this context means: logging of all tree species with a diameter over 15cm. Clear cutting can be undertaken only in the infrastructure construction sites approved by the government.
5. **Logging by selective cutting** or briefly called **Selective cutting**, in this context means: cutting efficiently some selected trees out of forest area in accordance with the classification survey plan and logging survey plan, or in another word, this is a logging

made in accordance with the classification plan, of which the logging area has been under the pre-logging survey and tree marking survey, that means cutting only the marked trees. Logging by selective cutting or selective cutting can be undertaken only in a classified production forest.

6. **Post logging cleaning** means: arranging branches and other waste parts of the cut trees in the reservoir area so that they would not be obstacles with serious impacts, and to facilitate reservoir bottom cleaning.
7. **Reservoir bottom cleaning** means: reducing the biomass of weeds and non cut trees that exist in the reservoir area as described in the project report and, a specific regulation regarding biomass cleaning will be laid down by the sector concerned.
8. **Reservoir protection zone** means: area surrounding the reservoir starting from its most flooded edge following the reservoir outlines.
9. **Dead water level** means: the lowest water level at which water supply is not possible for generating the electricity.

CHAPTER II

Principles for logging and harvesting NTFP

Section 1

Pre-logging and NTFP harvesting planning

Article 3. Determination of logging area in a reservoir

The determination of logging area in a reservoir is made based on the area susceptible to flood, following the elevation line of above the sea level (masl) in the reservoir, including the areas that would become islands.

Article 4. Survey of the area and assessment of timber volume

Before logging planning, survey for marking the areas susceptible to a flood, areas that would become islands and survey for assessment of standing tree volume in the reservoir area must be conducted, based on the coordination between MAF and project developers, Ministry of Energy and Mining and other parties concerned.

Article 5. Logging planning

Logging and NTFP harvesting planning must follow the following main process:

1. Zoning the area of logging and NTFP harvesting
2. Setting up hauling road network
3. Constructing bridges and under-road (drainage) pipes
4. Log yards
5. Road for transporting logs and NTFP
6. Logging camp
7. Measures for preventing fires
8. Historical and archeological sites found
9. Wildlife and aquatic animal

Article 6. Approval of the plan

Logging and NTFP harvesting plan and post logging cleaning plan, budget and manpower requirement plan need to be officially approved by the team responsible for the management of logging and reservoir cleaning through the application of the team responsible for field logging management.

Section 2

Pre-logging preparations

Article 7. Preparations

Preparations before undertaking logging and NTFP harvesting must have the following basic factors:

1. Mapping the logging area and sub-logging areas, including the areas subject to become islands, together with marking the areas and elevation lines (masl) of maximum flood on the map with scale 1:50 000 and 1:10 000.
2. Making a network of log hauling roads, transporting road and log yards must be in accordance with the prescribed technical requirements. Log yards and camps must be sufficiently far from the reservoir area to avoid negative impacts to water users in the down stream.
3. Defining needed labor, equipment and machinery plan for logging and waste cleaning appropriately with the concrete works.
4. Defining approaches and methods of logging wastes such as: branches, small trees, bamboo by burning them, removing them to other places or using them for other useful purposes.
5. The Team responsible for field management needs to discuss with the logging units, local authorities and other parties concerned to get a joint agreement for the implementation of the approved logging and NTFP harvesting and reservoir cleaning plan;
6. Demarcating adjacent zones or buffer zones nearby the reservoir or basin to be the habitat of wildlife escaped from the flooded areas.

Article 8. Construction of forest roads

The construction of logging and log and NTFP transporting roads must follow the following main principles:

1. Forest road and log yard construction plan must be included in the logging and NTFP harvesting plan and drawn on the map of each logging area.
2. The determination of log hauling and transporting roads must take into consideration the socio-economic and environmental factors in the reservoir or basin area; planning for using the existing roads must be firstly made; in the area where any road exists, planning for making new roads will be allowed and the concrete construction work can be only carried out during the dry season.
3. Opening the primary road strips by digging, covering the road by soil must be limited as much as possible.
4. The construction of log hauling, transporting roads and bridges over streams must be limited to a reasonable quantity, and constructing the road in the area of high slopes must be avoided to save the investment fund, to reduce the production costs, to prevent soil erosion and protect environment, as well as to ensure the safety of road users.
5. Before allowing the use of log hauling and transporting roads, inspection of their standards as stated in the contract must be undertaken to ensure that they can be used for logging operations to achieve successfully the targets set by the plan. During the using period, checking, repair and maintenance of these roads are needed.

Article 9. Construction of bridges or drainage canals along the log hauling road

The construction of bridges or drainages along the log hauling or transporting roads must follow the following main principles:

1. The log hauling or transporting roads which have to pass over stream with flowing water all year round need temporary, but sufficiently strong bridges to ensure the safety of road users. The types of bridges depend on stream conditions and must be specified in detail in the logging plan.

2. The construction of bridges must go together with a soil erosion protection strip.
3. The construction of bridges must be perpendicular with the stream to minimize the impacts resulted from the construction.
4. Drainage canals or under road water pipes used as bridges must have suitable sizes considering the water flows in the rainy season. The drainage canals or under road water pipes must have the protection strip to reduce soil erosion.
5. During the using period, checking, repair and maintenance of these roads are needed.

Article 10. Construction of logging camps

The construction of a logging camp must follow the following main principles:

1. Selecting appropriate sites that are not too far from the logging area, having sufficiently large area for building dormitories, kitchen, place for keeping wastes, making drainage, warehouse for logging equipment and space for parking vehicle and machinery.
2. Having sufficient drinking water and domestic water (for drinking water, it is recommended to use plastic or stainless tanks) in appropriate containers which can be moved easily. The drinking water tank must have a cover for keeping the cleanliness and, avoiding the mosquito eggs which will result many kinds of sickness.
3. Cleaning the area of at least 20m surrounding the camp to prevent the fire and disease spreading.

Article 11. Construction of the log yard

Construction of a log yard must follow the following main principles:

1. The construction of log yard must be appropriate for logging and cleaning machinery and equipment. The terrain must be flat or with gentle slope to avoid ground leveling that would cause soil erosion sliding down to the lower areas or streams, to make the enter and exit of vehicle safe and convenient in piling logs.
2. It should not be an area of high investment in opening, leveling and, of few big trees. The log yard must be at least 50m far from the main road; it is not allowed to use road shoulders, reserved zone of the road to make the log yard and the place for lifting the logs. The size of a log yard depends on the quantity and volume of timber in the logging area.
3. It must be easily accessible in both dry season and rainy season and far from the river or stream to prevent the pollution of stream, underground water and sedimentation. In case of necessity to make the log yard near the stream, it should be at least 30m far from the river/stream based on concrete conditions of the river or stream. It is strictly prohibited to make a log yard near the river/stream or to block the stream or river.
4. **It is needed to undertake after use cleaning of the log yard. Piling logs must be done in good order for the convenience and safety of the forestry staff in charge of measuring the logs, for the daily work of staff and workers of the logging unit. In the case that the log yard is outside of the reservoir area, after-use rehabilitation by forest regeneration and tree planting is needed.**

Article 12. Prevention of forest fire

Forest fire can be occurred in various forms, e.g. making fire for cooking inside the forest, burning and cleaning branches and twigs, throwing the burning cigarettes and burning forest for hunting wildlife, and so on. Thus, in order to prevent forest fire, attention must be given as follows:

1. The fire made for cooking in the camp or, in the place for lunch break must be completely extinguished before moving to another place.
2. Being always aware while smoking cigarettes; it is prohibited to throw the cigarette in flame everywhere.
3. Taking management and preventive measures while burning garbage or wastes for cleaning the reservoir to prevent fire spreading to other places.

4. The camp needs to be equipped with material, equipment and tools necessary for preventing and extinguishing the fire.
5. Making a fire break surrounding the reservoir area at 5m to 10m from the highly flooded zone.
6. In case of forest fire, all people in the nearby places must be leading in promptly extinguishing the fire to break its spreading.

Article 13. Management of wastes and dangerous materials

1. Cleaning and eliminating various wastes for environment protection must be divided into 2 types, such as:
 - 1.1 Wastes of food, plastic waste (plastic bags, drinking bottles, etc.), waste of glass, are the waste things that need to be eliminated by burying them in the earth, at least 50m far from the water sources, and the depth of the hole should not reach the level of underground water.
 - 1.2 The throwing garbage or wastes must be put in a hole covering with a thickness over 30cm of soil. The quantity of covering soil in each time depends on the quantity of waste or garbage.
2. It is not allowed to pour off the used oil on the ground of logging area; it is recommended to keep it and bring it to outside of the reservoir area for elimination or recycle use. In the garage for repairing vehicle, a place for keeping oil needs to be arranged to prevent the oil spreading out or flowing into the river.
3. For the zone of unexploded ordinance (unexploded bombs), it is needed to inform the parties concerned to undertake a clearance.

Article 14. Management of found archeological materials

In the reservoir area, there might be some areas susceptible to a flood where caves, archeological materials, archeological sites and historical traces, including medicinal plants or plants in verge of extinction can be found. If such materials are found, they must be recorded in full details:

1. For archeological materials, it is needed to collect or keep them before informing the relevant parties to undertake the collection and keep them in a safe place.
2. For the archeological sites or historical traces, it is needed to mark the area on the map together with some proofs or photos to inform the relevant sectors for field survey and data collection.
3. For the medicinal plants or plants in verge of extinction, it is needed to collect some samples and immediately inform the relevant agencies.

Article 15. Management of wildlife (and aquatic animal)

In wildlife management planning, it is needed to determine the corridor zone or buffer zone adjacent to the area where logging will be carried out or logging is going on, by setting up the passage tracks for wildlife. This is to provide the chance to them to migrate or escape to other places, meaning that logging should have an alternative of opening the chance to wildlife to avoid or escape from logging areas or flooded areas.

Section 3

Undertaking the logging and post logging cleaning

Article 16. Logging

1. **Logging shall be undertaken under clear cutting system, in area or zone, by cutting all tree species and completely. All cut trees must be completely hauled, together with cleaning branches and twigs in accordance with the conditions as stated in the contract.**
2. Logging in each logging area must be undertaken from the area of lower slope

3. to the area of higher slope, to prevent that the trees in higher places fall down on the trees in the lower places that create consequently the difficulty for hauling the logs and cleaning the branches, as well as to ensure the safety of the tree fellers.

Article 17. NTFP harvesting

NTFP harvesting must be implemented in parallel with logging and cleaning the waste of logging. Harvesting of all NTFP species must be only carried out in the allocated areas.

Article 18. Tree felling

To ensure the volume and quality of the cut trees together with preventing the accident that might happen to the fellers and persons who stay nearby, felling trees must observe the following main technical requirements:

1. Before cutting the tree, it is needed to clean the obstacles around the tree to be cut, especially the vine which ties this tree to another one. In the same time, the place for keeping away when the tree is falling down must be prepared for the safety of the fellers.
2. Determining the falling direction of the cut tree.
3. Felling the tree following the determined direction so that it would not be broken, lacerated, with splinters and so on, in order to maintain the volume and quality the cut tree.
4. Marking the code number of felling groups, sub-logging areas, and tree number.

Article 19. Lump cutting

Lump cutting of each cut tree must ensure maximum benefits, e.g. logs with good quality, big volume as much as possible. To avoid the lump cutting with a loss of some parts of the trunk that will be abandoned in the forest. After lump cutting, it is needed to draw clearly some marks on the diameter of the log, such as: logging zone, logging unit, order number and so on. Forestry technical staff who manage the logging activities in each zone must record number of trees, number of lumps and logging zone in the log list of the log yard I (recording No. of tree, No. of log and logging zone).

Article 20. Log hauling

Log hauling or log transporting must be done on the determined roads to prevent impacts to the environment. All logs must be hauled or transported to the log yard II. Particularly, in the area of high soil erosion, it is recommended to avoid the use of hauling trucks or tractors, but using winch cable is preferable to reduce the length of hauling road as well as to save the costs of hauling road construction.

In case of log hauling in the area with streams or water canals and hauling over these streams or water canals is necessary, it is recommended to choose the shorter road, without high soil erosion and, to pass the points over the rock blocks or solid and sure terrain.

Article 21. Log measuring

Log measuring and grading at the log yard II are the task of forestry technical staff by following the Provision of MAF No.0116/MAF, dated on 17 May 2007 regarding Principles for measuring and grading logs, stumps and swelling part of the trunk.

Article 22. Marking the end diameter of the log

Marking the end diameter of the log is to mark clearly the code numbers on the end diameter of each log including: diameter size, length (in cm), No. of the log, and logging area, and the forestry stamp hammer is authorized by forestry technical staff only for log marking in a specific logging area.

Article 23. Log transporting

The transport of logs from the log yard II to the log yard III or the ground of

wood processing factory must ensure the safety and follow the regulation regarding the removal of logs and other related regulations.

Article 24. Post logging cleaning

Cleaning must be undertaken simultaneously with logging and NTFP harvesting in each of logging areas by cutting branches and twigs and other waste parts of the felled tree in small pieces so that they would not become obstacles for cleaning the reservoir bottom.

CHAPTER III

Organizational system and budget

Section 1

Setting up the committee responsible for logging management and reservoir cleaning

Article 25. The committee responsible for logging management and reservoir cleaning, together with the field supervision committee are appointed by the Prime Minister through the application of MAF. The committee is leaded by the Deputy Minister of MAF who is seconded by the Vice provincial governor as standing member. Other members are representatives from ministries, agencies equivalent to ministries, concerned sectors at provincial and district levels.

Article 26. Setting up the field technical team

The Chairman of the committee responsible for logging management and reservoir cleaning decides and appoints the field technical team to manage the logging and reservoir cleaning which is consisting of technical staff from PAFO, Deputy Head of provincial Forestry Section, Provincial Finance Department, Provincial Industry and Commerce, concerned DAFO and some technical staff for assisting the field works.

Article 27. Rights, duties and roles of the overall supervision committee

1. Being government representatives to guide the implementation starting from conducting survey, marking the area by staking the poles, logging and cleaning planning, setting approaches for selling timber and NTFP, managing income and transferring it into the national treasury, managing wildlife (and aquatic animal), monitoring the implementation so that it will be efficient and successfully achieve the set targets.
2. Guiding the field team and persons who get the logging rights so that they undertake the activities in accordance with related regulations, laws and government's decisions.
3. Guiding timber bidding process and making the contract with the bid winner company.
4. Selecting and taking the decision of logging and NTFP harvesting unit; issuing logging and NTFP harvesting, and reservoir area cleaning permits.
5. Making the budget plan for assessment of timber volume in the reservoir area, for staking the poles, logging, cleaning and managing affected wildlife in the reservoir area, and submitting this plan to the government for consideration and approval.
6. Coordinating with the project for using the budget from hydropower construction project in the survey for assessment of timber volume in the reservoir area, marking the flooded areas, and cleaning activities.
7. Setting up the field technical team to carry out concrete works.
8. Reporting periodically the implementation results to the government.

Article 28. Rights, duties and roles of the committee responsible for field implementation

- **Rights, duties and roles of the field supervision team**

1. Coordinating with the parties concerned in managing and monitoring the implementation in terms of technical aspects of logging and NTFP harvesting, reservoir area cleaning; ensuring that the implementation of the plan and contract is completed as scheduled.
2. **Monitoring, supporting the logging units** and reservoir area cleaners in respecting strictly related regulations, laws, technical standards and contract commitments.
3. Giving order to suspend any incorrect action, any offense to the regulations, laws and contract commitments.
4. Monitoring and regularly reporting concrete implementation results in the field to the overall supervision committee.

- **Rights, duties and roles of the field technical team**

- ❖ **Administration unit**

1. Coordinating with all parties concerned
2. Performing administrative works in the field
3. Compiling planning-finance document
4. Managing financial works, accountant, cashier
5. Making monthly summary and expenditure plan
6. Making field implementation summary report to be regularly submitted to higher levels
7. Establishing the liaison contact with local authorities, Electricity Company and other parties concerned.

- ❖ **Logging management unit**

1. **Delineating the logging areas**
2. **Marking the logging areas**
3. **Making the plan for logging and NTFP harvesting, and reservoir area cleaning**
4. **Making annual plan, quarterly plan**
5. **Monitoring, recording daily tree felling list**
6. **Monitoring the application of regulations regarding the management of reservoir**
7. **Managing the construction of roads, bridges, log yards, worker camp in the forest and the removal of facilities**
8. **Managing the uses of roads, log yards and log transport**
9. **Conducting the survey of timber and forest, including wildlife found in the reservoir area**
10. **Providing training on logging and NTFP harvesting and, reservoir area cleaning.**

- ❖ **Income management unit**

1. Managing the implementation of buying-selling (trading) contract
2. Certifying the implementation of contract
3. Making the record on financial calculation in the contract
4. Measuring, making the log list, calculating the log volume, releasing the logs, monitoring the removal of logs, checking at the last check point.

- ❖ **Inspection unit**

1. Inspecting area, compartment, sub-compartment
2. Inspecting the logging and NTFP harvesting, post logging cleaning, wildlife management
3. Inspecting the implementation of contract and codes of practice
4. Certifying the results of the implementation and application of regulations.

Section 2

Budget and obligations of logging performers and cleaners

Article 29. Obligations of logging, NTFP harvesting performers and post logging cleaners

1. To be leading in implementing the contract signed with the government organizations, to strictly observe related laws and regulations
2. To provide cooperation and facilitate the government agencies in managing and monitoring the implementation of contract, the performance of logging and NTFP harvesting, and post logging reservoir area cleaning.

Article 30. Use of budget

1. The government budget can be used for the management of logging and NTFP harvesting, and monitoring of logging waste cleaning, based on concrete works.
2. The budget for timber volume assessment survey in the reservoir area and for demarcating the flooded areas will be supplied by the hydropower construction project
3. The budget for cleaning the biomass in the reservoir area will be supplied by the hydropower construction project
4. The budget for wildlife management, including the costs for removing the wildlife affected by the dam construction will be supplied by the hydropower construction project.

CHAPTER IV

Dissemination of regulations and evaluation

Section 1 Policy dissemination and technical training

Article 31. Dissemination for assimilating related regulations

Policies, plans and regulations regarding the logging and NTFP harvesting, and reservoir area cleaning must be disseminated to public and private sectors concerned, such as: businessmen, logging units, personnel responsible for field implementation, including local people so that they can fully understand, in order to ensure the uniformity of view points, perception and actions.

Article 32. Technical training

Technical staff assigned from each sector to take the responsibility for managing the logging, NTFP harvesting and reservoir area cleaning, such as: forestry, finance, commerce and other parties concerned, including participating local people need to be trained in technical matters related to their respective responsibilities.

Section 2 Monitoring and evaluation

Article 33. Monitoring and inspection

Monitoring, inspecting in each period must be carried out as follows:

- 1) Performing the logging in accordance with the strategic plan and instructions regarding the logging and reservoir area cleaning to ensure that logging and NTFP harvesting are not undertaken outside the allocated areas.
- 2) Measuring, grading and transporting the logs
- 3) Quality of log hauling-transporting vehicle and machinery, and logging equipment
- 4) The uses of log hauling-transporting vehicle and machinery, and logging equipment
- 5) Conditions of log hauling-transporting roads, log yards and logging areas

- 6) The pouring off oil and polluted waste in the reservoir area
- 7) Soil erosion that implies the sedimentation of river and streams
- 8) The height of tree stumps, number of logs and waste timber abandoned in the reservoir area
- 9) Prevention of forest fires.

Article 34. Evaluation

1. Evaluation is to review the results of logging and post logging cleaning performance in the reservoir area compared to the strategic plans and technical instructions regarding logging and reservoir area cleaning.
2. Results of the evaluation must be studied and discussed within the committee responsible for logging and reservoir area cleaning in cooperation with other parties concerned to draw lessons, together with measures to address deficiencies for further improving the operation plan.
3. Evaluation of logging performance needs to be done in 2 phases: **the phase of ongoing operations and the phase of after logging completion in each sub-logging area(post logging phase).**

CHAPTER V

Prohibitions

Article 35. Prohibitions

1. To carry out logging, NTFP harvesting outside the allocated reservoir areas;
2. To carry out logging in the areas susceptible to become islands and areas of critical risk to environment;
3. To throw the waste in the river, stream and forest without proper arrangement;
4. To harvest tree stumps in the areas with a slope over 26 degrees;
5. To undertake log hauling during the heavy rain, soil becomes muddy; log hauling machinery moves outside the roads as defined in the logging plan;
6. To transport logs on the soil road or non-standardized road during the heavy rain and the soil becomes too muddy;
7. It is strictly prohibited to hunt wildlife and aquatic animal.

CHAPTER VI

Rewards to outstanding persons and measures against offenders

Article 36. Rewards to the outstanding persons

Individuals or organizations that contribute in the management of logging and reservoir area cleaning performance will be duly awarded with commendations and incentives from the government.

Article 37. Measures against offenders

Any individual or organization that violates this regulation will be subject of measures as stated in the Forest Law and other government laws.

CHAPTER VII

Final provisions

Article 38. Implementation

All ministries, agencies equivalent to ministries, provinces, Capital city, all

economic entities including individuals, juristic persons and organizations must be informed and strictly implement this regulation.

Article 39. Effectiveness

This regulation becomes effective and enforced from the signing date.

For the Minister,
Ministry of Agriculture and Forestry

(signed and stamped)

Sitaheng RASPHON