Food and Agriculture Organization of the United Nations

Global Forest Resources Assessment 2020

Report

Lao People's Democratic Republic

Rome, 2020

FAO has been monitoring the world's forests at 5 to 10 year intervals since 1946. The Global Forest Resources Assessments (FRA) are now produced every five years in an attempt to provide a consistent approach to describing the world's forests and how they are changing. The FRA is a country-driven process and the assessments are based on reports prepared by officially nominated National Correspondents. If a report is not available, the FRA Secretariat prepares a desk study using earlier reports, existing information and/or remote sensing based analysis.

TABLE OF CONTENTS

Introduction

Report preparation and contact persons

The present report was prepared by the following person(s)

Name	Role	Email	Tables
Khamkhong Inthavong	Collaborator	KKFIPD@gmail.com	All
Somphavy Keoka	Collaborator	somphavy.keoka@gmail.com	All
Soukanh Bounthabandid	National correspondent	soukanh09@gmail.com	All
Yuta MORIKAWA	Collaborator	yuta_morikawa@kk-grp.jp	All

Introductory text

The data use of this report base on the forest Cover data from satellite for the year 2000, 2005, 2010 and 2015 ; and the second National Forest Inventory data on the year 2016-2017 to be used for FREL, to ensure that in order to be compatible, the FRA2020 report uses the same information. This information is from the Forest Inventory and Planning Division, Department of Forestry, Ministry of Agriculture and Forestry.

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National data

Data sources

2000	**References**	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC
	Methods used	Full-cover forest/vegetation maps
	Additional comments	Developed base on 2000 Landsat image

2005	**References**	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC
	Methods used	Full-cover forest/vegetation maps
	Additional comments	Map was developed base on Spot 5 image

2010	**References**	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC
	Methods used	Full-cover forest/vegetation maps
	Additional comments	Developed base on 2010 Rapid Eye image

2015	**References**	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC
	Methods used	Full-cover forest/vegetation maps
	Additional comments	Developed base on 2015 Rapid Eye image

Classifications and definitions

2000	**National class**	**Definition**
	Evergreen Forest	Defined as a multi storey forest consisting of more than 50% trees of evergreen species. Most of the trees have long and cylindrical boles, many of them with a big buttress. Usually, the height of the trees of the upper storey is more than 30 m. The dense second storey prevents most of the light from reaching the ground floor. Another typical characteristic of this forest type are climbers and lichen on the tree stems. Bamboo is usually not found except when the canopy has been opened.
	Mixed Deciduous Forest	Defined as the deciduous tree species represent more than 50% of the stand. The forest storeys are not as dense as those of evergreen types and most of the seedlings and saplings are deciduous trees. Most often bamboo occurs in this type of forest.
	Coniferous Forest	

	Defined as the Coniferous Forest is usually with single storied and open but the young growth may sometimes form a dense second storey. This forest type occurs in higher elevations and cold weather. The forest consist of pines (Pinus kesiya or Pinus merkusii), Mai hinghom(Keteleeria davidiana BEISSN) and Mai Longleng (Cunninghmia sinensis).
Mixed Coniferous and Broadleaved Forest	Defined as the coniferous trees could be mixed with either deciduous or evergreen trees. In general, the Mixed Coniferous Forest is a transition type between the coniferous and the broadleaved forest types. It is also found in higher elevations.
Dry Dipterocarp Forest	Defined as the Dry Dipterocarp Forest occurs in open stands. The tree diameter is comparably small and the height of the stand varies from 8 to 25 m. The crowns do not spread out widely. This type of forest is normally found in places with shallow soil, where the hard pan emerges above the ground, and on laterized soil. The forest consists of Many species being characteristically as fire resistant and have a thick bark such as: Mai Sabeng (Dipterocarpus intricatus), Mai Chick (Shorea obtusa), Mai Sat (Dipterocarpus obtusifolius), Mai Suak (Terminalia tomen-tosa) , Mai Hang (Shorea siamensis), Mai Khoung (Dipterocarpus tuberculatus ROXB).
Forest Plantation	Defined as all planted tree which is the same or various species mixed together, with the same age, height and spacing. All plantations (including young ones with a crown density less than 20 %, and DBH less than 10 cm.) should be classified as Forest Plantations.
Bamboo	Defined as the area covered with bamboo more than 80%. Abandoned upland crop is often recovered by bamboo. Bamboo brakes may vary in height from 2 m to 25 m depending on their species.
Regenerating Vegetation	Defined as the previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance, If the area is left to grow undisturbed it will become forest again.
Savannah	Defined as an area where the soil conditions are unsuitable for tree growth as well as agriculture production. The tree cover in the Savannah should be at least 1% but less than 20%. The trees are drought resistant and mostly short with graminaceous and herbaceous plants forming an under storey. Mostly found in plain areas.
Scrub	Defined as an area covered with scrub and stunted trees. The soil is shallow and rocky. Inaccessible parts of lime stone formations covered with scrub and stunted trees should be classified as Scrub.
Grassland	Defined as the area that has been covered by grass, on which no trees or shrubs grow.
Wetland	Defined as areas where the soil is saturated with water all around the year. The soil may basically be fertile but the least lack of oxygen limits its agriculture or forest-production capacity. The wetland could have a high ecological or environmental value and rich of bio-diversities.
Upland Crop	Defined as an area where the forest has been cut and burnt for temporary cultivation of rice and other crops. Area that have been abandoned for more than 2 years should be classified as Regenerating Vegetation.
Rice Paddy	Defined as an area permanently being used for rice cultivation. Old paddy that has been abandoned for more than one year should not be classified as Rice Paddy.
Other Agriculture	Defined as the agricultural land being used for production of other crops than rice and agriculture plantation, i.e. various kinds of vegetables such as sugarcane, millet, cotton, and etc.
Agriculture Plantation	Defined as areas of agricultural land being used for fruit tree cultivation example: mango tree, longans tree, etc. Plantations with cash crops, which is the perennial crop for example: tea, cacao, and coffee also refer to this land use class.
Urban	Defined as all areas being used for permanent settlements such as villages, towns, public gardens, industrial zone, and human settlements of any size.

	Other Land	Defined as the bare land, rock, and all land that not fall into any of the other six categories such as: current forest, Potential forest, other vegetated area, cropland and settlement, and above ground water source. Road, temple, cemeteries and some historical and cultural sites.
	Barren Land and Rock	Defined as the area which neither trees nor grasses can grow, shallow soil and rocky areas.
	Settlement	Defined as all developed land such as transportation, irrigation, hydropower plan, and electric line network.
	Above ground Water Source	Defined as water sources above the surface of the ground, e.g.: rivers, small waterways tributaries, ponds, canals, swamps, bogs, and springs
	River	Defined as the river and small waterways should be at least 10m wide. In other cases, it should be joined to adjacent land use class.

2005	**National class**	**Definition**
	Other Land	Defined as the road, temple, cemeteries and some historical and cultural sites.
	Barren Land and Rock	Defined as the area which neither trees nor grasses can grow, shallow soil and rocky areas.
	Evergreen Forest	Defined as a multi storey forest consisting of more than 50% trees of evergreen species. Most of the trees have long ad cylindrical boles, many of them with a big buttress. Usually, the height of the trees of the upper storey is more than 30 m. The dense second storey prevents most of the light from reaching the ground floor. Another typical characteristic of this forest type are climbers and lichen on the tree stems. Bamboo is usually not found except when the canopy has been opened.
	Mixed Deciduous Forest	Defined as the deciduous tree species represent more than 50% of the stand. The forest storeys are not as dense as those of evergreen types and most of the seedlings and saplings are deciduous trees. Most often bamboo occurs in this type of forest.
	Coniferous Forest	Defined as the Coniferous Forest is usually with single storied and open but the young growth may sometimes form a dense second storey. This forest type occurs in higher elevations and cold weather. The forest consist of pines (Pinus kesiya or Pinus merkusii), Mai hinghom(Keteleeria davidiana BEISSN) and Mai Longleng (Cunninghmia sinensis).
	Mixed Coniferous and Broadleaved Forest	Defined as the coniferous trees could be mixed with either deciduous or evergreen trees. In general, the Mixed Coniferous Forest is a transition type between the coniferous and the broadleaved forest types. It is also found in higher elevations.
	Dry Dipterocarp Forest	Defined as the Dry Dipterocarp Forest occurs in open stands. The tree diameter is comparably small and the height of the stand varies from 8 to 25 m. The crowns do not spread out widely. This type of forest is normally found in places with shallow soil, where the hard pan emerges above the ground, and on laterized soil. The forest consists of Many species being characteristically as fire resistant and have a thick bark such as: Mai Sabeng (Dipterocarpus intricatus), Mai Chick (Shorea obtusa), Mai Sat (Dipterocarpus obtusifolius), Mai Suak (Terminalia tomen-tosa) , Mai Hang (Shorea siamensis), Mai Khoung (Dipterocarpus tuberculatus ROXB).
	Forest Plantation	Defined as all planted tree which is the same or various species mixed together, with the same age, height and spacing. All plantations (including young ones with a crown density less than 20 %, and DBH less than 10 cm.) should be classified as Forest Plantations.
	Bamboo	Defined as the area covered with bamboo more than 80%. Abandoned upland crop is often recovered by bamboo. Bamboo brakes may vary in height from 2 m to 25 m depending on their species.
	Regenerating Vegetation	

		Defined as the previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance, If the area is left to grow undisturbed it will become forest again.
	Savannah	Defined as an area where the soil conditions are unsuitable for tree growth as well as agriculture production. The tree cover in the Savannah should be at least 1% but less than 20%. The trees are drought resistant and mostly short with graminaceous and herbaceous plants forming an under storey. Mostly found in plain areas.
	Scrub	Defined as an area covered with scrub and stunted trees. The soil is shallow and rocky. Inaccessible parts of lime stone formations covered with scrub and stunted trees should be classified as Scrub.
	Grassland	Defined as the area that has been covered by grass, on which no trees or shrubs grow.
	Swamp	Defined as areas where the soil is saturated with water all around the year. The soil may basically be fertile but the least lack of oxygen limits its agriculture or forest-production capacity. The wetland could have a high ecological or environmental value and rich of bio-diversities.
	Upland Crop	Defined as an area where the forest has been cut and burnt for temporary cultivation of rice and other crops. Area that have been abandoned for more than 2 years should be classified as Regenerating Vegetation.
	Rice Paddy	Defined as an area permanently being used for rice cultivation. Old paddy that has been abandoned for more than one year should not be classified as Rice Paddy.
	Other Agriculture	Defined as the agricultural land being used for production of other crops than rice and agriculture plantation, i.e. various kinds of vegetables such as sugarcane, millet, cotton, and etc.
	Agriculture Plantation	Defined as areas of agricultural land being used for fruit tree cultivation example: mango tree, longans tree, etc. Plantations with cash crops, which is the perennial crop for example: tea, cacao, and coffee also refer to this land use class.
	Urban	Defined as all areas being used for permanent settlements such as villages, towns, public gardens, industrial zone, and human settlements of any size.

2010	**National class**	**Definition**
	Evergreen Forest	Defined as a multi storey forest consisting of more than 50% trees of evergreen species. Most of the trees have long ad cylindrical boles, many of them with a big buttress. Usually, the height of the trees of the upper storey is more than 30 m. The dense second storey prevents most of the light from reaching the ground floor. Another typical characteristic of this forest type are climbers and lichen on the tree stems. Bamboo is usually not found except when the canopy has been opened.
	Mixed Deciduous Forest	Defined as the deciduous tree species represent more than 50% of the stand. The forest storeys are not as dense as those of evergreen types and most of the seedlings and saplings are deciduous trees. Most often bamboo occurs in this type of forest.
	Coniferous Forest	

	Defined as the Coniferous Forest is usually with single storied and open but the young growth may sometimes form a dense second storey. This forest type occurs in higher elevations and cold weather. The forest consist of pines (Pinus kesiya or Pinus merkusii), Mai hinghom(Keteleeria davidiana BEISSN) and Mai Longleng (Cunninghmia sinensis).
Mixed Coniferous and Broadleaved Forest	Defined as the coniferous trees could be mixed with either deciduous or evergreen trees. In general, the Mixed Coniferous Forest is a transition type between the coniferous and the broadleaved forest types. It is also found in higher elevations.
Dry Dipterocarp Forest	Defined as the Dry Dipterocarp Forest occurs in open stands. The tree diameter is comparably small and the height of the stand varies from 8 to 25 m. The crowns do not spread out widely. This type of forest is normally found in places with shallow soil, where the hard pan emerges above the ground, and on laterized soil. The forest consists of Many species being characteristically as fire resistant and have a thick bark such as: Mai Sabeng (Dipterocarpus intricatus), Mai Chick (Shorea obtusa), Mai Sat (Dipterocarpus obtusifolius), Mai Suak (Terminalia tomen-tosa) , Mai Hang (Shorea siamensis), Mai Khoung (Dipterocarpus tuberculatus ROXB).
Forest Plantation	Defined as all planted tree which is the same or various species mixed together, with the same age, height and spacing. All plantations (including young ones with a crown density less than 20 %, and DBH less than 10 cm.) should be classified as Forest Plantations.
Bamboo	Defined as the area covered with bamboo more than 80%. Abandoned upland crop is often recovered by bamboo. Bamboo brakes may vary in height from 2 m to 25 m depending on their species.
Regenerating Vegetation	Defined as the previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance, If the area is left to grow undisturbed it will become forest again.
Savannah	Defined as an area where the soil conditions are unsuitable for tree growth as well as agriculture production. The tree cover in the Savannah should be at least 1% but less than 20%. The trees are drought resistant and mostly short with graminaceous and herbaceous plants forming an under storey. Mostly found in plain areas.
Scrub	Defined as an area covered with scrub and stunted trees. The soil is shallow and rocky. Inaccessible parts of lime stone formations covered with scrub and stunted trees should be classified as Scrub.
Grassland	Defined as the area that has been covered by grass, on which no trees or shrubs grow.

	Swamp	Defined as areas where the soil is saturated with water all around the year. The soil may basically be fertile but the least lack of oxygen limits its agriculture or forest-production capacity. The wetland could have a high ecological or environmental value and rich of bio-diversities.
	Upland Crop	Defined as an area where the forest has been cut and burnt for temporary cultivation of rice and other crops. Area that have been abandoned for more than 2 years should be classified as Regenerating Vegetation.
	Rice Paddy	Defined as an area permanently being used for rice cultivation. Old paddy that has been abandoned for more than one year should not be classified as Rice Paddy.
	Other Agriculture	Defined as the agricultural land being used for production of other crops than rice and agriculture plantation, i.e. various kinds of vegetables such as sugarcane, millet, cotton, and etc.
	Agriculture Plantation	Defined as areas of agricultural land being used for fruit tree cultivation example: mango tree, longans tree, etc. Plantations with cash crops, which is the perennial crop for example: tea, cacao, and coffee also refer to this land use class.
	Urban	Defined as all areas being used for permanent settlements such as villages, towns, public gardens, industrial zone, and human settlements of any size.
	Other Land	Defined as the road, temple, cemeteries and some historical and cultural sites.
	Barren Land and Rock	Defined as the area which neither trees nor grasses can grow, shallow soil and rocky areas.

2015	**National class**	**Definition**
	Dry Dipterocarp Forest	Defined as the Dry Dipterocarp Forest occurs in open stands. The tree diameter is comparably small and the height of the stand varies from 8 to 25 m. The crowns do not spread out widely. This type of forest is normally found in places with shallow soil, where the hard pan emerges above the ground, and on laterized soil. The forest consists of Many species being characteristically as fire resistant and have a thick bark such as: Mai Sabeng (Dipterocarpus intricatus), Mai Chick (Shorea obtusa), Mai Sat (Dipterocarpus obtusifolius), Mai Suak (Terminalia tomen-tosa) , Mai Hang (Shorea siamensis), Mai Khoung (Dipterocarpus tuberculatus ROXB).
	Forest Plantation	Defined as all planted tree which is the same or various species mixed together, with the same age, height and spacing. All plantations (including young ones with a crown density less than 20 %, and DBH less than 10 cm.) should be classified as Forest Plantations.
	Bamboo	Defined as the area covered with bamboo more than 80%. Abandoned upland crop is often recovered by bamboo. Bamboo brakes may vary in height from 2 m to 25 m depending on their species.
	Regenerating Vegetation	

	Defined as the previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance, If the area is left to grow undisturbed it will become forest again.
Savannah	Defined as an area where the soil conditions are unsuitable for tree growth as well as agriculture production. The tree cover in the Savannah should be at least 1% but less than 20%. The trees are drought resistant and mostly short with graminaceous and herbaceous plants forming an under storey. Mostly found in plain areas.
Scrub	Defined as an area covered with scrub and stunted trees. The soil is shallow and rocky. Inaccessible parts of lime stone formations covered with scrub and stunted trees should be classified as Scrub.
Grassland	Defined as the area that has been covered by grass, on which no trees or shrubs grow.
Swamp	Defined as areas where the soil is saturated with water all around the year. The soil may basically be fertile but the least lack of oxygen limits its agriculture or forest-production capacity. The wetland could have a high ecological or environmental value and rich of bio-diversities.
Upland Crop	Defined as an area where the forest has been cut and burnt for temporary cultivation of rice and other crops. Area that have been abandoned for more than 2 years should be classified as Regenerating Vegetation.
Rice Paddy	Defined as an area permanently being used for rice cultivation. Old paddy that has been abandoned for more than one year should not be classified as Rice Paddy.
Other Agriculture	Defined as the agricultural land being used for production of other crops than rice and agriculture plantation, i.e. various kinds of vegetables such as sugarcane, millet, cotton, and etc.
Agriculture Plantation	Defined as areas of agricultural land being used for fruit tree cultivation example: mango tree, longans tree, etc. Plantations with cash crops, which is the perennial crop for example: tea, cacao, and coffee also refer to this land use class.
Urban	Defined as all areas being used for permanent settlements such as villages, towns, public gardens, industrial zone, and human settlements of any size.
Other Land	Defined as the road, temple, cemeteries and some historical and cultural sites.
Barren Land and Rock	Defined as the area which neither trees nor grasses can grow, shallow soil and rocky areas.
Evergreen Forest	Defined as a multi storey forest consisting of more than 50% trees of evergreen species. Most of the trees have long ad cylindrical boles, many of them with a big buttress. Usually, the height of the trees of the upper storey is more than 30 m. The dense second storey prevents most of the light from reaching the ground floor. Another typical characteristic of this forest type are climbers and lichen on the tree stems. Bamboo is usually not found except when the canopy has been opened.
Mixed Deciduous Forest	Defined as the deciduous tree species represent more than 50% of the stand. The forest storeys are not as dense as those of evergreen types and most of the seedlings and saplings are deciduous trees. Most often bamboo occurs in this type of forest.
Coniferous Forest	Defined as the Coniferous Forest is usually with single storied and open but the young growth may sometimes form a dense second storey. This forest type occurs in higher elevations and cold weather. The forest consist of pines (Pinus kesiya or Pinus merkusii), Mai hinghom(Keteleeria davidiana BEISSN) and Mai Longleng (Cunninghmia sinensis).
Mixed Coniferous and Broadleaved Forest	Defined as the coniferous trees could be mixed with either deciduous or evergreen trees. In general, the Mixed Coniferous Forest is a transition type between the coniferous and the broadleaved forest types. It is also found in higher elevations.

Original data and reclassification

	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
2000	Evergreen Forest	2 652.00	100.00 %	0.00 %	**0.00 %**
	Mixed Deciduous Forest	9 963.00	100.00 %	0.00 %	**0.00 %**
	Coniferous Forest	137.00	100.00 %	0.00 %	**0.00 %**
	Mixed Coniferous and Broadleaved Forest	144.00	100.00 %	0.00 %	**0.00 %**
	Dry Dipterocarp Forest	1 321.00	100.00 %	0.00 %	**0.00 %**
	Forest Plantation	18.00	100.00 %	0.00 %	**0.00 %**
	Bamboo	66.00	100.00 %	0.00 %	**0.00 %**
	Regenerating Vegetation	6 248.00	50.00 %	0.00 %	**50.00 %**
	Savannah	108.00	0.00 %	100.00 %	**0.00 %**
	Scrub	28.00	0.00 %	100.00 %	**0.00 %**
	Grassland	275.00	0.00 %	0.00 %	**100.00 %**
	Wetland	11.00	0.00 %	0.00 %	**100.00 %**
	Upland Crop	195.00	0.00 %	0.00 %	**100.00 %**
	Rice Paddy	1 173.00	0.00 %	0.00 %	**100.00 %**
	Other Agriculture	419.00	0.00 %	0.00 %	**100.00 %**
	Agriculture Plantation	50.00	0.00 %	0.00 %	**100.00 %**
	Urban	64.00	0.00 %	0.00 %	**100.00 %**
	Other Land	19.00	0.00 %	0.00 %	**100.00 %**
	Barren Land and Rock	189.00	0.00 %	0.00 %	**100.00 %**
	Settlement		%	%	**%**
	Above ground Water Source		%	%	**%**
	River		%	%	**%**
	Total	**23 080.00**	**17 425.00**	**136.00**	**5 519.00**

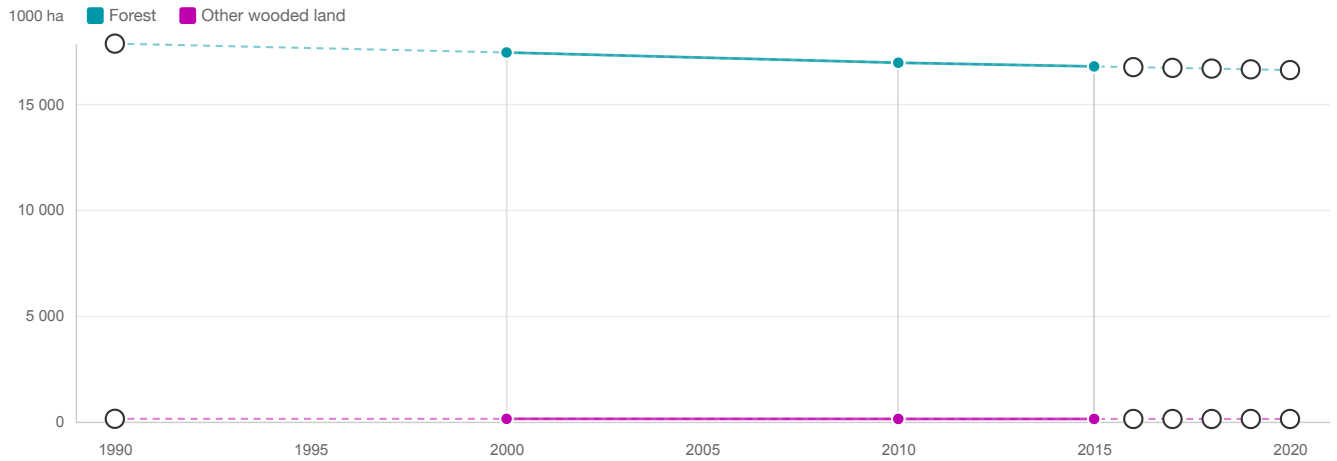
	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
2005	Other Land	18.00	0.00 %	0.00 %	**100.00 %**
	Barren Land and Rock	189.00	0.00 %	0.00 %	**100.00 %**
	Evergreen Forest	2 653.00	100.00 %	0.00 %	**0.00 %**
	Mixed Deciduous Forest	9 814.00	100.00 %	0.00 %	**0.00 %**
	Coniferous Forest	136.00	100.00 %	0.00 %	**0.00 %**
	Mixed Coniferous and Broadleaved Forest	144.00	100.00 %	0.00 %	**0.00 %**
	Dry Dipterocarp Forest	1 289.00	100.00 %	0.00 %	**0.00 %**
	Forest Plantation	24.00	100.00 %	0.00 %	**0.00 %**
	Bamboo	70.00	100.00 %	0.00 %	**0.00 %**
	Regenerating Vegetation	6 172.00	50.00 %	0.00 %	**50.00 %**
	Savannah	107.00	0.00 %	100.00 %	**0.00 %**
	Scrub	28.00	0.00 %	100.00 %	**0.00 %**
	Grassland	273.00	0.00 %	0.00 %	**100.00 %**
	Swamp	11.00	0.00 %	0.00 %	**100.00 %**
	Upland Crop	211.00	0.00 %	0.00 %	**100.00 %**
	Rice Paddy	1 196.00	0.00 %	0.00 %	**100.00 %**
	Other Agriculture	262.00	0.00 %	0.00 %	**100.00 %**
	Agriculture Plantation	53.00	0.00 %	0.00 %	**100.00 %**
	Urban	65.00	0.00 %	0.00 %	**100.00 %**
	Total	**22 715.00**	**17 216.00**	**135.00**	**5 364.00**

2010	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
	Evergreen Forest	2 655.00	100.00 %	0.00 %	**0.00 %**

	Mixed Deciduous Forest	9 641.00	100.00 %	0.00 %	**0.00 %**
	Coniferous Forest	127.00	100.00 %	0.00 %	**0.00 %**
	Mixed Coniferous and Broadleaved Forest	110.00	100.00 %	0.00 %	**0.00 %**
	Dry Dipterocarp Forest	1 235.00	100.00 %	0.00 %	**0.00 %**
	Forest Plantation	112.00	100.00 %	0.00 %	**0.00 %**
	Bamboo	93.00	100.00 %	0.00 %	**0.00 %**
	Regenerating Vegetation	5 935.00	50.00 %	0.00 %	**50.00 %**
	Savannah	105.00	0.00 %	100.00 %	**0.00 %**
	Scrub	27.00	0.00 %	100.00 %	**0.00 %**
	Grassland	260.00	0.00 %	0.00 %	**100.00 %**
	Swamp	10.00	0.00 %	0.00 %	**100.00 %**
	Upland Crop	209.00	0.00 %	0.00 %	**100.00 %**
	Rice Paddy	1 222.00	0.00 %	0.00 %	**100.00 %**
	Other Agriculture	970.00	0.00 %	0.00 %	**100.00 %**
	Agriculture Plantation	83.00	0.00 %	0.00 %	**100.00 %**
	Urban	74.00	0.00 %	0.00 %	**100.00 %**
	Other Land	23.00	0.00 %	0.00 %	**100.00 %**
	Barren Land and Rock	189.00	0.00 %	0.00 %	**100.00 %**
	Total	**23 080.00**	**16 940.50**	**132.00**	**6 007.50**

2015	**Classifications and definitions**		**FRA classes**		
	Class	**Area (1000 ha)**	**Forest**	**Other wooded land**	**Other land**
	Dry Dipterocarp Forest	1 208.00	100.00 %	0.00 %	**0.00 %**
	Forest Plantation	140.00	100.00 %	0.00 %	**0.00 %**
	Bamboo	90.00	100.00 %	0.00 %	**0.00 %**
	Regenerating Vegetation	6 174.00	50.00 %	0.00 %	**50.00 %**

	Savannah	104.00	0.00 %	100.00 %	**0.00 %**
	Scrub	27.00	0.00 %	100.00 %	**0.00 %**
	Grassland	259.00	0.00 %	0.00 %	**100.00 %**
	Swamp	10.00	0.00 %	0.00 %	**100.00 %**
	Upland Crop	153.00	0.00 %	0.00 %	**100.00 %**
	Rice Paddy	1 220.00	0.00 %	0.00 %	**100.00 %**
	Other Agriculture	1 070.00	0.00 %	0.00 %	**100.00 %**
	Agriculture Plantation	85.00	0.00 %	0.00 %	**100.00 %**
	Urban	77.00	0.00 %	0.00 %	**100.00 %**
	Other Land	32.00	0.00 %	0.00 %	**100.00 %**
	Barren Land and Rock	189.00	0.00 %	0.00 %	**100.00 %**
	Evergreen Forest	2 649.00	100.00 %	0.00 %	**0.00 %**
	Mixed Deciduous Forest	9 357.00	100.00 %	0.00 %	**0.00 %**
	Coniferous Forest	127.00	100.00 %	0.00 %	**0.00 %**
	Mixed Coniferous and Broadleaved Forest	110.00	100.00 %	0.00 %	**0.00 %**
	Total	**23 081.00**	**16 768.00**	**131.00**	**6 182.00**


1000 ha
Forest
Other wooded land
15 000
10 000
5 000
0
1990
1995
2000
2005
2010
2015
2020

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	17 843.00	17 425.00	16 940.50	16 768.00	16 733.50	16 699.00	16 664.50	16 630.00	16 595.50
Other wooded land (a)	138.00	136.00	132.00	131.00	130.80	130.60	130.40	130.20	130.00
Other land (c-a-b)	**5 099.00**	**5 519.00**	**6 007.50**	**6 181.00**	**6 215.70**	**6 250.40**	**6 285.10**	**6 319.80**	**6 354.50**
Total land area (c)	**23 080.00**	**23 080.00**	**23 080.00**	**23 080.00**	**23 080.00**	**23 080.00**	**23 080.00**	**23 080.00**	**23 080.00**

The FAOSTAT land area figure for the year 2015 is used for all reference years

Climatic domain	% of forest area 2015	Override value
Boreal	**0.00**	
Temperate	**0.00**	
Sub-tropical	**0.00**	
Tropical	**100.00**	

Comments

The data in 1990 is the data in FRA2015 this data is Calculated from the data of 1992, the data 2000, 2005, 2010, 2015 is data from wall to wall forest cover map is new data that we have now, the data in 2016, 2017, 2018, 2019 and 2020 is calculated by some function of FRA 2020

1b Forest characteristics

National data

Data sources

2000	**References**	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC
	Methods used	Full-cover forest/vegetation maps
	Additional comments	Developed base on 2000 Landsat image

2005	**References**	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC
	Methods used	Full-cover forest/vegetation maps
	Additional comments	Map was developed base on Spot 5 image

2010	**References**	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC
	Methods used	Full-cover forest/vegetation maps
	Additional comments	Developed base on 2010 Rapid Eye image

2015	**References**	Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC
	Methods used	Full-cover forest/vegetation maps
	Additional comments	Developed base on 2015 Rapid Eye image

Classifications and definitions

2000	**National class**	**Definition**
	Evergreen Forest	Defined as a multi storey forest consisting of more than 50% trees of evergreen species. Most of the trees have long and cylindrical boles, many of them with a big buttress. Usually, the height of the trees of the upper storey is more than 30 m. The dense second storey prevents most of the light from reaching the ground floor. Another typical characteristic of this forest type are climbers and lichen on the tree stems. Bamboo is usually not found except when the canopy has been opened.
	Mixed Deciduous Forest	Defined as the deciduous tree species represent more than 50% of the stand. The forest storeys are not as dense as those of evergreen types and most of the seedlings and saplings are deciduous trees. Most often bamboo occurs in this type of forest.
	Coniferous Forest	

	Defined as the Coniferous Forest is usually with single storied and open but the young growth may sometimes form a dense second storey. This forest type occurs in higher elevations and cold weather. The forest consist of pines (Pinus kesiya or Pinus merkusii), Mai hinghom(Keteleeria davidiana BEISSN) and Mai Longleng (Cunninghmia sinensis).
Mixed Coniferous and Broadleaved Forest	Defined as the coniferous trees could be mixed with either deciduous or evergreen trees. In general, the Mixed Coniferous Forest is a transition type between the coniferous and the broadleaved forest types. It is also found in higher elevations.
Dry Dipterocarp Forest	Defined as the Dry Dipterocarp Forest occurs in open stands. The tree diameter is comparably small and the height of the stand varies from 8 to 25 m. The crowns do not spread out widely. This type of forest is normally found in places with shallow soil, where the hard pan emerges above the ground, and on laterized soil. The forest consists of Many species being characteristically as fire resistant and have a thick bark such as: Mai Sabeng (Dipterocarpus intricatus), Mai Chick (Shorea obtusa), Mai Sat (Dipterocarpus obtusifolius), Mai Suak (Terminalia tomen-tosa) , Mai Hang (Shorea siamensis), Mai Khoung (Dipterocarpus tuberculatus ROXB).
Forest Plantation	Defined as all planted tree which is the same or various species mixed together, with the same age, height and spacing. All plantations (including young ones with a crown density less than 20 %, and DBH less than 10 cm.) should be classified as Forest Plantations.
Bamboo	Defined as the area covered with bamboo more than 80%. Abandoned upland crop is often recovered by bamboo. Bamboo brakes may vary in height from 2 m to 25 m depending on their species.
Regenerating Vegetation	Defined as the previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance, If the area is left to grow undisturbed it will become forest again.
Savannah	Defined as an area where the soil conditions are unsuitable for tree growth as well as agriculture production. The tree cover in the Savannah should be at least 1% but less than 20%. The trees are drought resistant and mostly short with graminaceous and herbaceous plants forming an under storey. Mostly found in plain areas.
Scrub	Defined as an area covered with scrub and stunted trees. The soil is shallow and rocky. Inaccessible parts of lime stone formations covered with scrub and stunted trees should be classified as Scrub.
Grassland	Defined as the area that has been covered by grass, on which no trees or shrubs grow.
Wetland	Defined as areas where the soil is saturated with water all around the year. The soil may basically be fertile but the least lack of oxygen limits its agriculture or forest-production capacity. The wetland could have a high ecological or environmental value and rich of bio-diversities.
Upland Crop	Defined as an area where the forest has been cut and burnt for temporary cultivation of rice and other crops. Area that have been abandoned for more than 2 years should be classified as Regenerating Vegetation.
Rice Paddy	Defined as an area permanently being used for rice cultivation. Old paddy that has been abandoned for more than one year should not be classified as Rice Paddy.
Other Agriculture	Defined as the agricultural land being used for production of other crops than rice and agriculture plantation, i.e. various kinds of vegetables such as sugarcane, millet, cotton, and etc.
Agriculture Plantation	Defined as areas of agricultural land being used for fruit tree cultivation example: mango tree, longans tree, etc. Plantations with cash crops, which is the perennial crop for example: tea, cacao, and coffee also refer to this land use class.
Urban	Defined as all areas being used for permanent settlements such as villages, towns, public gardens, industrial zone, and human settlements of any size.

	Other Land	Defined as the bare land, rock, and all land that not fall into any of the other six categories such as: current forest, Potential forest, other vegetated area, cropland and settlement, and above ground water source. Road, temple, cemeteries and some historical and cultural sites.
	Barren Land and Rock	Defined as the area which neither trees nor grasses can grow, shallow soil and rocky areas.
	Settlement	Defined as all developed land such as transportation, irrigation, hydropower plan, and electric line network.
	Above ground Water Source	Defined as water sources above the surface of the ground, e.g.: rivers, small waterways tributaries, ponds, canals, swamps, bogs, and springs
	River	Defined as the river and small waterways should be at least 10m wide. In other cases, it should be joined to adjacent land use class.

2005	**National class**	**Definition**
	Other Land	Defined as the road, temple, cemeteries and some historical and cultural sites.
	Barren Land and Rock	Defined as the area which neither trees nor grasses can grow, shallow soil and rocky areas.
	Evergreen Forest	Defined as a multi storey forest consisting of more than 50% trees of evergreen species. Most of the trees have long ad cylindrical boles, many of them with a big buttress. Usually, the height of the trees of the upper storey is more than 30 m. The dense second storey prevents most of the light from reaching the ground floor. Another typical characteristic of this forest type are climbers and lichen on the tree stems. Bamboo is usually not found except when the canopy has been opened.
	Mixed Deciduous Forest	Defined as the deciduous tree species represent more than 50% of the stand. The forest storeys are not as dense as those of evergreen types and most of the seedlings and saplings are deciduous trees. Most often bamboo occurs in this type of forest.
	Coniferous Forest	Defined as the Coniferous Forest is usually with single storied and open but the young growth may sometimes form a dense second storey. This forest type occurs in higher elevations and cold weather. The forest consist of pines (Pinus kesiya or Pinus merkusii), Mai hinghom(Keteleeria davidiana BEISSN) and Mai Longleng (Cunninghmia sinensis).
	Mixed Coniferous and Broadleaved Forest	Defined as the coniferous trees could be mixed with either deciduous or evergreen trees. In general, the Mixed Coniferous Forest is a transition type between the coniferous and the broadleaved forest types. It is also found in higher elevations.
	Dry Dipterocarp Forest	Defined as the Dry Dipterocarp Forest occurs in open stands. The tree diameter is comparably small and the height of the stand varies from 8 to 25 m. The crowns do not spread out widely. This type of forest is normally found in places with shallow soil, where the hard pan emerges above the ground, and on laterized soil. The forest consists of Many species being characteristically as fire resistant and have a thick bark such as: Mai Sabeng (Dipterocarpus intricatus), Mai Chick (Shorea obtusa), Mai Sat (Dipterocarpus obtusifolius), Mai Suak (Terminalia tomen-tosa) , Mai Hang (Shorea siamensis), Mai Khoung (Dipterocarpus tuberculatus ROXB).
	Forest Plantation	Defined as all planted tree which is the same or various species mixed together, with the same age, height and spacing. All plantations (including young ones with a crown density less than 20 %, and DBH less than 10 cm.) should be classified as Forest Plantations.
	Bamboo	Defined as the area covered with bamboo more than 80%. Abandoned upland crop is often recovered by bamboo. Bamboo brakes may vary in height from 2 m to 25 m depending on their species.
	Regenerating Vegetation	

		Defined as the previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance, If the area is left to grow undisturbed it will become forest again.
	Savannah	Defined as an area where the soil conditions are unsuitable for tree growth as well as agriculture production. The tree cover in the Savannah should be at least 1% but less than 20%. The trees are drought resistant and mostly short with graminaceous and herbaceous plants forming an under storey. Mostly found in plain areas.
	Scrub	Defined as an area covered with scrub and stunted trees. The soil is shallow and rocky. Inaccessible parts of lime stone formations covered with scrub and stunted trees should be classified as Scrub.
	Grassland	Defined as the area that has been covered by grass, on which no trees or shrubs grow.
	Swamp	Defined as areas where the soil is saturated with water all around the year. The soil may basically be fertile but the least lack of oxygen limits its agriculture or forest-production capacity. The wetland could have a high ecological or environmental value and rich of bio-diversities.
	Upland Crop	Defined as an area where the forest has been cut and burnt for temporary cultivation of rice and other crops. Area that have been abandoned for more than 2 years should be classified as Regenerating Vegetation.
	Rice Paddy	Defined as an area permanently being used for rice cultivation. Old paddy that has been abandoned for more than one year should not be classified as Rice Paddy.
	Other Agriculture	Defined as the agricultural land being used for production of other crops than rice and agriculture plantation, i.e. various kinds of vegetables such as sugarcane, millet, cotton, and etc.
	Agriculture Plantation	Defined as areas of agricultural land being used for fruit tree cultivation example: mango tree, longans tree, etc. Plantations with cash crops, which is the perennial crop for example: tea, cacao, and coffee also refer to this land use class.
	Urban	Defined as all areas being used for permanent settlements such as villages, towns, public gardens, industrial zone, and human settlements of any size.

2010	**National class**	**Definition**
	Evergreen Forest	Defined as a multi storey forest consisting of more than 50% trees of evergreen species. Most of the trees have long ad cylindrical boles, many of them with a big buttress. Usually, the height of the trees of the upper storey is more than 30 m. The dense second storey prevents most of the light from reaching the ground floor. Another typical characteristic of this forest type are climbers and lichen on the tree stems. Bamboo is usually not found except when the canopy has been opened.
	Mixed Deciduous Forest	Defined as the deciduous tree species represent more than 50% of the stand. The forest storeys are not as dense as those of evergreen types and most of the seedlings and saplings are deciduous trees. Most often bamboo occurs in this type of forest.
	Coniferous Forest	

	Defined as the Coniferous Forest is usually with single storied and open but the young growth may sometimes form a dense second storey. This forest type occurs in higher elevations and cold weather. The forest consist of pines (Pinus kesiya or Pinus merkusii), Mai hinghom(Keteleeria davidiana BEISSN) and Mai Longleng (Cunninghmia sinensis).
Mixed Coniferous and Broadleaved Forest	Defined as the coniferous trees could be mixed with either deciduous or evergreen trees. In general, the Mixed Coniferous Forest is a transition type between the coniferous and the broadleaved forest types. It is also found in higher elevations.
Dry Dipterocarp Forest	Defined as the Dry Dipterocarp Forest occurs in open stands. The tree diameter is comparably small and the height of the stand varies from 8 to 25 m. The crowns do not spread out widely. This type of forest is normally found in places with shallow soil, where the hard pan emerges above the ground, and on laterized soil. The forest consists of Many species being characteristically as fire resistant and have a thick bark such as: Mai Sabeng (Dipterocarpus intricatus), Mai Chick (Shorea obtusa), Mai Sat (Dipterocarpus obtusifolius), Mai Suak (Terminalia tomen-tosa) , Mai Hang (Shorea siamensis), Mai Khoung (Dipterocarpus tuberculatus ROXB).
Forest Plantation	Defined as all planted tree which is the same or various species mixed together, with the same age, height and spacing. All plantations (including young ones with a crown density less than 20 %, and DBH less than 10 cm.) should be classified as Forest Plantations.
Bamboo	Defined as the area covered with bamboo more than 80%. Abandoned upland crop is often recovered by bamboo. Bamboo brakes may vary in height from 2 m to 25 m depending on their species.
Regenerating Vegetation	Defined as the previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance, If the area is left to grow undisturbed it will become forest again.
Savannah	Defined as an area where the soil conditions are unsuitable for tree growth as well as agriculture production. The tree cover in the Savannah should be at least 1% but less than 20%. The trees are drought resistant and mostly short with graminaceous and herbaceous plants forming an under storey. Mostly found in plain areas.
Scrub	Defined as an area covered with scrub and stunted trees. The soil is shallow and rocky. Inaccessible parts of lime stone formations covered with scrub and stunted trees should be classified as Scrub.
Grassland	Defined as the area that has been covered by grass, on which no trees or shrubs grow.

	Swamp	Defined as areas where the soil is saturated with water all around the year. The soil may basically be fertile but the least lack of oxygen limits its agriculture or forest-production capacity. The wetland could have a high ecological or environmental value and rich of bio-diversities.
	Upland Crop	Defined as an area where the forest has been cut and burnt for temporary cultivation of rice and other crops. Area that have been abandoned for more than 2 years should be classified as Regenerating Vegetation.
	Rice Paddy	Defined as an area permanently being used for rice cultivation. Old paddy that has been abandoned for more than one year should not be classified as Rice Paddy.
	Other Agriculture	Defined as the agricultural land being used for production of other crops than rice and agriculture plantation, i.e. various kinds of vegetables such as sugarcane, millet, cotton, and etc.
	Agriculture Plantation	Defined as areas of agricultural land being used for fruit tree cultivation example: mango tree, longans tree, etc. Plantations with cash crops, which is the perennial crop for example: tea, cacao, and coffee also refer to this land use class.
	Urban	Defined as all areas being used for permanent settlements such as villages, towns, public gardens, industrial zone, and human settlements of any size.
	Other Land	Defined as the road, temple, cemeteries and some historical and cultural sites.
	Barren Land and Rock	Defined as the area which neither trees nor grasses can grow, shallow soil and rocky areas.

2015	National class	Definition
	Dry Dipterocarp Forest	Defined as the Dry Dipterocarp Forest occurs in open stands. The tree diameter is comparably small and the height of the stand varies from 8 to 25 m. The crowns do not spread out widely. This type of forest is normally found in places with shallow soil, where the hard pan emerges above the ground, and on laterized soil. The forest consists of Many species being characteristically as fire resistant and have a thick bark such as: Mai Sabeng (Dipterocarpus intricatus), Mai Chick (Shorea obtusa), Mai Sat (Dipterocarpus obtusifolius), Mai Suak (Terminalia tomen-tosa) , Mai Hang (Shorea siamensis), Mai Khoung (Dipterocarpus tuberculatus ROXB).
	Forest Plantation	Defined as all planted tree which is the same or various species mixed together, with the same age, height and spacing. All plantations (including young ones with a crown density less than 20 %, and DBH less than 10 cm.) should be classified as Forest Plantations.
	Bamboo	Defined as the area covered with bamboo more than 80%. Abandoned upland crop is often recovered by bamboo. Bamboo brakes may vary in height from 2 m to 25 m depending on their species.
	Regenerating Vegetation	

	Defined as the previously forested areas in which the crown density has been reduced to less than 20% because of logging or heavy disturbance, If the area is left to grow undisturbed it will become forest again.
Savannah	Defined as an area where the soil conditions are unsuitable for tree growth as well as agriculture production. The tree cover in the Savannah should be at least 1% but less than 20%. The trees are drought resistant and mostly short with graminaceous and herbaceous plants forming an under storey. Mostly found in plain areas.
Scrub	Defined as an area covered with scrub and stunted trees. The soil is shallow and rocky. Inaccessible parts of lime stone formations covered with scrub and stunted trees should be classified as Scrub.
Grassland	Defined as the area that has been covered by grass, on which no trees or shrubs grow.
Swamp	Defined as areas where the soil is saturated with water all around the year. The soil may basically be fertile but the least lack of oxygen limits its agriculture or forest-production capacity. The wetland could have a high ecological or environmental value and rich of bio-diversities.
Upland Crop	Defined as an area where the forest has been cut and burnt for temporary cultivation of rice and other crops. Area that have been abandoned for more than 2 years should be classified as Regenerating Vegetation.
Rice Paddy	Defined as an area permanently being used for rice cultivation. Old paddy that has been abandoned for more than one year should not be classified as Rice Paddy.
Other Agriculture	Defined as the agricultural land being used for production of other crops than rice and agriculture plantation, i.e. various kinds of vegetables such as sugarcane, millet, cotton, and etc.
Agriculture Plantation	Defined as areas of agricultural land being used for fruit tree cultivation example: mango tree, longans tree, etc. Plantations with cash crops, which is the perennial crop for example: tea, cacao, and coffee also refer to this land use class.
Urban	Defined as all areas being used for permanent settlements such as villages, towns, public gardens, industrial zone, and human settlements of any size.
Other Land	Defined as the road, temple, cemeteries and some historical and cultural sites.
Barren Land and Rock	Defined as the area which neither trees nor grasses can grow, shallow soil and rocky areas.
Evergreen Forest	Defined as a multi storey forest consisting of more than 50% trees of evergreen species. Most of the trees have long ad cylindrical boles, many of them with a big buttress. Usually, the height of the trees of the upper storey is more than 30 m. The dense second storey prevents most of the light from reaching the ground floor. Another typical characteristic of this forest type are climbers and lichen on the tree stems. Bamboo is usually not found except when the canopy has been opened.
Mixed Deciduous Forest	Defined as the deciduous tree species represent more than 50% of the stand. The forest storeys are not as dense as those of evergreen types and most of the seedlings and saplings are deciduous trees. Most often bamboo occurs in this type of forest.
Coniferous Forest	Defined as the Coniferous Forest is usually with single storied and open but the young growth may sometimes form a dense second storey. This forest type occurs in higher elevations and cold weather. The forest consist of pines (Pinus kesiya or Pinus merkusii), Mai hinghom(Keteleeria davidiana BEISSN) and Mai Longleng (Cunninghmia sinensis).
Mixed Coniferous and Broadleaved Forest	Defined as the coniferous trees could be mixed with either deciduous or evergreen trees. In general, the Mixed Coniferous Forest is a transition type between the coniferous and the broadleaved forest types. It is also found in higher elevations.

Original data and reclassification

	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
2000	Evergreen Forest	2 652.00	100.00 %	0.00 %	0.00 %
	Mixed Deciduous Forest	9 963.00	100.00 %	0.00 %	0.00 %
	Coniferous Forest	137.00	100.00 %	0.00 %	0.00 %
	Mixed Coniferous and Broadleaved Forest	144.00	100.00 %	0.00 %	0.00 %
	Dry Dipterocarp Forest	1 321.00	100.00 %	0.00 %	0.00 %
	Forest Plantation	18.00	0.00 %	100.00 %	0.00 %
	Bamboo	66.00	100.00 %	0.00 %	0.00 %
	Regenerating Vegetation	3 124.00	50.00 %	0.00 %	50.00 %
	Total	**17 425.00**	**15 845.00**	**18.00**	**1 562.00**

Plantation forest	**Area (1000 ha)**	**...of which introduced**
Forest Plantation	18.00	75.00 %
Total	**18.00**	**13.50**

	Classifications and definitions		FRA classes		
2005	**Class**	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
	Evergreen Forest	2 653.00	100.00 %	%	%
	Mixed Deciduous Forest	9 814.00	100.00 %	%	%
	Coniferous Forest	136.00	100.00 %	%	%
	Mixed Coniferous and Broadleaved Forest	144.00	100.00 %	%	%
	Dry Dipterocarp Forest	1 289.00	100.00 %	%	%
	Forest Plantation	24.00	%	100.00 %	%
	Bamboo	70.00	100.00 %	%	%

	Regenerating Vegetation	3 086.00	50.00 %	%	50.00 %
	Total	**17 216.00**	**15 649.00**	**24.00**	**1 543.00**

Plantation forest	Area (1000 ha)	...of which introduced
Forest Plantation	24.00	75.00 %
Total	**24.00**	**18.00**

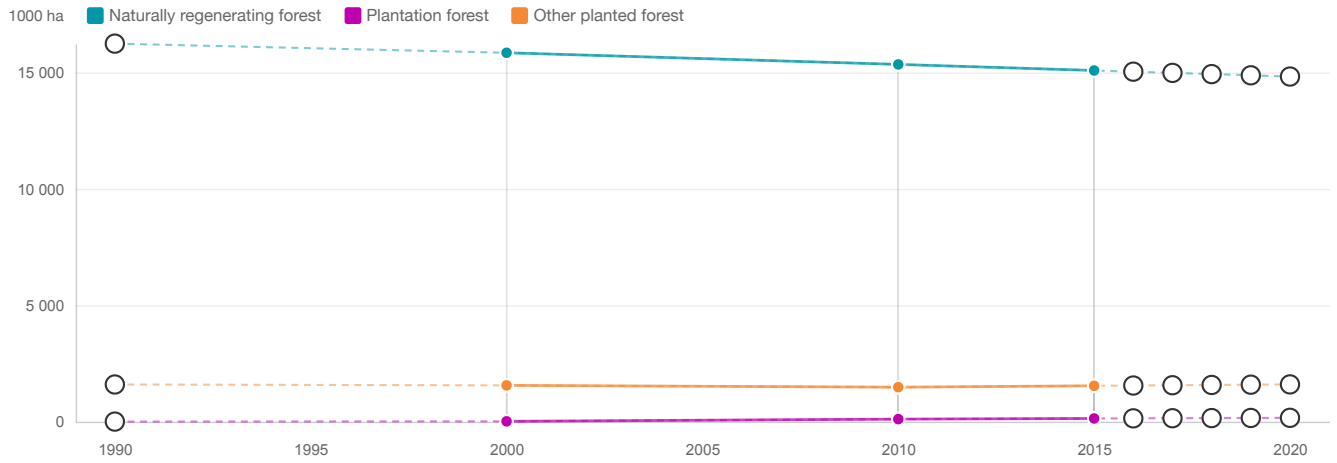
	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
2010	Evergreen Forest	2 655.00	100.00 %	%	%
	Mixed Deciduous Forest	9 641.00	100.00 %	%	%
	Coniferous Forest	127.00	100.00 %	%	%
	Mixed Coniferous and Broadleaved Forest	110.00	100.00 %	%	%
	Dry Dipterocarp Forest	1 235.00	100.00 %	%	%
	Forest Plantation	112.00	%	100.00 %	%
	Bamboo	93.00	100.00 %	%	%
	Regenerating Vegetation	2 967.50	50.00 %	%	50.00 %
	Total	**16 940.50**	**15 344.75**	**112.00**	**1 483.75**

Plantation forest	Area (1000 ha)	...of which introduced
Forest Plantation	112.00	75.00 %
Total	**112.00**	**84.00**

2015	Classifications and definitions		FRA classes		
	Class	**Area (1000 ha)**	**Naturally regenerating forest**	**Plantation forest**	**Other planted forest**
	Dry Dipterocarp Forest	1 208.00	100.00 %	0.00 %	0.00 %
	Forest Plantation	140.00	0.00 %	100.00 %	0.00 %
	Bamboo	90.00	100.00 %	0.00 %	0.00 %

	Regenerating Vegetation	3 087.00	50.00 %	0.00 %	50.00 %
	Evergreen Forest	2 649.00	100.00 %	0.00 %	0.00 %
	Mixed Deciduous Forest	9 357.00	100.00 %	0.00 %	0.00 %
	Coniferous Forest	127.00	100.00 %	0.00 %	0.00 %
	Mixed Coniferous and Broadleaved Forest	110.00	100.00 %	0.00 %	0.00 %
	Total	**16 768.00**	**15 084.50**	**140.00**	**1 543.50**

Plantation forest	**Area (1000 ha)**	**…of which introduced**
Forest Plantation	140.00	75.00 %
Total	**140.00**	**105.00**


1000 ha
Naturally regenerating forest
Plantation forest
Other planted forest
15 000
10 000
5 000
0
1990
1995
2000
2005
2010
2015
2020

FRA categories	Forest area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest (a)	16 237.00	15 845.00	15 344.75	15 084.50	15 032.45	14 980.40	14 928.35	14 876.30	14 824.25
Planted forest (b)	**1 606.00**	**1 580.00**	**1 595.75**	**1 683.50**	**1 701.05**	**1 718.60**	**1 736.15**	**1 753.70**	**1 771.25**
Plantation forest	6.00	18.00	112.00	140.00	145.60	151.20	156.80	162.40	168.00
…of which introduced species	4.50	13.50	84.00	105.00	109.20	113.40	117.60	121.80	126.00
Other planted forest	1 600.00	1 562.00	1 483.75	1 543.50	1 555.45	1 567.40	1 579.35	1 591.30	1 603.25
Total (a+b)	**17 843.00**	**17 425.00**	**16 940.50**	**16 768.00**	**16 733.50**	**16 699.00**	**16 664.50**	**16 630.00**	**16 595.50**
Total forest area	**17 843.00**	**17 425.00**	**16 940.50**	**16 768.00**	**16 733.50**	**16 699.00**	**16 664.50**	**16 630.00**	**16 595.50**

Comments

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

Data on bamboo were derived from the FAO Remote sensing exercise through the use of Collect Earth.

Data on temporarily unstocked taken from the Lao PDR's Forest Reference Emission Level and Forest Reference Level for REDD+ Results Payment under the UNFCCC

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

For bamboos the same value as of 2015 is repeated for 2020.

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest					
Temporarily unstocked and/or recently regenerated					
Bamboos		66.00	93.00	90.00	90.00
Mangroves	0.00	0.00	0.00	0.00	0.00
Rubber wood					

Comments

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Forest expansion (a)				
…of which afforestation				
…of which natural expansion				
Deforestation (b)				
Forest area net change (a-b)	**-41.80**	**-48.45**	**-34.50**	**-34.50**

Comments

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

No data available on reforestation.

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha/year)			
	1990-2000	2000-2010	2010-2015	2015-2020
Reforestation				

Comments

1f Other land with tree cover

National Data

Data sources + type of data source eg NFI, etc

No data available

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)					
Tree orchards (b)					
Agroforestry (c)					
Trees in urban settings (d)					
Other (specify in comments) (e)					
Total (a+b+c+d+e)	–	–	–	–	–
Other land area	**5 099.00**	**5 519.00**	**6 007.50**	**6 181.00**	**6 354.50**

Comments

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

MAF. 1992. Forest cover and Land use in Lao PDR- Final Report on the Nationwide Reconnaissance Survey. Ministry of Agriculture and Forestry. Department of Forestry. National Office of Forest Inventory and Planning. Lao PDR.

National classification and definitions

No national classification or definitions are available for this table.

Original data

The NFI database provides information on the estimate of growing stock in various provinces. The field work was done 1992 to 1997 and therefore, the reference year may be considered as 1995. Following is the summary table developed to provide estimate for forest and other wooded lands.

A. Summary Table

National Classes of Forests	Area (000 ha)	Volume (000 m^3)	Volume per ha
Natural High Forests (NHF)	10125.24	891811.18	88.08
Dry Dipterocarp Forests (DDF)	1603.96	81154.75	50.60
Potential Forests (PF)	8836.84	60743.82	6.87
Total Forest (NHF+DDF+0.6*PF)	17031	1009412	59.27
Total OWL (0.4*PF)	3535	24298	6.87

B. Detailed Table

Province	Forest type	Area (000 ha)	Avg. vol (m^3/ha)	Total volume (000 m^3)	Field work (Year)
1	NHF	133.59	108.81	14,535.93	1992
	DD	28.36	24.94	707.3	
	PF	66.31	6.45	427.7	
2	NHF	718	64.57	46,361.26	1997
	DD	0	0	0	
	PF	674	6.93	4,670.82	
3	NHF	464.42	58.07	26,968.87	1997
	DD	0	0	0	
	PF	332.95	7.77	2,587.02	
4	NHF	488	43.22	21,091.36	1997
	DD	0.93	NA		
	PF	1019	1.47	1,497.93	

5	NHF	272.6	54.74	14,922.12	1997
	DD	0	0	0	
	PF	198.67	5.9	1,172.15	
6	NHF	347.35	19.29	6,700.38	1995
	DD	16.94	21.62	366.24	
	PF	1475.34	0.93	1,372.07	
7	NHF	732.38	55.48	40,632.44	1998
	DD	0	0	0	
	PF	742.47	7.59	5,635.35	
8	NHF	704.71	111.01	78,229.86	1993
	DD	157.56	82.48	12,995.55	
	PF	696.2	7.87	5,479.09	
9	NHF	734.84	38.99	28,651.41	1998
	DD	6.33	0	0	
	PF	524.55	3.3	1,731.02	
10	NHF	648.44	56.6	36,701.70	1993
	DD	0	0	0	
	PF	1069.8	11	11,767.80	
11	NHF	1139.1	66.48	75,727.37	1996
	DD	11.6	62.93	729.99	
	PF	343.4	14.67	5,037.68	
12	NHF	956.5	188.23	180,042.00	1992
	DD	46.1	62.19	2,866.96	
	PF	232.5	26.08	6,063.60	
13	NHF	698.7	96.96	67,745.95	1992
	DD	600.1	58.82	35,297.88	
	PF	436.1	9.04	3,942.34	
14	NHF	529.4	152.64	80,807.62	1990
	DD	146.3	49.82	7,288.67	
	PF	253.9	15.28	3,879.59	
15	NHF	405.71	105.41	42,765.89	1994
	DD	61.44	46.68	2,868.02	

	PF	387.45	9.49	3,676.90	
16	NHF	526.1	99.76	52,483.74	1994
	DD	320.3	39.66	12,703.10	
	PF	184.7	5.98	1,104.51	
17	NHF	625.4	123.83	77,443.28	1995
	DD	208	25.63	5,331.04	
	PF	199.5	3.5	698.25	
Total		**20.566.1**		**1,033,709.74**	

Growing stock composition:

The NFI (1990) provides estimates of growing stock per hectare by following main species.

Species Scientific name	**cubic meters/ha)**	
Dipterocarpus tuberculatus	0.002	
Dalbergia kerii	0.109	
Shorea obtusa	0.085	
Afzelia xylocapa	1.272	
Hopea feerea P	2.013	
Pinus khasya	6.820	
Dipterocarpus alatus	5.850	
Pterocarpus macrocarpus	1.300	
Dipterocarpus obtusifolius	0.503	
Anisoptera cochinchinensis	5.362	
Remainder of species	n.a.	

Analysis and processing of national data

Estimation and forecasting

The following average volume per hectare will be used for estimations of growing stock for FRA reporting years.

Volume per ha (m3/ha)	**Forest 59.27**	**Other wooded land 6.87**

Reclassification into FRA 2020 categories

-

FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest									
Planted forest									
…of which plantation forest									
…of which other planted forest									
Forest	59.27	59.27	59.27	59.27	59.27	59.27	59.27	59.27	59.27
Other wooded land	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87	6.87

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest									
Planted forest									
…of which plantation forest									
…of which other planted forest									
Forest	1 057.55	1 032.78	1 004.06	993.84	991.79	989.75	987.70	985.66	983.62
Other wooded land	0.95	0.93	0.91	0.90	0.90	0.90	0.90	0.89	0.89

Comments

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

MAF. 1992. Forest cover and Land use in Lao PDR- Final Report on the Nationwide Reconnaissance Survey. Ministry of Agriculture and Forestry. Department of Forestry. National Office of Forest Inventory and Planning. Lao PDR.

National classification and definitions

-

Original data

Growing stock composition:

The NFI (1990) provides estimates of growing stock per hectare by following main species.

Species Scientific name	cubic meters/ha)	
Dipterocarpus tuberculatus	0.002	
Dalbergia kerii	0.109	
Shorea obtusa	0.085	
Afzelia xylocapa	1.272	
Hopea feerea P	2.013	
Pinus khasya	6.820	
Dipterocarpus alatus	5.850	
Pterocarpus macrocarpus	1.300	
Dipterocarpus obtusifolius	0.503	
Anisoptera cochinchinensis	5.362	
Remainder of species	n.a.	

Analysis and processing of national data

Estimation and forecasting

To fill in this table, it is assumed that the species-wise growing stock per hectare in 2000 and 2005 is same as in 1990. The species-wise growing stock is calculated by multiplying per hectare figures in 1990 with area of forests for the different reporting years. The growing stock of remaining species is calculated as the difference in the total growing stock.

Reclassification into FRA 2020 categories

-

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
#1 Ranked in terms of volume	Pinus khasya		121.71	118.86	115.56	114.38	113.20
#2 Ranked in terms of volume	Dipterocarpus alatus		104.41	101.96	99.12	98.12	97.11
#3 Ranked in terms of volume	Anisoptera cochinchinensis		95.70	93.45	90.86	89.93	89.00
#4 Ranked in terms of volume	Hopea feerea P		35.92	35.08	34.10	33.76	33.41
#5 Ranked in terms of volume	Pterocarpus macrocarpus		23.20	22.66	22.03	21.80	21.58
#6 Ranked in terms of volume	Afzelia xylocapa		22.70	22.17	21.55	21.33	21.11
#7 Ranked in terms of volume	Dipterocarpus obtusifolius		8.98	8.77	8.52	8.44	8.35
#8 Ranked in terms of volume	Dalbergia kerii		1.95	1.90	1.85	1.83	1.81
#9 Ranked in terms of volume	Shorea obtusa		1.52	1.48	1.44	1.42	1.41
#10 Ranked in terms of volume	Dipterocarpus tuberculatus		0.03	0.03	0.03	0.03	0.03
Remaining native tree species			641.45	626.42	609.00	602.80	596.60

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
Total volume of native tree species			**1 057.57**	**1 032.78**	**1 004.06**	**993.84**	**983.61**
Introduced tree species							
#1 Ranked in terms of volume							
#2 Ranked in terms of volume							
#3 Ranked in terms of volume							
#4 Ranked in terms of volume							
#5 Ranked in terms of volume							
Remaining introduced tree species							
Total volume of introduced tree species			–	–	–	–	–
Total growing stock			**1 057.57**	**1 032.78**	**1 004.06**	**993.84**	**983.61**

Comments

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

No national data on biomass were available so IPCC default values were applied.

Above ground biomass:

Following recommendations from FRA 2015 guidelines the following assumptions and calculations have been made:

Considering an ecological zone corresponding to the humid tropical the biomass conversion and expansion factor (BCEF) of 2.05 have been applied to the growing stock:

Below ground biomass :

Considering an above ground biomass<125t/ha and a tropical dry forest biome, the root-shoot ratio of 0.20 has been chosen.

Variables	Forest								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Total Growing Stock (million m3)	1057.55	1032.78	1004.06	993.84	991.79	989.75	987.7	985.66	983.62
BCEF	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05	2.05
Root shoot ratio	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Forest area	17843	17425	16940.5	16768	16733.5	16699	16664.5	16630	16595.5
AGB	2167.98	2117.20	2058.32	2037.37	2033.17	2028.99	2024.79	2020.60	2016.42
AGB/ha	121.50	121.50	121.50	121.50	121.50	121.50	121.50	121.50	121.50
BGB/ha	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30

Reclassification into FRA 2020 categories

-

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	121.50	121.50	121.50	121.50	121.50	121.50	121.50	121.50	121.50
Below-ground biomass	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30	24.30
Dead wood									

Comments

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

No original data on carbon were available, so the carbon conversion factor of 0.47 recommended in the FRA guidelines has been applied to the biomass.

Reclassification into FRA 2020 categories

-

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	57.11	57.11	57.11	57.11	57.11	57.11	57.11	57.11	57.11
Carbon in below-ground biomass	11.42	11.42	11.42	11.42	11.42	11.42	11.42	11.42	11.42
Carbon in dead wood									
Carbon in litter									
Soil carbon									

Soil depth (cm) used for soil carbon estimates	

Comments

3 Forest designation and management

3a Designated management objective

National Data

Data sources + type of data source eg NFI, etc

TFAP. 1990. Tropical Forestry Action Plan, First Phase (1990). Government of LAO PDR. Ministry of Agriculture and Forestry, Vientinae.

Record at the Department of Forestry. 1990 to 2004

Remote Sensing, FIPD, SIDA (Sweden), SPOT 4 and 5 (visually) 1990

Remote Sensing, FIPD, FIM (JICA) Alos, Spot5, Rapideye 1990 to 2004

Tsechalicha, Xiong and Don Gilmour. 2000. Forest Rehabilitation in LAO PDR- Issues and Constraints. IUCN.

UNEP-WCMC. 2005. World Database on Protected Areas. (http://sea.unep-wcmc.org/wdbpa/)

UNEP. 2002. State of Environment 2001- LAO PDR. Bangkok. Thailand (http://www.rrcap.unep.org/reports/soe/laosoe.cfm)

National classification and definitions

Production Forest	Forests and forest lands which are classified to provide for the requirements of national socio-economic development and peoples' livelihoods in terms of wood and forest derived products which do not seriously affect the environment.
Protection Forest	Forests and forest lands which are classified for the purpose of protecting water sources, preventing soil erosion, strategic areas for national defence, prevention of natural disasters, the environment, etc.
National Biodiversity Conservation Areas (NBCAs)	Forests and forest lands which are classified for the purpose of preventing species of flora and fauna, nature and other precious things in terms of history, culture, tourism, the environment, education, and scientific research.

Original data

A. Data for 1990

The country has over all designated the forest area in following three categories (TFAP, 1990 quoted in Tsechalicha and Don Gilmour, 2000):

Designation	Area in 000 ha
Production Forests	5000
Protection Forests	9500
Conservation Forests	2500
Total	**17000**

B. Data for 1993 and 1995

The SOE (2001) indicates following state of "Biodiversity conservation Areas" in 2001.

Biodiversity Conservation Area	Year Established	Area in 000 ha
1. Phou Daen Din	1993	222
2. Nam Ha	1993	222
3. Nam Et	1993	170
4. Phou Loei	1993	150

5. Nam Xam	1993	70
6. Nam Phui	1993	191
7. Phou Phanang	1993	70
8. Phou Khao Khouay	1993	200
9. Nam Khading	1993	169
10. Phou Hinpoun	1993	150
11. Nakai Namtheun	1993	353
12. Hin Nam Nor	1993	82
13. Phou Xang He	1993	110
14. Dong Phouvieng	1996	197
15. Xe Sap	1995	137
16. Xe Bang Nouan	1993	150
17. Phou Xiangthong	1993	120
18. Dong Hua Sao	1993	110
19. Dong Ampham	1993	200
20. Xe Pian	1993	240
Total		**3314**

C. Data for 1992 and 2002

The country presented following figures in National Correspondent meeting in Bangkok in November, 2004. However no documentation has been provided to support these figures.

FRA categories/ Designated function	**Area (1000 hectares)**	
	1992	**2002**
Forest		
Production	3207	3423
Protection of soil& water	10784	8696
Conservation of biodiversity	3391	4826
Social services	18	29
Total Forest	**17400**	**16974**
Other wooded land		
Production	416	429
Protection of soil& water	1664	1716
Conservation of biodiversity	2081	2144

Total Other wooded land	**4161**	**4289**

The social services include spiritual and sacred forests and it has been assumed that in rural area the average of social services forest area is about 3 ha per village.

C. Data for 2005

The UNEP-WCMC (2005) at its website in July 2005 indicates that there are 27 PA in the country and they cover 3,790,431 ha. area.

Analysis and processing of national data

Estimation and forecasting

A. Biodiversity Conservation Area

The figure for 1990 has been taken from TFAP (1990) and the figure for 2000 from UNEP (2002). The figure for 2005 has been taken from UNEP-WCMC (2005) website and same figure has been used for 2010. It is assumed that all the protected areas are forested.

B. Production Areas

The figures presented by the country for 1992 and 2002 in the November 2004 meeting of “National Correspondents” have been used for linear interpolation and extrapolation.

C. Social Service Areas

The figures presented by the country for 1992 and 2002 in the November 2004 meeting of “National Correspondents” have been used for linear interpolation and extrapolation.

D. Protection Area

Following the TFAP (1990) all remaining areas have been apportioned to Protection Areas.

FRA Designation	1990	2000	2005	2010
Forest				
Production	3164	3380	3488	3596
Protection of soil& water	11634	10310	9579	9074
Conservation of biodiversity	2500	2815	3043	3043
Social services	16	27	32	38
Total Forest	17314	16532	16142	15751

Reclassification into FRA 2020 categories

-

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)	3 164.00	3 380.00	3 596.00	3 704.00	3 812.00
Protection of soil and water (b)	11 634.00	10 310.00	9 074.00	8 456.00	7 838.00
Conservation of biodiversity (c)	2 500.00	2 815.00	3 043.00	3 157.00	3 271.00
Social Services (d)	16.00	27.00	38.00	43.50	49.00
Multiple use (e)	0.00	0.00	0.00	0.00	0.00
Other (specify in comments) (f)	0.00	0.00	0.00	0.00	0.00
None/unknown (g)	**529.00**	**893.00**	**1 189.50**	**1 407.50**	**1 625.50**
Total forest area	**17 843.00**	**17 425.00**	**16 940.50**	**16 768.00**	**16 595.50**

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production					
Protection of soil and water					
Conservation of biodiversity					
Social Services					
Other (specify in comments)					

Comments

3b Forest area within protected areas and forest area with long-term management plans

National Data

Data sources + type of data source eg NFI, etc

FRA 2020 geo spatial tools

National classification and definitions

-

Original data

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas		3 279.32	3 304.64	3 262.16	3 241.58	3 224.70			
Forest area with long-term forest management plan									
…of which in protected areas									

Comments

4 Forest ownership and management rights

4a Forest ownership

National Data

Data sources + type of data source eg NFI, etc

Southavilay, Thongleua and Tuukka Castrén. 1998. Timber Trade And Wood Flow Study - Lao PDR. Regional Environmental Technical Assistance 5771. Poverty Reduction & Environmental Management in Remote Greater Mekong Subregion (GMS) Watersheds Project (Phase I). LAO PDR.

Forest Law. LAO PDR

Land law. LAO PDR

National classification and definitions

Public ownership	Natural forests and forest lands are the property of the national community whom the state represents in the administration and allocation of individual use and reasonable organisation. Individuals and organisation shall have the right to possess and use any trees, natural forest and forest land provided only that they have received approval from the relevant authorized agency.

Original data

-

Analysis and processing of national data

Estimation and forecasting

All “Forest” and “Other Wooded land” in Laos belongs to the state (Forest law (1996), Land Law (2003), and Southavilay and Castrén. 1998).

Reclassification into FRA 2020 categories

-

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Private ownership (a)	0.00	0.00	0.00	0.00
…of which owned by individuals	0.00	0.00	0.00	0.00
…of which owned by private business entities and institutions	0.00	0.00	0.00	0.00
…of which owned by local, tribal and indigenous communities	0.00	0.00	0.00	0.00
Public ownership (b)	17 843.00	17 425.00	16 940.50	16 768.00
Unknown/other (specify in comments) (c)	**0.00**	**0.00**	**0.00**	**0.00**
Total forest area	**17 843.00**	**17 425.00**	**16 940.50**	**16 768.00**

Comments

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

Data not available

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)				
Individuals (b)				
Private business entities and institutions (c)				
Local, tribal and indigenous communities (d)				
Unknown/other (specify in comments) (e)	**17 843.00**	**17 425.00**	**16 940.50**	**16 768.00**
Total public ownership	**17 843.00**	**17 425.00**	**16 940.50**	**16 768.00**

Comments

The State assigns rights to use degraded forest lands or defoliated lands to individuals and organizations according to their labor and financial capacity to plant and rehabilitate forests for individuals the area shall not exceed three hectares for each laborer in a family

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Insects (a)																		
Diseases (b)																		
Severe weather events (c)																		
Other (specify in comments) (d)																		
Total (a+b+c+d)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Total forest area	**17 425.00**	–	–	–	–	**17 216.00**	–	–	–	–	**16 940.50**	–	–	–	–	**16 768.00**	**16 733.50**	**16 699.00**

Comments

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

FRA 2020 Geospatial tools

National classification and definitions

-

Original data

No national data available. Data were derived using module 3 of the FRA geospatial tools. Original excel file uploaded in the links and repository section of the Platform. It was not possible to generate data for 2017.

Analysis and processing of national data

Estimation and forecasting

-

Reclassification into FRA 2020 categories

-

FRA categories	Area (1000 ha)																	
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Total land area affected by fire	10.60	56.83	81.66	45.37	162.00	110.30	53.99	145.63	32.83	62.89	155.84	44.02	42.03	49.76	54.02	32.68	44.83	
…of which on forest	4.08	26.70	40.23	21.79	105.70	64.87	29.23	87.43	15.98	32.42	95.60	23.24	21.49	22.38	26.48	12.42	25.15	

Comments

5c Degraded forest

Does your country monitor area of degraded forest		
If "yes"	What is the national definition of "Degraded forest"?	
	Describe the monitoring process and results	

Comments

6 Forest policy and legislation

6a Policies, Legislation and national platform for stakeholder participation in forest policy

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

Indicate the existence of	Boolean (Yes/No)	
	National	Sub-national
Policies supporting SFM	Yes	Yes
Legislations and regulations supporting SFM	Yes	Yes
Platform that promotes or allows for stakeholder participation in forest policy development	Yes	
Traceability system(s) for wood products		

Comments

About the Platform that promotes stakeholders participation, there is Forestry Sector Sub-working Group consisting of concerned government agencies, donors/projects, NGO/CSO, which is organized on the quarterly basis. FSSWG is under the Natural Resource and Environment Sector Working Group, which directly reports to the Round Table Process between GOL and donors.

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate						

Comments

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Full-time equivalents (1000 FTE)											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Employment in forestry and logging												
…of which silviculture and other forestry activities												
…of which logging												
…of which gathering of non wood forest products												
…of which support services to forestry												

Comments

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

FRA 2020 categories	Number of graduated students											
	1990			2000			2010			2015		
	Total	Female	Male	Total	Female	Male	Total	Female	Male	Total	Female	Male
Doctoral degree												
Master's degree												
Bachelor's degree												
Technician certificate / diploma												
Total												

Comments

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

-

National classification and definitions

-

Original data

-

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1						
#2						
#3						
#4						
#5						
#6						
#7						
#8						
#9						
#10						
All other plant products						
All other animal products						
Total					–	

Name of currency	

Comments

8 Sustainable Development Goal 15

8a Sustainable Development Goal 15

SDG Indicator 15.1.1 Forest area as proportion of total land area 2015

Indicator	Percent							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area as proportion of total land area 2015	75.50	73.40	72.65	72.50	72.35	72.20	72.05	71.90

Name of agency responsible	

SDG Indicator 15.2.1 Progress towards sustainable forest management

Sub-Indicator 1	Percent						
	2000-2010	2010-2015	2015-2016	2016-2017	2017-2018	2018-2019	2019-2020
Forest area annual net change rate	-0.28	-0.20	-0.21	-0.21	-0.21	-0.21	-0.21

Name of agency responsible	

Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	121.50	121.50	121.50	121.50	121.50	121.50	121.50	121.50

Name of agency responsible	

Sub-Indicator 3	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area located within legally established protected areas	19.56	19.71	19.45	19.33	19.23	–	–	–

Name of agency responsible	

Sub-Indicator 4	Percent (2015 forest area baseline)							
	2000	2010	2015	2016	2017	2018	2019	2020
Proportion of forest area under long-term forest management plan	–	–	–	–	–	–	–	–

Name of agency responsible	

Sub-Indicator 5	Forest area (1000 ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Forest area under independently verified forest management certification schemes	0.00	81.62	132.70	0.32	13.56	18.01	–	–