Food and Agriculture Organization of the United Nations

Global Forest Resources Assessment 2020

Report

Iran (Islamic Republic of)

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.

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Introduction

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Introductory text

Iran covers a land area of **164,819,500 ha**. It is located in the southern part of the northern hemisphere on the **arid belt of the world**. Coastal points of the Caspian Sea are located lower than free seas. Damavand Mountain, with an altitude of 5,671 meters from sea level, is one of the highest mountains in the world and is the highest point in Iran.

A maximum precipitation of **2,000 mm** is observed at coastal areas of the Caspian Sea, as opposed to a minimum precipitation of **50 mm** received in some central areas of Iran. In summer, while the high mountains in Iran are covered with snow, the central deserts of the country, with temperatures of 55 ◦c, are among the hottest points on the planet earth. Iran is therefore, one of the most important countries in terms of climatic variations and that is why geographers have named Iran as "a connection bridge among the world's vital climates." Iran's varying climate has produced **a wide range of climatic variations** which in turn has created a unique collection of more than **8 thousand plant species** including herbal and tree species.

Ecologists and botanists have divided Iran's forests into **five vegetation regions** in consideration of **climate**. They are as follows:

1. The Hyrcanian Forests

2. Arasbarani Forests

3. Iran-Touranian Forests

4. Persian Gulf and Sea of Oman Region forests

5. Zagros Forests

According to the Constitutional Law of Iran, principle 45, all of forests, shrublands and other wooded lands are owned by the State and they are under public management.

Organizational Structure of forest management in Iran: Forest, Rangeland, and Watershed Management Organization (**FRWO**) and its provincial departments have a responsibility in protection, conservation, reclamation, development and utilization of forests, rangelands, forested lands, natural woods and coastal lands, as well as watershed management and soil conservation throughout the country. The head of the organization is the Deputy Minister of Forest, Range and Watershed Management Affairs. The institutional structure of FRWO is composed of Forest Affairs Deputy, Conservation and Land Affairs Deputy, Watersheds, Range Lands and Deserts Affairs Deputy and Planning, Management Development and Resources Deputy. Moreover, Public Relations & International Affairs Bureau, Extension & Public Participation Bureau, Central Security Bureau and Legal Affairs Bureau and Engineering and Studies Bureau are four independent bureaus which are doing their duties under the supervision of the head of the organization. FRWO has **33 provincial offices** that are responsible for forests protection. Each office has a few forestry sub-units and each forestry unit is composed of a few ranger offices.

The **vision** of **FRWO** is **Conservation**, **reclamation**, **sustainable development**, and sound **utilization** of forests, rangelands, wooded lands, natural woods, coastal areas and soil and water conservation based on **sustainable development approach** and through integrated management.

The **lack of fertile land** combined with the **growth in population**, especially in the 19th and 20th centuries, has led to the exploitable use of the land with no sustainable agricultural system. Reasons for **land degradation** are extensive land clearance, intensive irrigation agriculture on the highlands of Iran, overstepping the dry border, excessive livestock-keeping and groundwater extraction.

In spite of the gap of information that supports Sustainable Forest Management in Iran. FRWO now has a management shift to sustainable forest management. Development of National Forest Program (NFP) and preventing industrial logging in Caspian forests is happening now. Review of national forest policy and propose amendments where is conducive to the protection and development of forests with consideration of the interests of the local populations and stakeholders participation. The new policy will aim at reducing the people's dependence on the forest resources and promoting alternative income generating activities with added value.

FRA 2020 report are compiled mostly based on available information such as national forest inventory documents (for Caspian forests in north of Iran which is the last one is about ten years ago) and forest cover map 1:25000 (2015) for the forests located out of north Iran which had been prepared by Forest, Range and Watershed Organization (FRWO).

1 Forest extent, characteristics and changes

1a Extent of forest and other wooded land

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Additional comments
Engineering Technical and studies Bureau of FRWO	Forest area	Reference for the data of forest area is a national map which excluding fragmented Forests with around 0.5 ha. This project is providing maps with 1:25000 to detect forests area in all over Iran.

- The Data sources for 1990 is based on national forest inventory (for Hyrcanian forest) and national land cover map 1/250000 plus expertise *estimation (for other forests)*.
- The Data sources for 2000 is based on national land cover map 1/250000 plus aerial photo 1:40000 by using Orto photo interpretation with field ground truth data.
- the reference for forest areas in 2017 is forest cover map scale 1:25000 which classifies forests in all over of Iran by Canopy Cover Percentage. The method used for preparing forest cover map 1/25000 is satellite data interpretation plus aerial photo and field ground truth data (inventory).
- At the moment Engineering Technical Bureau of FRWO is investigating the status of Caspian forests and forest change using Sentinel-2 satellite imagery data and the results will be achieved in 2019.

National classification and definitions

National class	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 5 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.

Original data

Ecologists and botanists have divided Iran's forests into **five vegetation regions** in consideration of **climate**. They are as follows:

Forest type		Area/ 1000 ha
Zagros Forests	classification based on vegetation cover map and forest stand type map 1/25000 (2015)	5434
Iran-Touranian Forests		4666
Hyrcanian Forests		2073
Persian Gulf and Sea of Oman Region forests		2039
Arasbarani Forests		174

The data presented in the table above includes the area of forests and other wooded lands with a canopy cover of more than 5 percent.

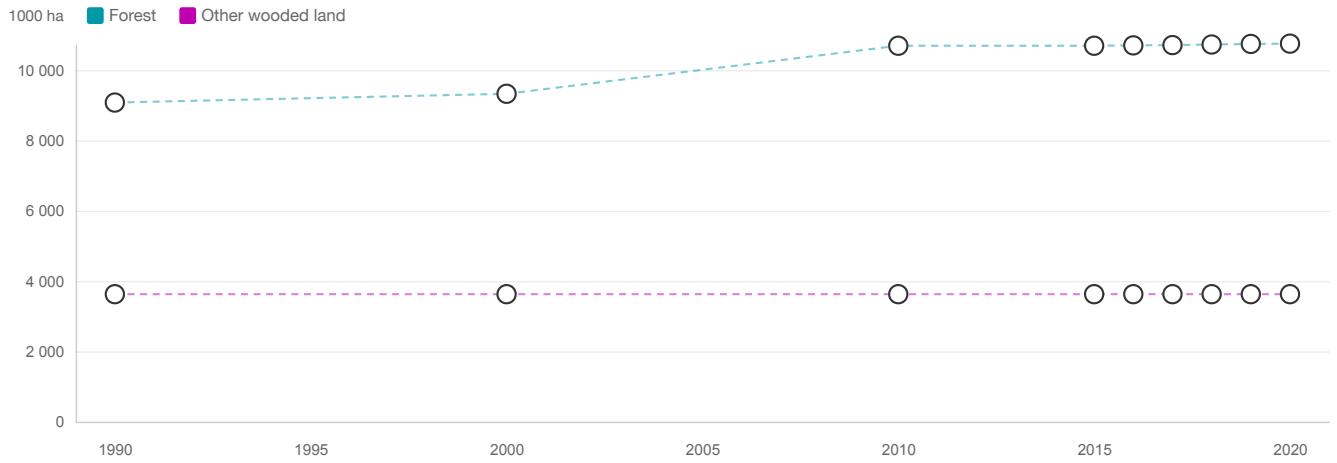
Analysis and processing of national data

Estimation and forecasting

There is no regular national forest inventory, except for Hyrcanian forest and The main difference is in the planted forest in different years. So Data were estimated using linear interpolation of the values of 1990 and 2017. Data for 2020 was forecasted using the linear extrapolation of values of 1990 and 2017.

Reclassification into FRA 2020 categories

The figures in the table entitled original data are based on vegetation cover map 1/250000 in the year 2000 and 1/25000 map in the year 2015
The method used for preparing this map is satellite data interpretation plus field ground truth data and expertise views.


1000 ha
Forest
Other wooded land
10 000
8 000
6 000
4 000
2 000
0
1990
1995
2000
2005
2010
2015
2020

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest (a)	9 076.06	9 325.66	10 691.98	10 691.98	10 702.08	10 710.59	10 727.03	10 743.47	10 751.87
Other wooded land (a)	3 627.02	3 627.02	3 627.02	3 627.02	3 627.02	3 627.02	3 627.02	3 627.02	3 627.02
Other land (c-a-b)	**150 172.92**	**149 923.32**	**148 557.00**	**148 557.00**	**148 546.90**	**148 538.39**	**148 521.95**	**148 505.51**	**148 497.11**
Total land area (c)	**162 876.00**	**162 876.00**	**162 876.00**	**162 876.00**	**162 876.00**	**162 876.00**	**162 876.00**	**162 876.00**	**162 876.00**

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	**4.00**	
Sub-tropical	**96.00**	
Tropical	**0.00**	

Comments

1b Forest characteristics

National Data

Data sources + type of data source eg NFI, etc

	References to sources of information	Variables	Years	Additional comments
1	Engineering Technical Bureau of FRWO	Mapping forest area	2000	Land cover map 1:250000, tree cover are included
2	Engineering Technical Bureau of FRWO	Mapping forest area	2015	forest map 1:25000

National classification and definitions

National class	Definition
Planted forest	Forest of natural or induced species , established through planting and/or deliberate seeding by human activity

Original data

FRA 2005 Categories	Area (1000 hectares)	Reference year	Source
Primary	200	2004	Expert Estimation
Other naturally regenerated forest	9531.74	2005	Vegetation cover map
Planted forest	941	2005	Vegetation cover map
Planted forest of which with native species in the Caspian Forests	198	2005	Vegetation cover map
Planted Forests of introduced species and conifers in the Caspian Forests and dryland forest	743	2005	Vegetation cover map
Mangroves	19.23	2005	Vegetation cover map

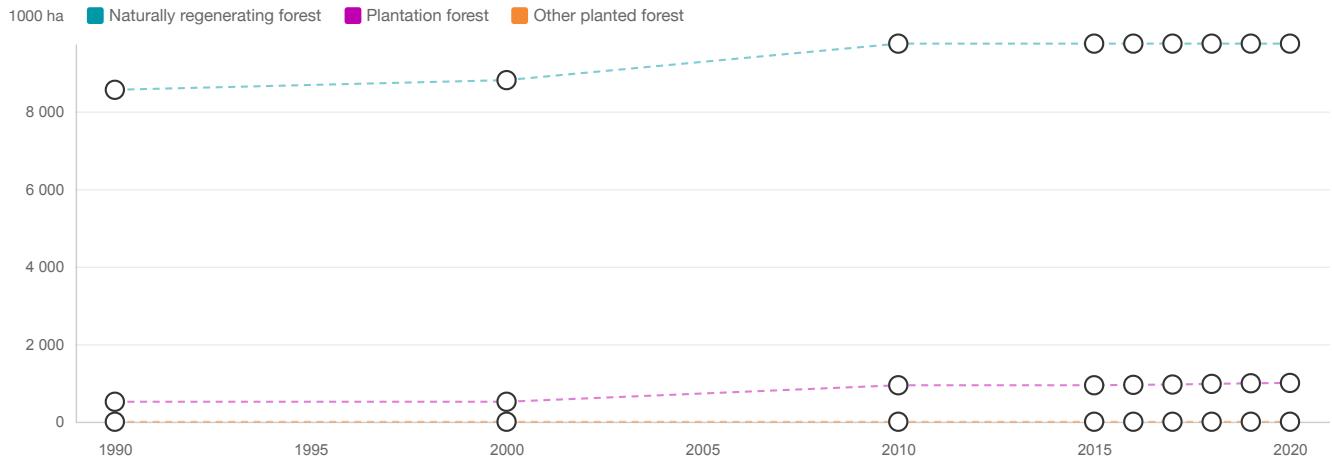
Analysis and processing of national data

Estimation and forecasting

Data were estimated using linear interpolation of the values of 1990 and 2017. Data for 2020 was forecasted using the linear extrapolation of values of 1990 and 2017.

Reclassification into FRA 2020 categories

The national definition for “Naturally regenerating forest” seems to be same as FRA definition. and for Planted forest Forest of natural or induced species , established through planting and/or deliberate seeding by human activity were used.


1000 ha
Naturally regenerating forest
Plantation forest
Other planted forest
8 000
6 000
4 000
2 000
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)	8 560.38	8 809.98	9 750.98	9 750.98	9 750.98	9 750.98	9 750.98	9 750.98	9 750.98
Planted forest (b)	**515.67**	**515.67**	**941.00**	**941.00**	**951.10**	**959.61**	**976.05**	**992.49**	**1 000.89**
Plantation forest	515.67	515.67	941.00	941.00	951.10	959.61	976.05	992.49	1 000.89
…of which introduced species									
Other planted forest	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total (a+b)	**9 076.05**	**9 325.65**	**10 691.98**	**10 691.98**	**10 702.08**	**10 710.59**	**10 727.03**	**10 743.47**	**10 751.87**
Total forest area	**9 076.06**	**9 325.66**	**10 691.98**	**10 691.98**	**10 702.08**	**10 710.59**	**10 727.03**	**10 743.47**	**10 751.87**

Comments

1c Primary forest and special forest categories

National Data

Data sources + type of data source eg NFI, etc

The data of primary forests is based on expert estimation and for mangroves is based on landcover map 1:25000.

National classification and definitions

Primary forest estimated as 200,000 hectares of Caspian forests in the north of Iran, There is not any regular inventory in there.

Original data

the data of primary forests is based on expert estimation

Analysis and processing of national data

Estimation and forecasting

The same figures for primary forest area due to lack of information wich is based on expert estimation and have been considered valid for all years, the data for mangroves area which is based on landcover map 1:250000.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories is not to be necessary.

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Primary forest	200.00	200.00	200.00	200.00	200.00
Temporarily unstocked and/or recently regenerated					
Bamboos	0.00	0.00	0.00	0.00	0.00
Mangroves	25.76	25.76	25.76	19.23	19.23
Rubber wood	0.00	0.00	0.00	0.00	0.00

Comments

1d Annual forest expansion, deforestation and net change

National Data

Data sources + type of data source eg NFI, etc

Annual forest expansion data were calculated with the help of the forest expert and annual specific reports of FRWO.

National classification and definitions

All tree plantation are included afforestation or reforestation.

The national definition for Reforestation refer to Natural regeneration or re-establishment of the forest through planting and/or deliberate seeding on land already in forest land use.

The national definition for afforestation Establishment of the forest through planting and/or deliberate seeding on land that, until then, was not defined as forest.

Original data

-

Analysis and processing of national data

Estimation and forecasting

Data were estimated using linear interpolation of the values of 1990 and 2017.

for deforestation, we used *Global Forest Watch for country tree cover loss and* Data were estimated using linear interpolation of the values of 2000 to 2017 for 2020.

Reclassification into FRA 2020 categories

No adjustment is done due to keeping the information on their real surface area based on FRA definition. planted forest area is based on the map of the plantation and provincial expert estimation.

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)	**24.96**	**136.63**	**0.00**	**11.98**

Comments

There is no detailed information for separation afforestation and natural expansion

1e Annual reforestation

National Data

Data sources + type of data source eg NFI, etc

Data sources for reforestation area is based on the map of the plantation and provincial expert estimation.

National classification and definitions

reforestation refers to natural regeneration or re-establishment of forest through planting and/or deliberate seeding on land already in forest land use.

Original data

-

Analysis and processing of national data

Estimation and forecasting

Data were estimated using linear interpolation of the values of 2000 to 2017 for 211502020 period.

Reclassification into FRA 2020 categories

No adjustment is done due to keeping the information on their real surface area based on FRA definition.

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

The data sources of agroforestry and Trees in urban settings is based on expert estimation.

National classification and definitions

National definition for agroforestry is wood production by plantation with Populus and Eucalyptus

Original data

-

Analysis and processing of national data

Estimation and forecasting

Estimates and forecasts do not require in this case.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

FRA categories	Area (1000 ha)				
	1990	2000	2010	2015	2020
Palms (a)	0.00	0.00	0.00	0.00	0.00
Tree orchards (b)					
Agroforestry (c)			6.86	2.11	5.00
Trees in urban settings (d)			1 000.00	1 500.00	1 800.00
Other (specify in comments) (e)					
Total (a+b+c+d+e)	**0.00**	**0.00**	**1 006.86**	**1 502.11**	**1 805.00**
Other land area	**150 172.92**	**149 923.32**	**148 557.00**	**148 557.00**	**148 497.11**

Comments

Due to the lack of information, there isn't any data for FRA categories of Tree orchards, Agroforestry, and trees in urban settings.

2 Forest growing stock, biomass and carbon

2a Growing stock

National Data

Data sources + type of data source eg NFI, etc

data of national periodic inventory (2006-2008) in Hyrcanian forests were used for the growing stoke table

National classification and definitions

Growing Stock for (Caspian Forests) is Volume over bark of all living trees more than 12.5 cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of 7 cm, and may also include branches to a minimum diameter of 7 cm.

Original data

Growing stock in Hyrcanian Caspian forests:
According to the 6th national periodic inventory based on temporally sample plots during 2006-2008 the
average growing stock is 242.42 cubic meters per hectare and forest area of the Caspian Forest was 1915500 ha but Caspian forest area based on vegetation cover map scale 1:25000 is 2073000 ha.

Dryland Forests:
The most parts of the Dryland Forest are simple coppice, so measurement of the growing stock cannot be done easily. The growing stock in these forests varies between 5 to 40 cubic meters per hectare. Average growing stock for these forests is estimated 12 cubic meters per hectare.

Biomass stock
No national data on biomass were available so IPCC default values are used. Carbon stock
No original data on carbon was available, so the carbon conversion factor recommended in the FRA guidelines 0.47 are used.

Analysis and processing of national data

Estimation and forecasting

Growing stock
Caspian forests:
The 1987 figure has been used for reporting year 1990 and the 1997 figure has been used for reporting year 2000. According to the decreasing of deforestation and annual harvesting the average volume of the growing stock increases by 1 cubic meter per hectare per year.
For 2010, an average growing stock of 230 cubic meters per hectare has been assumed with the same forest area as in 1997.

dou to not performing periodic inventory recently, the Data sources of 2010 National Forest Inventory repeated compatible for 2015 and 2020.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

FRA categories	Growing stock m³/ha (over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	47.27	46.14	48.12	48.12	48.12	48.12	48.12	48.12	48.12
Planted forest									
…of which plantation forest									
…of which other planted forest									
Forest									
Other wooded land									

FRA categories	Total growing stock (million m³ over bark)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Naturally regenerating forest	404.65	406.49	469.22	469.22	469.22	469.22	469.22	469.22	469.22
Planted forest									
…of which plantation forest									
…of which other planted forest									
Forest									
Other wooded land									

Comments

2b Growing stock composition

National Data

Data sources + type of data source eg NFI, etc

Only growing stock data by species for Caspian forests from 2008 inventory are available and presented in this table.

National classification and definitions

Definitions is according to FRA 2020 classification.

Original data

-

Analysis and processing of national data

Estimation and forecasting

dou to not performing periodic inventory recently, the Data sources of 2010 National Forest Inventory repeated compatible for 2015 and 2020.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

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	fagus orientalis		132.48	123.26	154.40	154.40	154.40
#2 Ranked in terms of volume	Carpinus betulus		126.20	125.25	150.00	150.00	150.00
#3 Ranked in terms of volume	Alnus sp.		30.53	35.53	36.70	36.70	36.70
#4 Ranked in terms of volume	Acer sp.		30.32	27.39	31.50	31.50	31.50
#5 Ranked in terms of volume	Quercus castaneafolia		34.17	36.35	30.20	30.20	30.20
#6 Ranked in terms of volume	Pavotia persica		15.75	21.29	23.00	23.00	23.00
#7 Ranked in terms of volume	Diospyrus lotus		5.99	9.86	13.80	13.80	13.80
#8 Ranked in terms of volume	Tillia sp		11.45	10.61	9.20	9.20	9.20
#9 Ranked in terms of volume	Fraxinus sp.		1.21	1.41	1.50	1.50	1.50
#10 Ranked in terms of volume	Remainder of species		16.68	15.58	19.00	19.00	19.00

FRA categories	Scientific name	Common name	Growing stock in forest (million m³ over bark)				
			1990	2000	2010	2015	2020
Native tree species							
Remaining native tree species							
Total volume of native tree species			**404.78**	**406.53**	**469.30**	**469.30**	**469.30**
Introduced tree species							
#1 Ranked in terms of volume	0		0.00	0.00	0.00	0.00	0.00
#2 Ranked in terms of volume	0		0.00	0.00	0.00	0.00	0.00
#3 Ranked in terms of volume	0		0.00	0.00	0.00	0.00	0.00
#4 Ranked in terms of volume	0		0.00	0.00	0.00	0.00	0.00
#5 Ranked in terms of volume	0		0.00	0.00	0.00	0.00	
Remaining introduced tree species			0.00	0.00	0.00	0.00	0.00
Total volume of introduced tree species			**0.00**	**0.00**	**0.00**	**0.00**	**0.00**
Total growing stock			**404.78**	**406.53**	**469.30**	**469.30**	**469.30**

Comments

2c Biomass stock

National Data

Data sources + type of data source eg NFI, etc

data of national periodic inventory (2006-2008) in Hyrcanian forests were used for the growing stoke table

National classification and definitions

Definitions is according to FRA 2020 classification.

Original data

Biomass stock
No national data on biomass were available so IPCC default values are used. Carbon stock
No original data on carbon was available, so the carbon conversion factor recommended in the FRA guidelines 0.47 are used.

Analysis and processing of national data

Estimation and forecasting

dou to not performing periodic inventory recently, the Data sources of 2010 National Forest Inventory repeated compatible for 2015 and 2020.

The root-shoot ratio of 0.24, 0.28 and 0.20 has been considered for broadleaved humid, Broadleaved dry and coniferous respectively. and The biomass conversion and expansion factor (BCEF) of 0.66, 0.66 and 0.55 have been applied for broadleaved humid, Broadleaved dry and coniferous respectively.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

FRA categories	Forest biomass (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass	130.73	137.17	138.44	138.44	138.31	138.20	137.99	137.78	137.67
Below-ground biomass	36.24	38.02	38.38	38.38	38.34	38.31	38.25	38.19	38.16
Dead wood									

Comments

2d Carbon stock

National Data

Data sources + type of data source eg NFI, etc

data of national periodic inventory (2006-2008) in Hyrcanian forests were used for the growing stoke table

National classification and definitions

Definitions is according to FRA 2020 classification.

Original data

Biomass stock
No national data on biomass were available so IPCC default values are used. Carbon stock
No original data on carbon was available, so the carbon conversion factor recommended in the FRA guidelines 0.47 are used.

Analysis and processing of national data

Estimation and forecasting

dou to not performing periodic inventory recently the Data sources of 2010 National Forest Inventory repeated compatible for 2015 and 2020.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

FRA categories	Forest carbon (tonnes/ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Carbon in above-ground biomass	61.44	64.47	65.07	65.07	65.01	64.95	64.85	64.76	64.70
Carbon in below-ground biomass	17.03	17.87	18.04	18.04	18.02	18.01	17.98	17.95	17.94
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

References to sources of information is Forestry technical Bureau of FRWO in forestry plans and projects. And also References to sources of information is Forest Resources Management Bureau of FRWO for the multi-purpose forestry plan in Zagros Forests.

National classification and definitions

for production forest, national definition is Forest management plan mainly focused on production of wood.

Original data

presented data are based on Forest areas with diffrent management plans including forestry plans in hyrcanian forests wich focused on wood production and multi purpuse forest plan in Zagros forests.

Analysis and processing of national data

Estimation and forecasting

Estimates and forecasts do not require in this case.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

Primary designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production (a)	1 000.00	1 500.00	1 500.00	1 500.00	1 500.00
Protection of soil and water (b)	7 377.06	7 135.66	6 134.98	5 726.98	5 126.98
Conservation of biodiversity (c)	153.00	153.00	153.00	419.00	419.00
Social Services (d)					
Multiple use (e)	0.00	500.00	2 867.00	3 000.00	3 000.00
Other (specify in comments) (f)					
None/unknown (g)	**546.00**	**37.00**	**37.00**	**46.00**	**705.89**
Total forest area	**9 076.06**	**9 325.66**	**10 691.98**	**10 691.98**	**10 751.87**

Total area with designated management objective

FRA 2020 categories	Forest area (1000 ha)				
	1990	2000	2010	2015	2020
Production	1 000.00	1 500.00	1 500.00	1 500.00	0.00
Protection of soil and water	7 377.06	7 325.66	3 992.98	5 726.98	5 126.98
Conservation of biodiversity					
Social Services					
Other (specify in comments)					

Comments

The difference in data between 2010 and 2000 for Protection of soil and water (Table3a):
This difference in statistics is due to the beginning of the preparation and implementation of multi-purpose forestry projects in the Zagros forests in 2010, and consequently increase the area of Multiple use forest in FRA 2020 categories.
This explanation requires that the difference in data is due to a change in management definitions, Protection of soil and water is also considered in Multiple use category.

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

References to sources of information for Forest area within protected areas is forest cover map 1:25000 (2018), prepared by Engineering Technical and studies Bureau of FRWO.

National classification and definitions

In addition to FRWO, the Department of Environment (DOE) national authority in charge of safeguarding the environment provides full protection to major biodiversity sites. The DOE manages five categories of protected areas as indicated below:

a. National Parks
b. Wildlife Refuges
c. Protected Areas
d. National Nature Monuments
e. Biosphere Reserves

Original data

-

Analysis and processing of national data

Estimation and forecasting

The data does not require any Estimation and forecasting.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

FRA categories	Area (1000 ha)								
	1990	2000	2010	2015	2016	2017	2018	2019	2020
Forest area within protected areas			1 069.00	1 069.00	1 510.00	1 510.00	1 510.00	1 510.00	1 510.00
Forest area with long-term forest management plan	541.73	982.47	3 080.00	3 100.00	3 100.00	3 100.00	3 100.00	3 100.00	3 100.00
...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

References to sources of information	Variables	Years
Engineering Technical Bureau of FRWO	Public ownership	2000
Forest Resources Management Bureau of FRWO	forest cover map 1:25000 for out of north Iran	2011

National classification and definitions

Definition is according to FRA classification

Original data

According to the Constitutional Law of Iran, the principle 45, all of forests, shrub lands and other wooded lands are owned by the State and they are under public management.

Analysis and processing of national data

Estimation and forecasting

The data is fixed and does not require any Estimation and forecasting

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

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)	9 076.06	9 325.66	10 691.98	10 691.98
Unknown/other (specify in comments) (c)	**0.00**	**0.00**	**0.00**	**0.00**
Total forest area	**9 076.06**	**9 325.66**	**10 691.98**	**10 691.98**

Comments

4b Holder of management rights of public forests

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years
Engineering Technical Bureau of FRWO	Public ownership	2000
Forest Resources Management Bureau of FRWO	forest cover map 1:25000 for out of north Iran	2011

National classification and definitions

Definition is according to FRA classification

Original data

According to the Constitutional Law of Iran, the principle 45, all of forests, shrub lands and other wooded lands are owned by the State and they are under public management..

Analysis and processing of national data

Estimation and forecasting

The data is fixed and does not require any Estimation and forecasting

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

FRA categories	Forest area (1000 ha)			
	1990	2000	2010	2015
Public Administration (a)	9 076.06	9 325.66	10 691.98	10 691.98
Individuals (b)	0.00	0.00	0.00	0.00
Private business entities and institutions (c)	0.00	0.00	0.00	0.00
Local, tribal and indigenous communities (d)	0.00	0.00	0.00	0.00
Unknown/other (specify in comments) (e)	**0.00**	**0.00**	**0.00**	**0.00**
Total public ownership	**9 076.06**	**9 325.66**	**10 691.98**	**10 691.98**

Comments

5 Forest disturbances

5a Disturbances

National Data

Data sources + type of data source eg NFI, etc

References to sources of information about forest Disturbances is Department of Conservation and Land Affairs of FRWO.

National classification and definitions

Definitions is according to FRA 2020 classification.

Original data

The data provided is based on provincial reports sent to the Department of Conservation of FRWO. This data for For important diseases such as Boxwood Blight and Oak decline is based on the map Which is provided by the Bureau of Engineering and Studies.

Analysis and processing of national data

Estimation and forecasting

Estimates and forecasts do not require in this case.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

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)																		502.30
Diseases (b)																		1 533.09
Severe weather events (c)																		
Other (specify in comments) (d)																		558.00
Total (a+b+c+d)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	**2 593.39**
Total forest area	**9 325.66**	–	–	–	–	–	–	–	–	–	**10 691.98**	–	–	–	–	**10 691.98**	**10 702.08**	**10 710.59**

Comments

Other forest Disturbances are forests affected by porcupines and other wild animals and parasitic plants like Viscum.

Oak charcoal disease in Zagros forests and boxwood blight in Caspian forests are most important Diseases. The total infected area for Oak charcoal disease is estimated 1496000 ha and for boxwood blight is 37094 ha.

Since the occurrence and outbreak of oak charcoal disease were reported in 2011 for the first time, it's a new disease. Causal agents were recognized morphologically and moleculary. Both species, *Biscogniauxia mediterranea* (syn. *Hypoxylon mediterraneum*) and *Obolarina persica,* Mirab., Y.M. Ju, H.M. Hsieh & J. D. Rogers, sp. Nov was found pathogens using pathogenicity tests on Persian oak seedling in glasshouse conditions. After identification the causal agents of oak charcoal disease complementary research projects conducted

The occurrence and outbreak of Buxus Blight as a new disease was reported in 2013 for the first time. After the fungal causal agent was identified morphologically and molecularly (*Calonectria pseudonaviculata*) complementary research projects were conducted.

Currently the project "**Assistance to Strengthening the Resilience of Zagros Forests to Oak Decline and Caspian Forests to Boxwood Blight and Development of National Forest Monitoring System in The Islamic Republic of Iran" TCP/IRA/3502,** is under running.

5b Area affected by fire

National Data

Data sources + type of data source eg NFI, etc

References to sources of information about forest Disturbances is Department of Conservation and Land Affairs of FRWO.

National classification and definitions

Total land area affected by fire in national classification refers to total rangeland and forest affected by fire and burned.

burned forest refers to forest affected by fire including stem and canopy.

Original data

The data provided is based on provincial reports sent to the Department of Conservation of FRWO. This data is based on the map and type of fire.

Analysis and processing of national data

Estimation and forecasting

Estimates and forecasts do not require in this case.

Reclassification into FRA 2020 categories

Reclassification into FRA 2020 categories not to be necessary.

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				165.58	183.25	113.82	157.52	294.57	21.34	142.98	642.52	98.85	60.99	15.43	19.68	15.01	21.50	9.18
…of which on forest				0.79	0.17	0.65	27.52	0.58	1.02	1.34	1.02	0.15	0.35	3.64	8.60	4.79	4.54	4.01

Comments

5c Degraded forest

Does your country monitor area of degraded forest		Yes
If "yes"	What is the national definition of "Degraded forest"?	The current status of the forest with low cover, soil degradation due to erosion and lack of sexual regeneration lead to unsustainable condition. There is no sexual regeneration through seedlings due to the high overgrazing.
	Describe the monitoring process and results	The main organization which leads researches to manage forest pests and diseases is Natural Resources Conservation and Protection Bureau, at Forest Range and Watershed Organization (FRWO). When an outbreak or occurrence of newfound pest or disease is reported by the local experts in FRWO centers or stations in different provinces, a meeting of the emergency technical committee of Natural Resources Conservation and Protection Bureau is held.

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

References to sources of information subject to SFM in Iran is instructions of Sustainable Forest Management which have been communicated by Forest, Rangeland and Watershed High Council in 2017.

National classification and definitions

Definitions is according to FRA 2020 classification.

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	Yes
Traceability system(s) for wood products	No	No

Comments

6b Area of permanent forest estate

National Data

Data sources + type of data source eg NFI, etc

References to sources of information	Variables	Years	Additional comments	
1	Engineering Technical Bureau of FRWO	Mapping forest area	2000	Land cover map 1:250000, tree cover are included
2	Engineering Technical Bureau of FRWO	Mapping forest area	2015	forest map 1:25000

National classification and definitions

The national definition for “Area of permanent forest estate” seems to be same as FRA definition.

Original data

-

FRA 2020 categories	Forest area (1000 ha)					
	Applicable?	1990	2000	2010	2015	2020
Area of permanent forest estate	Yes			10 691.98	10 691.98	10 751.87

Comments

7 Employment, education and NWFP

7a Employment in forestry and logging

National Data

Data sources + type of data source eg NFI, etc

the reference for Data sources of Employment based on person-years in 2018 is the plan and program bureau of FRWO.

These statistics include the number of people who are employed for activities, directly and indirectly, related to forestry and watershed management, protection and conservation of natural resources activities which cannot be separated exactly. It excludes the number of persons who are employed in FRWO.

National classification and definitions

Employment in forestry and logging means Employment in activities related to production of goods derived from forests. This category corresponds to the ISIC/NACE Rev. 4 activity A02 (Forestry and logging).

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	65.83	4.60	61.23	52.75	6.33	46.42	14.35	1.96	12.39	10.81	1.66	9.15
…of which silviculture and other forestry activities										7.56		
…of which logging												
…of which gathering of non wood forest products												
…of which support services to forestry												

Comments

These statistics include the number of people who are employed for activities, directly and indirectly, related to forestry and watershed management, protection and conservation of natural resources activities which cannot be separated exactly. It excludes the number of persons who are employed in FRWO.

7b Graduation of students in forest-related education

National Data

Data sources + type of data source eg NFI, etc

Data source for Bachelor 's, Master's and Doctoral degree in forest-related education is National Organization of Educational Testing (NOET) under the supervision of Ministry of Science and Higher Education.

Data source for Technician certificate/diploma is University of Applied Science and Technology.

National classification and definitions

Higher education is sanctioned by different levels of diplomas: *Fogh-e-Diplom* or *Kārdāni* after 2 years of higher education, *Kārshenāsi* (also known under the name "licence") is delivered after 4 years of higher education (Bachelor's degree). *Kārshenāsi-ye Arshad* is delivered after 2 more years of study (Master's degree). After which, another exam allows the candidate to pursue a doctoral program (PhD).

Original data

the presented data are based on Official Publications of NOET for selecting and introducing the most qualified people to study at university and higher educational institutions all over Iran.

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										37.00		
Master's degree										142.00		
Bachelor's degree										485.00		
Technician certificate / diploma										750.00		
Total										1 414.00		

Comments

7c Non wood forest products removals and value 2015

National Data

Data sources + type of data source eg NFI, etc

References to sources of information for Non-wood forest products removals and value is Watersheds, Range Lands and Deserts Affairs Deputy of FRWO

National classification and definitions

Non wood forest products (NWFPs) : Goods derived from forests that are tangible and physical objects of biological origin other than wood.

Original data

-

	Name of NWFP product	Key species	Quantity	Unit	Value (1000 local currency)	NWFP category
#1	Thyme (آویشن)	Thymus vulgaris	267 675	Kg	29 711 925	3 Raw material for medicine and aromatic products
#2	Asafetida (آنغوزه)	Ferula assa-foetida	168 460	Kg	1 137 684 250	1 Food
#3	Galbanum (باریجه)	Ferula gummosa	50 846	Kg	61 015 800	3 Raw material for medicine and aromatic products
#4	Truffle (دنبلان کوهی)	Tuber spp.	250 000	Kg	100 000 000	1 Food
#5	Licorice (ریشه شیرین بیان)	Glycyrrhiza glabra	69 395	Kg	5 537 721	3 Raw material for medicine and aromatic products
#6	Natural gum (سقز)	Pistacia atlantica	78 300	Kg	140 940 000	3 Raw material for medicine and aromatic products
#7	Astragal (کتیرا)	Astraglus spp.	23 149	Kg	162 043 000	3 Raw material for medicine and aromatic products
#8	Almond (بادام کوهی)	Amygdalus spp.	3 550	Kg	3 195 000	1 Food
#9	Borage (گل گاو زبان)	Anchusa italica Retz	137 808	Kg	8 268 480	3 Raw material for medicine and aromatic products
#10	Capparis (کاپاریس)	Capparis spinosa	32 000	Kg	960 000	3 Raw material for medicine and aromatic products
All other plant products					131 804 142	
All other animal products						
Total					**1 781 160 318**	

Name of currency	Iranian rial

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	5.73	6.56	6.56	6.57	6.58	6.59	6.60	6.60

Name of agency responsible	Forest, Rangeland and Watershed High Council (FRWO)

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	1.38	0.00	0.09	0.08	0.15	0.15	0.08

Name of agency responsible	Forest, Rangeland and Watershed High Council (FRWO)

Sub-Indicator 2	Forest biomass (tonnes/ha)							
	2000	2010	2015	2016	2017	2018	2019	2020
Above-ground biomass stock in forest	137.17	138.44	138.44	138.31	138.20	137.99	137.78	137.67

Name of agency responsible	Forest, Rangeland and Watershed High Council (FRWO)

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	–	10.00	10.00	14.12	14.12	14.12	14.12	14.12

Name of agency responsible	Forest, Rangeland and Watershed High Council (FRWO)

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	9.19	28.81	28.99	28.99	28.99	28.99	28.99	28.99

Name of agency responsible	Forest, Rangeland and Watershed High Council (FRWO)

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	0.00	0.00	0.00	0.00	0.00	–	–