

Chapter IV National Forest Management

1. Roles of National Forests

(1) Distribution and Roles of National Forests

National forests occupy 7.58 million ha of land, almost 20% of the land area of Japan, and approximately 30% of the total forest area. They are widely distributed in the remote mountainous areas and headwaters areas, and they play important roles in fulfillment of the multiple functions of forests, including land conservation, watershed conservation, etc.

National forests which have diverse ecosystems, are important for the conservation of biodiversity, and 95% of the land designated as World Natural Heritage sites in Japan (Shiretoko, Shirakami-Sanchi, Ogasawara Islands and Yakushima) is located in national forests.

(2) National Forests Management

National forests, an important asset of the country, are managed by the Forestry Agency in an integrated manner under the National Forest Management Program.

Since FY2013, this program has been executed under the General Account Budget with a view to further promoting the sound management of national forests aiming to enhance public benefits and to contribute to revitalization of Japan's forests and forestry.

2. Specific Initiatives under the National Forest Management Program

(1) Further Promotion of Management with Emphasis on Public Benefits

The Forestry Agency manages each national forest in accordance with the five forest types categorized based on the expected functions of "landslide prevention", "natural conservation", "recreational use", "comfortable environment development", and "watershed conservation".

Ninety percent of national forests are conservation forests such as watershed conservation. The Forestry Agency improves devastated land and conservation forests through forest conservation projects in order to ensure the people safe and worry-free lives.

The Forestry Agency designates and manages "Protected Forests" and "Green Corridors" in order to conserve biodiversity. As of April 2019, Protected Forests were designated at 667 locations covering 978,000 ha of land, which accounted for 13% of national forest area. "Green Corridors" were formed as of April 2019 at 24 locations, covering 584,000 ha of land, and accounting for 8% of national forest area. The Forestry Agency takes measures to protect rare species of wildlife, and prevents deer and other wildlife from damaging forests.

The Chubu Regional Forest Office in Nagano Prefecture is demonstrating a method to build a driftwood catching facility by exploiting an existing forest conservation dam. It has confirmed the excellent economic efficiency and workability of the method to build a driftwood catching facility at the upstream side of an existing forest conservation dam without adjusting the dam.



Facility location (Chushin, District Forest Office)
[constructed in 2018]



The driftwood catching facility (Tono, District Forest Office)
[constructed in 2018]



(2) Contribution to Transforming Forestry into a Growth Industry

Through the organizations, technical capabilities and resources of the National Forest Management Program, the Forestry Agency is (I) developing and disseminating technologies for low-cost forestry practices, such as utilization of containerized seedlings and “simultaneous operation of harvesting and planting”; (II) establishing cooperative forest management areas to collaborate with private forests to promote development of forestry road systems and forest operations; and (III) promoting stable wood supply to lumber and plywood mills through “System Sales”.

The Shikoku Regional Forest Office has introduced a system to improve trap patrolling efficiency and use wildlife for *gibiers* (game meat) because forests have been damaged by wildlife. The system uses LPWA (low-power, wide-area network) and mobile data communications to immediately inform hunters of trapped animals through mobile terminals.

The system improves not only the efficiency of hunter's trap patrolling and animal catching but also that of the administration sector's operations regarding forest damage prevention.

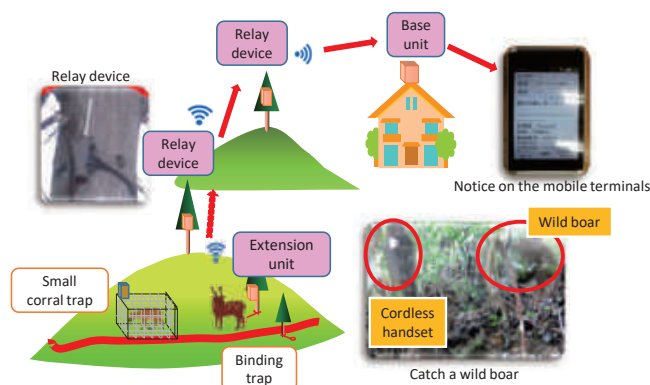


Image of a catch information system using IoT



(3) National Forests as “Forests for People”

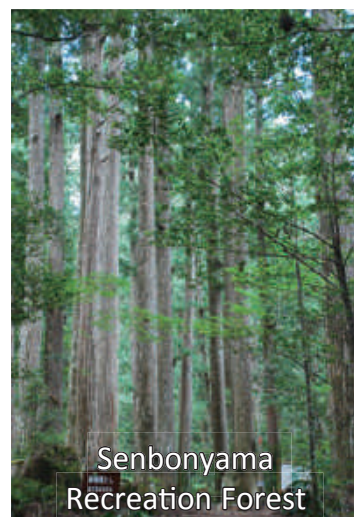
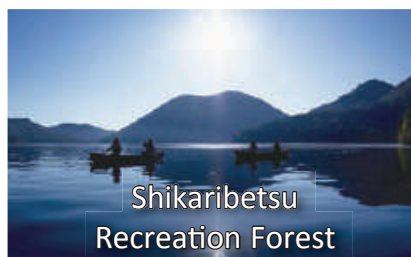
The Forestry Agency provides various organizations (e.g. schools, voluntary groups, corporations, traditional woodworkers) with places for field activities such as forest environmental education and forest management practices, by designating forests for such activities within national forests. The Forestry Agency also undertakes “model projects” to manage forests in cooperation with local parties and nature conservation groups.

The Forestry Agency leases national forests to local governments and residents. “Recreation Forests” are managed and administered in partnership with municipalities and other stakeholders in local communities such as the tourist industry. In FY2018, a total of 140 million people visited “Recreation Forests”.

And 93 of “Recreation Forests” that have potential attractiveness as tourism resources were selected as “Japan’s Forests with Breathtaking Views” (Fig.IV – 1). To encourage more people to visit these forests, the Forest Agency has improved facilities and promotes these by posting multilingual signs, provides information on web sites in two languages.



QR Code for “Japan’s Forests with Breathtaking Views” website



Source: Forestry Agency.

Fig. IV – 1 Cases of “Japan’s Forests with Breathtaking Views”

1. Recovery of Forests, Forestry and the Wood Industry

(1) Recovery of Forests, Forestry and the Wood Industry

In March 2011, the Great East Japan Earthquake caused damages to forests and forest conservation facilities and forest roads in 15 prefectures. By January 2020, 98% of the recovery works had been completed.

The Forestry Agency supported disposal, restoration, and improvement of wood processing and distribution facilities which were damaged (115 locations nationwide). As of April 2019, operations had restarted at 97 locations. Production of logs and wooden products have generally recovered to the respective levels before the earthquake.

(2) Restoration of Coastal Forests

Approximately 164 km of coastal disaster-prevention forests damaged by the tsunami required restoration work. Restoration works were started on all of them, and the works were completed on about 130 km of these damaged coastal disaster-prevention forests at the end of January 2020.

The restoration of coastal disaster-prevention forests is being done by planting and nurturing trees with the participation and cooperation of residents, companies, and NPOs.

(3) Promotion of Wood Use for Reconstruction and Contribution by Forests and Forestry

More than 25% of “emergency temporary houses” (about 15,000 dwellings) were constructed of wood in three prefectures (Iwate, Miyagi and Fukushima). By the end of September 2019, about 30% (about 9,000 dwellings) of completed public houses for disaster victims (reconstruction houses) were constructed of wood.

The large quantity of woody disaster debris produced by the earthquake and tsunami was used as raw material for engineered wood, boiler fuel, and biomass power plants.

To address population decline, hollowing of industry and other problems common to all regions of Japan, the forestry and wood processing industry also takes steps to achieve reconstruction using forest resources.

In October 2015, Minami Sanriku Town, Miyagi Prefecture, acquired an FSC^{※1} certificate to sustainably use mountain forests that account for 80% of its area.

Minami Sanriku Town is spreading local information to the public to take advantage of the certificate, through study tours at forests. It is also creating new relations with business corporations and consumers interested in the town and its environment.

Minami Sanriku Town has also acquired an ASC^{※2} certificate for oyster farming. The certificate is expected to contribute to enhancing the communication to the public of the local brand of Minami Sanriku, which links mountains to the sea.



A study tour in FSC forest

※ 1 FSC stands for Forest Stewardship Council.

※ 2 The ASC (Aquaculture Stewardship Council) certificate is given to safe, sustainable aquaculture giving consideration to the protection of nature and resources.



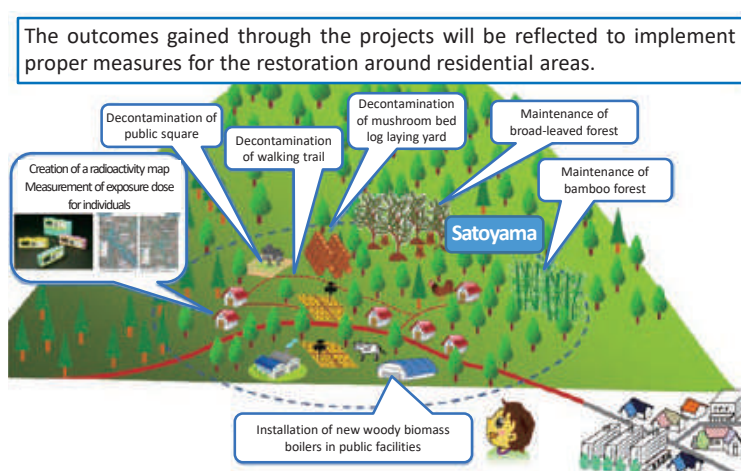
2. Reconstruction after the Nuclear Accident

(1) Measures against Radioactive Substances in Forests

Based on “Comprehensive Efforts towards the Regeneration of Forests and Forestry in Fukushima” (March 2016), the GOJ is undertaking efforts to restore “satoyama forests” around residential areas, to regenerate forestry and to disseminate information.

The GOJ conducts investigative research about trends of distribution of radioactive substances within forests.

The GOJ has conducted “Satoyama Forest Restoration Model Projects” which comprehensively promotes projected measures to restore satoyama forest. 14 model districts mainly within areas where evacuation orders have been lifted are selected by March 2019 (Fig. V – 1).



Source: Prepared by the Forestry Agency based on the Reconstruction Agency web site

Fig. V – 1 Illustration of the Satoyama Forest Restoration Model Project

(2) Supply Safe Forest Products

The Forestry Agency has developed “Guidelines Concerning Management of Bed-log Cultivation of Mushrooms to Decrease Radioactive Cesium”. Shipment restrictions on mushrooms are to be lifted when cultivation is managed based on this guideline and it has been determined that no mushrooms are produced whose radioactivity exceeds the standard values.

It is also to be noted that shipment restrictions for wild mushrooms and wild vegetables have been gradually lifted through appropriate inspection and shipment management.

To supply safe wood products to consumers, the Forestry Agency supports research and analysis on radioactive materials of wood products and the relevant work environment, and initiatives to develop arrangements for certifying the safety of wood products.

Appendix

1. Forestry-related Fundamental Figures

Item	Unit	2000	2005	2010	2014	2015	2016	2017	2018
i Nominal gross domestic product (GDP)	billion yen	526,706	524,133	500,354	513,876	531,320	535,537	545,897	547,126
Forestry	billion yen	172	134	190	214	206	211	215	226
Forestry / GDP	%	0.03	0.03	0.04	0.04	0.04	0.04	0.04	0.04
ii Total number of workers	million	64.46	63.56	62.57	63.71	64.01	64.65	65.30	66.64
Forestry	million	0.07	0.06	0.08	0.08	0.07	0.06	0.06	0.07
Forestry / Total # of workers	%	0.11	0.09	0.13	0.13	0.11	0.09	0.09	0.11
iii Land area of Japan	million ha	37.79	37.79	37.80	37.80	37.80	37.80	37.80	37.80
iv Forest	million ha	25.15	25.12	25.10	25.08	25.08	25.08	25.05	25.05
Forest / Land area	%	67.5	67.4	67.3	67.3	67.3	67.3	67.2	67.2
v Protection forest	million ha	8.93	11.65	12.02	12.14	12.17	12.18	12.20	12.21
Protection forest / Forest	%	35.5	46.4	47.9	48.4	48.5	48.6	48.7	48.7
vi Growing stock of forest	billion m ³	3.5	4.0	4.4	4.9	4.9	4.9	5.2	5.2
vii Industrial wood supply	million m ³	101.01	87.42	71.88	75.80	75.16	78.08	81.72	82.48
Domestic production	million m ³	19.06	17.90	18.92	23.65	24.92	27.14	29.53	30.20
Import	million m ³	81.95	69.52	52.96	52.15	50.24	50.94	52.19	52.28
Self-sufficiency rate	%	18.9	20.5	26.3	31.2	33.2	34.8	36.1	36.6
viii New housing starts	million units	1.23	1.24	0.81	0.89	0.91	0.97	0.96	0.94
Ratio of wooden structure	%	45.2	43.9	56.6	54.9	55.5	56.5	56.5	57.2

Notes : "Industrial wood supply," "Domestic production," and "Import" in "vii" refer to the volume in roundwood equivalent.

Sources: i: Cabinet Office "SNA (System of National Accounts)"

ii: Ministry of Internal Affairs and Communications "Labor Force Survey" (Iwate, Miyagi and Fukushima Prefectures are excluded from the data for 2011.)

iii: Ministry of Land, Infrastructure, Transport and Tourism (MLIT) "Land Survey of Prefectures, Cities, Wards, Towns and Villages, Geographical Survey Institute"

iv, v, vi: Forestry Agency

vii: Forestry Agency "Wood Supply and Demand Chart"

viii: MLIT "Statistics on Building Construction Starts"

2. Forestry Output

(Unit: billion yen)

Item	2000	2005	2010	2014	2015	2016	2017	2018
Forestry output	531.15	417.05	425.70	464.00	454.46	470.25	486.33	502.02
Wood production	322.18	210.50	195.29	245.86	234.08	237.00	256.09	264.83
Softwood	265.33	177.41	170.16	215.88	198.19	195.39	206.06	209.99
Sugi (Japanese Cedar)	123.78	87.53	93.50	129.62	118.09	116.74	122.68	126.44
Hardwood	54.72	31.71	23.76	18.96	19.51	19.06	18.40	18.42
Fuelwood and charcoal production	6.16	6.09	5.08	5.66	5.31	5.49	5.44	5.54
Grown mushroom production	196.89	198.50	218.91	208.40	210.52	221.39	220.08	225.66
Minor forestry products production	5.92	1.96	6.42	4.08	4.54	6.37	4.73	5.98
Forestry income produced	351.91	245.78	229.22	252.62	251.02	260.10	269.54	266.58

Notes 1: Due to rounding, some totals may not correspond with the sum of the separate figures.

2: "Wood production" includes the output of wood chips for fuel since 2011.

3: "Fuelwood and charcoal production" includes the output of bamboo wood and charcoal dust since 2001.

4: "Grown mushroom production" includes the output of eryngii mushrooms and other varieties of grown mushrooms since 2001.

5: "Minor forestry products production" includes the output of Japan wax and Japanese lacquer since 2002, the output of wild grass (wild vegetables and wild herbs) since 2010 and the output of gibier since 2016.

Source: Ministry of Agriculture, Forestry and Fisheries (MAFF) "Forestry Output"

3. Current State of Forest Resources

(Unit: 1,000ha, million m³)

Classification			Total		Standing timber area (canopy cover more than 30%)				Treeless land (canopy cover less than 30%)		Bamboo groves
					Planted forest		Natural forest				
			Area	Growing stock	Area	Growing stock	Area	Growing stock	Area	Growing stock	Area
Total			25,048	5,241.50	10,204	3,308.42	13,481	1,932.45	1,197	0.64	167
National forest	Subtotal		7,659	1,225.93	2,288	513.04	4,733	712.45	637	0.44	0
	Under the Forestry Agency's jurisdiction	Subtotal	7,593	1,220.72	2,282	512.03	4,682	708.24	629	0.44	0
		State-owned	7,508	1,201.28	2,208	492.83	4,680	708.01	620	0.44	0
		Government reforestation	85	19.44	73	19.21	2	0.23	10	0	-
		Others	0	0	-	-	-	-	0	0	-
	Under other Agency's jurisdiction		65	5.21	7	1.00	51	4.20	8	-	0
Private and public forest	Subtotal		17,389	4,015.57	7,916	2,795.38	8,747	1,220.00	560	0.19	167
	Public forest	Subtotal	2,995	615.56	1,334	397.05	1,531	218.36	124	0.15	6
		Prefecture	1,292	252.69	529	145.59	709	107.01	53	0.09	1
		Municipality/Property ward	1,702	362.87	804	251.47	822	111.35	71	0.06	5
	Private forest		14,347	3,394.33	6,569	2,395.55	7,188	998.74	431	0.04	158
	Others		48	5.68	13	2.78	28	2.90	5	0	3

Notes 1: Data cover the forests defined in Article 2 of the Forest Act.

2: "Others" refer to forests that are not subject to the "Regional Forest Plans" for non-national forest under Article 5 of the Forest Act, and for national forest under Article 7-2 of the Forest Act.

3: Figures are as of March 31, 2017.

4: Due to rounding, some totals may not correspond with the sum of the separate figures.

Source: Forestry Agency

4. Planted Area by Tree Species

(Unit: ha)

	Total	Softwood					Hardwood
		Sugi (Japanese cedar)	Hinoki (Japanese cypress)	Matsu (Pine)	Karamatsu (Japanese larch)	Others	
2000	(31,316)	(8,223)	(11,574)	(233)	(2,524)	(4,954)	(3,808)
	28,480	7,967	10,745	223	2,493	4,014	3,038
2005	(25,584)	(5,216)	(7,096)	(226)	(3,534)	(5,728)	(3,784)
	22,498	5,011	6,307	183	3,423	4,611	2,963
2010	(18,756)	(4,132)	(2,820)	(247)	(4,604)	(4,265)	(2,688)
	16,388	3,844	2,262	237	4,418	3,381	2,246
2014	(21,088)	(5,185)	(2,543)	(554)	(4,603)	(5,709)	(2,492)
	17,720	5,098	2,404	518	4,128	3,622	1,950
2015	(19,429)	(5,537)	(2,039)	(185)	(4,467)	(5,250)	(1,950)
	16,607	5,390	1,930	168	4,027	3,450	1,642
2016	(21,106)	(6,766)	(1,972)	(291)	(5,017)	(4,983)	(2,077)
	18,390	6,570	1,852	253	4,552	3,383	1,781
2017	(22,069)	(7,102)	(1,979)	(406)	(5,388)	(5,423)	(1,771)
	19,866	6,845	1,874	388	5,179	4,110	1,471
2018	(21,568)	(6,899)	(1,845)	(277)	(5,486)	(5,106)	(1,956)
	19,340	6,597	1,760	272	5,165	3,799	1,747

Notes 1: Figures do not include national forest.

2: Figures in parentheses refer to the total area which includes area planted as lower layer of multi-layered forest.

Source: Forestry Agency

5. Planted Forest Area by Age Classes

(Unit: 1,000ha)

	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	XIII	XIV	XV	XVI	XVII	XVIII	XIX	XX
1985	604	895	1,263	1,691	1,762	1,569	947	337	240	205	178	137	111	83	148					
1989	436	700	943	1,351	1,691	1,746	1,413	777	270	224	183	151	118	93	79	52	62			
1994	278	421	699	937	1,336	1,686	1,719	1,388	735	262	213	172	139	112	86	67	105			
2001	131	226	350	589	874	1,149	1,599	1,677	1,522	946	353	204	171	144	112	89	62	52	70	
2006	88	168	227	352	593	873	1,143	1,582	1,649	1,500	918	345	200	168	141	106	90	62	120	
2011	73	114	159	231	347	584	852	1,111	1,565	1,631	1,473	921	345	194	164	138	105	87	174	
2016	68	102	114	164	224	348	582	846	1,108	1,529	1,592	1,428	893	340	190	162	135	104	86	172

Notes 1: Figures are as the end of each fiscal year.

2: For the year 1985, the class XV contains forests older than that class. For the years 1989 and 1994, the class XVII contains forests older than that class. For the years 2001, 2006 and 2011, the class XIX contains forests older than that class. For the year 2016, the class XX contains forests older than that class.

3: Data cover the forests defined in Article 5 or Article 7-2 of the Forest Act.

Source: Forestry Agency

6. Thinned Area and Use of Thinnings

(FY)	Thinned area (1,000ha)			Volume of thinnings used (million m ³)					
	Total	Private and public forest	National forest	Total	Private and public forest				National forest
					Subtotal	Sawnwood	Roundwood	Others	
2008	548	434	114	5.66	3.68	2.26	0.39	1.03	1.98
2010	556	445	110	6.65	4.43	2.70	0.42	1.31	2.22
2014	465	339	126	7.69	5.21	2.91	0.33	1.97	2.47
2015	452	341	112	8.13	5.65	2.97	0.35	2.32	2.48
2016	440	319	121	8.23	5.76	2.95	0.30	2.51	2.47
2017	410	304	106	8.12	5.56	2.75	0.28	2.53	2.56
2018	370	269	101	7.46	4.94	2.37	0.25	2.32	2.52

Notes 1: Volumes are in roundwood equivalent.

2: "Sawnwood" means the wood such as building materials and wood packaging materials.

3: "Roundwood" means the wood such as scaffolding timber and stakes.

4: "Others" means the wood such as wood chip and wood powder (sawdust).

5: Due to rounding, some totals may not correspond with the sum of the separate figures.

Source: Forestry Agency

7. Forest Area by Owners

	2015	
	Forest area (ha)	Ratio to total area
Total	17,626,761	100.0%
Private	13,563,827	77.0%
Public	3,370,380	19.1%
Prefecture	1,271,571	7.2%
Public corporation	391,189	2.2%
Municipality	1,406,063	8.0%
Property ward	301,557	1.7%
Incorporated Administrative Agencies	692,554	3.9%

Notes 1: Due to rounding, some totals may not correspond with the sum of the separate figures.

2: "Incorporated Administrative Agencies" include Independent Administrative Agencies, National University Corporations and Special Corporations.

Source: MAFF "2015 Census of Agriculture and Forestry"

8. Number of Forestry Management Entities and their Forest Area

(Unit: #, ha)

	Total		-3ha		3-5ha		5-20ha		20-50ha		50-100ha		100ha-	
	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area
Total	87,284	4,373,374	2,247	1,170	23,767	85,988	41,885	389,986	12,193	348,521	3,572	235,747	3,620	3,311,962
Corporation	5,599	1,470,626	1,065	237	397	1,495	1,315	14,029	894	27,849	658	45,473	1,270	1,381,544
Private company	2,456	774,282	707	144	193	706	538	5,481	333	9,838	196	12,829	489	745,285
Cooperative	2,337	497,968	304	85	109	425	480	5,559	448	14,529	379	26,598	617	450,772
Agricultural cooperative	87	19,669	-	-	4	16	9	101	21	779	14	1,041	39	17,732
Forestry cooperative	1,819	304,008	263	83	74	287	342	4,083	341	11,085	317	22,336	482	266,135
Other cooperatives	431	174,291	41	2	31	123	129	1,376	86	2,665	48	3,221	96	166,905
Other corporations	806	198,376	54	8	95	364	297	2,989	113	3,482	83	6,046	164	185,487
Non-corporation	80,396	1,349,519	1,181	933	23,329	84,334	40,417	374,113	11,129	315,103	2,768	180,050	1,572	394,985
Individual	77,692	1,215,213	1,073	901	22,922	82,773	39,327	362,792	10,575	298,201	2,494	160,726	1,301	309,821
Public	1,289	1,553,229	1	-	41	159	153	1,844	170	5,570	146	10,224	778	1,535,432

Notes 1: Symbol of "-" means not applicable.

2: "Forestry management entities" correspond to either of the following. (1) The forestry on the scale whose owned forest area exceed 3 hectares.

(2) Consigned forestation and raw materials production, and crude matters manufacturing through the purchase of standing trees.

Source: MAFF "2015 Census of Agriculture and Forestry"

9. Roundwood Production

(Unit: 1,000m³, %)

		2000	2005	2010	2014	2015	2016	2017	2018	Relative change from the previous year (%)
Total		17,034	16,166	17,193	19,916	20,049	20,660	21,408	21,640	1.1
By tree species	Subtotal	13,707 (80)	13,695 (85)	14,789 (86)	17,743 (89)	17,815 (89)	18,470 (89)	19,258 (90)	19,462 (90)	1.1
	Sugi (Japanese cedar)	7,671	7,756	9,049	11,194	11,226	11,848	12,276	12,532	2.1
	for sawnwood	7,258 <57>	6,737 <58>	6,695 <63>	7,872 <64>	7,869 <66>	8,095 <66>	8,200 <65>	8,237 <66>	0.5
	Hinoki (Japanese cypress)	2,273	2,014	2,029	2,395	2,364	2,460	2,762	2,771	0.3
	Akamatsu (Japanese red pine), Kuromatsu (Japanese black pine)	1,034	783	694	674	779	678	641	628	▲ 2.0
	Karamatsu (Japanese larch), Ezomatsu (Yezo spruce), Todomatsu (Sakhalin fir)	2,410	2,910	2,816	3,327	3,268	3,325	3,380	3,366	▲ 0.4
	Others	319	232	201	153	170	153	198	165	▲ 16.7
	Hardwood	3,327 (20)	2,471 (15)	2,404 (14)	2,173 (11)	2,236 (11)	2,188 (11)	2,153 (10)	2,178 (10)	1.2
	Sawnwood	12,798 (75)	11,571 (72)	10,582 (62)	12,211 (61)	12,004 (60)	12,182 (59)	12,632 (59)	12,563 (58)	▲ 0.5
	Plywood	138 (1)	863 (5)	2,490 (14)	3,191 (16)	3,356 (17)	3,682 (18)	4,122 (19)	4,492 (21)	9.0
By use	Chips	4,098 (24)	3,732 (23)	4,121 (24)	4,514 (23)	4,689 (23)	4,796 (23)	4,654 (22)	4,585 (21)	▲ 1.5

Notes 1: Figures in parentheses refer to the percentage of each to total volume.

2: Figures in angle brackets refer to the percentage of sugi for sawnwood to the volume for sawnwood of all species.

3: Roundwood Production excludes forest residue.

4: Due to rounding, some totals may not correspond with the sum of the separate figures.

5: Total figures is the sum of "Sawnwood", "Plywood" and "Chips".

6: Production of roundwood for LVL is added to "Plywood" since 2017.

Source: MAFF "Wood Supply and Demand Report"

10. Wood Supply and Demand Chart (roundwood equivalent)

(Unit: 1,000m³)

Demand Supply		Demand						Domestic consumption						Export														
		Industrial use				Fuel wood		Industrial use				Fuel wood		Industrial use				Fuel wood										
Supply	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel	Total	Roundwood	Sawnwood	Pulp and chips	Plywood	Others	Subtotal	Charcoal	Firewood	Wood chips for fuel
	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel																	
												Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel						
	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel																	
	Total												Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel						

Notes 1: Figures in parentheses refer to the volume of pulp and chips from mill residue or construction waste, which are already included in the volume of sawnwood, plywood, or others.

Therefore these figures are excluded from "Total" and "Subtotal".

2: "Forest residue" refers to branches or roots carried into mills for use.

3: Wood pellets produced domestically are included in "Fuel wood" of Domestic production.

4: Due to rounding, some totals may not correspond with the sum of the separate figures.

Source : Forestry Agency "Wood Supply and Demand Chart", 2018

11. Wood Supply/Demand (roundwood equivalent)

(Unit: 1,000m³)

	Wood supply/demand				Wood demand for industrial use by sector				Wood supply for industrial use by source	
	Total	Wood for industrial use	Fuel wood	Wood for mushroom production	Sawnwood	Pulp and chips	Plywood	Others	Domestic production	Import (roundwood and wood products)
1955	65,206	45,278	19,928	...	30,295	8,285	2,297	4,401	42,794	2,484
1960	71,467	56,547	14,920	...	37,789	10,189	3,178	5,391	49,006	7,541
1965	76,798	70,530	6,268	...	47,084	14,335	5,187	3,924	50,375	20,155
1970	106,601	102,679	2,348	1,574	62,009	24,887	13,059	2,724	46,241	56,438
1975	99,303	96,369	1,132	1,802	55,341	27,298	11,173	2,557	34,577	61,792
1980	112,211	108,964	1,200	2,047	56,713	35,868	12,840	3,543	34,557	74,407
1985	95,447	92,901	572	1,974	44,539	32,915	11,217	4,230	33,074	59,827
1990	113,242	111,162	517	1,563	53,887	41,344	14,546	1,385	29,369	81,793
1995	113,698	111,922	721	1,055	50,384	44,922	14,314	2,302	22,916	89,006
2000	101,006	99,263	940	803	40,946	42,186	13,825	2,306	18,022	81,241
2005	87,423	85,857	1,001	565	32,901	37,608	12,586	2,763	17,176	68,681
2010	71,884	70,253	1,099	532	25,379	32,350	9,556	2,968	18,236	52,018
2014	75,799	72,547	2,940	313	26,139	31,433	11,144	3,830	21,492	51,054
2015	75,160	70,883	3,962	315	25,358	31,783	9,914	3,829	21,797	49,086
2016	78,077	71,942	5,807	328	26,150	31,619	10,248	3,925	22,355	49,586
2017	81,854	73,742	7,800	311	26,370	32,302	10,667	4,403	23,312	50,430
2018	82,478	73,184	9,020	274	25,708	32,009	11,003	4,465	23,680	49,505

Notes 1: "Others" include items such as roundwood for export.

2: Due to rounding, some totals may not correspond with the sum of the separate figures.

3: "Fuel wood" includes wood chip for fuel utilized by woody biomass power plants since 2014.

Source: Forestry Agency "Wood Supply and Demand Chart"

12. Trend of Domestic and Imported Wood Supply/Demand (roundwood equivalent)

(Unit: 1,000m³)

		2000	2005	2010	2014	2015	2016	2017	2018	Relative change from the previous year (%)
Total wood supply/demand		101,006	87,423	71,884	75,799	75,160	78,077	81,854	82,478	0.8
Industrial use		99,263	85,857	70,253	72,547	70,883	71,942	73,742	73,184	▲ 0.8
Fuel wood		940	1,001	1,099	2,940	3,962	5,807	7,800	9,020	15.6
Wood for mushroom production		803	565	532	313	315	328	311	274	▲ 11.9
Domestic production		19,058	17,899	18,923	23,647	24,918	27,141	29,660	30,201	1.8
Import		81,948	69,523	52,961	52,152	50,242	50,936	52,194	52,277	0.2
Self-sufficiency rate (%)		18.9	20.5	26.3	31.2	33.2	34.8	36.2	36.6	0.4
Wood demand for industrial use by sector	Total	99,263	85,857	70,253	72,547	70,883	71,942	73,742	73,184	▲ 0.8
	Domestic production	18,022	17,176	18,236	21,492	21,797	22,355	23,312	23,680	1.6
	Import	81,241	68,681	52,018	51,054	49,086	49,586	50,430	49,505	▲ 1.8
	Self-sufficiency rate (%)	18.2	20.0	26.0	29.6	30.8	31.1	31.6	32.4	0.8
	Sawnwood	40,946	32,901	25,379	26,139	25,358	26,150	26,370	25,708	▲ 2.5
	Domestic production	12,798	11,571	10,582	12,211	12,004	12,182	12,632	12,563	▲ 0.5
	Import	28,148	21,330	14,797	13,928	13,354	13,968	13,738	13,145	▲ 4.3
	Self-sufficiency rate (%)	31.3	35.2	41.7	46.7	47.3	46.6	47.9	48.9	1.0
	Pulp and chips	(6,537)	(7,974)	(6,192)	(6,922)	(6,667)	(6,853)	(7,107)	(6,792)	▲ 0.9
	Domestic production	4,749	4,426	4,785	5,047	5,202	5,266	5,193	5,089	▲ 2.0
	Import	37,437	33,181	27,565	26,386	26,581	26,353	27,110	26,920	▲ 0.7
	Self-sufficiency rate (%)	11.3	11.8	14.8	16.1	16.4	16.7	16.1	15.9	▲ 0.2
	Plywood	13,825	12,586	9,556	11,144	9,914	10,248	10,667	11,003	3.1
	Domestic production	138	863	2,490	3,346	3,530	3,876	4,122	4,492	9.0
	Import	13,687	11,723	7,066	7,798	6,384	6,372	6,545	6,511	▲ 0.5
	Self-sufficiency rate (%)	1.0	6.9	26.1	30.0	35.6	37.8	38.6	40.8	2.2
	Others	2,306	2,763	2,968	3,830	3,829	3,925	4,403	4,465	1.4
	Domestic production	337	316	379	889	1,061	1,031	1,365	1,536	12.5
	Import	1,969	2,447	2,589	2,942	2,767	2,894	3,038	2,930	▲ 3.6
	Self-sufficiency rate (%)	14.6	11.4	12.8	23.2	27.7	26.3	31.0	34.4	3.4

Notes 1: Self-sufficiency rate is calculated by domestic production divided by total or subtotal in each category.

2: "Others" include items such as roundwood for export.

3: Figures in parentheses refer to the volume of wood chip from mill residue or construction waste, which are already included in the volume of sawnwood, plywood, or others. Therefore, these figures are excluded from "total" and "subtotal".

4: Due to rounding, some totals may not correspond with the sum of the separate figures.

5: "Fuel wood" includes wood chip for fuel utilized by woody biomass power plants since 2014.

6: Among "relative change from the previous year", "self-sufficiency rate" field is the difference from the previous year.

Source: Forestry Agency "Wood Supply and Demand Chart"

13. Wood Supply by Country (roundwood equivalent)

(Unit: 1,000m³, %)

			2000	2005	2010	2014	2015	2016	2017	2018
Imported wood	North America	Subtotal	(28.9) 28,700	(18.8) 16,129	(19.2) 13,506	(17.9) 13,013	(17.5) 12,415	(17.2) 12,377	(16.8) 12,352	(16.3) 11,898
		U.S.A	14,460	6,844	5,838	6,153	6,057	6,083	6,233	6,273
		Canada	14,240	9,285	7,668	6,860	6,359	6,294	6,119	5,625
	Southeast Asia	Subtotal	(13.7) 13,569	(12.2) 10,511	(8.9) 6,287	(9.2) 6,718	(8.3) 5,848	(7.7) 5,525	(7.8) 5,751	(7.4) 5,421
		Malaysia	6,690	5,888	3,773	3,293	2,917	2,709	2,778	2,514
		Indonesia	5,858	4,137	2,304	3,328	2,804	2,698	2,887	2,759
		Others	1,021	486	209	97	127	117	85	148
	Russia Federation		(7.5) 7,429	(8.6) 7,411	(3.3) 2,343	(3.1) 2,221	(2.9) 2,081	(3.3) 2,366	(3.3) 2,398	(3.3) 2,411
	Europe		(4.7) 4,675	(6.9) 5,937	(7.1) 4,967	(7.6) 5,554	(7.6) 5,374	(8.5) 6,135	(8.7) 6,450	(8.0) 5,880
	Others	New Zealand	(4.4) 4,374	(3.4) 2,878	(3.9) 2,720	(2.6) 1,858	(2.3) 1,638	(2.4) 1,749	(2.1) 1,545	(2.0) 1,484
			(3.8) 3,795	(4.6) 3,952	(6.7) 4,726	(6.2) 4,468	(5.6) 3,987	(5.9) 4,234	(5.7) 4,236	(5.5) 4,055
		Australia	(8.7) 8,604	(10.2) 8,729	(11.0) 7,722	(5.8) 4,203	(6.6) 4,662	(5.7) 4,067	(6.4) 4,684	(6.3) 4,604
		China	(2.5) 2,445	(3.0) 2,544	(3.0) 2,084	(3.4) 2,434	(2.8) 1,967	(2.7) 1,912	(2.7) 1,982	(2.6) 1,901
		Viet Nam	/	/	/	/	(7.6) 5,418	(6.9) 4,946	(6.7) 4,917	(8.1) 5,939
		Others	(7.7) 7,651	(12.3) 10,591	(10.9) 7,663	(14.7) 10,585	(8.0) 5,696	(8.7) 6,275	(8.3) 6,116	(8.1) 5,911
		Subtotal		(81.8) 81,241	(80.0) 68,681	(74.0) 52,018	(70.4) 51,054	(69.2) 49,086	(68.9) 49,586	(68.4) 50,430	(67.6) 49,505
	Domestic wood		(18.2) 18,022	(20.0) 17,176	(26.0) 18,236	(29.6) 21,492	(30.8) 21,797	(31.1) 22,355	(31.6) 23,312	(32.4) 23,680
Total		(100.0) 99,263	(100.0) 85,857	(100.0) 70,253	(100.0) 72,547	(100.0) 70,883	(100.0) 71,942	(100.0) 73,742	(100.0) 73,184	

Notes 1: Figures refer to the sum of domestic/imported roundwood volume and imported products volume (sawnwood, plywood, and pulp and chips) converted into roundwood equivalent.

2: "Others" of "Southeast Asia" include Philippines, Singapore, Brunei, Papua New Guinea, and Solomon.

3: "Others" of "Others" include African countries.

4: "Others" of "Others" include Viet Nam until 2014.

5: Figures in parentheses refer to the percentage of each volume to the "total" volume of each year.

6: Due to rounding, some totals may not correspond with the sum of the separate figures.

Sources: Ministry of Finance "Trade Statistics of Japan", Forestry Agency "Wood Supply and Demand Chart"

14. Number of Mills/Factories and Production Volumes

		Unit	2000	2005	2010	2014	2015	2016	2017	2018
Sawnwood	Number of mills	mills	11,692	9,011	6,569	5,469	5,206	4,934	4,814	4,582
	Inputs for sawnwood production	1,000m ³	26,526	20,540	15,762	16,661	16,182	16,590	16,802	16,672
	Shipments	1,000m ³	17,231	12,825	9,415	9,595	9,231	9,293	9,457	9,202
Plywood	Number of mills	mills	354	271	192	186	185	183	181	180
	Inputs for plywood production	1,000m ³	5,401	4,636	3,811	4,405	4,218	4,638	5,004	5,287
	Surface-untreated plywood production	1,000m ³	3,218	3,212	2,645	2,813	2,756	3,063	3,287	3,298
	Surface-treated plywood production	1,000m ³	1,534	1,037	647	584	524	642	623	580
Glued laminated lumber	Number of factories	factories	281	259	182	165	157	150	165	165
	Production	1,000m ³	892	1,512	1,455	1,555	1,485	1,549	1,971	1,923
Cross Laminated Timber	Number of factories	factories	...	...	...	...	...	...	7	9
	Production	1,000m ³	...	...	...	...	...	...	14	14
Wood chips	Number of mills	mills	2,657	2,040	1,577	1,477	1,424	1,393	1,364	1,303
	Production	1,000tons (1,000m ³)	10,851	6,005	5,407	5,850	5,745	5,826	5,954	5,706

Notes 1: "Sawnwood" excludes sawmills with output power less than 7.5kW.

2: Figures of LVL is added to figures of "Plywood" since 2017.

3: Production of glued laminated lumber has used the data from Japan Laminated Wood Products Association until 2016.

4: "Wood chips" excludes chips for fuels.

5: "..." means "figures not available".

Source: MAFF "Wood Supply and Demand Report", Japan Laminated Wood Products Association

Full text (in Japanese) of the “Annual Report on Forest and Forestry for FY2019” is available on the website of the Forestry Agency:

<https://www.rinya.maff.go.jp/j/kikaku/hakusyo/r1hakusyo/index.html>



Please refer to those texts for further information on the issues contained in this brochure, or ask the Annual Report Group of the Forestry Agency:

Annual Report Group

Policy Planning Division, Forest Policy Planning Department,
Forestry Agency

Ministry of Agriculture, Forestry, and Fisheries (MAFF)

1-2-1 Kasumigaseki, Chiyoda-ku, TOKYO 100-8952

JAPAN

Contact the Ministry of Agriculture, Forestry and Fisheries

https://www.contactus.maff.go.jp/rinya/form/rinsei/inquiry_rinya_160801.html

