

Protected Forest of Inohae broad-leaved evergreen forest (Miyazaki Prefecture)

(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 through “System Sales” contracts with lumber and plywood mills.

(3) National Forests as “Forests for People”

The Forestry Agency provides various organizations (e.g. school, 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.

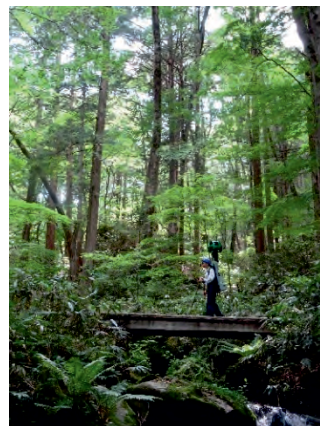
The Forestry Agency leases national forests to local governments and residents. “Recreation Forests” are managed and administered in partnership with municipalities and other stakeholders in local communities such as the tourist industry. In FY2017, a total of 140 million people visited “Recreational Forests.”

And 93 of “Recreational Forests” that have potential attractiveness as tourism resources were selected as “Japan’s Forests with Breathtaking Views.” To encourage more people to visit these forests, the Forest Agency has improved facilities and promotes these by posting signs, provides information on web sites in multiple languages, and participates in a variety of events jointly with local people.

The Kiso District National Forest Office of the Chubu Regional Forest Office (in Nagano Prefecture) released photographs of national forests taken using a “Street View*.” Forest Office staff members took photographs as they walked along trails carrying photographic equipment.

This effort uses “Recreational Forests” as a tourism resources to inform travelers of the superior natural scenic beauty and attractiveness of this region including beautiful groves of Kiso cypress.

* A function of Google Map, it is an internet service that can show 360-degree panorama photographs taken on roads



Forest Office staff carrying photographic equipment capture scenes inside a national park



In May 2018, the Forestry Agency launched a new web site: “Japan’s Forests with Breathtaking Views.” This web site is published in two languages: Japanese and English. It presents special locations and ways of enjoying each Recreational Forest, plus the latest information about local events. On some these forests sites, multi-lingual signboards have provided information both in voice and text not only in Japanese but also in multiple languages by smartphone application which works without WiFi or a communication environment.



Smartphone screen

Signboard adapted for multiple languages using a smartphone



Chapter VI Reconstruction after the Great East Japan Earthquake

1. Recovery of Forests, Forestry and the Wood Products Industry

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

In March 2011, the Great East Japan Earthquake caused damaged to forests and forest conservation facilities and forest roads in 15 prefectures. By January 2019, 97% 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 2018, 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. Excluding sections which are difficult to restore, restoration works were started on about 163 km, and the works were completed on about 113km of these damaged coastal disaster-prevention forests at the end of January 2019.

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

In the Maehama district of Noda village in Iwate Prefecture, Japanese black pine (*Pinus thunbergii*) forests played the role of a tidal wave and salty wind prevention forest. But the Great East Japan Earthquake washed away all of the trees except a few. In this district, a tree-planting event was held for the first time in October 2017, after which a tide embankment had almost been completed. At this event, about 100 residents planted approximately 1,000 Japanese black pines. Then in June 2018, another tree planting event was held led by a local resident group, and about 200 people from the village and elsewhere took part, planting approximately 300 broad-leaved trees.



View of the tree-planting event in the Maehama district (Iwate Prefecture)



(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 2018, about 30% (about 8,300 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.

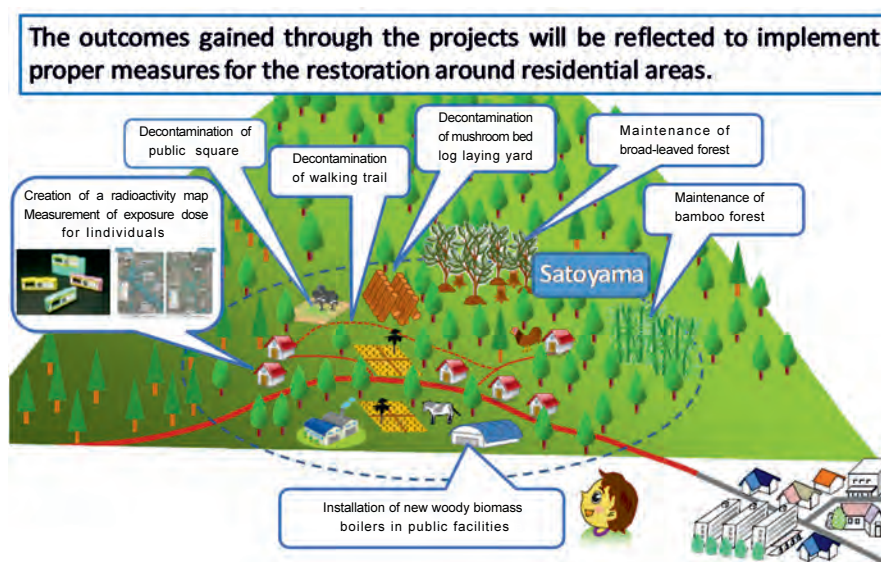
To address population decline, hollowing of industry and other problems common to all regions of Japan, the forestry and wood processing industry also takes steps to achieve reconstruction through the use of forest resources.

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 forest around residential areas, to regenerate forestry and to disseminate information.

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



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

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

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. VI – 1).

(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.

Appendix

1. Forestry-related Fundamental Figures

Item	Unit	2000	2005	2010	2013	2014	2015	2016	2017
i Gross domestic product (GDP)	billion yen	526,706	524,133	500,354	503,176	513,876	531,320	535,986	545,122
Forestry	billion yen	172	134	190	201	214	206	211	217
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	63.26	63.71	64.01	64.65	65.30
Forestry	million	0.07	0.06	0.08	0.08	0.08	0.07	0.06	0.06
Forestry / Total # of workers	%	0.11	0.09	0.13	0.13	0.13	0.11	0.09	0.09
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	25.08	25.05
Forest / Land area	%	67.5	67.4	67.3	67.3	67.3	67.3	67.3	67.2
v Protection forest	million ha	8.93	11.65	12.02	12.12	12.14	12.17	12.18	12.20
Protection forest / Forest	%	35.5	46.4	47.9	48.3	48.4	48.5	48.6	48.7
vi Growing stock of forest	billion m ³	3.5	4.0	4.4	4.9	4.9	4.9	4.9	5.2
vii Industrial wood supply	million m ³	101.01	87.42	71.88	75.46	75.80	75.16	78.08	81.72
Domestic production	million m ³	19.06	17.90	18.92	21.74	23.65	24.92	27.14	29.53
Import	million m ³	81.95	69.52	52.96	53.72	52.15	50.24	50.94	52.19
Self-sufficiency rate	%	18.9	20.5	26.3	28.8	31.2	33.2	34.8	36.1
viii New housing starts	million units	1.23	1.24	0.81	0.98	0.89	0.91	0.97	0.96
Ratio of wooden structure	%	45.2	43.9	56.6	56.1	54.9	55.5	56.5	56.5

Notes 1: "Protection forest area" in "v" refers to the area excluding duplication.

2: "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 Demand and Supply Chart"

viii: MLIT "Statistics on Building Construction Starts"

2. Gross Domestic Product classified by Economic Activities (at current prices)

(Unit: billion yen)

Item	2000	2005	2010	2013	2014	2015	2016	2017
Gross domestic product	526,706	524,133	500,354	503,176	513,876	531,320	535,986	545,122
Agriculture, forestry, and fishing	8,090	5,898	5,515	5,556	5,428	5,918	6,491	6,483
Forestry	172	134	190	201	214	206	211	217
Mining	611	414	304	311	327	315	286	301
Manufacturing	118,815	113,448	104,239	97,799	101,394	110,585	110,817	112,988
Electricity, gas and water supply and waste management service	16,898	15,237	13,797	10,655	12,090	13,924	13,938	14,253
Construction	36,215	29,186	23,984	26,779	28,470	29,362	29,887	31,329
Wholesale and retail trade	68,830	75,313	69,088	74,271	73,188	74,270	74,012	75,919
Transport and postal services	25,643	26,573	25,231	25,366	26,752	27,153	26,993	27,695
Accommodation and food service activities	16,580	14,350	12,847	12,345	12,648	12,405	13,656	13,791
Information and communications	24,236	25,911	25,514	25,718	26,082	26,723	26,856	26,684
Finance and insurance	25,637	31,192	24,115	23,055	22,808	23,208	22,323	22,516
Real estate	54,138	54,571	59,531	59,889	60,128	60,616	61,154	61,789
Professional, scientific and technical activities	30,291	33,394	34,940	36,513	37,144	38,387	39,868	40,483
Public administration	27,314	26,930	26,306	25,759	26,446	26,572	26,697	26,883
Education	19,003	18,620	18,247	18,377	18,861	19,205	19,397	19,598
Human health and social work activities	27,874	28,916	32,025	34,818	34,910	36,267	37,740	38,102
Other service activities	27,353	25,700	23,454	22,891	23,251	23,377	22,903	23,302

Source: Cabinet Office "SNA (System of National Accounts)"

3. Forestry Output

(Unit: billion yen)

Item	2000	2005	2010	2013	2014	2015	2016	2017
Forestry output	531.15	417.05	425.70	433.12	464.10	454.98	470.91	485.89
Wood production	322.18	210.50	195.29	219.68	245.86	234.08	237.00	254.97
Softwood	265.33	177.41	170.16	193.66	215.88	198.19	195.39	204.94
Sugi (Japanese Cedar)	123.78	87.53	93.50	112.02	129.62	118.09	116.74	121.57
Hardwood	54.72	31.71	23.76	20.06	18.96	19.51	19.06	18.40
Fuelwood and charcoal production	6.16	6.09	5.08	5.53	5.66	5.31	5.49	5.44
Grown mushroom production	196.89	198.50	218.91	203.73	208.50	210.98	222.05	220.75
Minor forestry products production	5.92	1.96	6.42	4.18	4.08	4.60	6.37	4.73
Forestry income produced	351.91	245.78	229.22	234.42	252.67	251.29	260.41	269.15

Notes 1: Total figures may not be equal to the sum of each item due to round off.

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"

4. Current State of Forest Resources

(Unit: 1,000ha, million m³)

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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			
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	5.12	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	1,702	362.87	804	251.47	822	111.35	71	0.06	5
	Private forest		14,247	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" and "Under other agency's jurisdiction" 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: Total figures may not be equal to the sum of each item due to round off.

Source: Forestry Agency

5. 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) 28,480	(8,223) 7,967	(11,574) 10,745	(233) 223	(2,524) 2,493	(4,954) 4,014	(3,808) 3,038
2005	(25,584) 22,498	(5,216) 5,011	(7,096) 6,307	(226) 183	(3,534) 3,423	(5,728) 4,611	(3,784) 2,963
2010	(18,756) 16,388	(4,132) 3,844	(2,820) 2,262	(247) 237	(4,604) 4,418	(4,265) 3,381	(2,688) 2,246
2013	(22,225) 18,906	(5,429) 5,215	(2,780) 2,512	(330) 231	(5,099) 4,620	(5,811) 3,942	(2,777) 2,386
2014	(21,088) 17,720	(5,185) 5,098	(2,543) 2,404	(554) 518	(4,603) 4,128	(5,709) 3,622	(2,492) 1,950
2015	(19,429) 16,607	(5,537) 5,390	(2,039) 1,930	(185) 168	(4,467) 4,027	(5,250) 3,450	(1,950) 1,642
2016	(21,106) 18,390	(6,766) 6,570	(1,972) 1,852	(291) 253	(5,017) 4,552	(4,983) 3,383	(2,077) 1,781
2017	(22,069) 19,866	(7,102) 6,845	(1,979) 1,874	(406) 388	(5,388) 5,179	(5,423) 4,110	(1,771) 1,471

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

6. 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

7. Thinned Area and Use of Thinnings

(FY)	Thinned area (1,000ha)			Volume of thinnings used (million m³)					
	Total	Private and public forest	National forest	Total	Private and public forest				National forest
					Subtotal	Sawnwood	Roundwood	Others	
2007	521	395	126	5.37	3.44	2.14	0.47	0.83	1.93
2010	556	445	110	6.65	4.43	2.70	0.42	1.31	2.22
2013	521	400	121	8.11	5.65	3.23	0.44	1.97	2.46
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

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: Total figures may not be equal to the sum of each item due to round off.

Source: Forestry Agency

Thinned Area and Use of Thinnings before 2007 (as for private forest including communal forest)

(FY)	1990	1995	2000	2003	2004	2005	2006	2007
Thinned area (1,000ha)	277	215	304	312	277	281	282	395
Volume of thinnings used (million m³)	Total	2.34	1.83	2.74	2.83	2.84	3.24	3.44
	Sawnwood	1.70	1.25	1.95	1.85	1.81	1.96	2.14
	Roundwood	0.37	0.34	0.41	0.50	0.41	0.48	0.47
	Others	0.26	0.24	0.38	0.48	0.55	0.80	0.83

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: Total figures may not be equal to the sum of each item due to round off.

Source: Forestry Agency

8. 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: Total figures may not be equal to the sum of each item due to round off.

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

Source: MAFF "2015 Census of Agriculture and Forestry"

9. 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	2,990	113	3,482	83	6,047	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"

10. Roundwood Production

(Unit: 1,000m³, %)

		2000	2005	2010	2013	2014	2015	2016	2017	Relative change from previous year (%)
Total		17,034	16,166	17,193	19,646	19,916	20,049	20,660	21,408	nc
By tree species	Subtotal	13,707 (80)	13,695 (85)	14,789 (86)	17,246 (88)	17,743 (89)	17,815 (89)	18,470 (89)	19,258 (90)	nc
	Sugi (Japanese cedar)	7,671	7,756	9,049	10,902	11,194	11,226	11,848	12,276	nc
	for sawnwood	7,258 <57>	6,737 <58>	6,695 <63>	7,825 <65>	7,872 <64>	7,869 <66>	8,095 <66>	8,200 <65>	nc
	Hinoki (Japanese cypress)	2,273	2,014	2,029	2,300	2,395	2,364	2,460	2,762	nc
	Akamatsu (Japanese red pine), Kuromatsu (Japanese black pine)	1,034	783	694	624	674	779	678	641	nc
	Karamatsu (Japanese larch), Ezomatsu (Yezo spruce), Todomatsu (Sakhalin fir)	2,410	2,910	2,816	3,275	3,327	3,268	3,325	3,380	nc
	Others	319	232	201	145	153	170	153	198	nc
	Hardwood	3,327 (20)	2,471 (15)	2,404 (14)	2,400 (12)	2,173 (11)	2,236 (11)	2,188 (11)	2,153 (10)	nc
	Sawnwood	12,798 (75)	11,571 (72)	10,582 (62)	12,058 (61)	12,211 (61)	12,004 (60)	12,182 (59)	12,632 (59)	nc
	Plywood	138 (1)	863 (5)	2,490 (15)	3,016 (15)	3,191 (16)	3,356 (17)	3,682 (18)	4,122 (19)	nc
	Chips	4,098 (24)	3,732 (23)	4,121 (24)	4,572 (23)	4,514 (23)	4,689 (23)	4,796 (23)	4,654 (22)	nc

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

2: Figures in < > are the percentage of sugi for sawnwood to the total volume for sawnwood of all species.

3: Roundwood Production exclude forest residue.

4: Total figures may not be equal to the sum of each item due to round off.

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

6: Production of roundwood for LVL is added to "Plywood" since 2017 so that "relative change from previous year" cannot be calculated.

Source: MAFF "Wood Supply and Demand Report", 2017

11. Wood Supply and Demand Chart (roundwood equivalent)

(Unit: 1,000m³)

Demand Supply		Demand								Domestic consumption								Export													
		Total	Industrial use					Wood for mushroom production	Fuel wood	Total	Industrial use					Wood for mushroom production	Fuel wood				Total	Industrial use					Fuel wood				
			Subtotal	Sawnwood	Pulp and chips	Plywood	Others				Subtotal	Sawnwood	Pulp and chips	Plywood	Others		Subtotal	Charcoal	Firewood	Wood chips for fuel		Subtotal	Roundwood	Sawnwood	Pulp and chips	Plywood	Others	Subtotal	Charcoal	Firewood	Wood chips
Supply	Total	(19,591) 81,854	(7,107) 73,742	26,370	(7,107) 32,302	10,667	4,403	311	(12,484) 7,800	(19,591) 79,235	(7,107) 71,128	26,165	(7,107) 31,085	10,471	3,408	311	(12,484) 7,795	933	52	(12,484) 6,811	2,619	2,614	971	205	1,218	196	25	5	4	0	
	Industrial use																														
	Roundwood	(7,107) 27,713	(7,107) 27,713	16,392	(7,107) 4,934	5,004	1,384		(7,107) 25,099	(7,107) 25,099	(7,107) 16,187	(7,107) 3,716	4,808	388							2,614	2,614	971	205	1,218	196	25				
	Forest residue	265	265		265				265	265		265																			
	Import	45,764	45,764	9,978	27,104	5,663	3,020		45,764	45,764	9,978	27,104	5,663	3,020																	
	Wood for mushroom production	311						311		311						311															
Fuel wood	(12,484) 7,800							(12,484) 7,800	(12,484) 7,795							(12,484) 7,795	933	52	(12,484) 6,811	5								5	4	0	
Domestic production	Total	29,660	23,312	12,632	5,193	4,122	1,365	311	6,037	27,047	20,703	12,428	3,975	3,930	370	311	6,032	67	51	5,913	2,613	2,608	971	204	1,218	192	25	5	4	0	
	Industrial use																														
	Roundwood	23,047	23,047	12,632	4,928	4,122	1,365			20,438	20,438	12,428	3,710	3,930	370						2,608	2,608	971	204	1,218	192	25				
	Forest residue	265	265		265					265	265		265																		
	Wood for mushroom production	311						311		311						311															
Fuel wood	6,037							6,037	6,032								6,032	67	51	5,913	5							5	4	0	
Import	Total	52,194	50,430	13,738	27,110	6,545	3,038		1,764	52,189	50,425	13,737	27,110	6,541	3,038		1,764	866	0	897	6	6	0	1				5	0		
	Industrial use																														
	Roundwood	4,666	4,666	3,760	6	882	18			4,661	4,661	3,759	6	877	18																
	Subtotal	45,764	45,764	9,978	27,104	5,663	3,020			45,764	45,764	9,978	27,104	5,663	3,020																
	Sawnwood	9,978	9,978							9,978	9,978	9,978																			
	Pulp	5,887	5,887			5,887				5,887	5,887			5,887																	
	Chips	21,216	21,216		21,216					21,216	21,216		21,216																		
	Plywood	5,663	5,663			5,663				5,663	5,663			5,663																	
	Others	3,020	3,020				3,020			3,020	3,020				3,020																
Fuel wood	1,764							1,764	1,764								1,764	866	0	897											

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.

These figures are excluded from "total" and "subtotal".

2: "Others" refers to items such as glulam, worked wood, sleeper, utility pole, pile wood, and scaffolding timber.

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

4: Wood pellet produced domestically is included "Fuel wood" of Domestic production.

5: Total figures may not be equal to the sum of each item due to round off.

6: "Fuel wood" includes wood chips for fuel, utilized by woody biomass power plants since 2014.

7: "Others" of Export was divided into "Roundwood" and "Others" since 2017.

Source: Forestry Agency "Wood Supply and Demand Chart", 2017

12. 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
2013	75,459	73,867	1,204	388	28,592	30,353	11,232	3,690	21,117	52,750
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

Notes 1: "Wood supply/demand" = Domestic production + Import (roundwood, wood products and fuel wood). (Roundwood equivalent)

2: "Others" refers to items such as glulam, worked wood, sleeper, utility pole, pile wood, and scaffolding timber.

3: Total figures may not be equal to the sum of each item due to round off.

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

Source: Forestry Agency "Wood Supply and Demand Chart"

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

(Unit: 1,000m³)

		2000	2005	2010	2013	2014	2015	2016	2017	Relative change to previous year (%)
Total wood supply/demand		101,006	87,423	71,884	75,459	75,799	75,160	78,077	81,854	4.8
Industrial use		99,263	85,857	70,253	73,867	72,547	70,883	71,942	73,742	2.5
Fuel wood		940	1,001	1,099	1,204	2,940	3,962	5,807	7,800	34.3
Wood for mushroom production		803	565	532	388	313	315	328	311	▲ 5.2
Domestic production		19,058	17,899	18,923	21,735	23,647	24,918	27,141	29,660	9.3
Import		81,948	69,523	52,961	53,724	52,152	50,242	50,936	52,194	2.5
Self-sufficiency rate (%)		18.9	20.5	26.3	28.8	31.2	33.2	34.8	36.2	1.4
Wood demand for industrial use by sector	Total	99,263	85,857	70,253	73,867	72,547	70,883	71,942	73,742	2.5
	Domestic production	18,022	17,176	18,236	21,117	21,492	21,797	22,355	23,312	4.3
	Import	81,241	68,681	52,018	52,750	51,054	49,086	49,586	50,430	1.7
	Self-sufficiency rate (%)	18.2	20.0	26.0	28.6	29.6	30.8	31.1	31.6	0.5
	Sawnwood	40,946	32,901	25,379	28,592	26,139	25,358	26,150	26,370	0.8
	Domestic production	12,798	11,571	10,582	12,058	12,211	12,004	12,182	12,632	3.7
	Import	28,148	21,330	14,797	16,534	13,928	13,354	13,968	13,738	▲ 1.6
	Self-sufficiency rate (%)	31.3	35.2	41.7	42.2	46.7	47.3	46.6	47.9	1.3
	Pulp and chips	(6,537)	(7,974)	(6,192)	(7,972)	(6,922)	(6,667)	(6,853)	(7,107)	2.2
	Domestic production	4,749	4,426	4,785	5,177	5,047	5,202	5,266	5,193	▲ 1.4
	Import	37,437	33,181	27,565	25,176	26,386	26,581	26,353	27,110	2.9
	Self-sufficiency rate (%)	11.3	11.8	14.8	17.1	16.1	16.4	16.7	16.1	▲ 0.6
	Plywood	13,825	12,586	9,556	11,232	11,144	9,914	10,248	10,667	4.1
	Domestic production	138	863	2,490	3,255	3,346	3,530	3,876	4,122	6.3
	Import	13,687	11,723	7,066	7,977	7,798	6,384	6,372	6,545	2.7
	Self-sufficiency rate (%)	1.0	6.9	26.1	29.0	30.0	35.6	37.8	38.6	0.8
	Others	2,306	2,763	2,968	3,690	3,830	3,829	3,925	4,403	12.2
	Domestic production	337	316	379	627	889	1,061	1,031	1,365	32.4
	Import	1,969	2,447	2,589	3,063	2,942	2,767	2,894	3,038	5.0
	Self-sufficiency rate (%)	14.6	11.4	12.8	17.0	23.2	27.7	26.3	31.0	4.7

Notes 1: "Wood supply/demand" = Domestic production + Import (roundwood, wood products and fuel wood). (Roundwood equivalent)

2: Self-sufficiency rate = Volume of domestic production for each category / Volume of total or subtotal for each category × 100

3: "Others" refers to items such as glulam, worked wood, sleeper, utility pole, pile wood and scaffolding wood.

4: 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".

5: Total figures may not be equal to the sum of each item due to round off.

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

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

Source: Forestry Agency "Wood Supply and Demand Chart"

14. Wood Supply by Country (roundwood equivalent)

(Unit: 1,000m³, %)

			2000	2005	2010	2013	2014	2015	2016	2017
Imported wood	North America	Subtotal	(28.9)	(18.8)	(19.2)	(18.9)	(17.9)	(17.5)	(17.2)	(16.8)
		U.S.	28,700	16,129	13,506	13,942	13,013	12,415	12,377	12,352
		Canada	14,460	6,844	5,838	6,225	6,153	6,057	6,083	6,233
	Southeast Asia	Subtotal	(13.7)	(12.2)	(8.9)	(8.7)	(9.2)	(8.3)	(7.7)	(7.8)
		Malaysia	13,569	10,511	6,287	6,439	6,718	5,848	5,525	5,751
		Indonesia	6,690	5,888	3,773	3,518	3,293	2,917	2,709	2,778
		Others	5,858	4,137	2,304	2,787	3,328	2,804	2,698	2,887
	Russia	Subtotal	1,021	486	209	134	97	127	117	85
		Russia	(7.5)	(8.6)	(3.3)	(3.2)	(3.1)	(2.9)	(3.3)	(3.3)
	Europe	Subtotal	7,429	7,411	2,343	2,380	2,221	2,081	2,366	2,398
		Europe	(4.7)	(6.9)	(7.1)	(9.1)	(7.6)	(7.6)	(8.5)	(8.7)
	Others	Subtotal	4,675	5,937	4,967	6,754	5,554	5,374	6,135	6,450
		New Zealand	(4.4)	(3.4)	(3.9)	(3.0)	(2.6)	(2.3)	(2.4)	(2.1)
		Chile	4,374	2,878	2,720	2,217	1,858	1,638	1,749	1,545
		Australia	(3.8)	(4.6)	(6.7)	(6.3)	(6.2)	(5.6)	(5.9)	(5.7)
		China	3,795	3,952	4,726	4,617	4,468	3,987	4,234	4,236
		Viet Nam	(8.7)	(10.2)	(11.0)	(5.6)	(5.8)	(6.6)	(5.7)	(6.4)
		Others	8,604	8,729	7,722	4,106	4,203	4,662	4,067	4,684
		Others	(2.5)	(3.0)	(3.0)	(3.4)	(3.4)	(2.8)	(2.7)	(2.7)
	Subtotal	Subtotal	2,445	2,544	2,084	2,483	2,434	1,967	1,912	1,982
		Others	(7.7)	(12.3)	(10.9)	(13.3)	(14.7)	(8.0)	(8.7)	(8.3)
		Others	7,651	10,591	7,663	9,810	10,585	5,696	6,275	6,116
	Domestic wood		(18.2)	(20.0)	(26.0)	(28.6)	(29.6)	(30.8)	(31.1)	(31.6)
	Total		18,022	17,176	18,236	21,117	21,492	21,797	22,355	23,312
			(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
			99,263	85,857	70,253	73,867	72,547	70,883	71,942	73,742

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: Total figures may not be equal to the sum of each item due to round off.

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

15. Number of Mills/Factories and Production Volumes

		Unit	2000	2005	2010	2013	2014	2015	2016	2017
Sawnwood	Number of mills	mills	11,692	9,011	6,569	5,690	5,469	5,206	4,934	4,814
	shipments	1,000m ³	17,231	12,825	9,415	10,100	9,595	9,231	9,293	9,457
Plywood	Number of mills	mills	354	271	192	195	186	185	183	181
	Inputs for plywood production	1,000m ³	5,401	4,636	3,811	4,181	4,405	4,218	4,638	5,004
	Surface-untreated plywood production	1,000m ³	3,218	3,212	2,645	2,811	2,813	2,756	3,063	3,287
	Surface-treated plywood production	1,000m ³	1,534	1,037	647	654	584	524	642	623
Glued laminated lumber	Number of factories	factories	281	259	182	166	165	157	150	150
	production	1,000m ³	892	1,512	1,455	1,647	1,555	1,485	1,549	1,687
Cross Laminated Timber	Number of factories	factories	-	-	-	-	-	-	-	7
	production	1,000m ³	-	-	-	-	-	-	-	14
Wood chips	Number of mills	mills	2,657	2,040	1,577	1,510	1,477	1,424	1,393	1,364
	production	1,000tons (1,000m ³)	10,851	6,005	5,407	6,452	5,850	5,745	5,826	5,954

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

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

3: "Wood chips" excludes chips for fuels.

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

16. Number of Sawmills classified by Sawing Power Output

	2000	2005	2010	2013	2014	2015	2016	2017
Number of sawmills	11,692	9,011	6,569	5,690	5,469	5,206	4,934	4,814
7.5 to less than 75.0 kW	8,178	6,189	4,282	3,615	3,455	3,239	3,030	2,924
75.0 - 300.0 kW	2,971	2,334	1,837	1,643	1,597	1,551	1,491	1,466
300.0 kW and over	543	488	450	432	417	416	413	424
1000.0 kW and over	71

Notes 1: Figures exclude sawmills with power output less than 7.5kW.

2: Classes of sawing power output were changed to "7.5 - 75.0 kW", "75.0 - 300.0 kW", "300.0 kW -" and "1000.0kW -" since 2017. Therefore, figures before 2016 are recounted by new classes.

3: The indicator used for classification changed "output of sawing power" to "volume of logs consumption in previous year" since 2017. For that reason, the number of sawmills classified by sawing power output in 2017 is not able to compare with the number before 2016.

4: "..." means "figures not available" because number of sawmills with power output more than 1000.0kW can not count before 2016.

Source: MAFF "Wood Supply and Demand Report"

Full text (in Japanese) of the “Annual Report on Forest and Forestry for FY2018” is available on the website of the Forestry Agency:

<http://www.rinya.maff.go.jp/j/kikaku/hakusyo/30hakusyo/index.html>



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