

1. Recovery of Forests, Forestry and the Wood Industry

(1) The Great East Japan Earthquake

On March 11, 2011, the Great East Japan Earthquake, the largest earthquake ever recorded in Japan, hit the eastern part of Japan. It caused a strong earth tremor over a broad area and brought a great tsunami which devastated entire coastal communities along the eastern coast of the Tohoku region.

In July 2011, the GOJ developed the fundamental reconstruction policy, titled the Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake, setting the timeframe for reconstruction at 10 years.

In March 2021, the GOJ established “Basic Guidelines for Reconstruction from the Great East Japan Earthquake After the “Reconstruction and Revitalization Period””.

(2) Recovery of Forests

The Great East Japan Earthquake caused damages to forests and disaster control facilities and forest roads in 15 prefectures. By January 2021, 99% of the recovery works had been completed.

Approximately 164 km of coastal disaster-prevention forests damaged by the tsunami required restoration work. Restoration works were completed on about 145 km of them at the end of March 2021 (Fig. V-1). It is necessary to continue the project for growing the seedlings.

Since coastal disaster-prevention forests mitigated the tsunami damage in the Earthquake, the GOJ promotes to develop coastal disaster-prevention forests in other coasts.

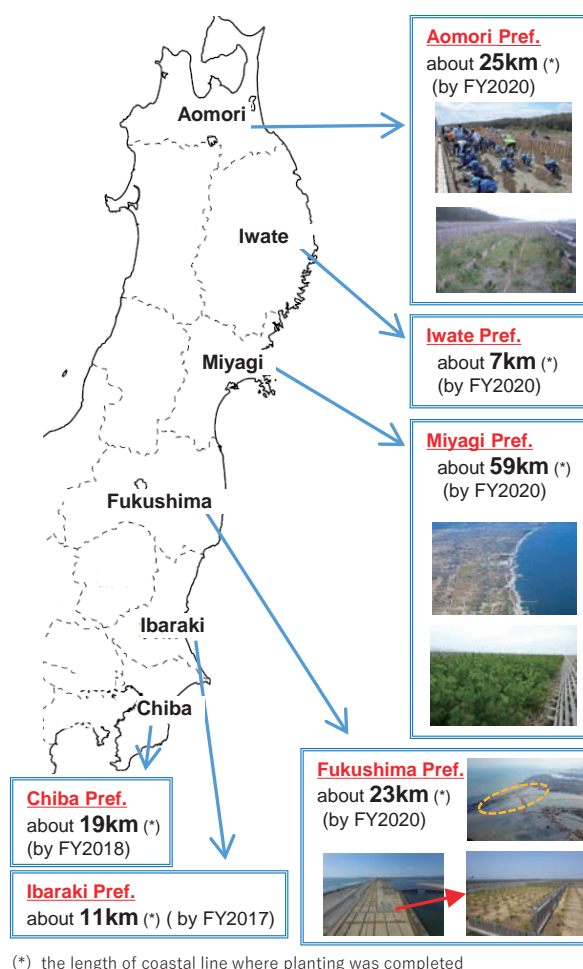


Fig. V-1 Recovery of coastal disaster-prevention forests

(3) Recovery of Forestry and the Wood Industry

The Great East Japan Earthquake damaged 115 wood processing/distribution facilities and 476 non-wood forest products facilities. Distribution of plywood materials and wood chips was disrupted as large-scale plywood and paper mills along the Pacific Coast were damaged.

The Forestry Agency supported disposal, restoration, and improvement of wood processing and distribution facilities.

The distribution recovered within FY2011. As of April 2020, operations had restarted at 98 facilities and production of logs and wooden products have generally recovered to the respective levels before the earthquake.

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

More than 25% (about 15,000) of “emergency temporary houses” were constructed of wood. The temporary wooden houses are highly evaluated for their convenience and comfort.

Disaster agreements are increasingly being concluded by local governments to ensure promptly supply of wooden emergency temporary houses in case of large-scale disasters. Some wooden emergency temporary houses built in Fukushima Prefecture were rebuilt and reused in another disaster-affected area in 2018.

Approximately 30% (approximately 7,800) of public houses for disaster victims (reconstruction houses) are planned to be constructed with wooden structures, and 99% have been completed by the end of December 2020.

The initiatives to utilize wood in reconstruction of public buildings and civil engineering have been promoted. Furthermore, wood biomass facilities such as power plants have been introduced in each prefecture, which contribute to reconstruction.

2. Reconstruction after the Nuclear Accident

(1) Nuclear Disaster and Response to Radioactive Materials

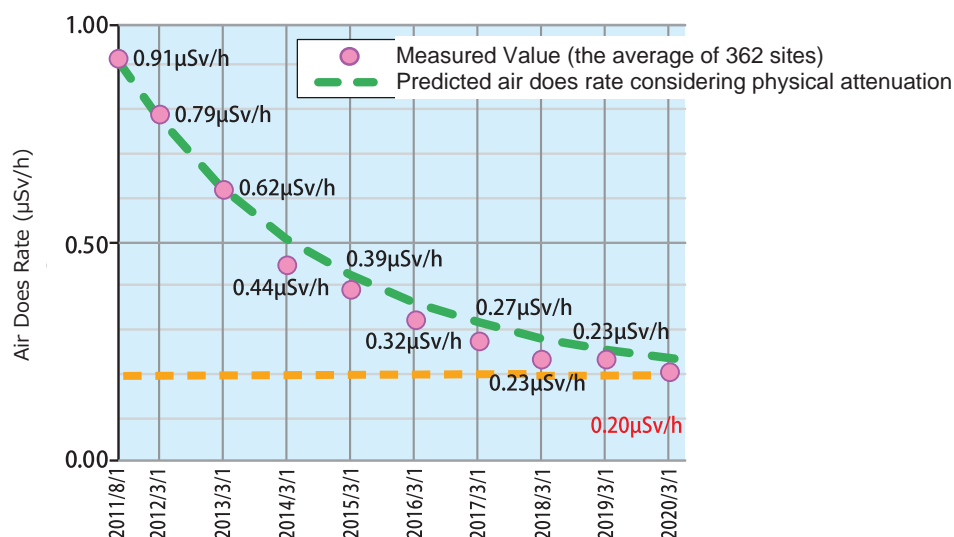
On March 11, 2011, the Fukushima Daiichi Nuclear Power Stations of the Tokyo Electric Power Company (TEPCO) automatically shut down following the Great East Japan Earthquake. As a result of explosions presumably caused by hydrogen, a substantial amount of radioactive material was discharged into the atmosphere.

The GOJ designated the areas of evacuation and has rearranged them one by one. By March 2020, the evacuation orders were lifted in all the areas except areas where returning is difficult.

For decontamination of the forests, the measures in the vicinity of residence had been given top priority. 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.

Air dose rate in forests in Fukushima Prefecture has been declining year by year (Fig. V-2).



Source: Forest planning division of Fukushima prefectural government, *the current state and prediction of radioactive materials in forests (FY 2019)*

Fig. V-2 Changes of Air Dose Rate in forests in Fukushima

(2) Measures against Radioactive Substances in Forests

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

In order to maintain and promote the multiple functions of forests and to regenerate forestry industry, the Forestry Agency has promoted forest management such as thinning and pilot initiatives against radioactive substances since FY2013.

For ensuring safety and security against radiation for forest workers, the Forestry Agency summarized the points during work and researched the exposure reduction method. In 2016, a guidebook for forest workers was published.

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.

(3) Supply Safe Forest Products

The GOJ set standard limits for radioactive substances in foods at 100 Bq/kg for general foods. As of March 26, 2021, 22 items of non-wood forest products have shipping restrictions.

The Forestry Agency has developed Guidelines Concerning Management of Bed-log Cultivation of Mushrooms to Decrease Radioactive Cesium. Shipping 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 limits. Although the production of shiitake mushrooms on logs has not recovered even now, the production of shiitake mushrooms on sawdust medium has recovered to almost the level before the Great East Japan Earthquake.

Some shipment restrictions for wild mushrooms have been gradually lifted through the appropriate efforts of inspection and shipment management, while other restrictions remain.

The Forestry Agency promptly publishes the results of inspections on radioactivity levels in the products in order to dispel harmful rumors. In addition, the agency promotes the restoration of satoyama hardwood forest for shiitake logs.

Iwaki Shiitake Blocks Growers Cooperation, which produces shiitake mushrooms in Fukushima Prefecture, was forced to suspend shipments for a while after the Great East Japan Earthquake, but it has succeeded in expanding production and sales channels thorough safety management and branding.



Shiitake mushrooms and Shochu produced under safety management

By disclosing all the facilities, the production processes, and the inspection results, the association has earned the trust from their business partners. It has been also working on creating their hit products such as Shochu (Japanese distilled spirits) using shiitake mushrooms as one of their sixth industrialization activities.



Appendix

1. Forestry-related Fundamental Figures

Item	Unit	2000	2005	2010	2015	2016	2017	2018	2019
i Nominal gross domestic product (GDP)	billion yen	535,418	532,516	505,531	538,032	544,365	553,073	556,190	561,267
Forestry	billion yen	176	137	196	234	239	243	249	250
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	64.01	64.65	65.30	66.64	67.24
Forestry	million	0.07	0.06	0.08	0.07	0.06	0.06	0.07	0.08
Forestry / Total # of workers	%	0.11	0.09	0.13	0.11	0.09	0.09	0.11	0.12
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	25.05	25.05	25.05
Forest / Land area	%	67.5	67.4	67.3	67.3	67.3	67.2	67.2	67.2
v Protection forest	million ha	8.93	11.65	12.02	12.17	12.18	12.20	12.21	12.23
Protection forest / Forest	%	35.5	46.4	47.9	48.5	48.6	48.7	48.7	48.8
vi Growing stock of forest	billion m ³	3.5	4.0	4.4	4.9	4.9	5.2	5.2	5.2
vii Total wood supply/demand	million m ³	101.01	87.42	71.88	75.16	78.08	81.85	82.48	81.91
Domestic production	million m ³	19.06	17.90	18.92	24.92	27.14	29.66	30.20	30.99
Import	million m ³	81.95	69.52	52.96	50.24	50.94	52.19	52.28	50.92
Self-sufficiency rate	%	18.9	20.5	26.3	33.2	34.8	36.2	36.6	37.8
viii New housing starts	million units	1.23	1.24	0.81	0.91	0.97	0.96	0.94	0.91
Ratio of wooden structure	%	45.2	43.9	56.6	55.5	56.5	56.5	57.2	57.8

Notes : "Total wood supply/demand," "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 "Annual Report on the Labour Force Survey"

iii: Geospatial Information Authority of Japan "The Report of Statistical reports on the land area by prefectures and municipalities in Japan"

iv, v, vi: Forestry Agency

vii: Forestry Agency "Wood Supply and Demand Chart"

viii: Ministry of Land, Infrastructure, Transport and Tourism "Housing Starts"

2. Forestry Output

(Unit: billion yen)

Item	2000	2005	2010	2015	2016	2017	2018	2019
Forestry output	531.15	417.05	425.70	454.47	470.26	486.34	502.03	497.63
Wood production	322.18	210.50	195.29	234.08	237.00	256.09	264.83	270.00
Softwood	265.33	177.41	170.16	198.19	195.39	206.06	209.99	213.01
Sugi (Japanese Cedar)	123.78	87.53	93.50	118.09	116.74	122.68	126.44	127.43
Hardwood	54.72	31.71	23.76	19.51	19.06	18.40	18.42	16.95
Fuelwood and charcoal production	6.16	6.09	5.08	5.31	5.49	5.44	5.54	5.81
Grown mushroom production	196.89	198.50	218.91	210.52	221.39	220.08	225.66	217.02
Minor forestry products production	5.92	1.96	6.42	4.55	6.38	4.74	5.99	4.80
Forestry income produced	351.91	245.78	229.22	251.02	260.11	269.54	266.59	264.52

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 charcoal 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 ginseng 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	
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
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
2019	(22,788)	(7,189)	(1,821)	(311)	(6,466)	(5,046)	(1,954)
	20,562	7,005	1,745	308	6,139	3,692	1,673

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	
2010	556	445	110	6.65	4.43	2.70	0.42	1.31	2.22
2011	552	437	115	7.11	4.86	2.88	0.40	1.58	2.25
2012	488	368	121	7.59	5.21	3.00	0.36	1.86	2.38
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
2018	370	269	101	7.46	4.94	2.37	0.25	2.32	2.52
2019	365	268	98	7.68	5.21	2.53	0.30	2.37	2.47

Notes 1: Volumes are in roundwood equivalent.

2: "Sawnwood" means the wood such as wood 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		2020	
	Forest area (ha)	Ratio to total area	Forest area (ha)	Ratio to total area
Total	17,626,761	100.0%	17,616,828	100.0%
Private	13,563,827	77.0%	13,560,059	77.0%
Public	3,370,380	19.1%	3,408,740	19.3%
Prefecture	1,271,571	7.2%	1,310,110	7.4%
Public corporation	391,189	2.2%	351,481	2.0%
Municipality	1,406,063	8.0%	1,435,718	8.1%
Property ward	301,557	1.7%	311,431	1.8%
Incorporated Administrative Agencies	692,554	3.9%	648,029	3.7%

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 "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" corresponds to one of the followings. The entities (I) own more than 3 hectares of forest, and also have conducted forestry or have established a "Forest Management Plan" for the past five years, (II) have been entrusted with forestation or (III) have harvested more than 200 m³ of logs for the past one year through the entrustment and the purchase of standing trees.

Source: MAFF "2015 Census of Agriculture and Forestry"

9. Roundwood Production

(Unit: 1,000m³, %)

		2000	2005	2010	2015	2016	2017	2018	2019	Relative change from the previous year (%)
Total		17,034	16,166	17,193	20,049	20,660	21,408	21,640	21,883	1.1
By tree species	Subtotal	13,707 (80)	13,695 (85)	14,789 (86)	17,815 (89)	18,470 (89)	19,258 (90)	19,462 (90)	19,876 (91)	2.1
	Sugi (Japanese cedar)	7,671	7,756	9,049	11,226	11,848	12,276	12,532	12,736	1.6
	for sawnwood	7,258 <57>	6,737 <58>	6,695 <63>	7,869 <66>	8,095 <66>	8,200 <65>	8,237 <66>	8,582 <67>	4.2
	Hinoki (Japanese cypress)	2,273	2,014	2,029	2,364	2,460	2,762	2,771	2,966	7.0
	Akamatsu (Japanese red pine), Kuromatsu (Japanese black pine)	1,034	783	694	779	678	641	628	601	▲ 4.3
	Karamatsu (Japanese larch), Ezomatsu (Yezo spruce), Todomatsu (Sakhalin fir)	2,410	2,910	2,816	3,268	3,325	3,380	3,366	3,405	1.2
	Others	319	232	201	170	153	198	165	168	1.8
	Hardwood	3,327 (20)	2,471 (15)	2,404 (14)	2,236 (11)	2,188 (11)	2,153 (10)	2,178 (10)	2,007 (9)	▲ 7.9
	Sawnwood	12,798 (75)	11,571 (72)	10,582 (62)	12,004 (60)	12,182 (59)	12,632 (59)	12,563 (58)	12,875 (59)	2.5
	Plywood	138 (1)	863 (5)	2,490 (14)	3,356 (17)	3,682 (18)	4,122 (19)	4,492 (21)	4,745 (22)	5.6
By use	Chips	4,098 (24)	3,732 (23)	4,121 (24)	4,689 (23)	4,796 (23)	4,654 (22)	4,585 (21)	4,263 (19)	▲ 7.0

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

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

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)

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

Domestic production	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel	Roundwood	Sawnwood	Pulp and chips	Plywood	Others	Subtotal	Charcoal	Firewood	Wood chips for fuel
	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel														
																	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal
	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel														
Total																	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood

Import	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel	Roundwood	Sawnwood	Pulp and chips	Plywood	Others	Subtotal	Charcoal	Firewood	Wood chips for fuel
	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel														
																	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal
	Total	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood	Wood chips for fuel														
Total																	Roundwood	Forest residue	Wood for mushroom production	Fuel wood	Total	Subtotal	Sawnwood	Pulp and chips	Plywood	Others	Wood for mushroom production	Subtotal	Charcoal	Firewood

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", 2019

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
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
2019	81,905	71,269	10,386	251	25,270	31,061	10,474	4,464	23,805	47,464

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	2015	2016	2017	2018	2019	Relative change from the previous year (%)
Total wood supply/demand		101,006	87,423	71,884	75,160	78,077	81,854	82,478	81,905	▲ 0.7
Industrial use		99,263	85,857	70,253	70,883	71,942	73,742	73,184	71,269	▲ 2.6
Fuel wood		940	1,001	1,099	3,962	5,807	7,800	9,020	10,386	15.1
Wood for mushroom production		803	565	532	315	328	311	274	251	▲ 8.4
Domestic production		19,058	17,899	18,923	24,918	27,141	29,660	30,201	30,988	2.6
Import		81,948	69,523	52,961	50,242	50,936	52,194	52,277	50,917	▲ 2.6
Self-sufficiency rate (%)		18.9	20.5	26.3	33.2	34.8	36.2	36.6	37.8	1.2
Wood demand for industrial use by sector	Total	99,263	85,857	70,253	70,883	71,942	73,742	73,184	71,269	▲ 2.6
	Domestic production	18,022	17,176	18,236	21,797	22,355	23,312	23,680	23,805	0.5
	Import	81,241	68,681	52,018	49,086	49,586	50,430	49,505	47,464	▲ 4.1
	Self-sufficiency rate (%)	18.2	20.0	26.0	30.8	31.1	31.6	32.4	33.4	1.0
	Subtotal	40,946	32,901	25,379	25,358	26,150	26,370	25,708	25,270	▲ 1.7
	Domestic production	12,798	11,571	10,582	12,004	12,182	12,632	12,563	12,875	2.5
	Import	28,148	21,330	14,797	13,354	13,968	13,738	13,145	12,395	▲ 5.7
	Self-sufficiency rate (%)	31.3	35.2	41.7	47.3	46.6	47.9	48.9	51.0	2.1
	Subtotal	(6,537)	(7,974)	(6,192)	(6,667)	(6,853)	(7,107)	(6,792)	(6,258)	▲ 3.0
	Domestic production	4,749	4,426	4,785	5,202	5,266	5,193	5,089	4,651	▲ 8.6
	Import	37,437	33,181	27,565	26,581	26,353	27,110	26,920	26,410	▲ 1.9
	Self-sufficiency rate (%)	11.3	11.8	14.8	16.4	16.7	16.1	15.9	15.0	▲ 0.9
	Subtotal	13,825	12,586	9,556	9,914	10,248	10,667	11,003	10,474	▲ 4.8
	Domestic production	138	863	2,490	3,530	3,876	4,122	4,492	4,745	5.6
	Import	13,687	11,723	7,066	6,384	6,372	6,545	6,511	5,729	▲ 12.0
	Self-sufficiency rate (%)	1.0	6.9	26.1	35.6	37.8	38.6	40.8	45.3	4.5
	Subtotal	2,306	2,763	2,968	3,829	3,925	4,403	4,465	4,464	▲ 0.0
	Domestic production	337	316	379	1,061	1,031	1,365	1,536	1,534	▲ 0.1
	Import	1,969	2,447	2,589	2,767	2,894	3,038	2,930	2,931	0.0
	Self-sufficiency rate (%)	14.6	11.4	12.8	27.7	26.3	31.0	34.4	34.4	0.0

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	2015	2016	2017	2018	2019	
Imported wood	North America	Subtotal	(28.9) 28,700	(18.8) 16,129	(19.2) 13,506	(17.5) 12,415	(17.2) 12,377	(16.8) 12,352	(16.3) 11,898	(15.3) 10,893	
		U.S.A	14,460	6,844	5,838	6,057	6,083	6,233	6,273	5,754	
		Canada	14,240	9,285	7,668	6,359	6,294	6,119	5,625	5,139	
	Southeast Asia	Subtotal	(13.7) 13,569	(12.2) 10,511	(8.9) 6,287	(8.3) 5,848	(7.7) 5,525	(7.8) 5,751	(7.4) 5,421	(6.9) 4,949	
		Malaysia	6,690	5,888	3,773	2,917	2,709	2,778	2,514	2,213	
		Indonesia	5,858	4,137	2,304	2,804	2,698	2,887	2,759	2,548	
		Others	1,021	486	209	127	117	85	148	187	
	Russia Federation		(7.5) 7,429	(8.6) 7,411	(3.3) 2,343	(2.9) 2,081	(3.3) 2,366	(3.3) 2,398	(3.3) 2,411	(3.5) 2,459	
	Europe		(4.7) 4,675	(6.9) 5,937	(7.1) 4,967	(7.6) 5,374	(8.5) 6,135	(8.7) 6,450	(8.0) 5,880	(8.4) 5,974	
	Others	New Zealand	(4.4) 4,374	(3.4) 2,878	(3.9) 2,720	(2.3) 1,638	(2.4) 1,749	(2.1) 1,545	(2.0) 1,484	(2.0) 1,393	
			(3.8) 3,795	(4.6) 3,952	(6.7) 4,726	(5.6) 3,987	(5.9) 4,234	(5.7) 4,236	(5.5) 4,055	(4.9) 3,479	
		Australia	(8.7) 8,604	(10.2) 8,729	(11.0) 7,722	(6.6) 4,662	(5.7) 4,067	(6.4) 4,684	(6.3) 4,604	(6.0) 4,271	
		China	(2.5) 2,445	(3.0) 2,544	(3.0) 2,084	(2.8) 1,967	(2.7) 1,912	(2.7) 1,982	(2.6) 1,901	(2.5) 1,777	
		Viet Nam				(7.6) 5,418	(6.9) 4,946	(6.7) 4,917	(8.1) 5,939	(9.0) 6,446	
		Others	(7.7) 7,651	(12.3) 10,591	(10.9) 7,663	(8.0) 5,696	(8.7) 6,275	(8.3) 6,116	(8.1) 5,911	(8.2) 5,823	
		Subtotal		(81.8) 81,241	(80.0) 68,681	(74.0) 52,018	(69.2) 49,086	(68.9) 49,586	(68.4) 50,430	(67.6) 49,505	(66.6) 47,464
		Domestic wood		(18.2) 18,022	(20.0) 17,176	(26.0) 18,236	(30.8) 21,797	(31.1) 22,355	(31.6) 23,312	(32.4) 23,680	(33.4) 23,805
	Total		(100.0) 99,263	(100.0) 85,857	(100.0) 70,253	(100.0) 70,883	(100.0) 71,942	(100.0) 73,742	(100.0) 73,184	(100.0) 71,269	

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 Volume

		Unit	2000	2005	2010	2015	2016	2017	2018	2019
Sawnwood	Number of mills	mills	11,692	9,011	6,569	5,206	4,934	4,814	4,582	4,382
	Arrival of logs	1,000m ³	26,526	20,540	15,762	16,182	16,590	16,802	16,672	16,637
	Shipment	1,000m ³	17,231	12,825	9,415	9,231	9,293	9,457	9,202	9,032
Plywood	Number of mills	mills	354	271	192	185	183	181	180	176
	Arrival of logs	1,000m ³	5,401	4,636	3,811	4,218	4,638	5,004	5,287	5,448
	Surface-untreated plywood production	1,000m ³	3,218	3,212	2,645	2,756	3,063	3,287	3,298	3,337
	Surface-treated plywood production	1,000m ³	1,534	1,037	647	524	642	623	580	562
Glued laminated timber	Number of factories	factories	281	259	182	157	150	165	165	162
	Production	1,000m ³	892	1,512	1,455	1,485	1,549	1,971	1,923	1,920
Cross Laminated Timber	Number of factories	factories	-	-	-	-	-	7	9	9
	Production	1,000m ³	-	-	-	-	-	14	14	13
Wood chips	Number of mills	mills	2,657	2,040	1,577	1,424	1,393	1,364	1,303	1,250
	Production	1,000tons	-	6,005	5,407	5,745	5,826	5,954	5,706	5,266
		(1,000m ³)	10,851	-	-	-	-	-	-	-

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: Figures of glued laminated timber are based on the data from Japan Laminated Wood Products Association until 2016.

4: "Wood chips" excludes chips for fuel.

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

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

Full text (in Japanese) of the “Annual Report on Forest and Forestry for FY2020” is available on the website of the Forestry Agency:

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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 of the Ministry of Agriculture, Forestry and Fisheries

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