Chapter 6 Revitalization of Industries and Livelihoods

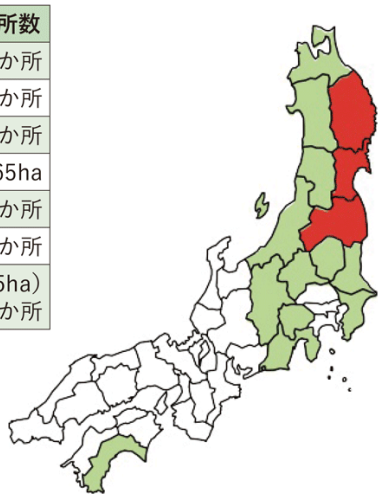
Section 3 Forestry and Wood Industries

1. Overview of damage

In 15 prefectures from Aomori to Kochi, desolation of forest land, forest fires, and damage to forest conservation and forest road facilities as well as industrial facilities such as plywood mills and lumber mills occurred, and coastal disaster prevention forests on the Pacific coastal area were damaged by the tsunami. In addition, the accident at the TEPCO Fukushima Daiichi Nuclear Power Station released large amounts of radioactive materials into the environment, contaminating wide areas of forest in Fukushima Prefecture and other prefectures and affecting the forestry and wood industries.

Figure 6-3-1 Forest land-related damage caused by the Great East Japan Earthquake

被害の内容	被害箇所数
林地荒廃	458か所
治山施設	275か所
林道施設等	2,632か所
森林被害	1,065ha
木材加工流通施設	115か所
特用林産施設等	476か所
合　　計	(1,065ha) 3,956か所



注１：着色部は震災による林野関係の被害が確認された県(15県)。
　　■は特に被害が甚大であった３県。
　２：被害箇所数は平成23(2011)年に報告された数値。
資料：林野庁調べ(平成23(2011)年時点)。

Source) White Paper on Forests and Forestry, FY2020, Chapter V, 1. (3) Damages to Forests, etc., and Restoration and Reconstruction https://www.rinya.maff.go.jp/j/kikaku/hakusyo/R2hakusyo_h/all/chap5_1_3.html (accessed July 27, 2023)

Figure 6-3-2 Forest land-related damage by prefecture

都道府県	林地荒廃	治山施設	林道施設等	森林被害	木材加工・流通施設	特用林産施設等	合 計	
	箇所数	箇所数	箇所数	面積(ha)	箇所数	箇所数	箇所数	被害額(億円)
青 森	1	12	0	0	3	0	16	28
岩 手	37	84	483	707	31	195	830	299
宮 城	113	97	580	220	42	54	886	1,165
秋 田	4	0	0	0	0	9	13	8
山 形	3	1	0	0	0	0	4	1
福 島	143	27	997	138	31	39	1,237	495
茨 城	50	17	202	0	5	22	296	49
栃 木	65	2	100	0	1	86	254	31
群 馬	7	1	3	0	0	4	15	2
千 葉	5	32	1	0	0	6	44	7
新 潟	20	1	122	0	0	41	184	28
山 梨	2	0	0	0	0	0	2	1
長 野	7	1	138	0	1	20	167	41
静 岡	1	0	6	0	0	0	7	0
高 知	0	0	0	0	1	0	1	0
合 計	458	275	2,632	1,065	115	476	3,956	2,155

資料：林野庁調べ(平成24(2012)年3月5日現在)。

In addition to direct damage to forest lands and forest road facilities, the Great East Japan Earthquake also caused indirect damage to the forestry industry, as large-scale plywood and paper mills located along the Pacific coast of the Tohoku region were affected, and the distribution of plywood lumber and wood chips supplied to these mills stagnated.

For example, in Iwate Prefecture, approximately 30% of the prefecture's material production was supplied to three plywood mills in Miyako City and Ofunato City for plywood production, but these mills were forced to shut down due to tsunami damage, and the distribution of plywood materials was disrupted.

Three paper mills in Hachinohe City, Aomori Prefecture, and Ishinomaki City and Iwanuma City, Miyagi Prefecture, which had been receiving large volumes of wood chips produced in the Tohoku region, etc., also ceased operations due to tsunami damage, and the distribution of wood chips as well as pulp and chip materials, which were used as their raw materials, stagnated.

Furthermore, the production system for shiitake mushrooms, etc. was severely damaged due to the difficulty in procuring bed logs in eastern Japan as a result of the radioactive materials from the accident at TEPCO Fukushima Daiichi Nuclear Power Station.

As for the wood industry, 115 timber processing and distribution facilities and 476 non-timber forest products facilities were affected. These included six large plywood mills located in Iwate Prefecture and Miyagi Prefecture that were affected. These mills produced about 30% of the nationwide plywood production.

2. Recovery and reconstruction of forestry, etc. from the earthquake and tsunami disaster

(1) Basic framework

The “Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake” stated that work would be done on the revitalization of the forestry and wood industries as core regional industries, the promotion of the use of regional timber for housing and public buildings, and the establishment of an energy supply system centered on woody biomass, etc. in the forestry sector.

Description on “forestry” in the “Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake”

5 Reconstruction measures (3) Revitalization of the local economic activities - ④ Forestry

(i) In the reconstruction of the forestry and wood industries, these industries will be revitalized as self-sustaining core industries of the region. In addition, the rehabilitation of damaged lumber and plywood mills and the establishment of an efficient timber processing and distribution system will be implemented to actively promote the use of local timber for housing and public buildings, while also establishing sustainable forest management by advancing consolidation of forest practices and establishment of the road network.

(ii) As a leading model for utilizing wood waste from the earthquake disaster, cogeneration of heat and electricity for reconstruction housing, public buildings, public facilities such as fishery cooperatives, horticultural facilities, etc. will be promoted, and a sustainable woody biomass-based energy supply system with low environmental impact will be established in the future by shifting to energy supply from unused thinned wood and other wood resources.

In addition, Aomori Prefecture, Iwate Prefecture, Miyagi Prefecture, and Fukushima Prefecture have formulated their own reconstruction policies. The figure below (Figure 6-3-3) shows the main policies for efforts related to forests, forestry, and wood industries.

Figure 6-3-3 Status of reconstruction policy development and budget by affected prefectures

	策定状況	森林・林業・木材産業に関連する主な取組
青森県	平成23(2011)年5月に「青森県復興プラン」を策定。同12月に「青森県復興ビジョン」を策定。	・木材産業施設等の復旧 ・津波減衰効果の大きい海岸防災林の再生と保全　等
岩手県	同4月に「東日本大震災津波からの復興に向けた基本方針」を策定。同8月に「岩手県東日本大震災津波復興計画」を策定。	・木質バイオマス等の再生可能エネルギーによるエネルギー供給システムの導入促進 ・合板工場等の復旧・整備による木材加工体制の再生 ・防潮林、海岸保全施設の復旧・整備　等
宮城県	同8月に「宮城県震災復興計画(案)」を策定、同10月に県議会で可決。	・復興に向けた木材供給の確保、産業の維持 ・県産材を使用した住宅・公共施設等の建築・復旧への支援 ・海岸防災林等の早期復旧 ・木質バイオマスの有効活用促進
福島県	同8月に「福島県復興ビジョン」を策定。同12月に「福島県復興計画(第1次)」を策定。	・除染とあわせた森林整備の推進 ・県産材の安定供給体制の構築 ・再生可能エネルギーとしての木質バイオマスの利用促進 ・森林等の除染の推進　等

資料：林野庁調べ(平成23(2011)年12月現在)。

In the first supplementary budget approved on May 2, 2011, 34.4 billion yen was for forestry. Assessment and analysis of the damage situation, restoration and maintenance of disaster prevention facilities, forest road facilities, and forest reserves damaged by the earthquake and tsunami, removal and treatment of wildfire-damaged trees, restoration and afforestation, etc. were urgently carried out.

The second supplementary budget approved on July 25, 2011 included an additional 300 million yen for forestry.

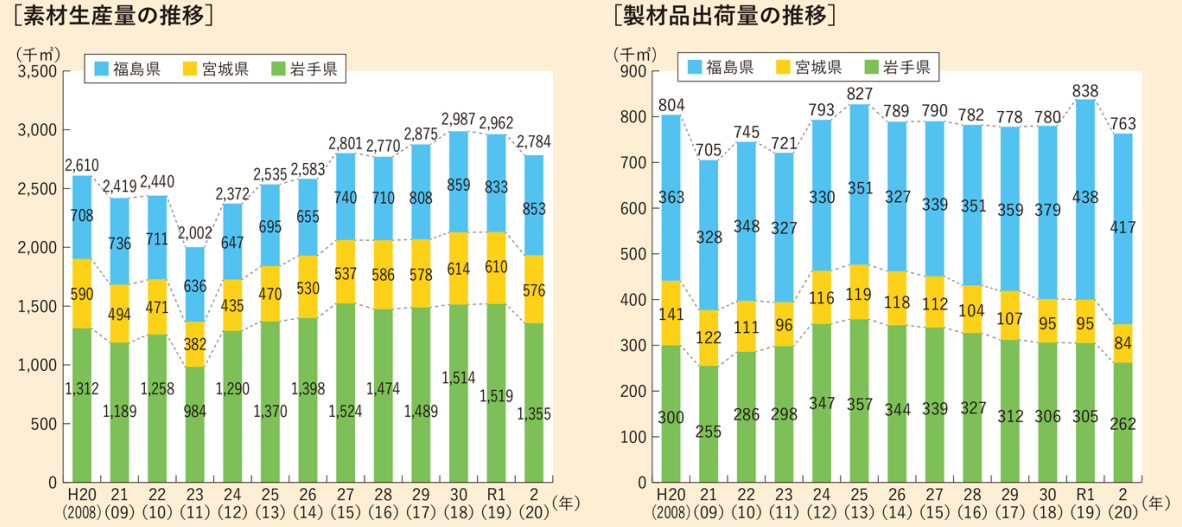
The third supplementary budget approved on November 21, 2011 included 235.9 billion yen for forestry. This supplementary budget included restoration and maintenance of collapsed mountainsides, restoration and rehabilitation of coastal disaster prevention forests, and restoration of damaged disaster prevention facilities, as well as forestry operations such as thinning and road network enhancement in the disaster-affected areas, etc.

(2) Reconstruction measures

1) Support for the reconstruction of the forestry and wood industries

The Forestry Agency provided support for the distribution costs of shipping bed logs, etc. to damaged mills, the disposal, restoration, and maintenance of damaged timber processing and distribution facilities, as well as the recovery of timber that had flowed into ports and harbors, through the first supplementary budget for FY2011 (emergency measures for timber supply, etc.) and the third supplementary budget (measures to restore timber processing and distribution facilities, etc.). The project for restoration of timber processing and distribution facilities under the first supplementary budget was implemented at 11 timber processing and distribution facilities in Iwate Prefecture and Miyagi Prefecture, and production of lumber, plywood, and other products at the damaged facilities was successively resumed in early July 2011 and later. Furthermore, restoration projects funded by the third supplementary budget were implemented at 36 timber processing and distribution facilities in Iwate Prefecture, Miyagi Prefecture, Fukushima Prefecture, and Nagano Prefecture, and restoration was completed by the end of March 2014. Thanks to the reconstruction efforts of all parties involved, material production has generally recovered to pre-earthquake levels.

Figure 6-3-4 Changes in material production volumes and product shipment volumes in Iwate Prefecture, Miyagi Prefecture and Fukushima Prefecture



注：平成29（2017）年値から素材生産量にLVL用の単板製造用素材を含む。
資料：農林水産省「木材需給報告書」

Source) White Paper on Forests and Forestry, FY2021, Chapter V, 1.(3) Damage and status of restoration in the forestry and wood industries
https://www.rinya.maff.go.jp/j/kikaku/hakusyo/r3hakusyo/attach/pdf/zenbun-16.pdf (accessed July 27, 2023)

2) Stable supply of plywood

As for plywood, about 30% of the nation's plywood production was affected by the disaster, and the Japan Plywood Manufacturers' Association issued a statement immediately after the earthquake stating that it would do the utmost to ensure a stable supply of plywood, and decided to establish a system to increase production at non-affected mills. The Forestry Agency held a total of five "Plywood Supply and Demand Information Exchange Meetings" from March 22, 2011 to August of the same year. Through these information exchange meetings and weekly plywood price surveys, they actively collected, exchanged, and provided information to stabilize the market. As a result, domestic production of plywood increased from 166,000 m^3 in March 2011 to 196,000 m^3 in April 2011, and has remained around 200,000 m^3/month since then. In addition, needle-leaf tree plywood prices stopped rising in June of the same year and have remained stable since then.

3) Provision of emergency relief supplies

Regarding the provision of emergency relief supplies, requests were made to concerned organizations to establish a supply system for charcoal, briquettes, etc., and charcoal, charcoal stoves, etc. were provided to evacuation shelters in various regions on the day of the earthquake. The Tohoku and Kanto Regional Forest Offices secured vehicles and personnel to transport emergency food supplies to evacuation shelters, and also organized their own relief supplies and provided them to evacuation shelters in each region.

4) Stable supply of timber for disaster recovery

Regarding the stable supply of timber for disaster recovery, a “Liaison Conference on Measures to Secure Timber for Disaster Recovery” was held on March 15, 2011 to request the related organizations to secure an appropriate supply of materials for reconstruction, stabilize the nationwide supply and demand of timber, and cooperate with planned power outages.

5) Utilization of national forests

Immediately after the earthquake, the disaster-affected prefectures were provided with a list of national forests and fields that could be used as temporary storage areas for debris and temporary housing, and approximately 426 ha of national forests and fields including seaside forests was lent without charge as temporary storage areas for debris based on requests from the disaster-affected prefectures, etc.

In addition, various efforts were made for earthquake recovery, including the supply of approximately 530,000 piling logs for emergency temporary housing from the relevant regional forest offices, and the provision of forest roads in national forests as detour routes for the disrupted prefectural roads.

6) Utilization of timber for new community development

The construction of emergency temporary housing that began in each prefecture immediately after the earthquake was led by major housing manufacturers that were members of the Japan Prefabricated Construction Suppliers and Manufacturers Association, which had concluded disaster agreements with each prefecture, and some of the housing was constructed of wood. Subsequently, during 2011, the three affected prefectures (Iwate Prefecture, Miyagi Prefecture, and Fukushima Prefecture) decided to publicly invite local construction companies, etc. to apply to be builders of emergency temporary housing. Local contractors who responded to public solicitation in each prefecture actively worked to supply temporary housing using local materials, and by April 2013, more than 25% of the approximately 53,000 emergency temporary housing units built in the three affected prefectures, which corresponded to approximately 15,000 units, were constructed of wood.

Based on the results and evaluation of the supply of wooden emergency temporary housing in the aftermath of the Great East Japan Earthquake, Japan Builders Network (JBN, then the Japan Building Contractors' Support Center) and the National Federation of Construction Workers’ Unions established the “Japan Association of Wooden Construction Businesses” in September 2011. In order to establish a system to promptly supply temporary wooden emergency housing after a large-scale disaster, the association has been promoting the conclusion of disaster agreements with prefectures, etc., and had concluded disaster agreements with 40 prefectures and 10 cities by October 2022. Some local authorities have also concluded agreements with local forestry cooperatives and timber associations for the supply of timber in the event of a disaster.

Regarding disaster public housing, the “Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake” also stated that “the construction of wooden disaster public housing, etc. should be promoted in areas where there is no tsunami risk,” and the establishment of wooden reconstruction housing was promoted. In September 2011, with the participation of the Ministry of Land, Infrastructure, Transport and Tourism, the Forestry Agency, and the Japan Housing Finance Agency as observers, and

the Miyagi Association of Architectural Firms serving as the secretariat, the "Public-Private Partnership Liaison Conference for Regional Reconstruction Housing in the Three Affected Prefectures (Iwate, Miyagi, and Fukushima)," consisting of the three disaster-affected prefectures and related organizations, was held with the aim of achieving the construction of wooden reconstruction housing using regional timber. In December of the same year, the conference established guidelines for a model design and production system for wooden reconstruction housing. Of the disaster public housing planned in the housing reconstruction process chart, construction of 29,230 units was completed by the end of FY2020, excluding those being adjusted for nuclear power station evacuees and those for returnees, and approximately 25% were constructed using wood construction.

7) Utilization of woody biomass

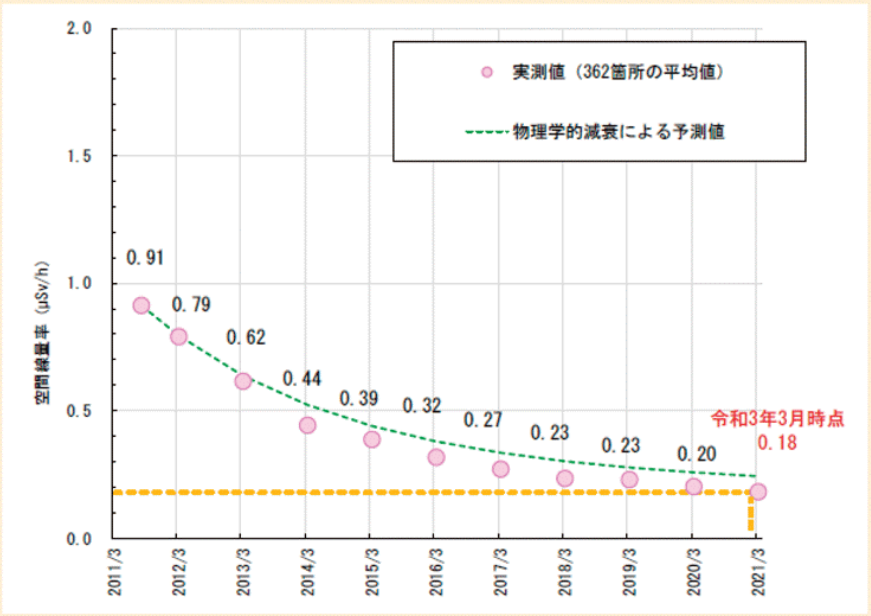
In the Great East Japan Earthquake, approximately 20 million metric tons of disaster waste (debris) were generated by the earthquake and tsunami in 239 municipalities located in 13 prefectures. Of this amount, wood waste amounted to approximately 1.35 million metric tons. Management of this disaster waste became a major issue in the restoration of the disaster-affected areas. Meanwhile, the accident at TEPCO Fukushima Daiichi Nuclear Power Station and damage to thermal and hydroelectric power stations, substations, and transmission facilities caused by the earthquake and tsunami resulted in a major shortage of electricity supply, particularly in the Kanto region. Under these circumstances, the "Guidelines (Master Plan) for Disaster Waste Management after the Great East Japan Earthquake" formulated by the Ministry of the Environment in May 2011 stated that wood waste could be expected to be used for woody boards, boiler fuel, power generation, etc. In addition, the "Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake" formulated by the government in July of the same year called for the promotion of cogeneration of heat and electricity using woody disaster waste. In response, wood waste generated by the disaster was used in woody biomass power generation facilities and woody board mills in various regions.

Regarding the use of renewable energy including woody biomass, the "Basic Guidelines for Reconstruction in Response to the Great East Japan Earthquake" also set forth the promotion of its introduction, including a future shift to energy supply from unused thinned wood and other wood resources. In addition, the "Basic Guidelines for the Reconstruction and Revitalization of Fukushima" approved in a cabinet decision in 2012 positioned the revitalization of the local economy through the creation of renewable energy industries, etc. as one of the goals. The "Iwate Prefecture Great East Japan Earthquake and Tsunami Reconstruction Plan" and the "Miyagi Prefecture Earthquake Disaster Recovery Plan" also include the use of woody biomass as one of the reconstruction efforts. In response to these plans, woody biomass-related facilities are now in operation in each prefecture. In Iwate Prefecture, Miyagi Prefecture, and Fukushima Prefecture, 21 power plants using woody biomass, mainly from thinned wood, etc. had been approved for FIT, and 13 of them were in operation as of September 2021. There are also examples of heat supply projects in Kesennuma City, Miyagi Prefecture, and Kuji City, Iwate Prefecture, regarding the use of heat from woody biomass.

3. Restoration and reconstruction after the nuclear disaster

As for measures for radioactive materials in forests, surveys on the distribution of radioactive materials in forests have been conducted continuously since FY2011, and efforts are being made, including the demonstration of measure technologies for radioactive materials necessary for forest maintenance. Efforts are also being made to ensure that wood products are supplied safely.

Figure 6-3-5 Air dose rate in forests in Fukushima Prefecture



注：放射性セシウムの物理減衰曲線とモニタリング実測値（福島県の森林内362か所の平均値）の関係。
資料：福島県「森林における放射性物質の状況と今後の予測について」（令和２(2020)年度）

Source) White Paper on Forests and Forestry, FY2021, Chapter V, 2.(1) Measures for radioactive materials in forests
https://www.rinya.maff.go.jp/j/kikaku/hakusyo/r3hakusyo/attach/pdf/zenbun-3.pdf (accessed July 28, 2023)

1) Survey and analysis of contamination with radioactive materials in forests, etc.

In order to understand the actual state of contamination with radioactive materials in forests, surveys and analyses have been conducted, including those on the distribution of radioactive materials by level from the tree crown to the soil. As a result of the surveys and analyses, it was found that radioactive cesium, which had adhered to branches and leaves immediately after the nuclear power station accident, migrated to the soil over time, that currently 90% of the cesium remains in the soil, and that absorption of radioactive cesium into sapwood and heartwood was negligible.

2) Efforts in forestry revitalization measures

Projects were implemented to integrate forest thinning and other forest maintenance necessary to prevent the discharge of soil containing radioactive materials and measures for radioactive materials, as well as demonstration projects for the revitalization of forests and forestry.

As a result, in 44 municipalities in Fukushima Prefecture designated as intensive contamination survey areas (including those that have already been lifted), public entities have conducted forest thinning and other forest maintenance, and installed simple terracing work, etc. to temporarily control the movement of topsoil on steep slopes.

As of the end of March 2021, the total area of forest thinning, etc. was 10,468 ha, and 1,289 km of forest work roads had been constructed.

Figure 6-3-6 Scenes of efforts in forestry revitalization measures

In addition, since FY2014, a demonstration program for the regeneration of forests for production of bed logs, etc. was conducted in 7 prefectures affected by the stagnation of the production of shiitake mushroom bed logs, etc. due to the effects of radioactive materials, in order to systematically regenerate broadleaf forests.

3) Efforts for the Restoration of Satoyama

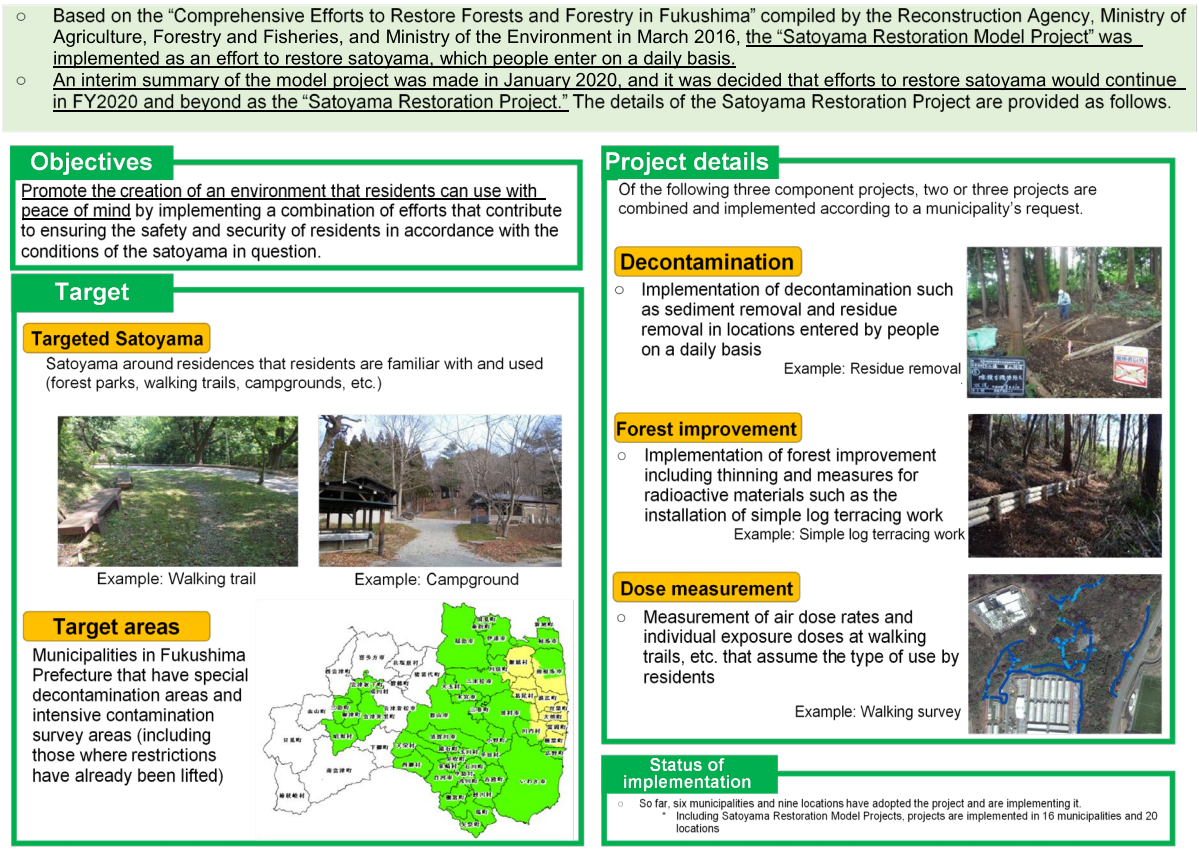
The "Satoyama Restoration Project" was implemented from FY2020 with the purpose of promoting the creation of an environment that residents can use with peace of mind by implementing a combination of efforts that contribute to ensuring the safety and security of residents in accordance with the conditions of the satoyama in question.

Based on the results of the "Satoyama Restoration Model Project," which was implemented in 14 municipalities from FY2016 to FY2019, it expands the target areas and continues the measures in 48 municipalities in Fukushima Prefecture.

The project is a combination of decontamination under a project by the Ministry of the Environment, forest maintenance by the Forestry Agency, etc., and dose measurement under a project by Fukushima Prefecture, etc., and it is being implemented in cooperation among the Reconstruction Agency, other relevant ministries and agencies, Fukushima Prefecture, and municipalities.

By the end of March 2022, the project had been implemented in 16 municipalities, and 20 locations, together with the Satoyama Restoration Model Project.

Figure 6-3-7 The Satoyama Restoration Project



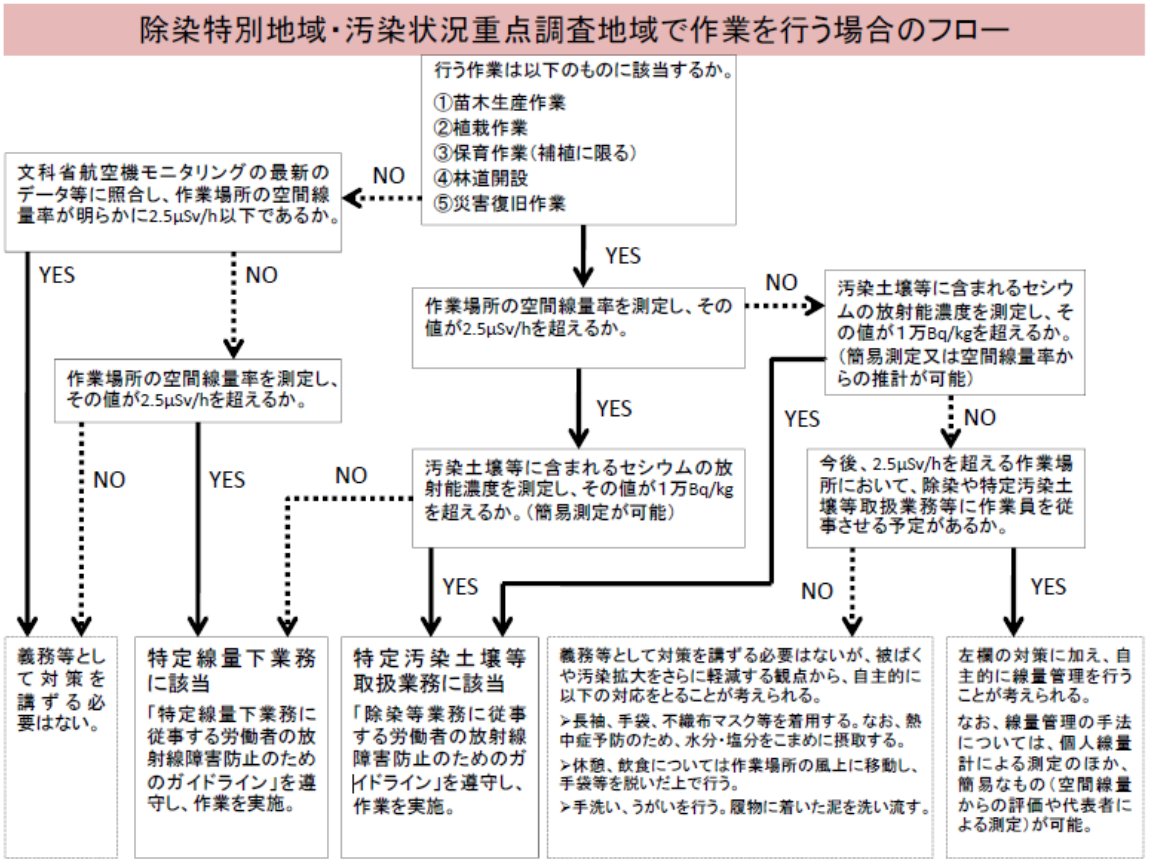
Source) Satoyama Restoration Project (Reconstruction Agency website), Overview
https://www.reconstruction.go.jp/topics/main-cat1/sub-cat1-1/taskforce/Satoyama-outline.pdf
(accessed July 28, 2023)

4) Efforts in safety and security measures for forest workers

Following the revision of the "Ordinance on Prevention of Ionizing Radiation Hazards in Projects for Decontaminating Soil and Waste Contaminated by Radioactive Materials Resulting from the Great East

Japan Earthquake and Related Works," the "Points to Consider Regarding Measures to Prevent Radiation Hazards in Work in Forests, etc. (Q&A)" was prepared in 2012. The flow chart was organized so that it would be possible to determine whether individual work in the forest falls under the category of work for handling specified contaminated soil, etc. or work under specified radiation doses, and the work procedures and points to consider when actually conducting work in the forests were explained.

Figure 6-3-8 Flow chart for work in special decontamination areas and priority plan on contamination status



Source) Forestry Agency https://www.rinya.maff.go.jp/j/routai/anzen/pdf/sagyou.pdf (accessed July 28, 2023)

5) Efforts in safety certification measures for wood products, work environment, etc.

There was some damage caused by harmful rumors due to concerns about the effects of radioactive materials on lumber produced in Fukushima Prefecture. Development of a device that automatically measures (detects) radiation doses in timber (logs, lumber products, etc.), etc. was therefore implemented.

To date, devices that automatically measure (detect) radiation levels in logs and lumber products have been installed at bed log markets and lumber mills in Fukushima Prefecture (43 automatic detection devices and 35 non-destructive inspection devices as of the end of December 2022).

6) Efforts in bark treatment measures

Although bark generated during the timber processing stage (hereinafter referred to as "bark") had

been effectively used as fuel, livestock bedding material, etc., its use was stopped and it was temporarily accumulated at plants due to concerns about the effects of radioactive materials caused by the accident at TEPCO Fukushima Daiichi Nuclear Power Station. Therefore, in order to stabilize business activities and promote the distribution of forestry products, temporary payment support was provided for the incineration, transportation, and temporary storage of bark, etc. (compensation for damage by TEPCO), which resulted in a decrease in the amount of bark retained from 84,000 metric tons in August 2013, the peak month, to 1,700 metric tons in May 2022. In addition, to promote the effective use of bark, etc., demonstrative efforts to expand its use in new ways were implemented.

7) Supply of safe non-timber forest products

The spread of radioactive materials due to the accident at TEPCO Daiichi Nuclear Power Station has had a major impact on the production of non-timber forest products such as mushrooms and wild vegetables. In the event that the test results of radioactive materials in foods such as mushrooms exceed 100 Bq/kg, which is the standard limit for general foods, and when the spread of radioactive materials is observed, the director of the Nuclear Emergency Response Headquarters instructed the prefectural governors concerned to restrict shipments, etc. As of March 2023, shipping restriction instructions had been issued for 22 non-timber forest products items from 196 municipalities in 14 prefectures.

In order to ensure the safety of log-grown mushrooms, the Forestry Agency has worked to establish cultivation management methods that reduce radioactive materials and continuously survey radioactive materials related to mushroom bed logs.

As an effort to reduce radioactive materials in log-grown mushrooms, the government formulated the “Guidelines for Managing the Cultivation of Log-Grown Mushrooms to Reduce Radioactive Materials” and disseminated the Guidelines to prefectures throughout Japan with a view to resuming the production of log-grown mushrooms. Even in areas where shipping restrictions have been specified, bed logs can be shipped in units of lots even when the regional shipping restrictions remain in place if it has been determined that the implementation of cultivation management according to the Guidelines is sufficient to ensure that no mushrooms exceeding the standard limit are produced. As of March, 2023, 93 municipalities in six prefectures have been ordered to place restrictions on the shipment of log-grown shiitake mushrooms, but it was decided that shipments would be permitted in units of lots for 66 municipalities in six prefectures.

In addition, support was provided for the maintenance of prevention facilities such as simple greenhouses and devices for measuring radioactive materials, which are necessary for the production of safe mushrooms, etc., and information was transmitted on websites regarding the test results for radioactive materials and the shipping restrictions and their lifting on mushrooms and other non-timber forest products.

As for efforts to ensure a stable supply of mushroom bed logs, the Forestry Agency has worked to ensure a stable supply of mushroom bed logs by holding a committee to examine the stable supply of mushroom bed logs, consisting of people involved in the production and distribution of mushrooms and prefectural governments, and conducting matching between consumers and suppliers, as the production of mushroom bed logs decreased significantly due to the effects of radioactive materials, affecting the stable procurement of mushroom bed logs in many prefectures, even though mushroom bed logs produced in the Abukuma region of Fukushima Prefecture were widely distributed throughout Japan prior to the Great East Japan Earthquake. In recent years, the amount of mushroom bed logs that need to be matched has been decreasing, and it is believed that log-grown mushroom producers are increasingly

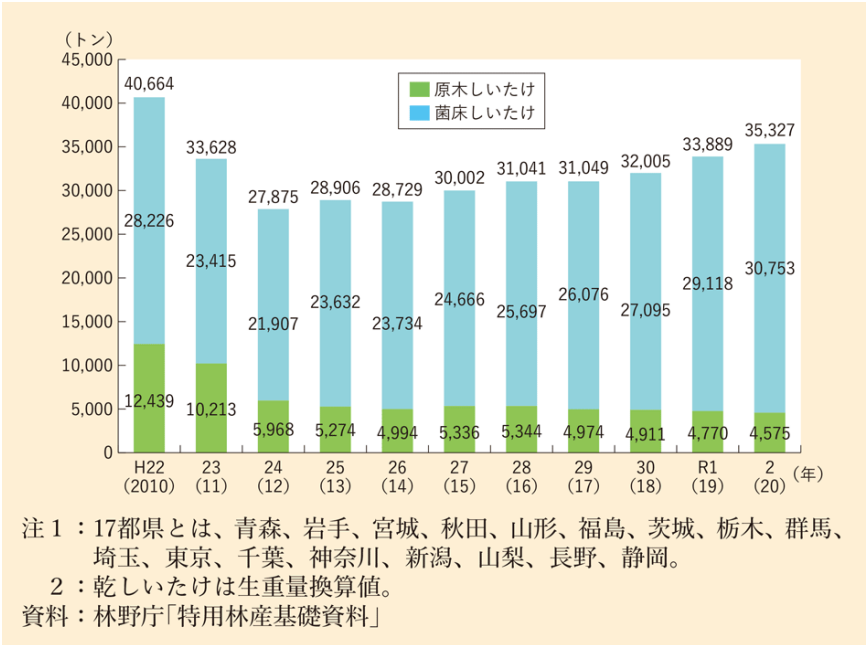
able to procure bed logs. However, there is still a mismatch when seen by tree species.

In addition, the Forestry Agency is supporting the introduction cost of production materials necessary for the next stage of production by producers through the Reconstruction Project for the Establishment of Non-timber Forest Products Facilities in order to revitalize production areas of non-timber forest products.

As a result of these efforts, in the production of shiitake mushrooms in eastern Japan, the production volume of bed-grown shiitake mushrooms has generally recovered to the pre-Great East Japan Earthquake level, while as of 2020 the production volume of log-grown shiitake mushrooms has remained at 50% of the pre-Great East Japan Earthquake level of 2010 or less.

Meanwhile, as of March 2023 shipping restrictions had been instructed for 18 items of wild mushrooms and wild vegetables, including wild mushrooms and bamboo shoots. In order to facilitate the lifting of shipping restrictions, the Forestry Agency notified the relevant prefectures of specific inspection methods and shipping management in 2015 through the "Specific Operation of Inspections, etc. for Lifting Shipping Restrictions on Wild Mushrooms, etc." Furthermore, in 2021, the "Concepts of Inspection Planning and Establishment and Cancellation of Items and Areas to which Restriction of Distribution and/or Consumption of Foods Concerned Applies" formulated by the Nuclear Emergency Response Headquarters was partially revised, and it became possible to ship items that have been confirmed to be below the standard limits through non-destructive testing if a system is in place to properly control and inspect mushrooms and wild vegetables according to the shipment and inspection policy established by the prefecture, even in areas with shipping restrictions. The Ministry of Health, Labour and Welfare notified prefectures of the application of the law to matsutake mushrooms in March 2021 and to unpeeled bamboo shoots in March 2022. As a result, shipments of matsutake mushrooms and unpeeled bamboo shoots have resumed in Miyagi Prefecture and parts of Fukushima Prefecture.

Figure 6-3-9 Changes in shiitake mushroom production volumes in East Japan (17 prefectures excluding Hokkaido)



注１：17都県とは、青森、岩手、宮城、秋田、山形、福島、茨城、栃木、群馬、埼玉、東京、千葉、神奈川、新潟、山梨、長野、静岡。
２：乾しいたけは生重量換算値。
資料：林野庁「特用林産基礎資料」

Source) White Paper on Forests and Forestry, FY2021, Chapter V, 2.(2) Supply of safe non-timber forest products
https://www.rinya.maff.go.jp/j/kikaku/hakusyo/r3hakusyo/attach/pdf/zenbun-3.pdf (accessed July 28, 2023)

Figure 6-3-10 Areas where shipping restrictions, etc., have been issued for mushrooms and wild vegetables

	Cultivated mushrooms			Wild mushrooms			Wild vegetables	
	Intake restrictions	Shipping restrictions	Voluntary restraint of shipping	Intake restrictions	Shipping restrictions	Voluntary restraint of shipping	Shipping restrictions	Voluntary restraint of shipping
Aomori Prefecture					▲			
Iwate Prefecture		▲	▲		▲		▲	▲
Miyagi Prefecture		▲	▲		▲		▲	
Akita Prefecture								▲
Yamagata Prefecture						▲		▲
Fukushima Prefecture	▲	▲		▲	▲		▲	▲
Ibaraki Prefecture		▲	▲		▲	▲	▲	
Tochigi Prefecture		▲	▲		▲		▲	▲
Gunma Prefecture			▲		▲		▲	▲
Saitama Prefecture					▲			
Chiba Prefecture		▲	▲					
Kanagawa Prefecture			▲					
Niigata Prefecture						▲	▲	
Yamanashi Prefecture					▲			
Nagano Prefecture					▲		▲	▲
Shizuoka Prefecture					▲			

▲: Regions where instructions have been issued for some areas (As of **March 31, 2022**)

4. Future issues, measures, etc.

Since the effects of radioactive materials in forests will continue over a long period of time, it is necessary to continuously collect and analyze data through radioactive material monitoring and various demonstrations to obtain the knowledge necessary for implementing forest and forestry policies. Based on these results, projects will be continued, including one to integrate forest thinning and other forest maintenance necessary to prevent the discharge of soil containing radioactive materials and measures for radioactive materials for the revitalization of forests and forestry. As for the Satoyama Restoration Model Project, all of the model districts in the 14 selected municipalities had completed their projects by June 2020, and the final reports were compiled. Based on the results, efforts for satoyama restoration will continue as the "Satoyama Restoration Project" from FY 2020. Furthermore, since the production and management of mushrooms, etc., continue to be difficult due to the effects of radioactive materials, support for the revitalization of production areas for non-timber forest products will be promoted, including the introduction of production materials necessary for the next production period of mushrooms, etc., and the introduction of devices for measuring radioactive materials. In particular, with regard to broadleaf forests in satoyama for production of shiitake mushroom bed logs, efforts for systematic revitalization will be strongly promoted so that the forests can be used in a cyclical manner through harvesting and renewal, while paying attention to their growth conditions and the dynamics of radioactive materials. Furthermore, in order to revitalize the wood industry, establishment of a safety certification system for timber products, etc. will be implemented to promote the use of timber products manufactured in the prefecture including laminated wood, since there are still areas with high air dose rates.