Japan’s actions for bioeconomy

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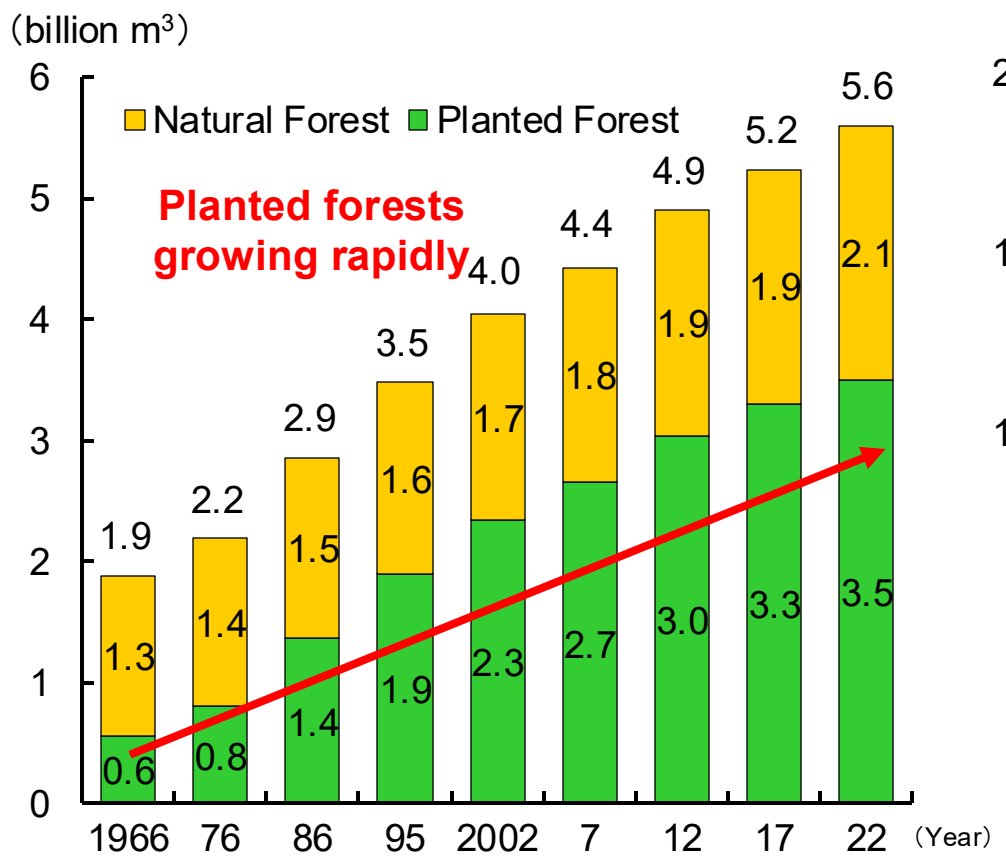
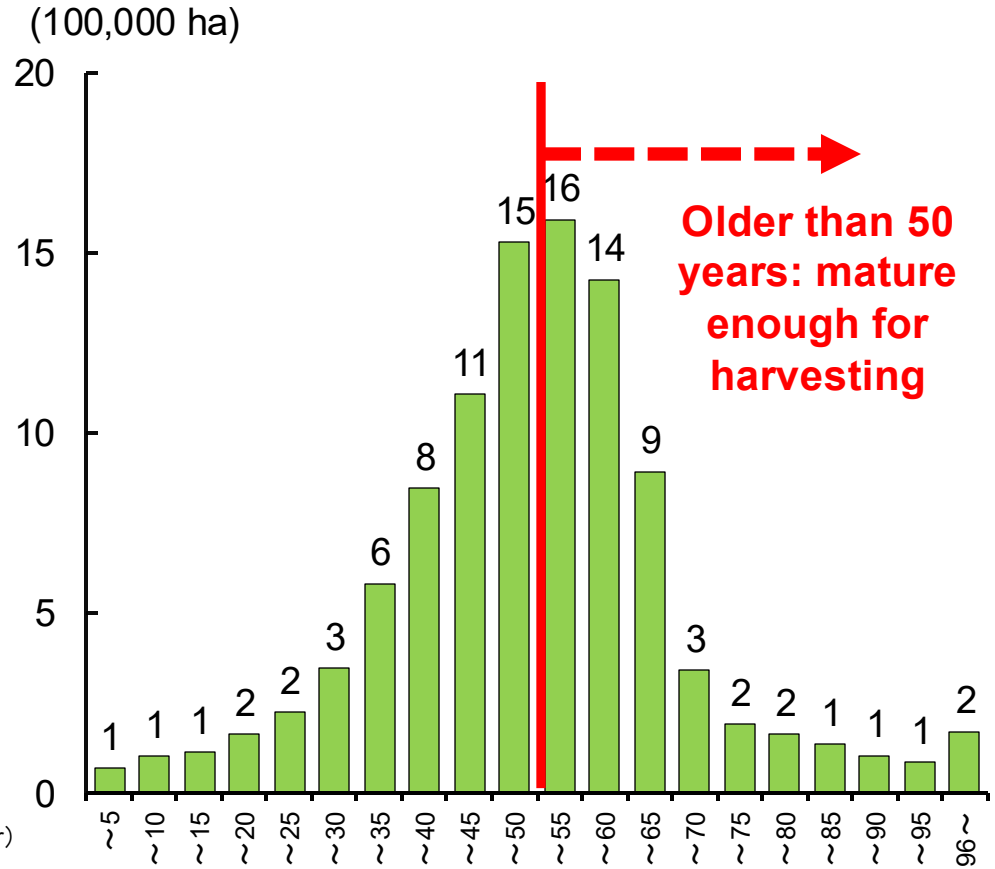
Forest Resources in Japan



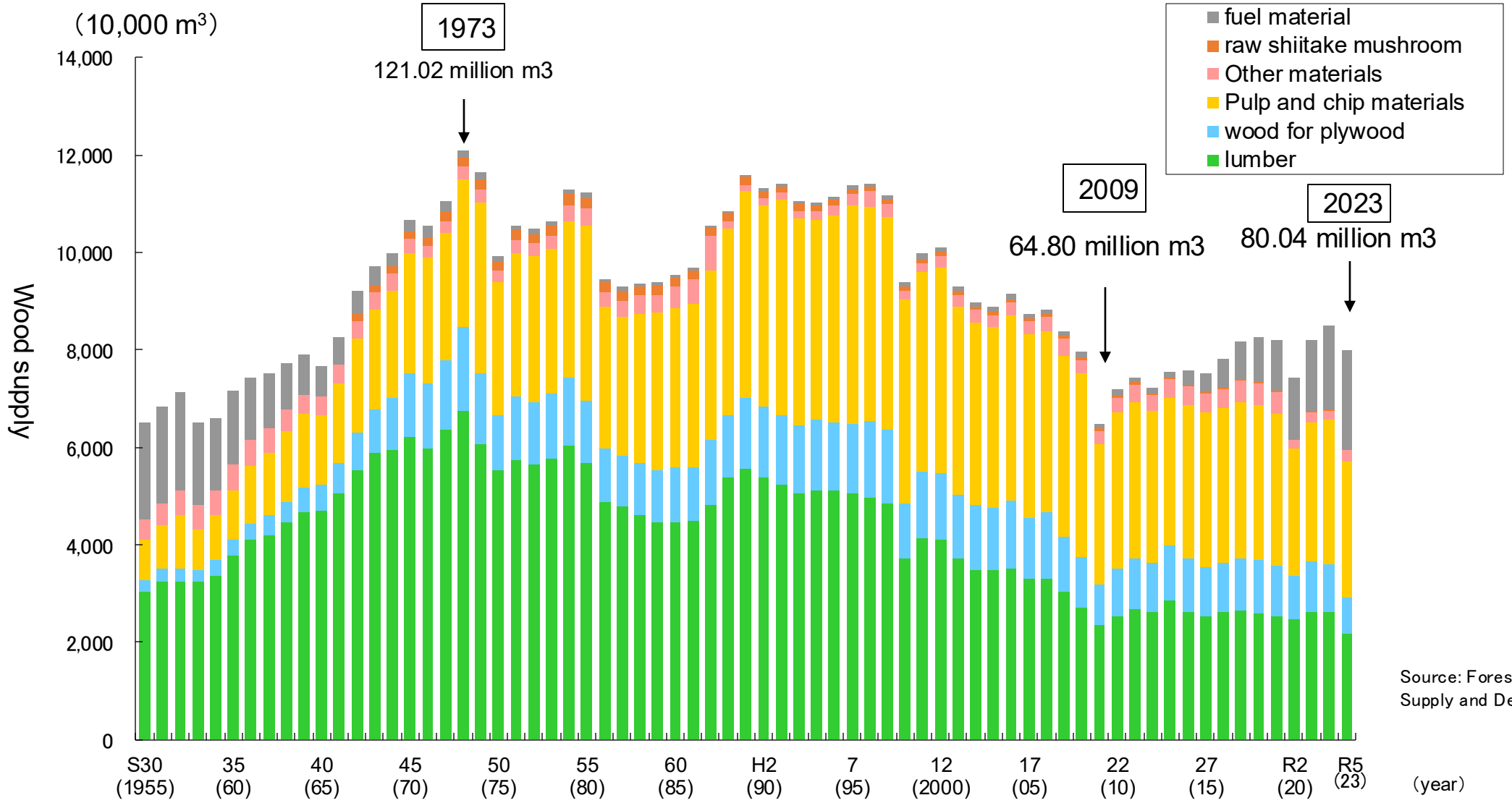
Volume of forest stock in Japan



Age structure of planted forests in Japan

Trends in Japan's Wood Demand

Changes in Wood Demand Volume



Source: Forestry Agency, Wood Supply and Demand Sheet

Basic Plan for Forest and Forestry (June 2021, Cabinet decision)

New Plan **“Green Growth” through forests, forestry, and the wood industry**

By properly managing forests and growing and developing them while enhancing the sustainability of the forestry and wood industries, a prosperous society can be achieved with a view to net-zero by 2050

Appropriate management and use of forest resources

- Securing proper logging and reforestation (land suitable for forestry)
- Forest development such as mixed forests of conifers and broad leaf trees (
- other than those above)
- National resilience through forest management and conservation
- Securing and enhancing forest absorption through thinning and reforestation


Development of initiatives for “New forestry”

- With innovation, positive transition of harvesting → reforestation and income
- (elite trees, automated operating machinery etc.)
- Improving forest worker income and occupational safety
- Fostering long-term and sustainable forestry business entities


Strengthening the competitiveness of the wood industry

- Low-cost supply of JAS dried materials, etc. (large-scale)
- Multi-item production such as high value boards (small and medium,
- local)
- Use of wood in daily life (hardwood furniture, etc.)


Creation of the “Second forests” in urban areas.

- Use of wood in urban and non-residential sectors
- Use of fire-resistant materials and CLT, etc., and
- standardization of specification design
- Promotion of wood product export and use of biomass in thermoelectricity



Creation of new value for mountain villages

- Use of local resources (combined agriculture and forestry, mushrooms, etc.)
- Village development and revitalization (collaborative activities such as
- satoyama management, etc.)
- Promotion of the forest-related service industry, expansion of related
- population


Previous Plan

With a background of planted forests entering their period of use, promote forestry and the wood industry as growth industries

Progress towards goals

- Abundant forest resources (5.4 billion m^3), delayed induction of multi-layered forests
- The Japanese wood supply was 31 million m^3, roughly as planned

Directions of initiatives

- Build a stable supply system for logs
- Enhance the competitiveness of the wood industry and create new demand for wood

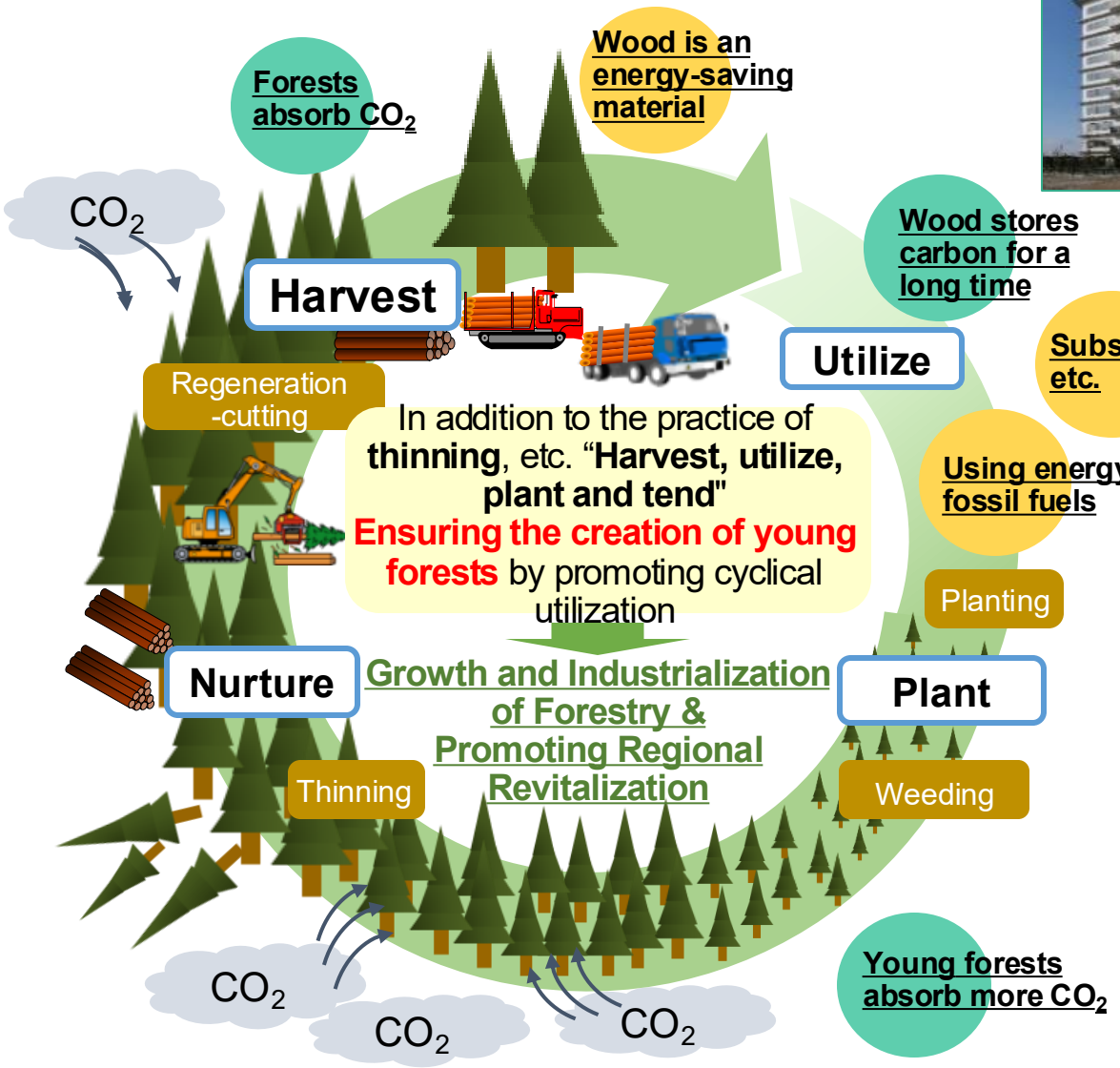
Progress of initiatives

- ❊ **Forests** → Establishment of a forest management system/forest environmental tax
- ❊ **Forestry** → Scale of management entities has expanded, but still underway
- ❊ **Wood** → Scale of sawmills etc. has expanded, SME factories have declined
  → Progress in the development of fire-resistant materials, etc., and start of use in private non-residential sector

Issues and changes in circumstances

- ❊ **Forests** → No reforestation of clear-cut land
  → Intensification of disasters – “climate change x disaster prevention”
- ❊ **Forestry** → Establish forestry industry enabling reforestation with income from logging
  → Declining population (decline in worker = labor saving essential)
- ❊ **Wood** → Thorough quality control (JAS/KD wood, laminated timber)
  → Unclear housing demand (Depopulation and COVID-19)
- ❊ **Sustainability** → SDGs, Carbon neutral by 2050, no plastics

Sustainable and Circular Use of Forest Resources



Wooden construction in cities

Development of new materials

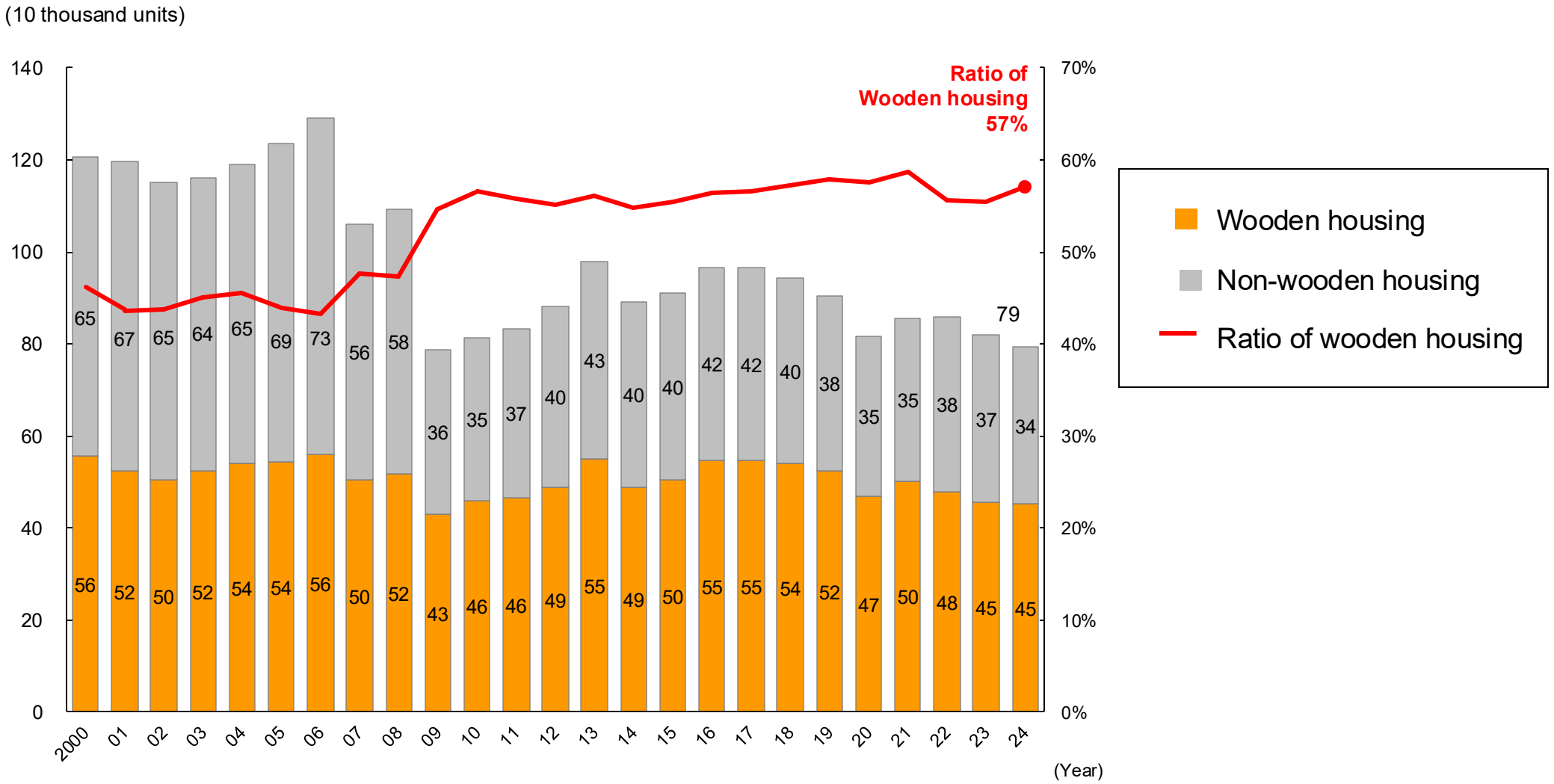
Woody biomass utilization

Elite trees

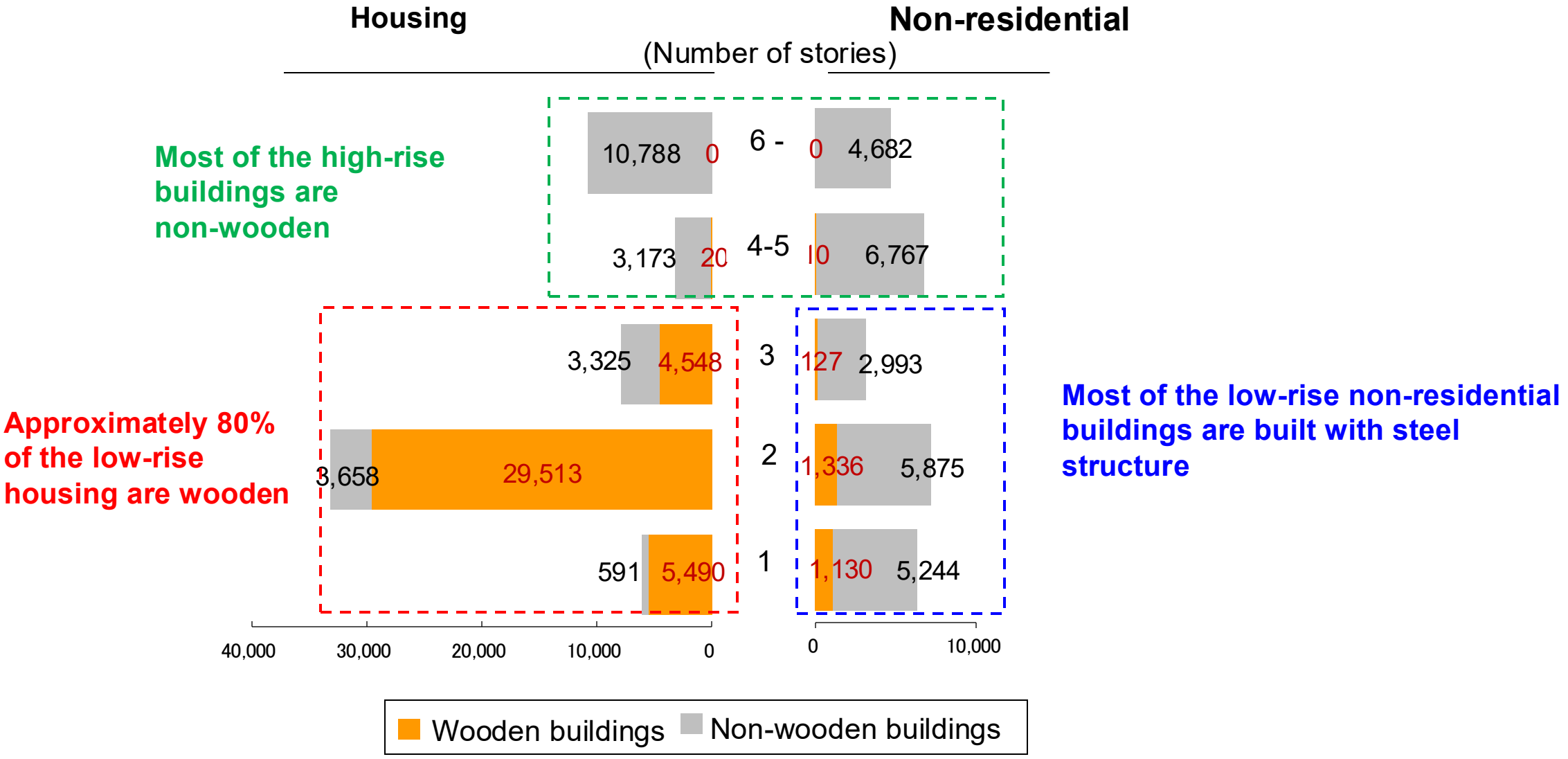
Source: Forestry Agency,Current Situation of forests and forestry in Japan

Wooden Housings in Japan

The number of housing starts in Japan



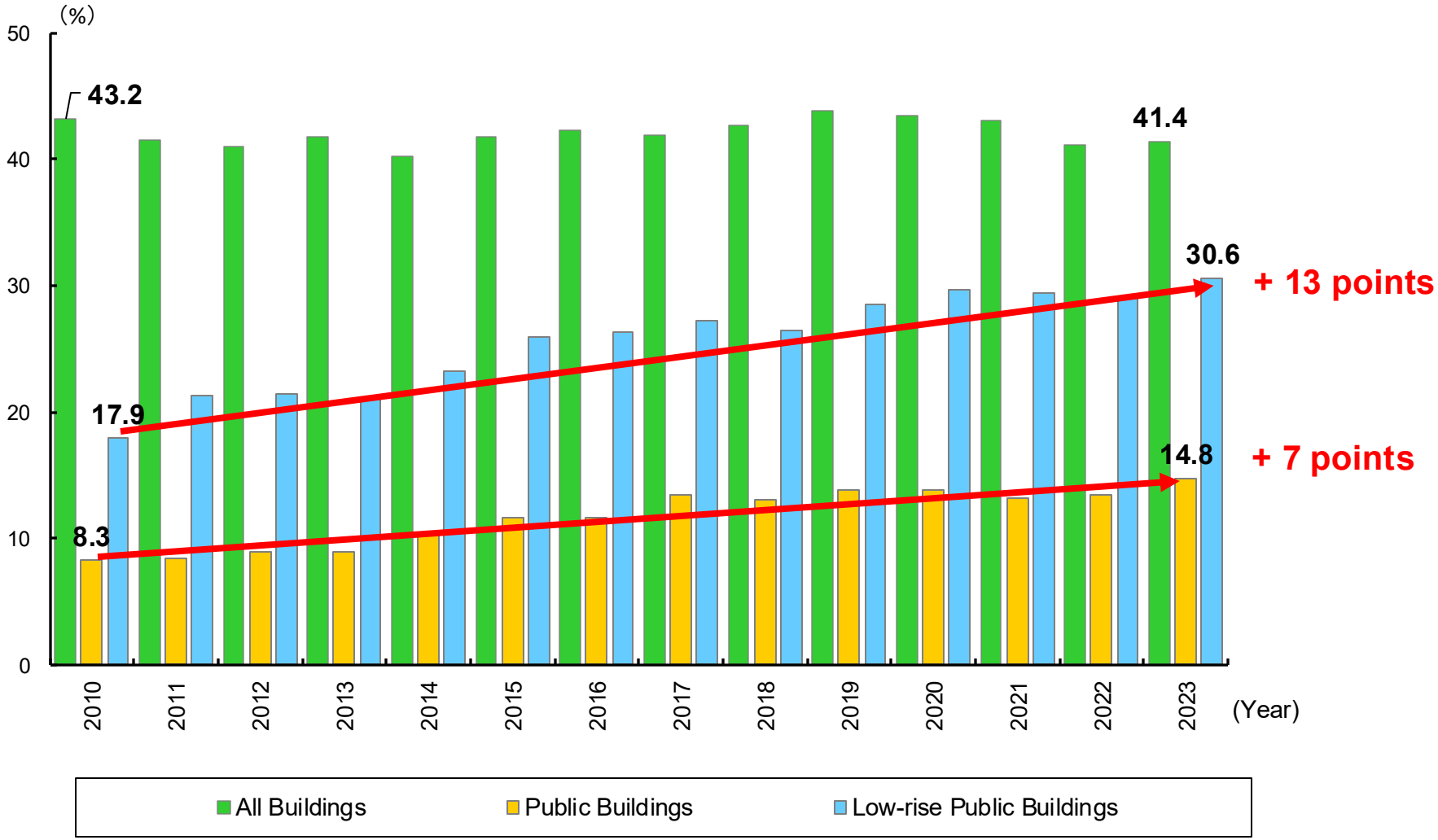
Rate of Wood Use in Floor Area of New Building Starts



Floor area of construction starts in Japan (2024)

Non-residential Wooden Buildings

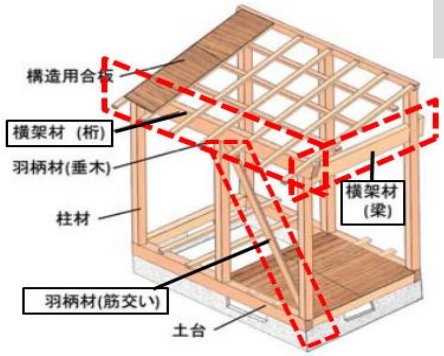
Ratio of wooden structure in public buildings



Efforts to Expand Demand and Promote the Use of Domestic Wood

Further use of domestic timber in low-rise housing

[Wooden framework construction]



For **horizontal and feather timber** Use of domestic timber is **low**

- Support for technological development and popularization of **crossbeams and feather blades**
- Support for technological development and dissemination of **interior** and **floor materials**

[Two-by-four construction]

For **frame members** Use of domestic timber is **low**

- Support for technological development and popularization of domestic **2x4 members**

Mid to high-rise buildings
(* 11-story wooden training center)

Wooden non-residential buildings
(* Commercial buildings using JAS structural materials)

Expanding demand for low-rise non-residential buildings and medium-rise buildings

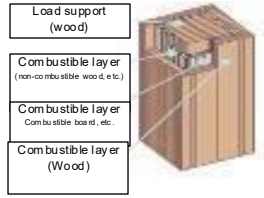
JAS structural materials for sawnwood

- Dissemination of JAS structural materials with reliable quality and performance that are compatible with structural calculations
- Development and dissemination of materials and construction methods that utilize commonly available materials

Large-scale trusses made from sawn lumber

Fire-resistant materials

- Development of fire-resistant materials required for mid-to-high-rise buildings
- Three-hour fire-resistant materials have been developed. From the viewpoint of fire-resistance, wooden materials can be used regardless of the number of floors.



Introduction of cutting-edge digital technology

- Promotion of the use of BIM in medium- to high-rise wooden buildings for smooth procurement of domestically produced lumber and efficient design and construction

wood use in buildings Improvement of the environment for evaluation

- Development and dissemination of guidance that organizes evaluation items and methods for effects such as carbon neutrality through wood use in buildings and contribution to the circular use of forest resources.

CLT (Cross Laminated Timber)

- Expanding the use of CLT by supporting the demonstration of pioneering buildings using CLT

Japanese cedar CLT

Human resource development including designers

- Implementation of technical seminars on design and construction
- Preparation and dissemination of manuals on fire-resistant wood materials and CLT

Promotion of interior materials development

- Development of interior materials that are easy to construct and use solid wood indoors
- Development and practical application of domestic early maturing trees (such as sendan) to replace natural hardwood resources

Japanese early-maturing hardwood species furniture made from

Utilization of domestic lumber in the civil engineering field

Use in public civil engineering works

- Promotion of the use of lumber from thinning in public civil engineering works by taking the initiative in afforestation projects

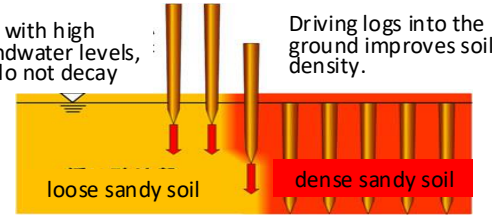
Remaining forms from afforestation projects
Utilization of lumber from forest thinning
(Miyako City, Iwate Prefecture)

Use in wooden piles for soil improvement

Thinning logs are placed in the ground
Measures against liquefaction by densifying the sand ground

areas with high groundwater levels, logs do not decay

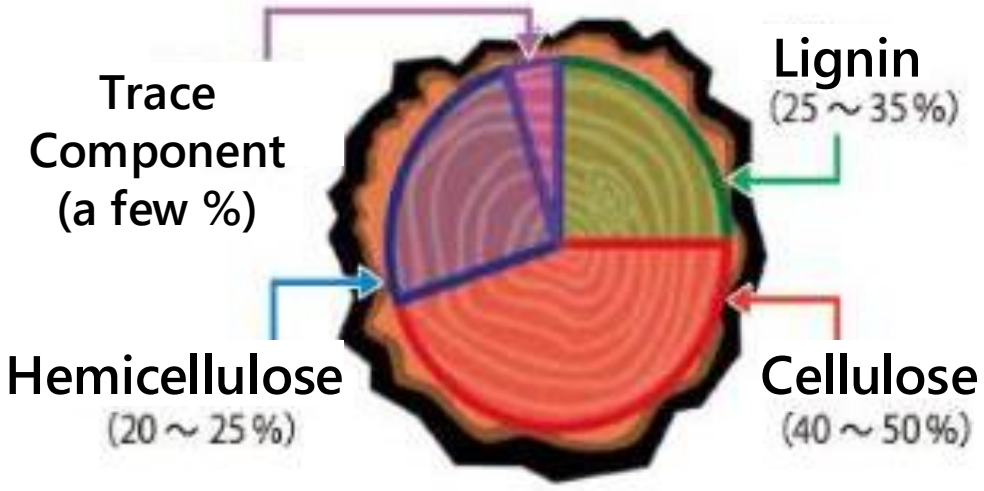
Driving logs into the ground improves soil density.



Principle of construction method

Utilization of New Materials for Woody Biomass

Chemical Composition of Wood



Cellulose Nanofiber (CNF)

- Fibrous material made by chemically and mechanically treating cellulose and breaking it down to nano-size (1/1 million mm)
- Lightweight yet stroang, and controllable viscosity for various applications, this material has expanded its range of applications

Examples of expected applications

Wood protective paint
CNF-containing paint suppresses UV light transmission and prevents discoloration and degradation of wood

Photo: Gengen Chemical Industry Co., Ltd.

Tennis shoes
Sole midsole reinforced with CNF for improved strength and durability

Photo: ASICS CO., LTD.

Modified Lignin

- Lignin is modified and extracted by heating Japanese cedar chips mixed with polyethylene glycol.
- High heat resistance and processability, and can be used as a substitute for plastic materials derived from fossil resources by combining with various materials.

Examples of expected applications (prototype)

Electronic substrates
Better dimensional stability when heated than existing products, and can be manufactured at lower cost

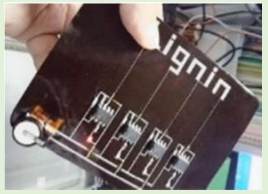


Photo: National Institute of Advanced Industrial Science and Technology

Automotive steering
Design and environmental compatibility are ensured by using materials containing modified lignin.

Photo: Tendo Mokko Co., Ltd., National Institute for Materials Science, Toyota Gosei Co., Ltd.

Call for Participation in the “Forest Nation & Wood City” Declaration

“Forest Nation & Wood City” Declaration

Declaration to Promote:

① **Utilization of Wood, including Wooden Architecture**

② **Visualization of the Benefits of Wood Use**

This declaration invites participation from:

Target Participants: Municipalities, Companies, etc.

Application Method: Apply via the Forestry Agency Website

Application Period: October 1, 2025 – March 31, 2026

“Forest Nation & Wood City” Declaration

To firmly pass on the blessings of our country’s rich forests to future generations, it is essential not only to “plant and nurture” but also to “use.” We hereby declare our commitment to contribute to preventing global warming through the utilization of wood that supports forest maintenance, and to foster the future of communities living in harmony with wood by promoting the creation of a “Forest Nation and Wood City.”

- ✓ We will actively promote the use of wood, including wooden architecture, and contribute to the sustainable development of local communities through wood utilization.
- ✓ In promoting wood use, we will make full use of systems such as the SHK scheme and work in collaboration with local stakeholders to visualize the benefits of wood utilization.

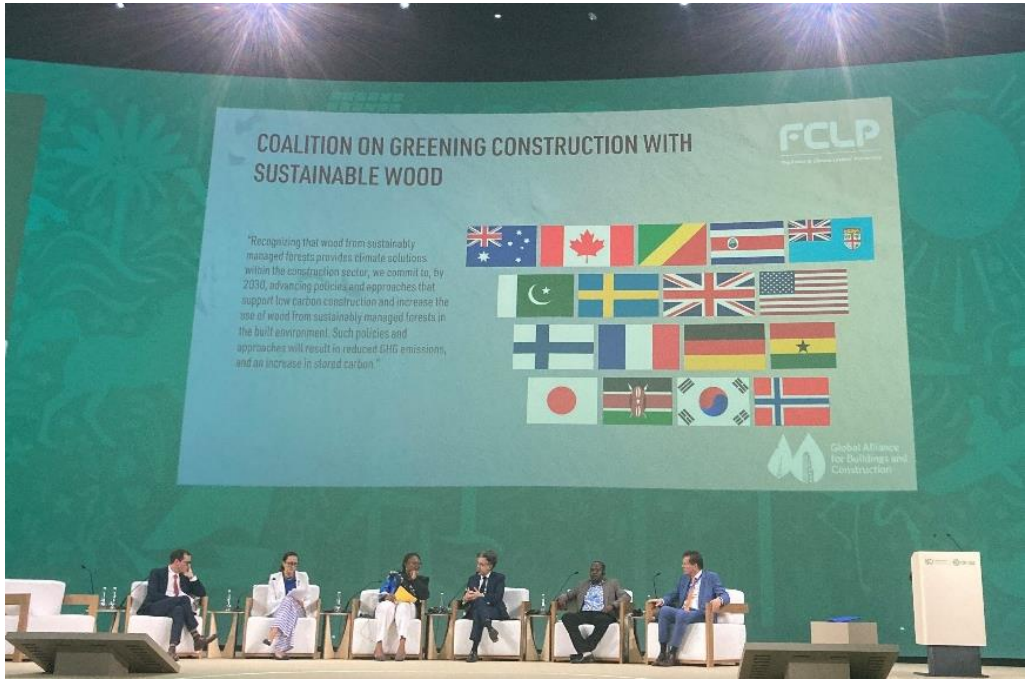
SHK System (GHG Emissions Calculation, Reporting, and Disclosure System)

・System Mandating Calculation and Reporting of GHG Emissions under the Act on Promotion of Global Warming Countermeasures

・Companies and municipalities that come to own newly constructed buildings using wood will be allowed to deduct the amount of carbon stored through wood use from their reported emissions under the revised regulation, scheduled to take effect in April 2026.

Participation in International Initiatives

FCLP's Greening Construction with Sustainable Wood Statement (COP28)



"Recognizing that wood from sustainably managed forests provides climate solutions within the construction sector, we commit to, by 2030, advancing policies and approaches that support low carbon construction and increase the use of wood from sustainably managed forests in the built environment. Such policies and approaches will result in reduced GHG emissions, and an increase in stored carbon."

FCLP's Principles for Responsible Timber Construction (COP30)

Principles for Responsible Timber Construction

1. Extending the life of existing buildings.

The potential for existing structures to be repurposed, renovated, and/or extended using timber, biobased, secondary and other low-carbon materials is prioritised over demolition.

2. Accounting for the Whole Life Cycle.

New timber buildings and renovations are designed and constructed to be safe and resilient, in ways that minimise Whole Life Cycle impacts, optimising operational efficiency and minimising embodied carbon emissions and other environmental impacts from materials. Carbon is accounted for transparently, clearly differentiating between biogenic and fossil carbon.

3. Ensuring Sustainable Forest Management.

Wood-based construction materials are sourced from forests managed according to best practices in sustainable forest management which as 'a dynamic and evolving concept, aims to maintain and enhance the economic, social and environmental values of all types of forests, for the benefit of present and future generations' [*UN definition of SFM*].

4. Maximising the carbon storage potential of wood.

Wood is used efficiently, and its carbon storage potential is maximised by prioritising and incentivising its use for durable products such as construction where appropriate. Circularity of wood use for buildings is promoted, including design for disassembly to facilitate re-use and subsequent cascading of timber components in successive buildings to maximise the material's lifespan.

5. Promoting a responsible timber building bioeconomy.

Information, education and training is provided for stakeholder across the 'forest to frame' value chain on the benefits and practices of responsible timber use in construction. Innovation, research and development is supported and encouraged to enable a timber construction economy and wood culture to thrive.

Thank you
ありがとうございました