Third Training Workshop on 25-26 Feb. 2013
in Kuningan - West Java, Indonesia

University of Tsukuba 筑波大学

Update information on the progress of Japan's Study

Dr. Satoshi TACHIBANA and Dr. Masahiko OTA
Faculty of Life and Environmental Sciences,
University of Tsukuba

Tentative contents of Japan's study

I. Background
   1. Brief profile about Japan *(July 2012)*
   2. Land use change and its drivers: change in 100 years *(Feb 2013)*

II. Forest resources and forestry
   1. Historical review of forest covers change: change in 100 years *(Feb 2013)*
   2. Forestry regulation and administration *(July 2012)*
   3. Economic, social and environmental contributions of forests *(July 2012)*

III. Major forces to drive the forest transition
   1. Drivers to forest cover changes: change in 100 years *(Feb 2013)*
   2. Key legal and policy milestones *(July 2012)*

IV. Understanding forest transition in Japan
   1. Case study in Hokkaido *(Sep 2013)*

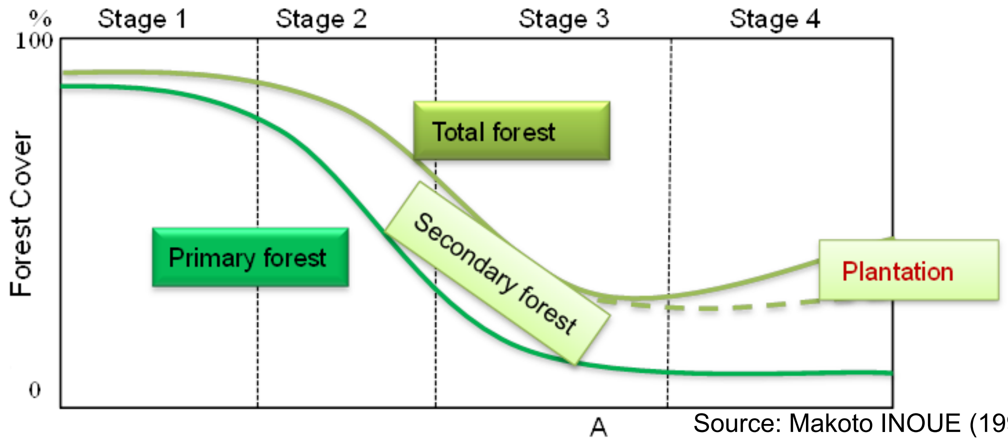
V. Reflections and policy recommendation *(Sep 2013)*

VI. References *(Feb 2013 and Sep 2013)*

Historical change in forest resources

-Prof. Makoto INOUE model (1992)-

- Change from "Primary forest and Natural forest" to "Secondary forest and Planted forest"
- Four stages on historical change: (1) Hunting and gathering stage, (2) Agricultural stage (agricultural revolution), (3) Industrializing stage (Industrial Revolution), (4) Post industrializing stage
- Primary forest keeps stable and forest cover increases gradually with an expansion of planted forest since point A.

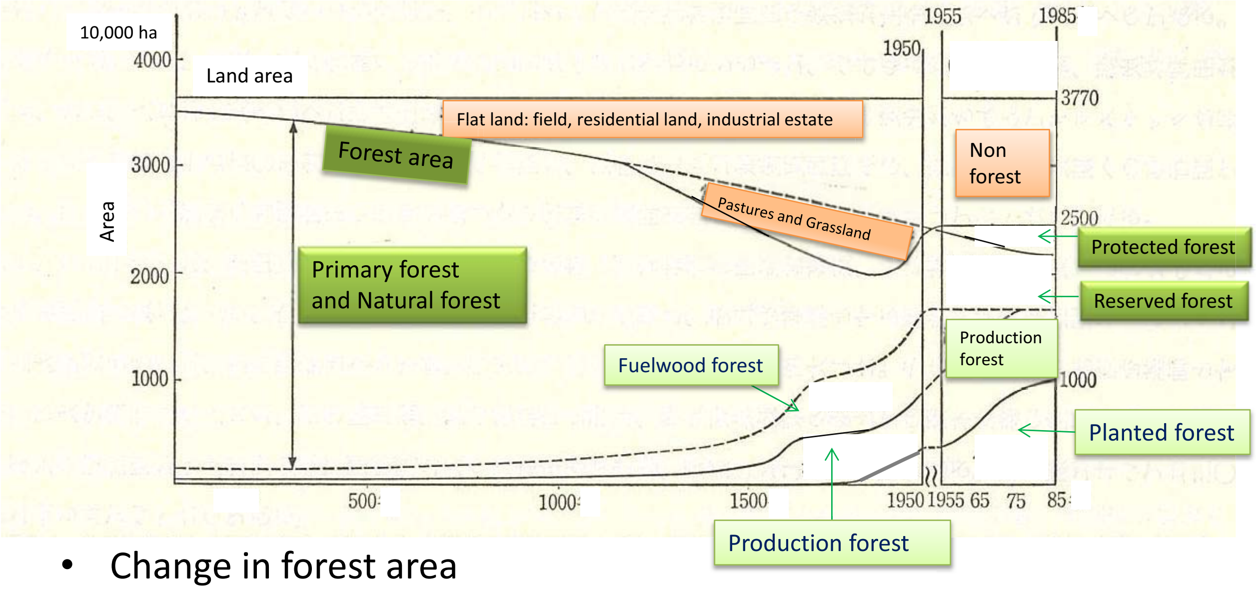


Source: Makoto INOUE (1992)

Estimation of change in forest and grassland in Japan -Prof. Ryozo YORMITSU (1984)-

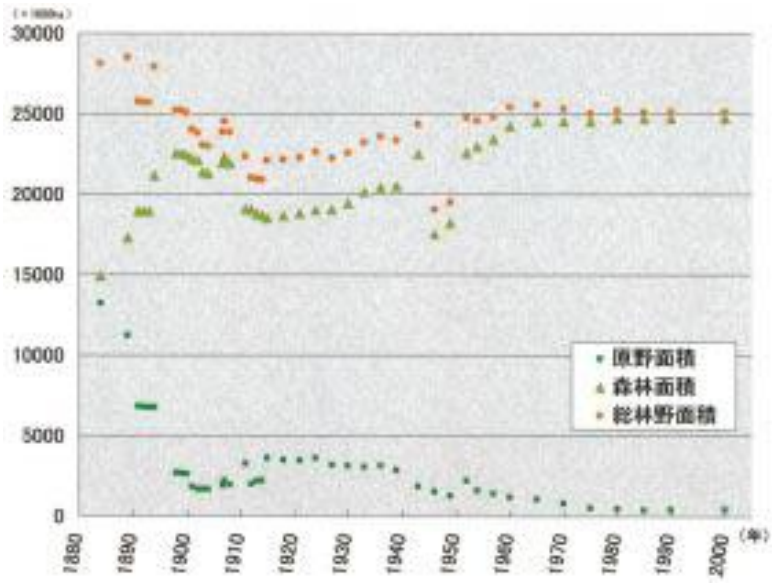
- The 11-12 Century
  - More than 10 million people
  - Conversion of grassland into farmland
- The beginning of 17 century (Edo era)
  - More than 30 million people
  - Urbanization (increase in building materials and fuel wood) and tapping primary forest
  - Expanding river transportation system as a harvesting method
- The latter half of 19 century (development of capitalism)
  - High growth rate of population
  - Forest railroad system, afforestatioion in undeveloped woodland near populated area (*satoyama*) and expanding forestland
- 1950s (entering a period of rapid economic growth)
  - Population of 100 million
  - Development of forest utilization under the capitalism and urbanization such as building materials, pulpwood, tourism, and water conservation forest

Prof. Ryozo YORMITSU model (1984)



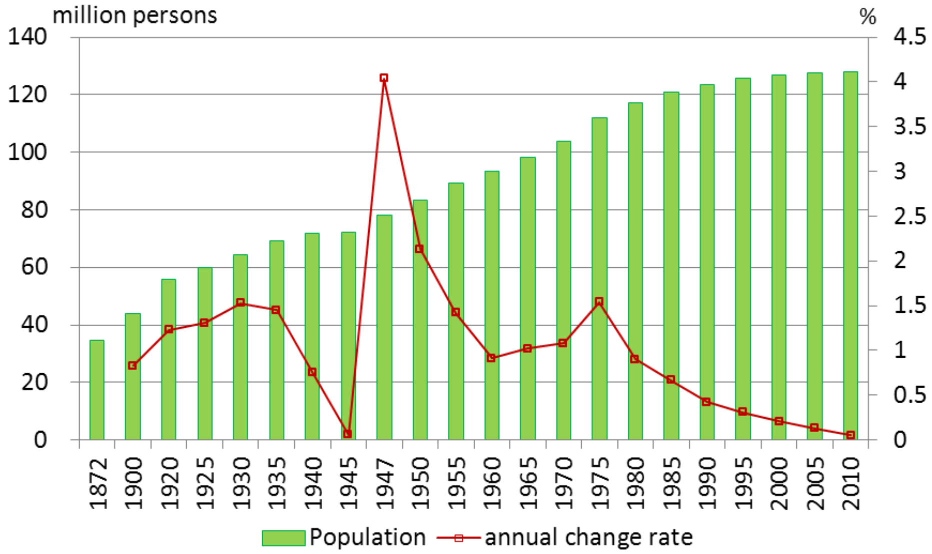
- Change in forest area
  - Continuous decrease up to the begging of the 20 century.
  - Forest transition was accompanied by planted forest then.
- Determinants
  - Population growth
  - Development of production, esp. agriculture and forestry

Historical change in forest area in Japan



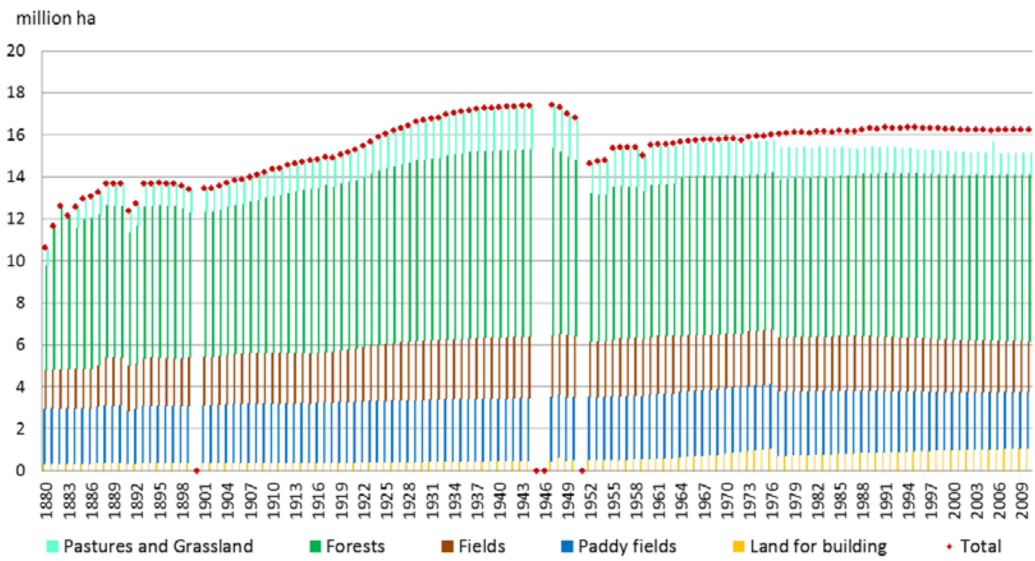
- Forest area (yellow-green line) was considered to increase for 1880s and 1890s accompanied by a decrease in grassland (green line).
- We can find out an increasing trend in forest area from 1950s and 1960s.

Total population



- Total population in Japan has been growing continuously since 1870s.
- Annual growing rate of population has declined since the latter half of 1970s.
- Japan has just entered a diminution stage in recent years.

Historical change in private land area (1)

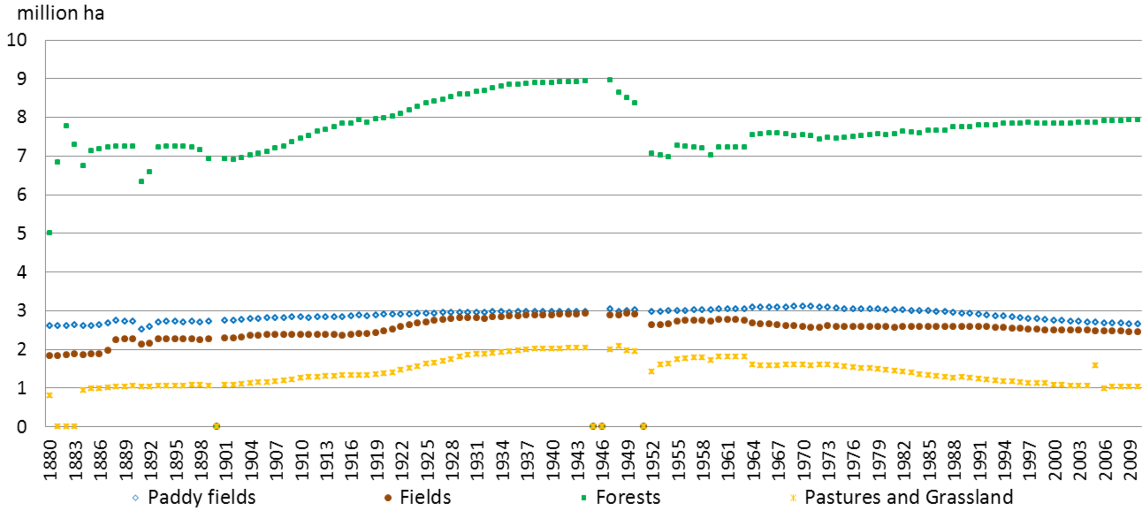


Historical change in private land area by land category: 1880-2010

note: missing values in 1900, 1945, 1946 and 1951

- The data were recorded based upon the tax roll by the government.
  - Land for building had been growing smoothly for 1980s and 1990s.
  - Paddy fields are showing a tendency to decrease.
  - Pastures and grassland have had a trend of decrease since 1960s.

Historical change in private land area (2)

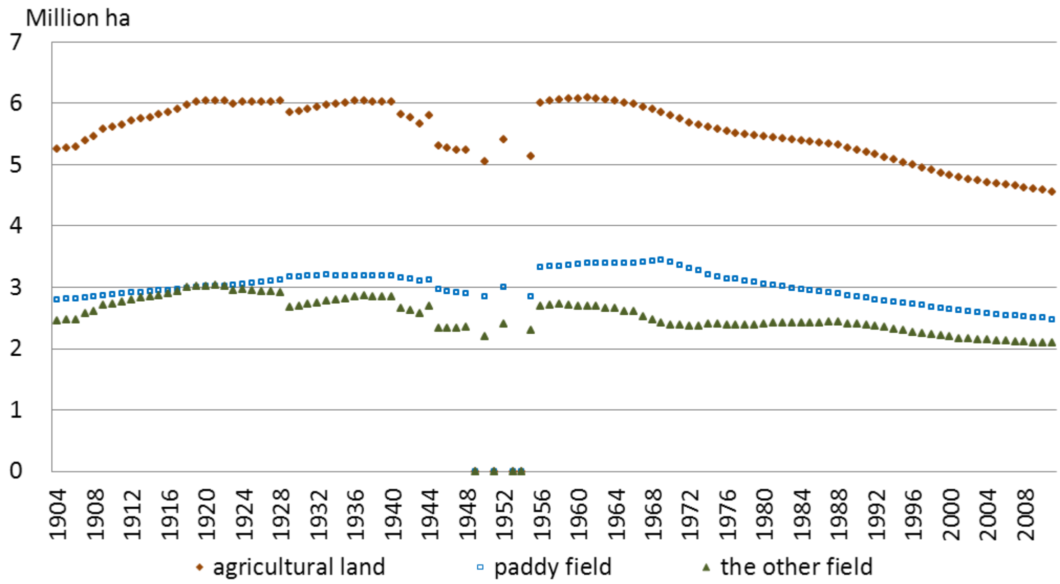


Historical change in private land area by land category: 1880-2010

note: missing values in 1900, 1945, 1946 and 1951

- Private forest area has been increasing slowly since 1950s.
  - Land owners have planted trees in their pastures and grassland.
  - Farmers have planted trees in their fields with their aging.
  - Some of National Forest have been converted to private sector.

Historical change in agricultural land in Japan

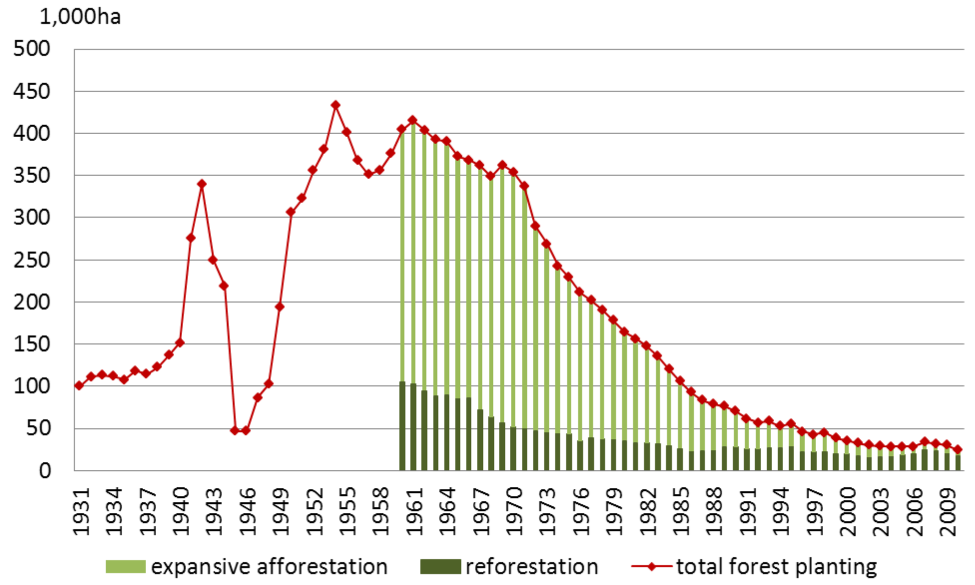


Historical change in agricultural land in Japan

note: missing values in 1949, 1951, 1953 and 1954

- Agricultural land has decreased remarkably since 1960s.
  - Paddy field has decreased since 1970s.
  - The other field has decreased since 1960s.

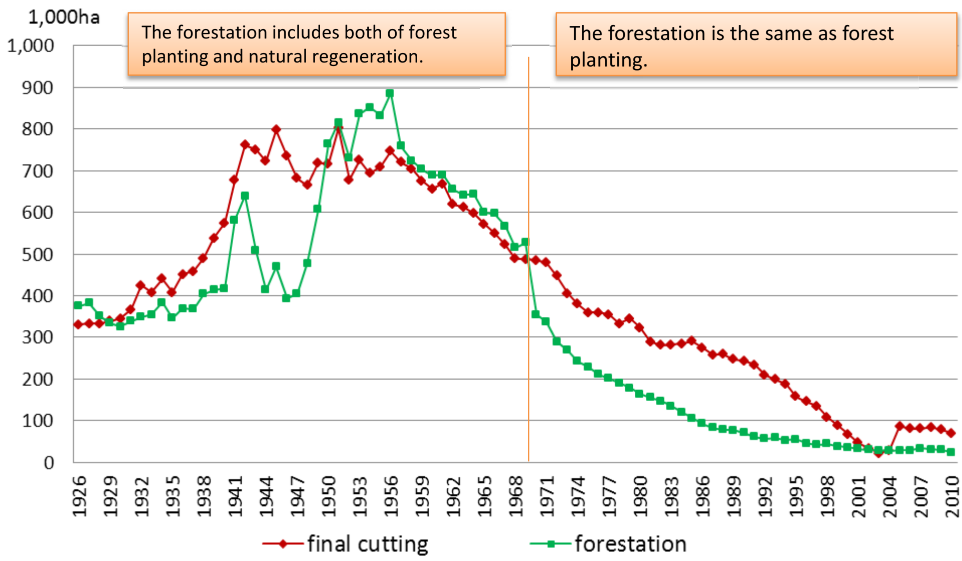
Historical change of forest planting area



Historical change of forest planting area in Japan

- Forest planting activity, especially expansive afforestation had played an significant role in Japan's forest from 1950s to the first half 1980s.
- In the WW Ⅱ period forest planting area decreased temporary.

Relation between final cutting and forestation



Relationship between final cutting and forestation in Japan

- Final felling area had exceed forestation area for 1930s and 1940s.
- Since the end of 1950s final felling and forestation area have been decreasing remarkably.

Plan of the study

- For Country Report
  - To conduct Econometric analysis between forest area and socio-economic variables
  - To gather data and information of land use in Hokkaido and present the results
  - To review forest policy and related literatures and draw conclusions with reflections and policy recommendation
- For participation in the next workshop or symposium in Beijing
  - I am keeping the latter half of September 2013 open.