



# **Assessing changes in the demand for forest ecosystem services: The impact of an aging society and the role of national statistics system**

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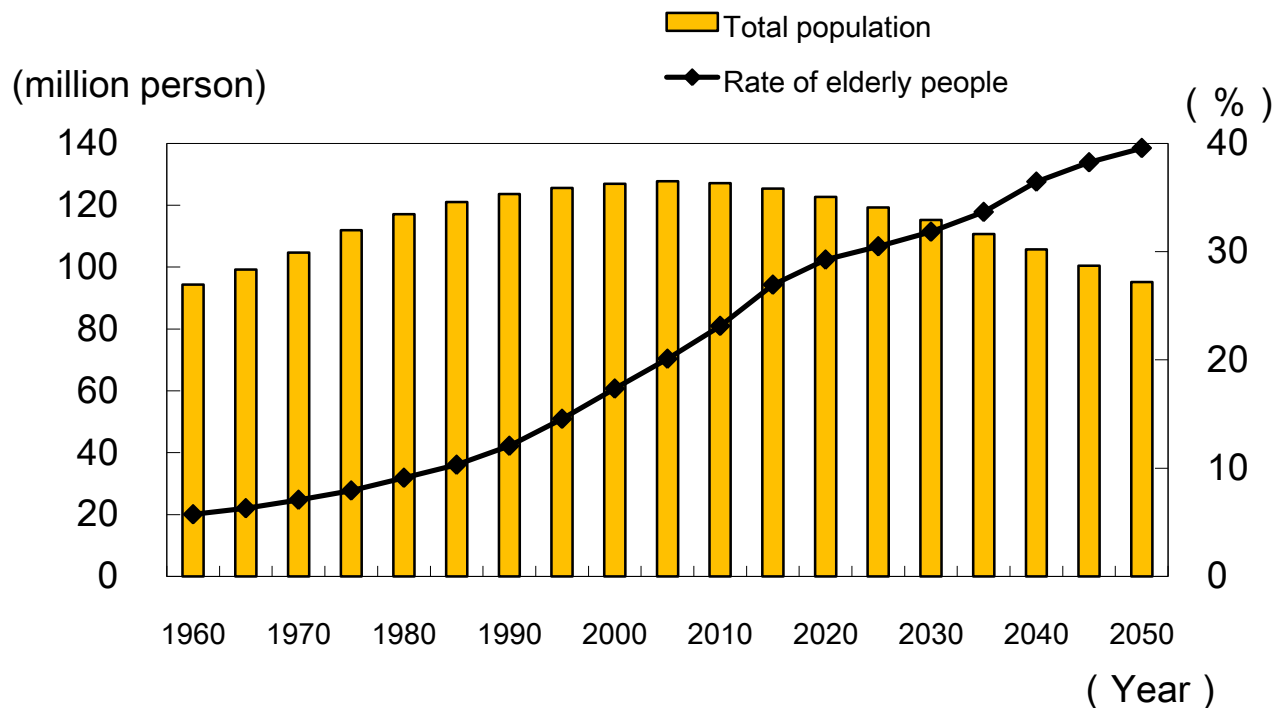


# Introduction

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- Japan's population is decreasing, with a shift in demographics to more people in older age classes. Demand for forest ecosystem services, primarily timber production and recreational opportunities, is shifting along with these demographic changes.
- I used national-level statistics and surveys to assess changes in the demand for timber and recreational opportunities. Current problems regarding national statistical data analyses are presented.

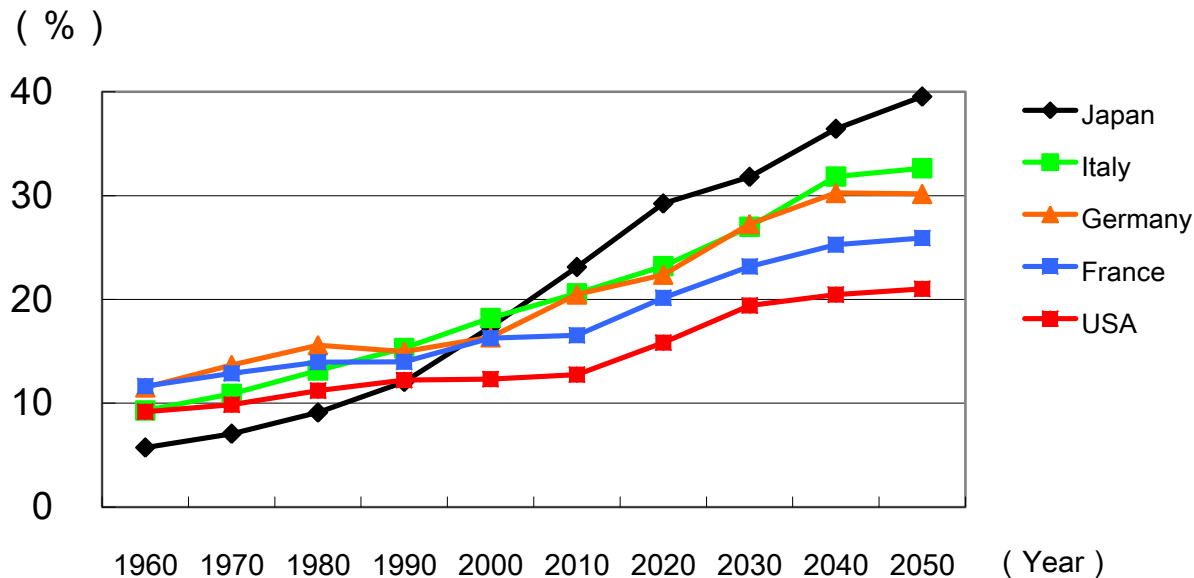
# Japan's aging society (1)



Source: National Institute of Population and Social Security Research  
Estimation of, Dec. of 2006 (from 2010 to 2050)  
Estimated year of peak of population = 2004 (127,787,000)

# Japan's aging society (2)

## Percentage of 65 years and older people



Source: UN, World Population Prospects: The 2004 Revision  
("Koreishakai-kisoshiryō, 2009-2010", p.332)



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1. Data and method
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# 1. Data and method (1)

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- This study was conducted by using re-sampled micro-data from **the Housing and Land Survey** (1993, 1998, and 2003), provided by the RCISSS, Institute of Economic Research, Hitotsubashi University.
- Notice through the official gazettes (March 30, 2009)
- Random sampling, with 10% sampling rate
- Number of records = 300,000 ~ 400,000 / year
- Unit of records = household
- Elderly person = 65 years and older

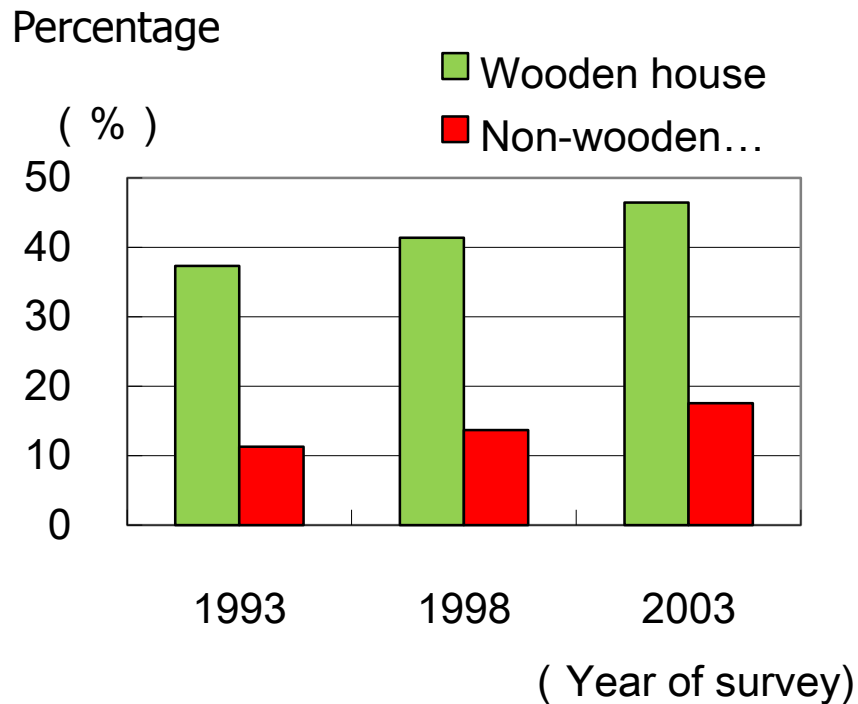


# 1. Data and method (2)

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- Published summary tables of **the Survey of Public Opinion on Forest and Life** (2007), conducted by Cabinet Office, was used.
- Method = Individual interview
- Effective answer = 1,827 people
- Response rate = 60.9%
- Elderly person = 60-69 years, 70 years and older

## 2. Wooden houses and elderly people (1)



### Rate of resident

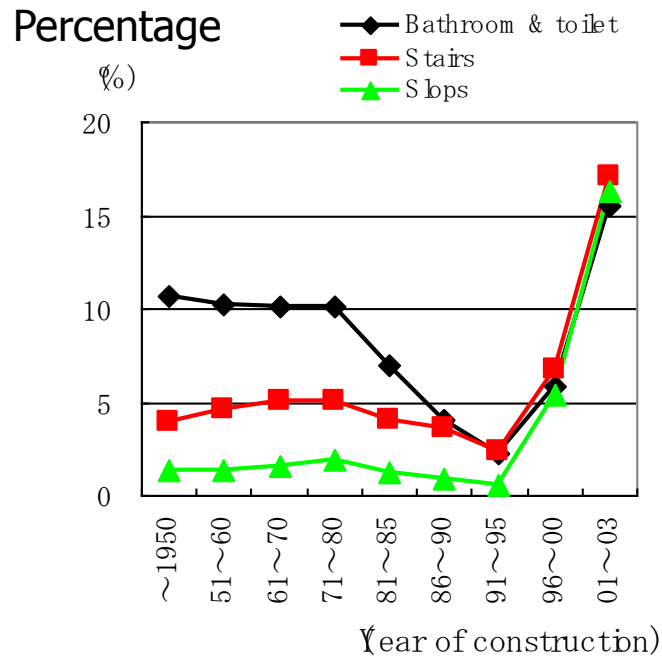
The percentage of households containing an elderly person (65 years and older), within the total number of households



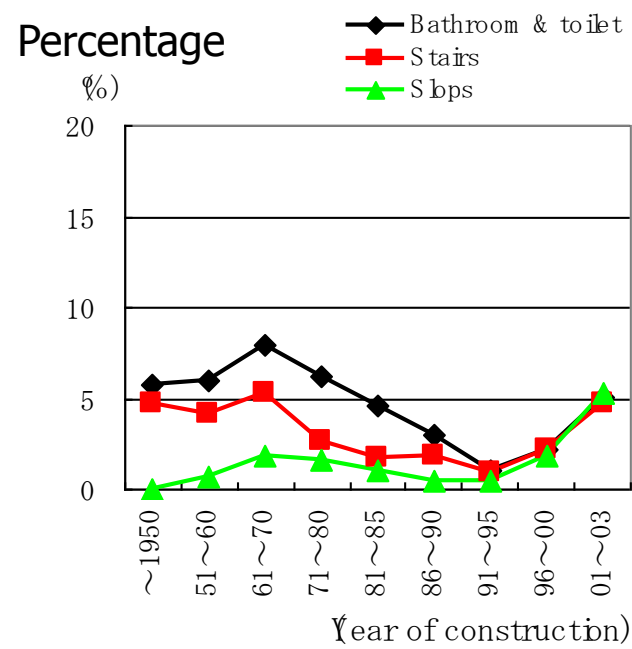
## 2. Wooden houses and elderly people (2)

### Rate of remodeling

The percentage of households which had completed barrier-free improvements, within the total number of households (past 5 years)

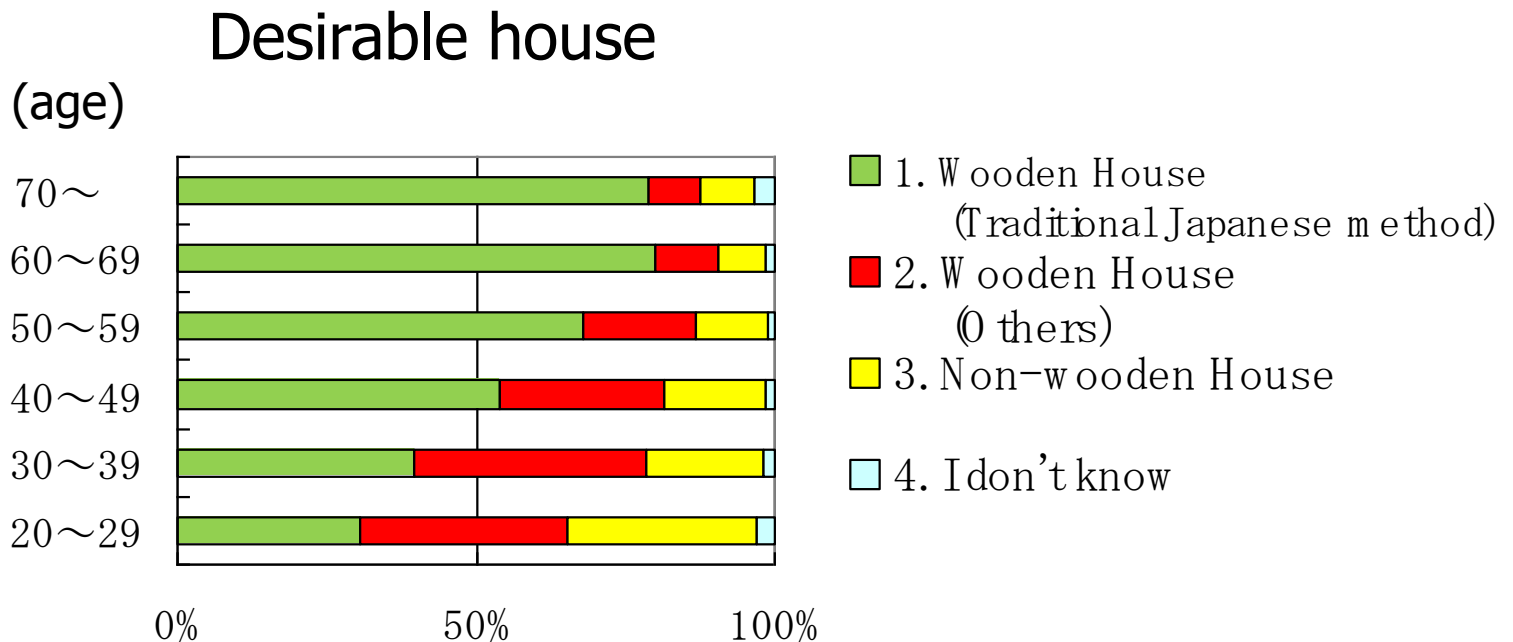


Wooden House



Non-wooden House

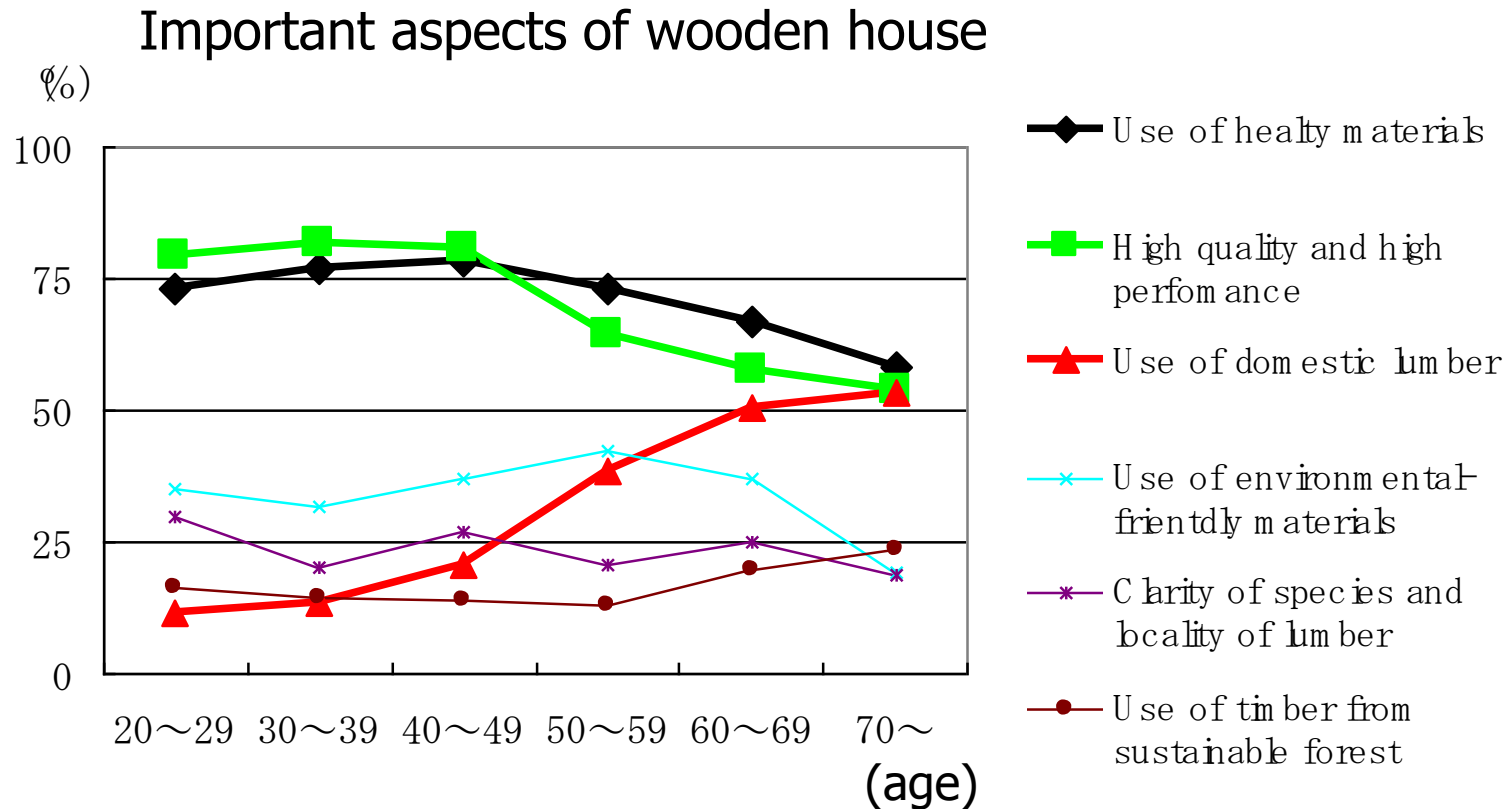
## 2. Wooden houses and elderly people (3)



Source: The Survey of Public Opinion on Forest and Life (2007)

Question: When you construct or buy a new house from now on, what type of house do you prefer?

## 2. Wooden houses and elderly people (4)



Source: The Survey of Public Opinion on Forest and Life (2007)



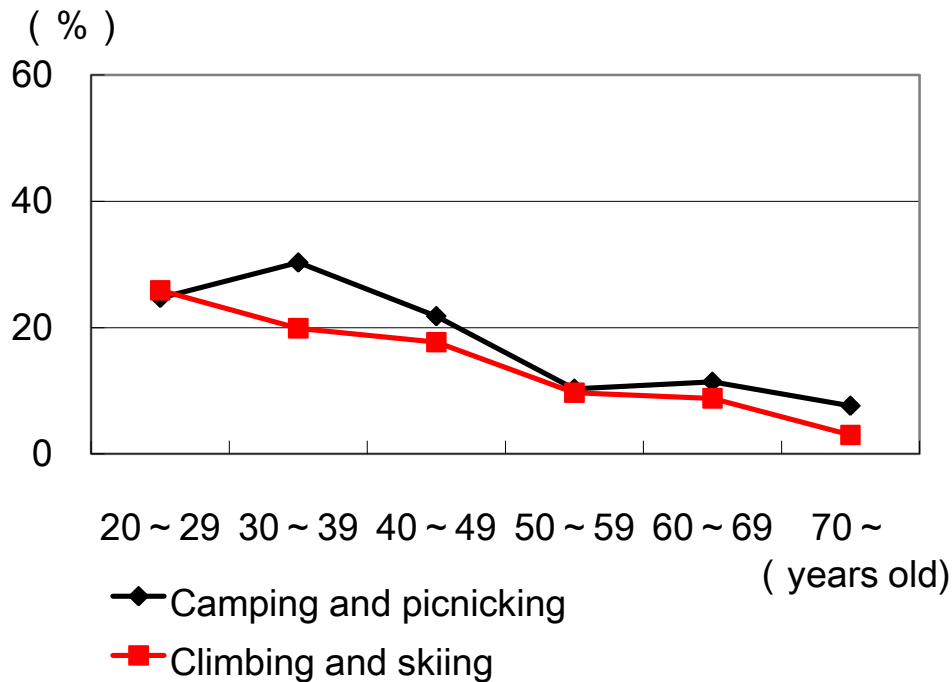
## 3. Purpose for visiting forests (1)

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- Survey of Public Opinion on Forest and Life (2007)
- Question: What was your purpose when visiting forests or the mountains during the last year? (Multiple answers are allowed.)
- Visitation purpose → 3 categories

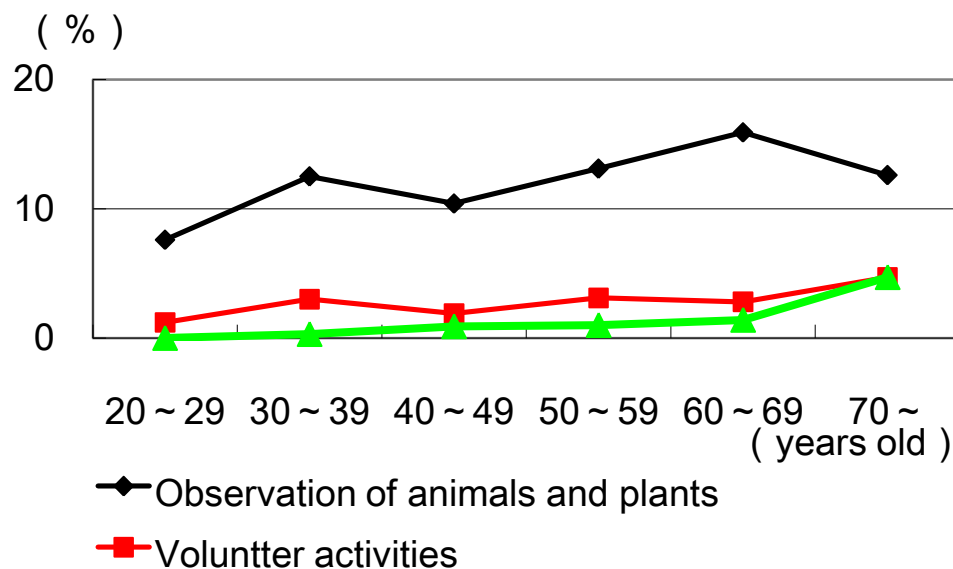
# 3. Purpose for visiting forests (2)

Percentage of people who visited forests or mountains



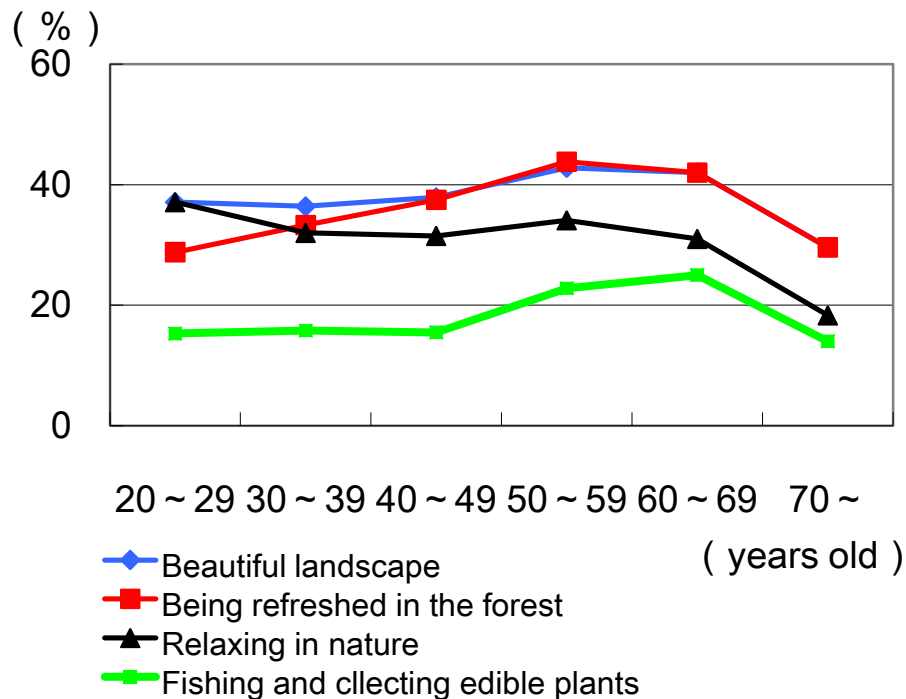
# 3. Purpose for visiting forests (3)

Percentage of people who visited forests or mountains



# 3. Purpose for visiting forests (4)

Percentage of people who visited forests or mountains





## 4. Problems on statistics (1)

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1. The basic problem relating to statistics for wooden house is that the survey method was created during a period when the elderly people was not very high.
2. Demand for barrier-free improvements to wooden house is clearly increasing. Increasing demand are expected, but current surveys are insufficient.
3. Opinions or desires for new house is clearly differ among generations. It is necessary to add generation factors in future demand predictions and basic surveys.





## 4. Problems on statistics (2)

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1. Panel surveys, which are not generally developed in Japan, seems to be necessary, to statistically clarify trends related to recreational activities.
2. Result of opinion survey indicate that recreational forest use tends to decrease in elderly people. Most facilities have been introduced for younger generations.
3. Visitor survey need to be introduced for forest parks, in-forest trails that elderly people frequently use. Use of forests by elderly people is currently underestimated.



## 5. Conclusion

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- Most statistical survey relating to forest and forestry commenced in the 1950's. To develop appropriate forest policy in light of an aging society, statistical data standards for collection, analysis, and use must be improved.
- In addition, the complete use of existing national-level statistics, including use of re-sampled micro-data, is also important. The amendment of the Statistics Act in 2009 may enhance a potential for more effective use of existing statistics.