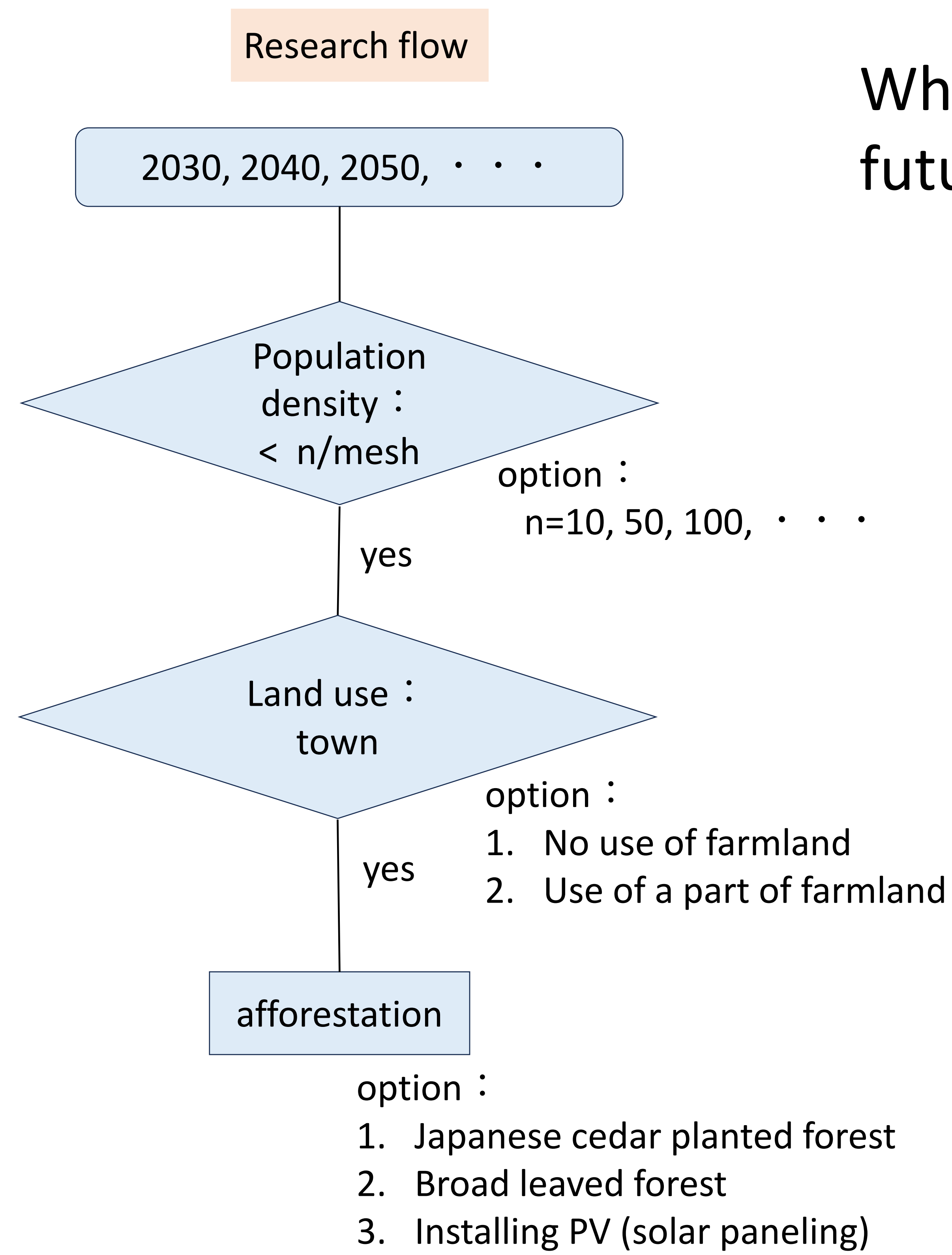




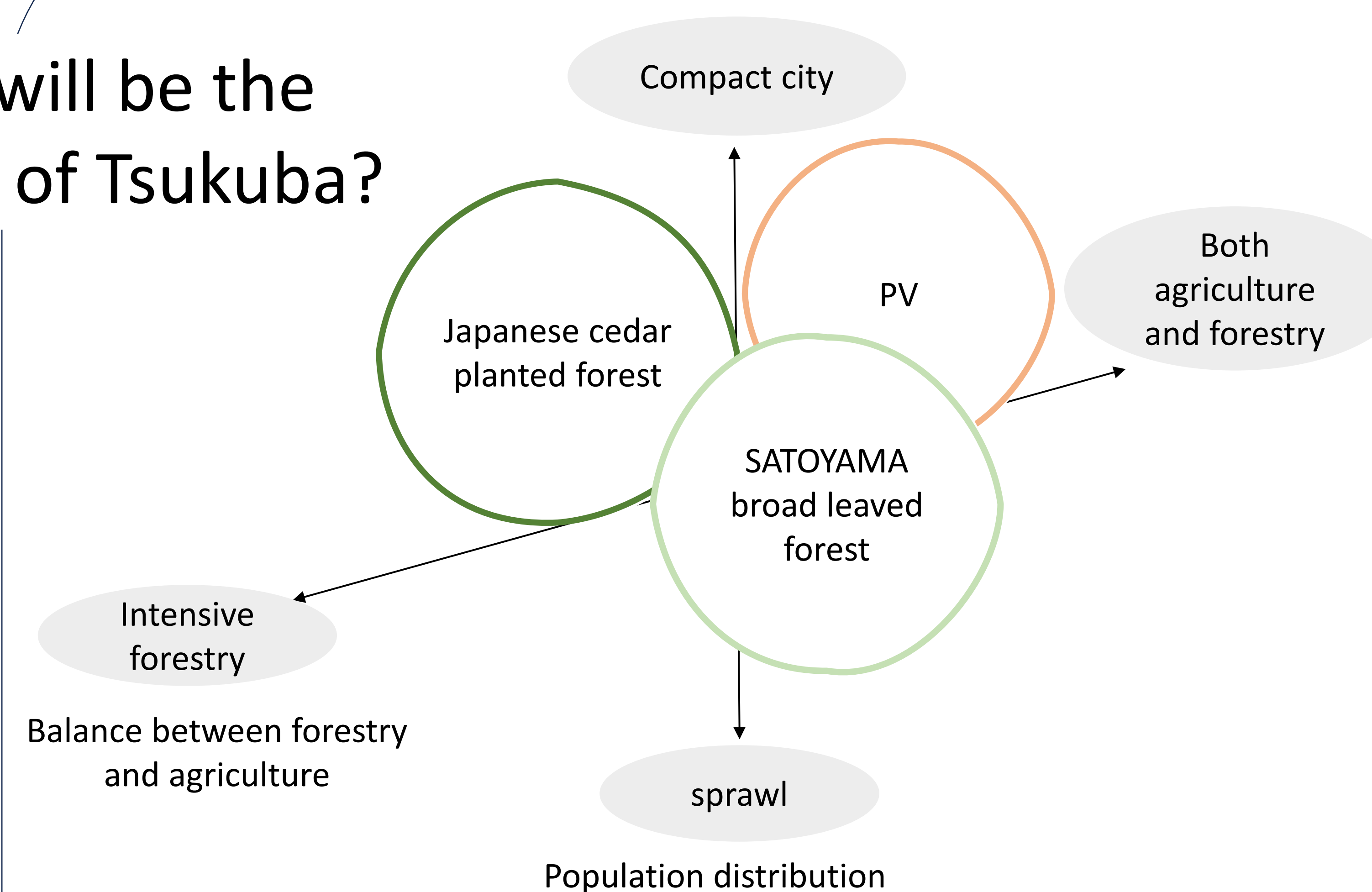
Changes in wood area and CO₂ absorption due to urbanization in Tsukuba

Satoko Kawarasaki, NIES

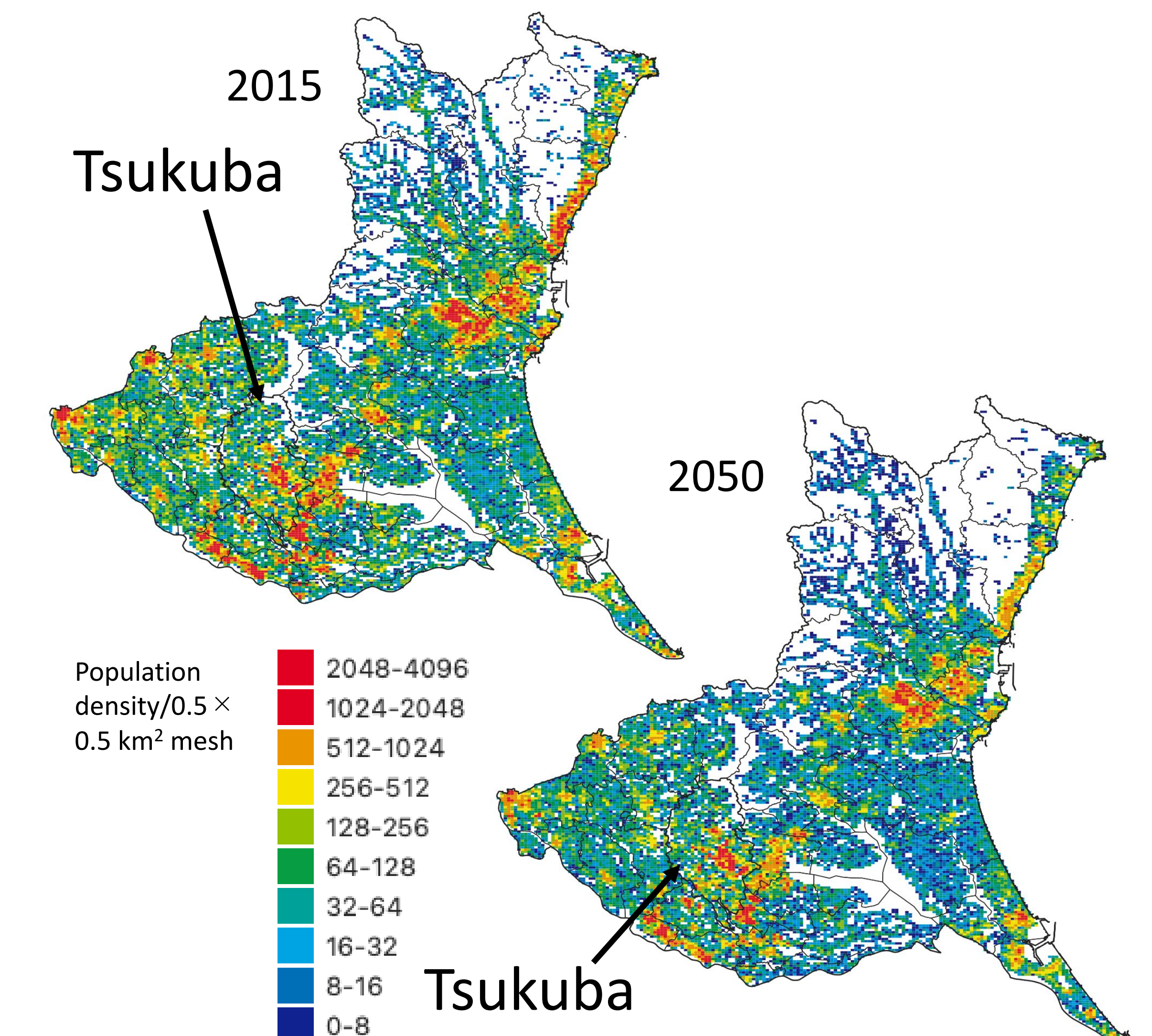
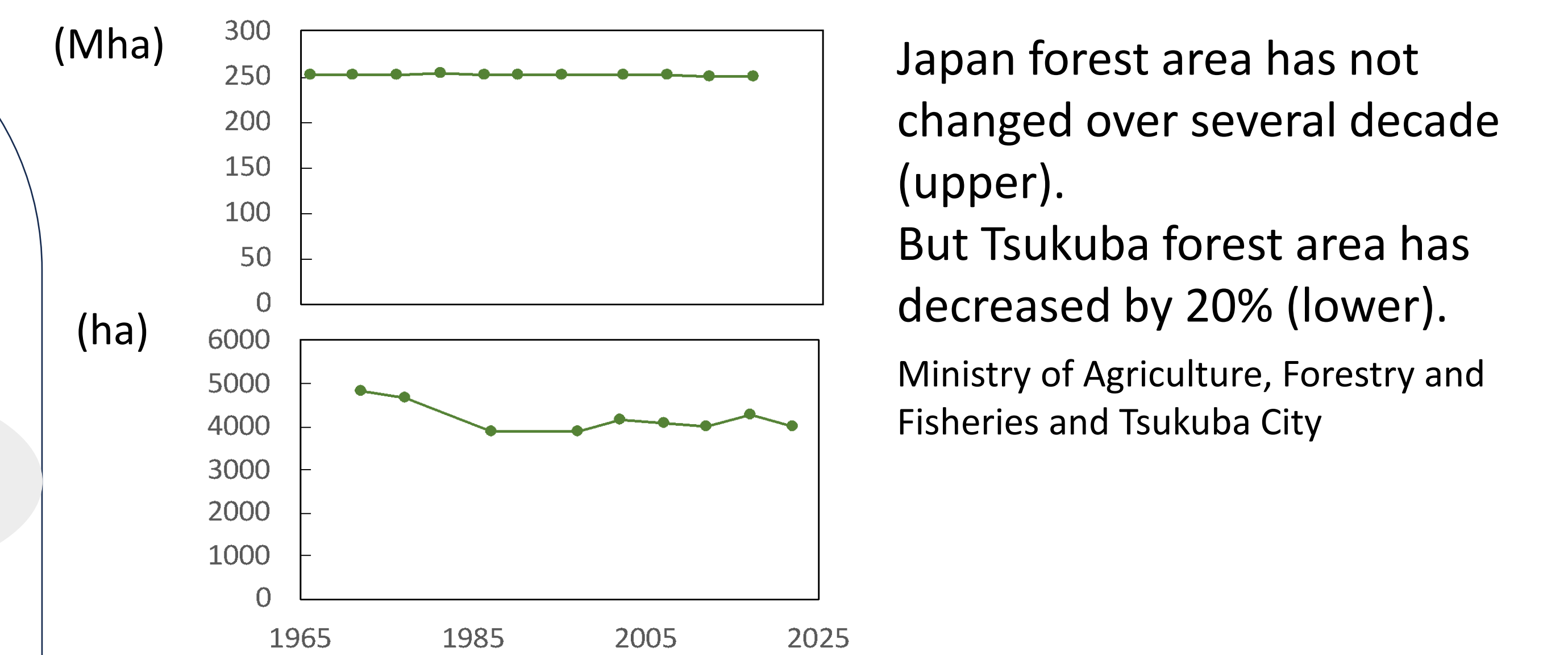
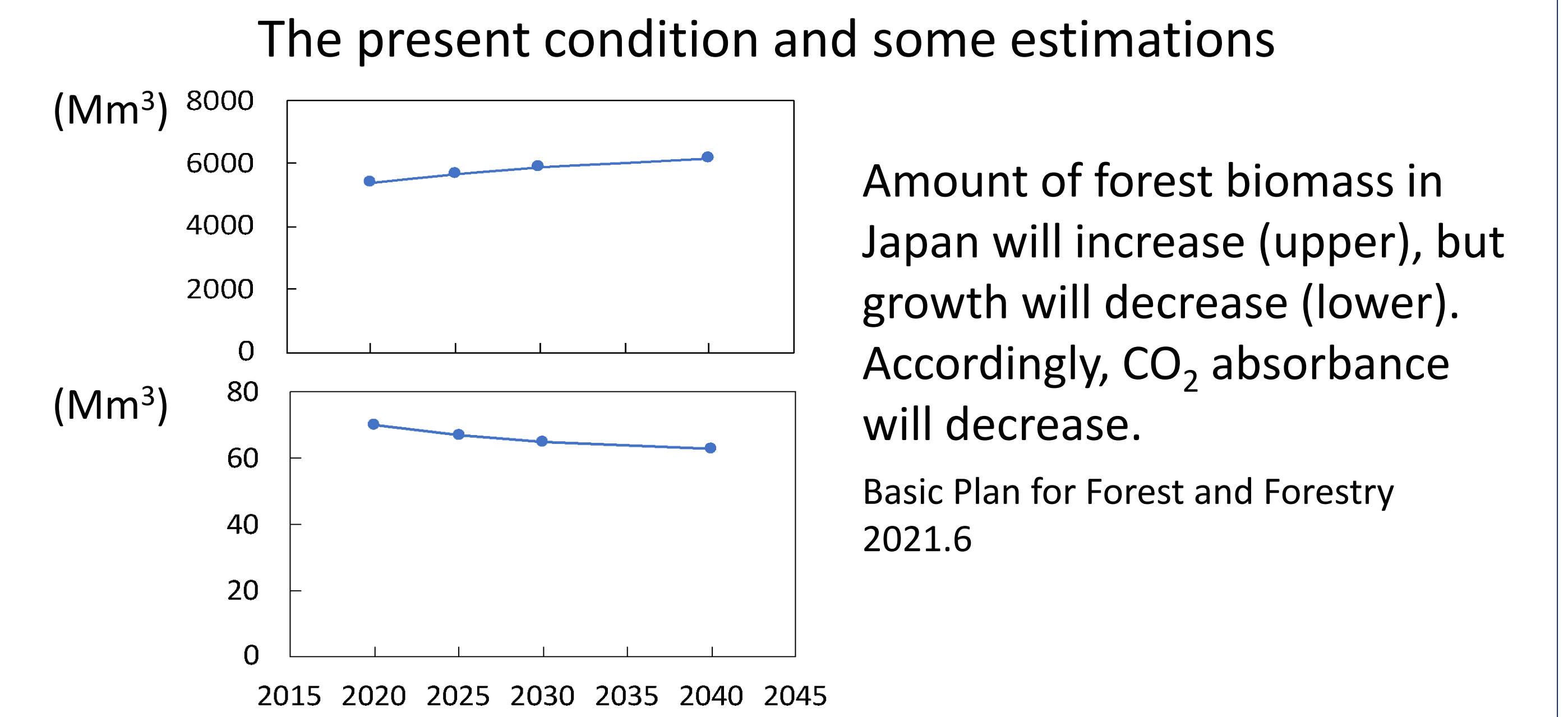
As we move toward renewable energy systems to achieve decarbonization, the carbon dioxide sink function of forests has become a highly anticipated area of focus. Japanese forests are now reaching maturity and have high absorption capacity, but absorption is expected to decline in the future. Therefore, it is necessary to increase the amount of carbon sinks. On the other hand, urban development has led to the clearing of many flat-land, SATOYAMA broad leaved forests for housing purposes. But even in these areas, vacant land is increasing due to population flow and declining population. In terms of land use planning, turning vacant land into new sink forests could help build a decarbonized society. In Tsukuba City, where urbanization has continued over the past few decades, we will conduct a scenario analysis focusing on land use to see what kind of efforts can be made to transform the city into a decarbonized society in the future.



What will be the future of Tsukuba?



- Cedar planted forests are high biomass productivity. New cedar planted forests will aid in future resource supply. If more than 100 km² of land can be secured, sustainable forestry operations can be conducted. CO₂ absorption will be large.
- The regeneration of SATOYAMA-broad leaved forests, which used to exist around cities, will not only provide resources, but also enable biodiversity conservation. But their productivity will be lower than cedar forests.
- PV installation on towns does not burden the natural environment. We could be self-sufficient in electricity.



Population density in Ibaraki pref. in 2015 and 2050 (estimation). There are no changes in high density meshes (>1000), lower density meshes in 2015 will become smaller in 2050.

National Land Information Division, National Spatial Planning and Regional Policy Bureau, MLIT of Japan

Scenario analysis will predict how forest area and biomass accumulation will increase after 2050, how much it will contribute to a decarbonized society as a CO₂ sink, and how the society and environment of Tsukuba City will be transformed.

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