

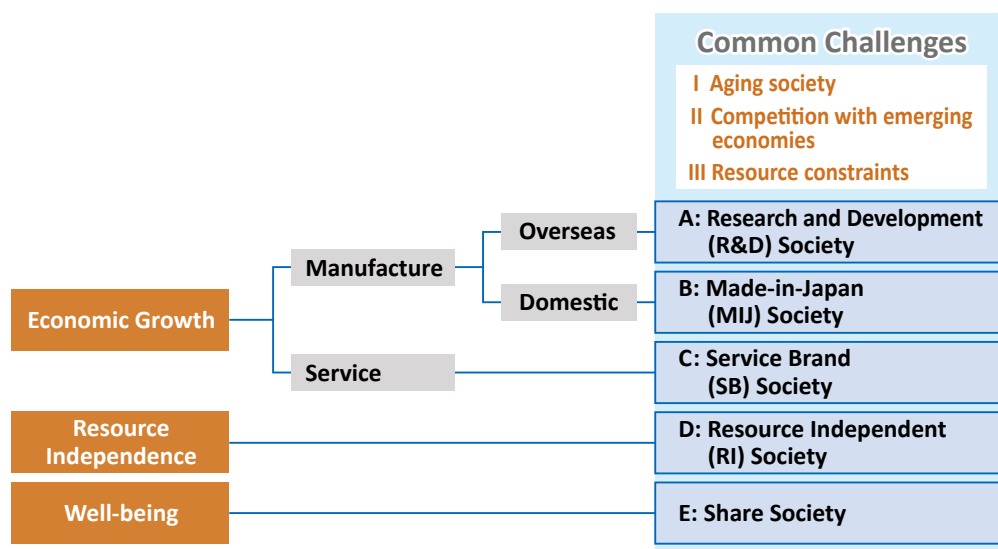
Society Scenarios

The projections of energy consumption and GHG emissions for 2050 can be significantly affected by the structure of economy and society we envision for 2050. For the 2050 Low Carbon Navigator, the user can select from five society scenarios for 2050,

which were presented in 2012 for government discussions (MOE, 2012b) and developed based on three important factors to consider for Japan's future: (1) economic growth, (2) resource independence, and (3) well-being.

The user choice on this lever affects socioeconomic activity levels (e.g., GDP, number of households, industrial production level, and residential and commercial floor space) (see Figure 2).

Figure 1 Concepts of 2050 society scenarios



Source: Adapted from MOE (2012b).

Notes: The society scenarios consider different but likely future societies in Japan in 2050. The concept of these five scenarios take into consideration the fundamental questions that matter to Japan. The first question related to the type or direction of development that should take place. The direction is then considered from the vantage points of economic growth, resource independence and prosperity. The next question raises the issue of the way to achieve economic growth, i.e. by focusing on manufacturing or on the service sector. The third question, a critical one for Japan, is about the location—within Japan or outside Japan—of manufacturing goods, especially materials.

Against the backdrop of the above consideration, the five society scenarios are developed to emphasis different directions, manner, and location for fostering Japan's growth and development toward a low carbon society. An economic growth-oriented Japan will have to emphasis either manufacturing or service industry. The SB Society can be envisioned when Japan focuses on developing its service industry. On the other hand, if Japan focuses on manufacturing industry, then the question of either producing at home or abroad will come up. Consequently, two different society scenarios can be envisioned—the R&D and the MIJ society, with the latter stressing in Japan production. The other two societies, RI and Shared Society, are directly related to the alternative development directions—resource independence and prosperity-oriented—that Japan may choose.

These society scenarios also help us understand how Japan's trade structure, which is one important underlying factors for CO₂ emissions, may develop. For the R&D and MIJ scenarios, there is a large difference in how much Japan would rely on international trade to sustain high economic growth. In the R&D scenario, the production of goods for overseas customers will move from Japan to overseas close to the market. As production moves outside of Japan, import will also be significant. In the MIJ scenario, Japan will continue to produce goods for overseas customers within Japan and export them. It is assumed that to support production within Japan, higher volume of imports compared to R&D scenario—particularly raw material and intermediate goods—will occur under MIJ scenario. Overall, the energy consumption and related CO₂ emissions from manufacturing sector will be higher for the MIJ scenario than in the R&D scenario.

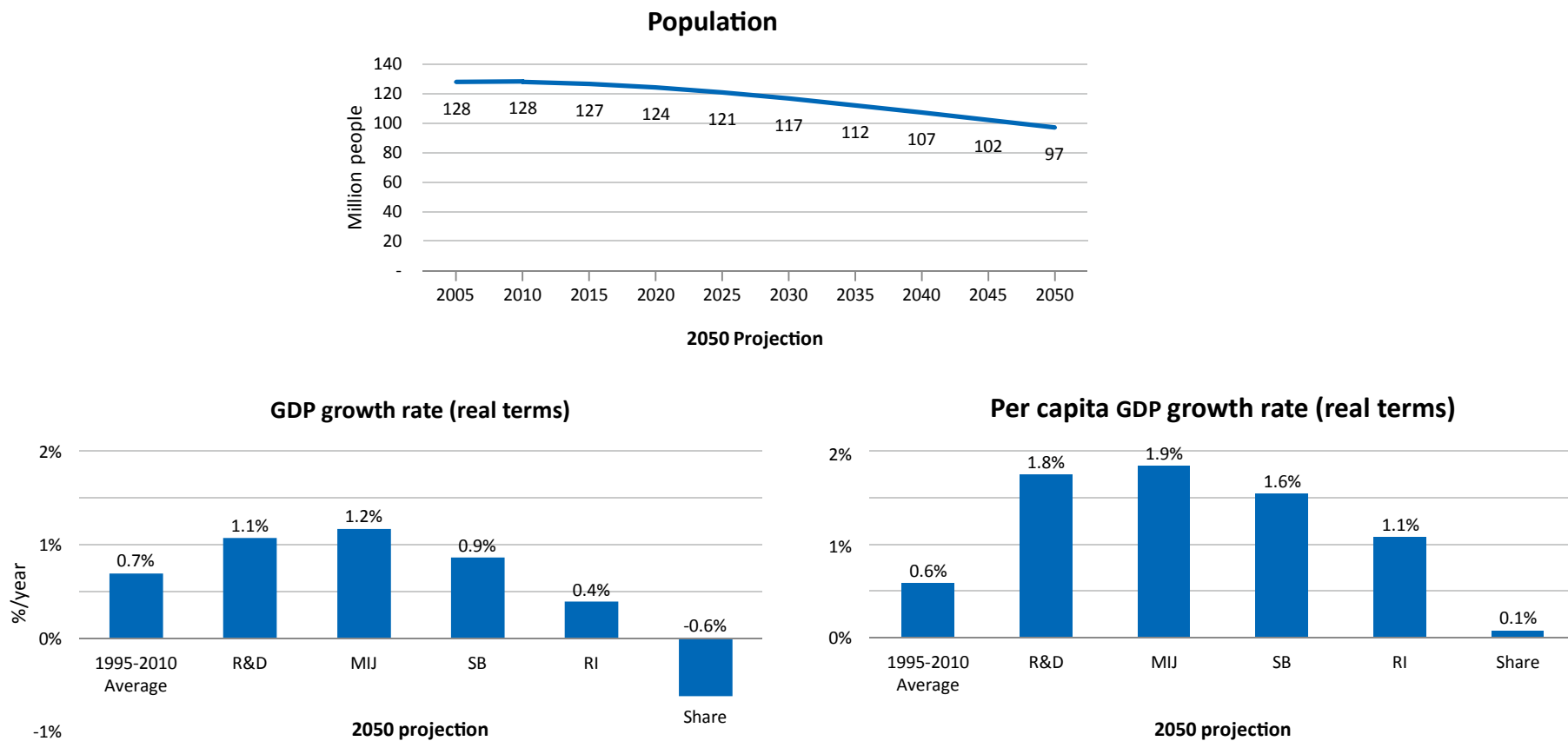
The RI scenario is similar to the R&D scenario in that they both result in lower levels of international trade compared to the MIJ scenario, but some significant differences can be found, e.g. in the industrial sector. The RI scenario aims for greater use of domestically-recovered secondary steel and larger production from the agricultural sector to improve resource independence, whereas in the R&D scenario continues to depend on imported iron ore for steel production and imported agricultural products. *This note is based on MOE (2012b) and Ashina (2015).*

Table 1 Overview of 2050 society scenarios

2050 society scenarios	Summary	Pros	Cons
Made-In-Japan (MIJ)	A society in which domestic industrial manufacturing drives high economic growth.	The Japanese economy is boosted by the domestic production of competitive low-carbon technologies and high value-added products for mid-high income customers overseas.	There may be a lack of innovation and the salary level may be kept to low levels to compete internationally. Moreover, the economy will be more vulnerable to changes in currency exchange rates.
Research and Development (R&D)	A society in which the overseas expansion of Japanese manufacturing industries drives high economic growth.	Japan will become the global hub of Research and Development (R&D) for the manufacturing industry including low-carbon technologies. Revenues are generated by sales overseas.	To maintain a technological edge on competitors, the country needs to be successful in a harsh global competitive environment by developing state-of-the-art infrastructure and supporting entrepreneurs and game-changers.
Service-Brand (SB)	A society in which the expansion of high-quality service industry toward foreign customers drives high economic growth.	Japan will achieve high economic growth through expansion of its high-quality service industry toward wealthy foreign customers including tourists.	Large fraction of services provided by the Japanese economy, which target wealthy foreign customers, may not be affordable to average Japanese consumers.
Resource Independent (RI)	A society in which resource independence is considered most important for prosperity.	The society will become more resilient to global resource protectionism by supplying as much food, energy and resources domestically as possible.	Japan needs to bear additional costs for energy and resources to maintain resource independence.
Share	A society in which a well-being and a humble lifestyle is sought for.	Necessary goods and services will be provided domestically, and more laid-back lifestyle will be achieved.	The economy becomes more vulnerable to external factors. Moreover, the sense of community prevails individualism that collective actions and sharing of goods become the basis of daily life.

Source: Adapted from MOE (2012b).

Figure 2 2050 projections for population, GDP growth rates and percapita GDP growth rates under five society scenarios



Source: Authors' calculation based on MOE (2012b).