

## Recommendations

### **First, fishery in Indonesia should be made more sustainable and profitable.**

Fishing methods, volume of catch, and production should be controlled. Management methods should be improved. The Japan International Cooperation Agency project, Optimising Mariculture Based on Big Data with Decision Support System (2017–2022), is finding ways to better manage aquaculture by using big data. The fishery supply chain, cold chain, and temperature control supply chain should be strengthened. Cold chain starts from the fishing boat and proceeds to the fishing port, fish market, fish-processing factory, and shop. Indonesia can learn from Japan's experience in sustainable fishery and aquaculture and from its well-developed cold supply chain.

### **Second, the maritime environment should be protected as it is vital for sustainable fishery.**

Indonesia should mitigate climate change and contribute to the international discussion on climate change. Marine plastic waste is a threat. More marine plastic debris is generated on land than on the ocean. Indonesia generates the second-largest amount of marine plastic debris in the world (Jambeck, 2015) and has started to tackle this issue. The Presidential Decree on Marine Debris Management and its action plan (2018–2025) aim to raise stakeholder awareness, produce more biodegradable and recyclable plastics, and build facilities to receive waste at ports, amongst others. Waste management and wastewater treatment should be strengthened in marine-based tourist spots and their upper water catchment areas.

### **Third, resiliency to earthquakes and tsunamis should be strengthened**

The first risk-reduction measure is raising awareness. People should learn about the danger of tsunamis and what to do after an earthquake or early warning. Local governments should have in place evacuation plans and shelters. The national government has invested in early warning systems in some regions. In some areas, earthquake-detection devices have been installed to transmit information to disaster information centres. But a system to send early warnings to individuals is not well established. Such a system is widely used in Japan, with information sent to mobile phones. Indonesia should invest further in early warning systems for earthquakes, tsunamis, and other disasters.

### **Fourth, maritime connectivity should be strengthened because it is key to tackling the economic disparity between Java and other regions and to make Indonesia part of the global supply chain.**

The economic disparity between Java and other regions, especially eastern Indonesia, should be reduced and domestic marine connectivity increased. Although *Visi Indonesia 2045* mentions it and much progress has been made under President Jokowi Widodo, infrastructure to expand marine connectivity, such as seaports, should be further upgraded by, for instance, optimising the functions of maritime highways to connect the archipelago. The government should strengthen integration and take a more strategic approach to information, economic analysis, and incentives, and better harness technology and innovation.

### **Geopolitical outlook: Indonesia and Japan should be on the front line to tackle maritime challenges**

*In the geopolitics of the information revolution era, wealth and power remain, perhaps more so than before, structured around communication and connectivity. It was inevitable that the restructuring of the international order would take place in the maritime space.*

*Indonesia and Japan, both maritime and archipelagic nations, are on the front line facing the new geopolitical challenge. As regional maritime powers, both countries must lead in rearranging the global order. Achieving this strategic goal relies on whether the maritime space will become a zone of access and connectivity or one of confrontation and denial.*

*Indonesia and Japan define maritime security as defensive. They do not aim to annex other territories. Sovereignty is de-territorialised due to technological advancement and the interconnected global economy. Indonesia and Japan need to redesign maritime strategies to be more proactive. As economic development relies on connectivity, the accessibility of maritime space and security of communication lines are of paramount importance.*