

## Country report from Japan

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### General remarks on the Manila clam fishery

Asari is one of the most important fisheries species in the coastal waters of Japan. The production of the asari fishery in Chiba prefecture had occupied more than half of the national production in early 1960's. Rampant land reclamation from 1960's to 1970's, however, severely reduced the wild stock of asari in Chiba, and the reduction was compensated by increased production in Kumamoto prefecture, which had the largest tidal flat area in Japan. The annual production was more than 100 thousand tons from 1960's to mid 1980's. However, constant decrease of the production in Kumamoto has resulted in reduction in the national production since 1980s. Only the production in Aichi Prefecture has been maintained relatively constant for about 50 years. The national production was about 22,700 tons in 2013 around 15% of the peak value in 1980's. The reduction of the wild stock is attributed to many factors such as reclamation, reduced sand supply by dams, sediment siltation, hypoxia, red tide, predation, parasite infection and disease. The production of the clam in Japan mostly depends on capture fisheries.

### Basic information on fishery

**Geography and geomorphological characteristics:** Asari fishing is mainly operated in sandy tidal flats and shallow sub-tidal waters in calm inner bay.

**Fishing method:** Short shaft raking, long shaft raking, clam dredge, hydraulic dredge.

**Fishery management:** Shell size regulations, fishing closed season and joint selling.

**Standing stock assessment:** Statistical survey by local governments and fisheries cooperative associations.

### Basic information on aquaculture

**Environmental characteristics:** Aquaculture of asari is mostly done on fishing grounds in tidal flats in Japan.

**Culture methods:** Bottom culture by reseeding using transplanted natural spats. Suspended cage culture is being developed and recently getting much attention.

### Major constraints and countermeasures

**Habitat degradation:** Habitat area of asari significantly decreased by reclamation in 1960s in Tokyo Bay. Dam construction caused the change of bottom substrata directly or indirectly. Anoxic or hypoxic water in Ariake Sound, Mikawa Bay, Ise Bay, Tokyo Bay caused by phytoplankton blooms.

**Overfishing:** Over catching destroyed the clam population in many places in 1980s and 1990s. It seemed to be the largest cause for rapid decrease of the clam production in Kumamoto, Fukuoka and Oita prefectures. Fear for the over catching is still present to some extent.

**Diseases and parasites:** Broad prevalence of *Parkinsus honshuensis*, *Vibrio tapetis*, abrupt occurrence of a parasitic sea spider, *Nymphonella tapetis* in Kisarazu in Tokyo Bay.

**Climate change:** Change of food environment is considered to be associated with sea level rise.

**Economic aspects:** Relatively low farm gate price despite low production.

**Others:** Heavy predation by eagle ray, *Aetobatus narutobiei* and the alien naticid gastropod *Euspira fortunei* has been occurring in Western and Northern part of Japan, respectively.

**Proposed international collaborative studies in**

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the future: Creation of international researcher's networks on asari.

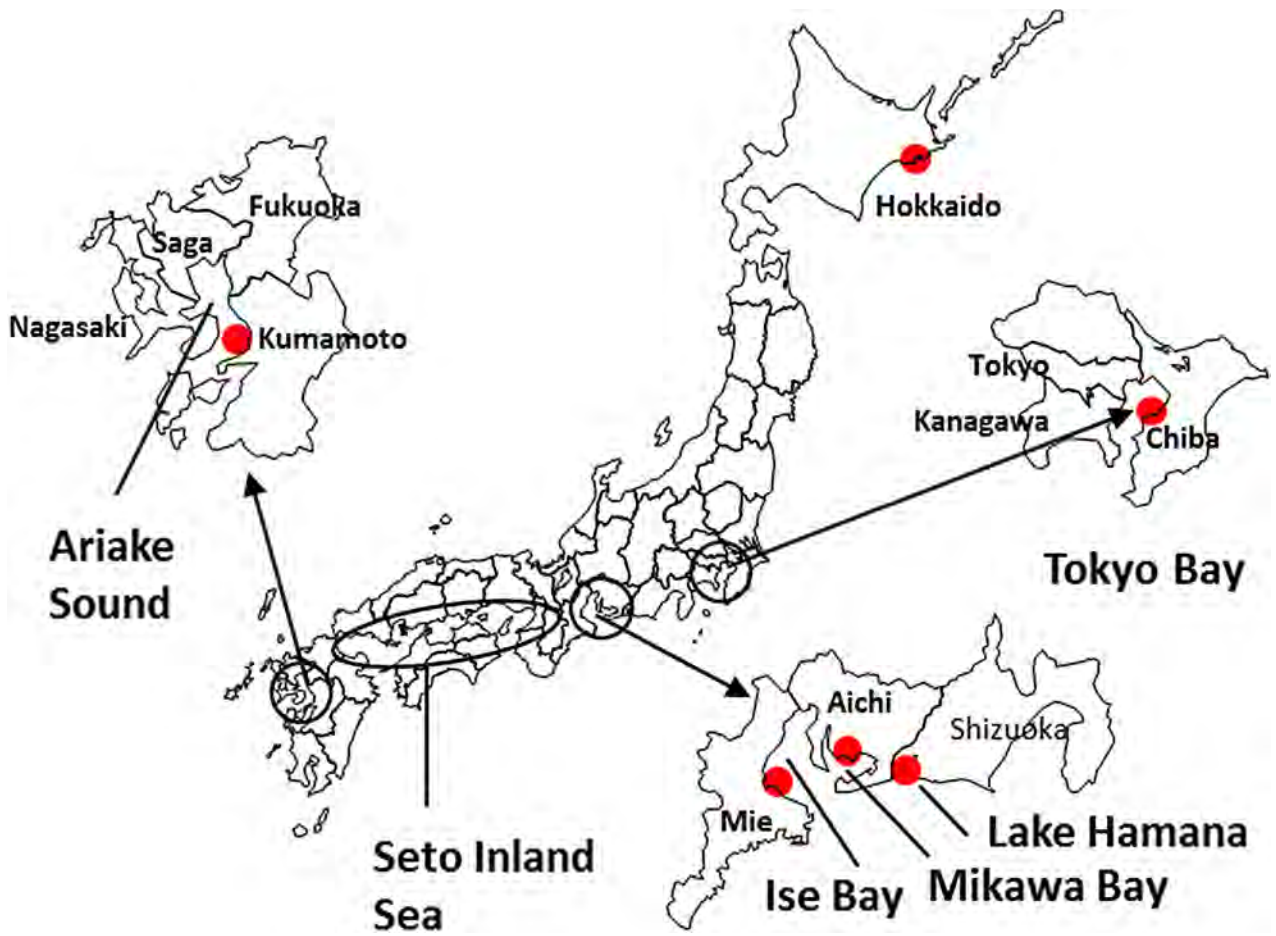


Fig. 1. Main bay and estuary habitats of *Ruditapes philippinarum* and other filter feeding bivalves in Japan.

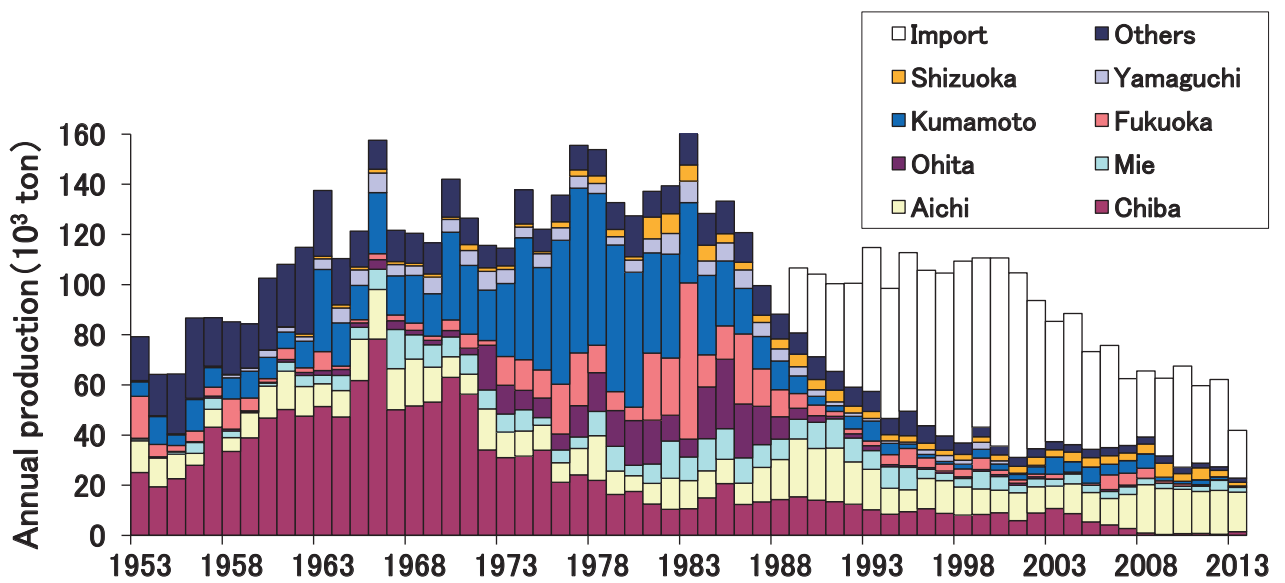


Fig. 2. Annual production and imported amount of *Ruditapes philippinarum* in Japan.