

Grouper

Name of species/group

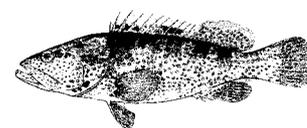
Groupers (family Serranidae, subfamily Epinephelinae).

Primary potential

Aquaculture.

Attributes for aquaculture/stock enhancement

- ▶ High demand in export markets.
- ▶ High value.
- ▶ Rapid growth rates (depending on species).
- ▶ Sedentary / territorial.



Culture methods

Seedstock

- ▶ Most grouper seedstock is still supplied through wild capture of juvenile fish. Juvenile fish are collected using a range of methods, such as push nets and traps and fish aggregating devices.
- ▶ Hatchery production of groupers is still low and irregular. Larvae are difficult to rear because of their specific feed and environmental requirements. Survival is generally less than 5% to juvenile stage. A few hatcheries have improved survival of some grouper species (barramundi cod *Cromileptes altivelis* and tiger grouper *Epinephelus fuscoguttatus*) to around 40%. Viral and bacterial diseases also cause mortalities in hatcheries.

Grow-out

- ▶ Groupers are generally grown out in net cages. Some coastal species can be grown out in ponds.
- ▶ Specific requirements for grow-out are:
 - Suitable water quality, particularly temperature 26–32°C and salinity 20–35 parts per thousand.
 - Suitable sites for cages: sheltered areas, moderate currents, depth at least 10 metres, sand or mud substrate.
 - Supply of feed, preferably compounded (pellet) feed.
- ▶ Grouper is well suited to small-scale operations, and is cultured in small (2 X 2 X 2 m to 5 X 5 X 5 m) cages in Asia.
- ▶ Successful management requires a good knowledge of finfish aquaculture, as well as technical support, particularly for disease (viral, bacterial, parasitic) diagnosis and treatment.
- ▶ Opportunities for employment of women in daily maintenance, including feeding, harvesting and packing.

Current production status

- ▶ World aquaculture production of groupers is around 6000–7000 tonnes per annum, valued at about USD60 million, the bulk of production from wild seedstock.
- ▶ Production is constrained by the numbers of seedstock available from the wild and from limited hatchery production.
- ▶ Availability of feed (trash fish or pellets) is another constraint to grouper grow-out.
- ▶ Taiwan is the leading producer of hatchery reared grouper seedstock. Taiwan exports grouper seedstock throughout the Asia-Pacific region.
- ▶ Translocation and health testing are important issues associated with the import of grouper seed.

Marketing

- ▶ Many high value grouper species (such as coral trout) are sold to the Hong Kong live fish market, where they bring high prices.
- ▶ Live groupers can be shipped using airfreight or live fish transport vessels. If airfreight is used, direct flights to Hong Kong are preferred to prevent offloading, which often results in long delays and loss of product.
- ▶ There may be small-volume local markets (hotels, restaurants, Chinese communities) in South Pacific countries.
- ▶ There is currently an effort under way to introduce a voluntary code of practice for live reef fish. This may lead to certification and eco-labelling of sustainably produced live reef fish.

Comparative advantages/disadvantages (risks) of producing the species in the Pacific

- ▶ Marketing infrastructure is important — either direct flights for airfreight or the availability of live fish transport vessels. Live fish transport vessels require a substantial quantity of product, e.g. 15 tonnes or more, to make a trip worthwhile.
- ▶ A source of feed needs to be established. Compounded (pellet) feeds are preferable, since they are more cost-effective and less environmentally damaging than the use of trash fish.
- ▶ Grouper aquaculture is set to expand in Asia. Asian producers may have a competitive advantage due to location close to the major markets, seedstock supplies, etc.