

### River Seabream, *Acanthopagrus berda* (Aeri)

- ❖ Feeding nature : Omnivore
- ❖ Seed availability : Wild collection
- ❖ Growth rate : Medium growth
- ❖ Constraints : Seed availability



*Acanthopagrus berda* (Aeri)

### Rabbit Fish, *Siganus vermiculatus* (Viravarayan Karad)

- ❖ Feeding nature : Omnivore
- ❖ Seed availability : Wild collection
- ❖ Growth rate : Medium growth (commercial plate size in 9–12 months)
- ❖ Constraints : Seed availability



*Siganus vermiculatus* (Viravarayan Karad)

### Cobia, *Rachycentron canadum* (Modha)

- ❖ Feeding nature : Carnivore
- ❖ Seed availability : Hatchery produced
- ❖ Growth rate : Fast growth rate
- ❖ Constraints : High protein requirement



*Rachycentron canadum* (cobia)

### Grouper, *Epinephelus* spp. (Kalawa)

- ❖ Feeding nature : Carnivore
- ❖ Seed availability : Hatchery produced/wild collection
- ❖ Growth rate : Medium growth (commercial plate size in 9–12 months)
- ❖ Constraints : Seed availability, high protein diet, high cannibalism during larval rearing



*Epinephelus* spp (Groupers)

### Silver pompano, *Trachinotus blochii* (Vatta)

- ❖ Feeding nature : Omnivore
- ❖ Seed availability : Hatchery produced
- ❖ Growth rate : Medium growth
- ❖ Culture period : 8-12 months
- ❖ Constraints : High protein diet, no export value



*Trachinotus blochii* (Pompano)

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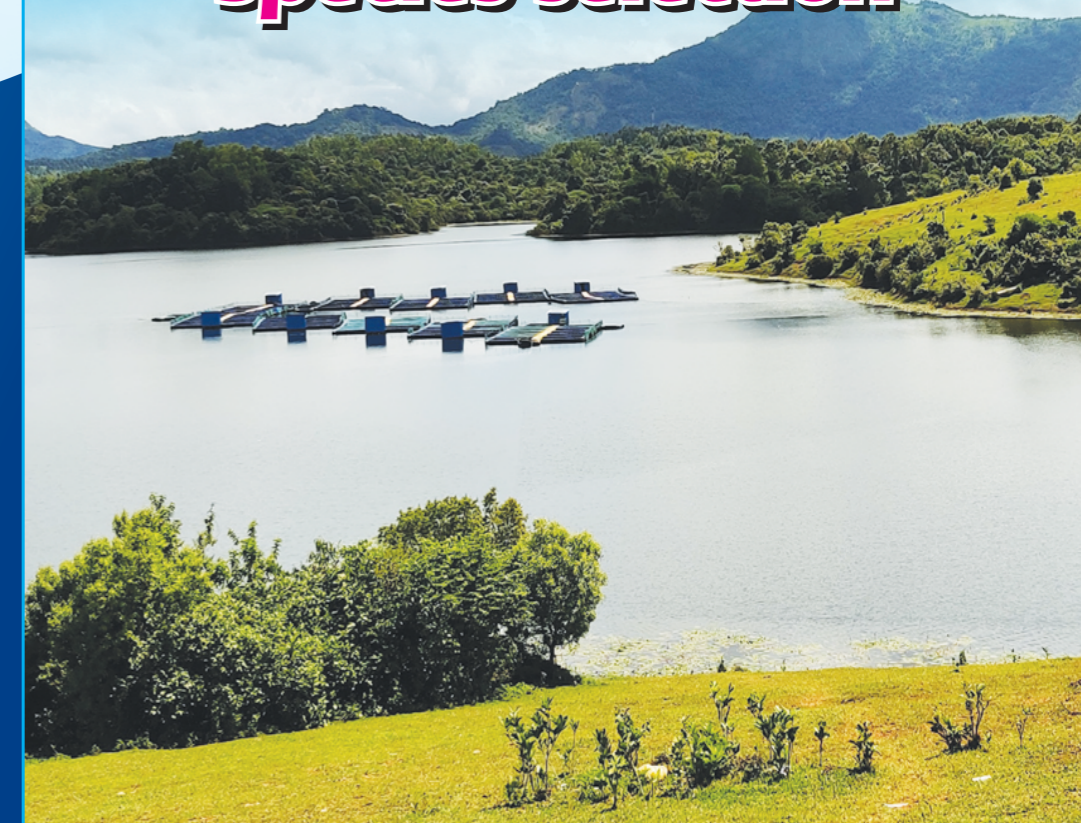
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## Cage Culture: Site selection and Species selection



## What is cage culture?

An aquaculture production system made of a floating frame and enclosed by a net to hold and culture desired species of fishes.



GI cages used for fish culture

Fishes are reared from fry to marketable size in an enclosed space that facilitates water exchange.



Cage farm at Mujukunnu, Kozhikode

## Advantages of cage culture:

- ❖ Flexibility in utilization in lakes, estuaries or sea
- ❖ Low construction cost
- ❖ Reduced culture period and high production
- ❖ Easy management and harvesting
- ❖ Alternative income avenue

## Site selection for cage culture:

### Topographical criteria

- ❖ Depth at least 3-8 m during low tide
- ❖ Good tidal flow to maintain optimal water quality
- ❖ Wind and wave action should be moderate
- ❖ Should be located away from sources of pollution
- ❖ Should be away from highly erodible watershed
- ❖ Site should not be a regular fishing ground
- ❖ Ability to move cages out of potential harmful events (high algal bloom or low dissolved oxygen levels)
- ❖ Sites with high fouling rate should be avoided

- ❖ Site should have an all-weather access road

### Physical criteria

- ❖ Turbid waters are not suitable
- ❖ Optimum water temperature for culture is 27–31°C

### Chemical criteria

- ❖ Dissolved Oxygen should be 5 ppm or more
- ❖ Salinities between 15–30 ppt are ideal for marine fishes (depending upon the species selected, the salinity may vary)
- ❖ pH ideal is 7.0 to 8.5
- ❖ Level of ammonia-nitrogen should be < 0.5 ppm
- ❖ Nitrite level should not exceed 4 ppm while nitrate level should be < 200 ppm

### Biological criteria

- ❖ Selected site should be away from algal blooms
- ❖ Easy accessibility to facilitate for distribution of farm products (live fish, feed, fingerlings, fuel)
- ❖ Cages should be easily monitorable

## Selection of species for cage culture

- ❖ Species having good demand, high market value
- ❖ Fast growth rate, efficient food conversion and disease resistance
- ❖ Species tolerant to wide variation in water quality
- ❖ Ability to accept pellet feeds
- ❖ Seed availability

## Potential candidate species for brackish water and open sea cage culture in India

### Asian Seabass, *Lates calcarifer* (Kalanji/Kolovan/Narimeen)

- ❖ Feeding nature : Carnivore
- ❖ Farming suitability : Fresh / brackish / marine water
- ❖ Seed availability : Hatchery produced/wild collection
- ❖ Growth rate : Fast growth (plate size in 4 months, 1 kg in 8 months)
- ❖ Constraints : High cannibalism in juveniles



*Lates calcarifer* (Kalanji/Kolovan)

### Mangrove Red snapper, *Lutjanus argentimaculatus* (Chemballi)

- ❖ Feeding nature : Carnivore
- ❖ Farming suitability : Fresh / brackish / marine water
- ❖ Seed availability : Wild collection
- ❖ Growth rate : Medium growth (commercial plate size in 9–12 months)
- ❖ Constraints : Seed availability, require high protein feed



*Lutjanus argentimaculatus* (Chemballi)

### Milk Fish, *Chanos chanos* (Poomeen)

- ❖ Feeding nature : Omnivore /herbivore
- ❖ Seed availability : Wild collection/ hatchery
- ❖ Culture period : 4-8 months
- ❖ Growth rate : 350-500 gms
- ❖ Constraints : Seed availability



*Chanos chanos* (Poomeen)

### Mullet, *Mugil cephalus* (Thirutha)

- ❖ Feeding nature : Omnivore
- ❖ Seed availability : Wild collection
- ❖ Growth rate : Medium growth
- ❖ Constraints : No export value, seed availability



*Mugil cephalus* (Thirutha)