

Figure 3.2. Coastal resource map of Loon, Bohol.

LOON

**Legend:**



**HABITATS**

- Sandy Beach
- Rocky Shoreline
- Inshore Flats
- Seagrass Beds
- Coral Reef
- Estuary
- Mangrove
- Terrestrial Zone
- Marine Zone
- Mudflats
- Offshore sandbars

**RESOURCES**

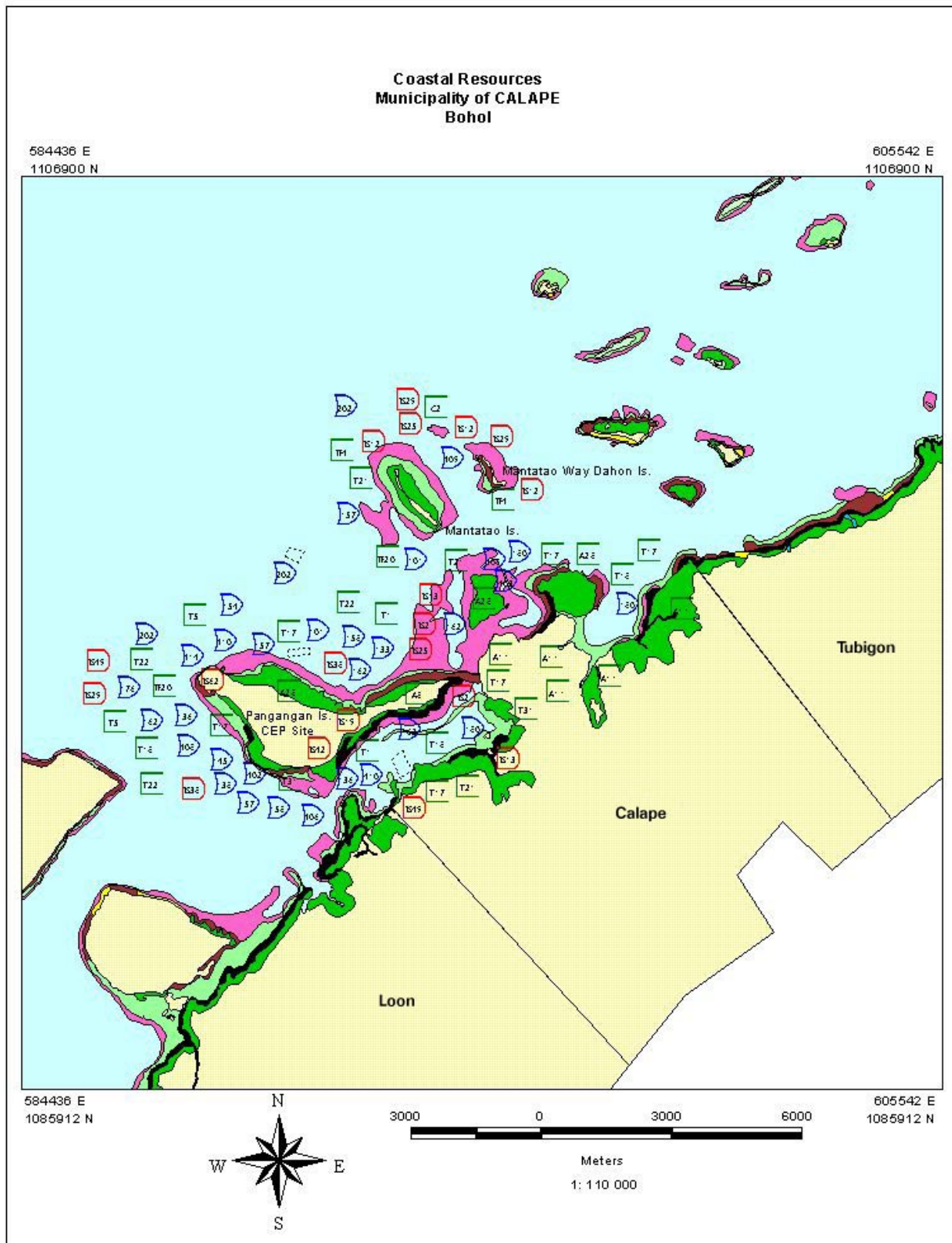
- Anchovies
- Battish
- Emperor breems
- Flying fish
- Fusiliers
- Garfish, needlefish
- Goatfish
- Hairbeaks
- Mullets

**ISSUES**

- Destructive fishing
- Encroachment on the fishing ground by outsiders
- Fishing gear conflicts
- Lack of alternative livelihood
- Lack of law enforcement
- Lack of security of tenure of land and/or home lot
- Lack of social services
- Mangrove conversion
- Mangrove overharvesting
- Waste dumping
- Gambling

**USES**




- Parrotfish
- Rabbitfish, spinefeet
- Sardines and herrings
- Scads
- Sharks
- Slipmouths
- Tunas and mackerels
- Venus shells
- Octopuses
- Squids
- Fishponds/shrimp ponds
- Protected areas
- Gears banned by local legislation (e.g. beach seines, baby trawls, modified danish seines)
- Superlights within municipal waters
- Bottom set gill nets
- Drive-in nets
- Fish shelters
- Hook and lines/handlines/drop lines
- Jiggers
- Lights
- Spears



**Figure 3.3. Coastal resource map of Calape, Bohol.**

CALAPE


**Legend:**

-  Municipal boundary
-  Fish sanctuary
-  CEP Coastal Environment Program

**HABITATS**














-  Sandy Beach
-  Rocky Shoreline
-  Inshore Flats
-  Seagrass Beds
-  Coral Reef
-  Estuary
-  Mangrove
-  Terrestrial Zone
-  Marine Zone
-  Mudflats
-  Offshore sandbars

**RESOURCES**

-  101 Anchovies
-  130 Fork-tailed catfish
-  136 Goatfish
-  139 Groupers, seabasses, perchlets
-  145 Jacks and cavallas
-  154 Moorish idols
-  157 Mulletts
-  159 Parrotfish
-  162 Rabbitfish, spinefeet
-  176 Sharks
-  180 Slipmouths
-  202 Tunas and mackerels
-  402 Cuttlefish
-  403 Large shrimps and prawns
-  406 Blue crabs
-  408 Octopuses

-  409 Sea cucumbers
-  410 Sea urchins
-  414 Squids

**USES**

-  A8 Fish cages
-  A11 Fishponds/shrimp ponds
-  A28 Protected areas
-  C2 Compressors
-  IF4 Explosives
-  IF20 Poisons/noxious substances
-  T1 Bagnets
-  TS Bottom set gill nets
-  T17 Fish corrals
-  T18 Fish pots and crab pots
-  T21 Harpoons
-  T22 Hook and lines/handlines/droplines
-  T31 Push nets


**ISSUES**

-  IS2 Beach/shoreline erosion
-  IS12 Destructive fishing
-  IS13 Deterioration of aesthetic quality
-  IS19 Fish kills
-  IS25 Illegal fishing
-  IS29 Lack of law enforcement
-  IS38 Mangrove conversion
-  IS42 Overfishing
-  IS49 Siltation
-  IS62 Sand extraction



TUBIGON



















Legend:

 Municipal boundary

HABITATS

-  Sandy Beach
-  Rocky Shoreline
-  Inshore Flats
-  Seagrass Beds
-  Coral Reef
-  Estuary
-  Mangrove
-  Terrestrial Zone
-  Marine Zone
-  Mudflats
-  Offshore sandbars

RESOURCES

-  101 Anchovies
-  104 Fusiliers
-  105 Garfish, needlefish
-  108 Goatfish
-  109 Groupers, seabasses, perchlets
-  141 Halfbeaks
-  145 Jacks and cavallas
-  151 Mojarras
-  158 Parrotfish
-  162 Rabbitfish, spinefeet
-  180 Snappers
-  202 Tunas and mackerels
-  204 Whittings
-  206 Wrasses
-  402 Cuttlefish
-  403 Large shrimps and prawns
-  406 Blue crabs
-  408 Octopuses

 414 Squids

USES

-  A28 Port/pier/wharf/marina
-  A28 Protected areas
-  A38 Sand and gravel extraction
-  C2 Compressors
-  IF1 Drive-in net with bamboo/tree trunk scare devices
-  IF4 Explosives
-  IF5 Fine mesh nets (<30m) for unexempted species
-  IF18 Gears banned by local legislation (e.g. beach seines, baby trawls, modified danish seines)
-  IF20 Poisons/noxious substances
-  IF21 Superlights within municipal waters
-  IF22 Commercial fishing
-  T9 Crab lift nets
-  T12 Drift gill nets
-  T15 Encircling gill nets
-  T17 Fish corrals
-  T19 Fish pots and crab pots
-  T22 Hook and lines/handlines/droplines
-  T41 Spears

ISSUES

-  IS7 Coral extraction
-  IS9 Declining fish catch
-  IS12 Destructive fishing
-  IS20 Fishing gear conflicts
-  IS38 Low environmental awareness
-  IS39 Mangrove overharvesting
-  IS55 Waste dumping

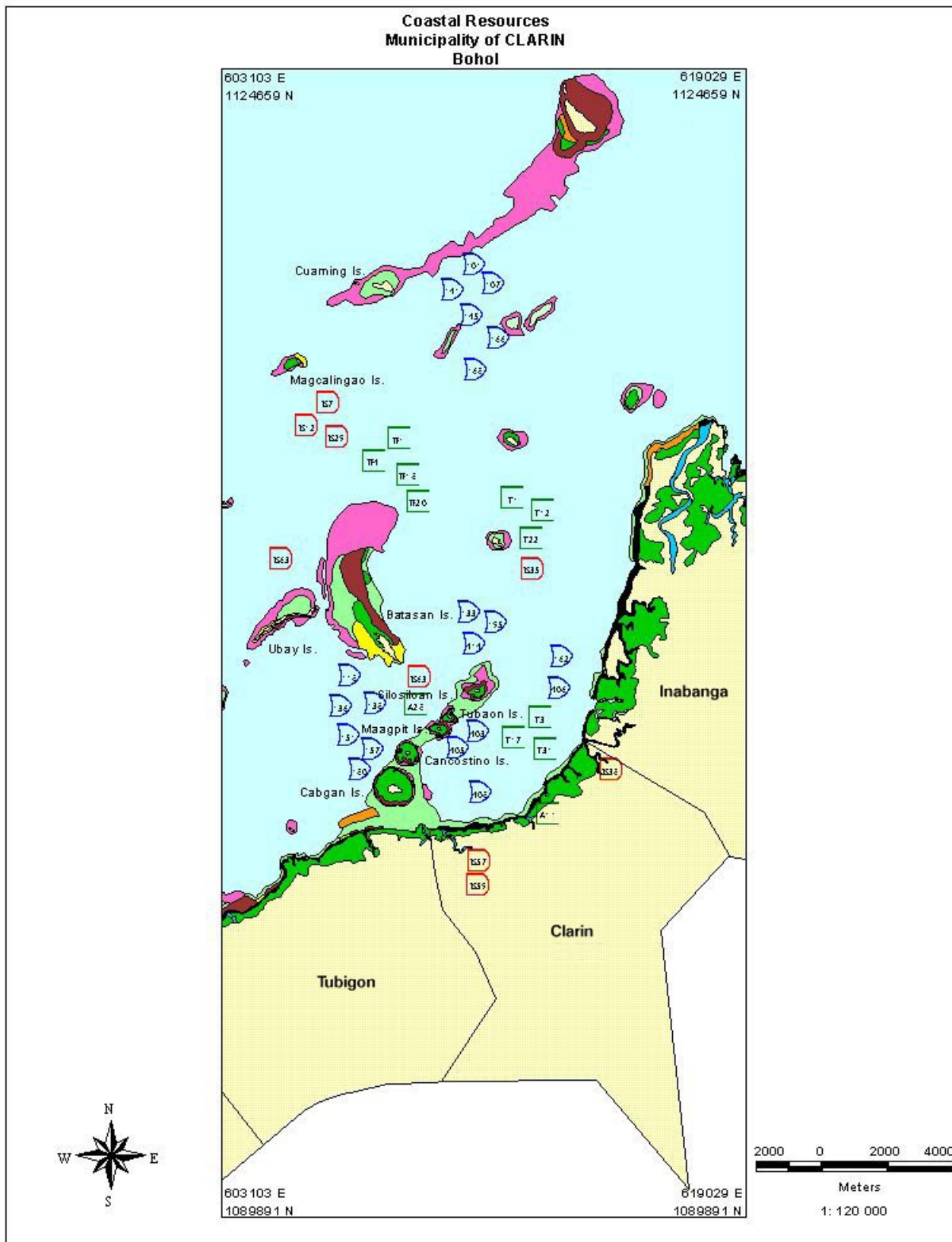


Figure 3.5. Coastal resource map of Clarin, Bohol.

CLARIN



















**Legend:**

 Municipal boundary

**HABITATS**

-  Sandy Beach
-  Rocky Shoreline
-  Inshore Flats
-  Seagrass Beds
-  Coral Reef
-  Estuary
-  Mangrove
-  Terrestrial Zone
-  Marine Zone
-  Mudflats
-  Offshore sandbars

**RESOURCES**

-  101 Anchovies
-  107 Barracudas
-  119 Croakers
-  133 Fork-tailed catfish
-  136 Goatfish
-  138 Groupers, seabasses, perchlets
-  141 Halfbeaks
-  145 Jacks and cavallas
-  151 Mojarras
-  157 Mulletts
-  162 Rabbitfish, spinefeet
-  166 Sardines and herrings
-  168 Scads
-  180 Slipmouths
-  195 Threadfin breams
-  403 Large shrimps and prawns
-  405 Mud/mangrove crabs
-  408 Blue crabs

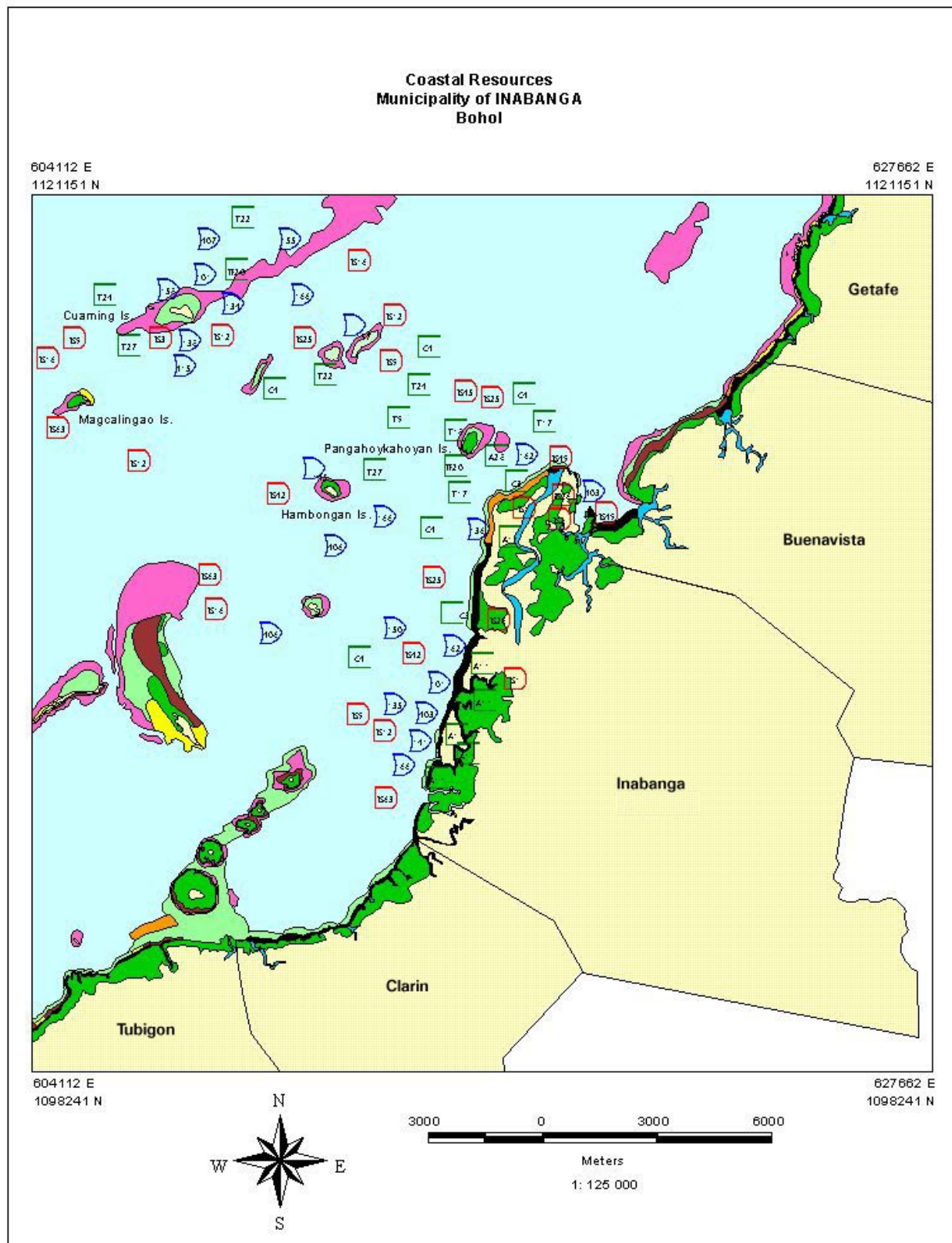
-  408 Octopuses
-  414 Squids

**USES**

-  A11 Fishponds/shrimp ponds
-  A28 Protected areas
-  IF1 Drive-in net with bamboo/tree trunk and scare devices
-  IF4 Explosives
-  IF18 Gears banned by local legislation (e.g. beach seines, baby trawls, modified danish seines)
-  IF20 Poisons/noxious substances
-  T1 Bagnets
-  T3 Beach seines
-  T12 Drift gill nets
-  T17 Fish corrals
-  T22 Hook and lines/handlines/droplines
-  T31 Push nets

**ISSUES**

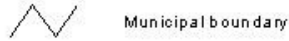
-  IS7 Coral extraction
-  IS12 Destructive fishing
-  IS29 Lack of law enforcement
-  IS35 Loss of rare/endangered species
-  IS38 Mangrove conversion
-  IS57 Weak organization
-  IS59 Lack of funding for CRM
-  IS63 Boundary dispute



**Figure 3.6. Coastal resource map of Inabanga, Bohol.**

INABANGA

**Legend:**













**HABITATS**

	Sandy Beach
	Rocky Shoreline
	Inshore Flats
	Seagrass Beds
	Coral Reef
	Estuary
	Mangrove
	Terrestrial Zone
	Marine Zone
	Mudflats
	Offshore sandbars

**RESOURCES**

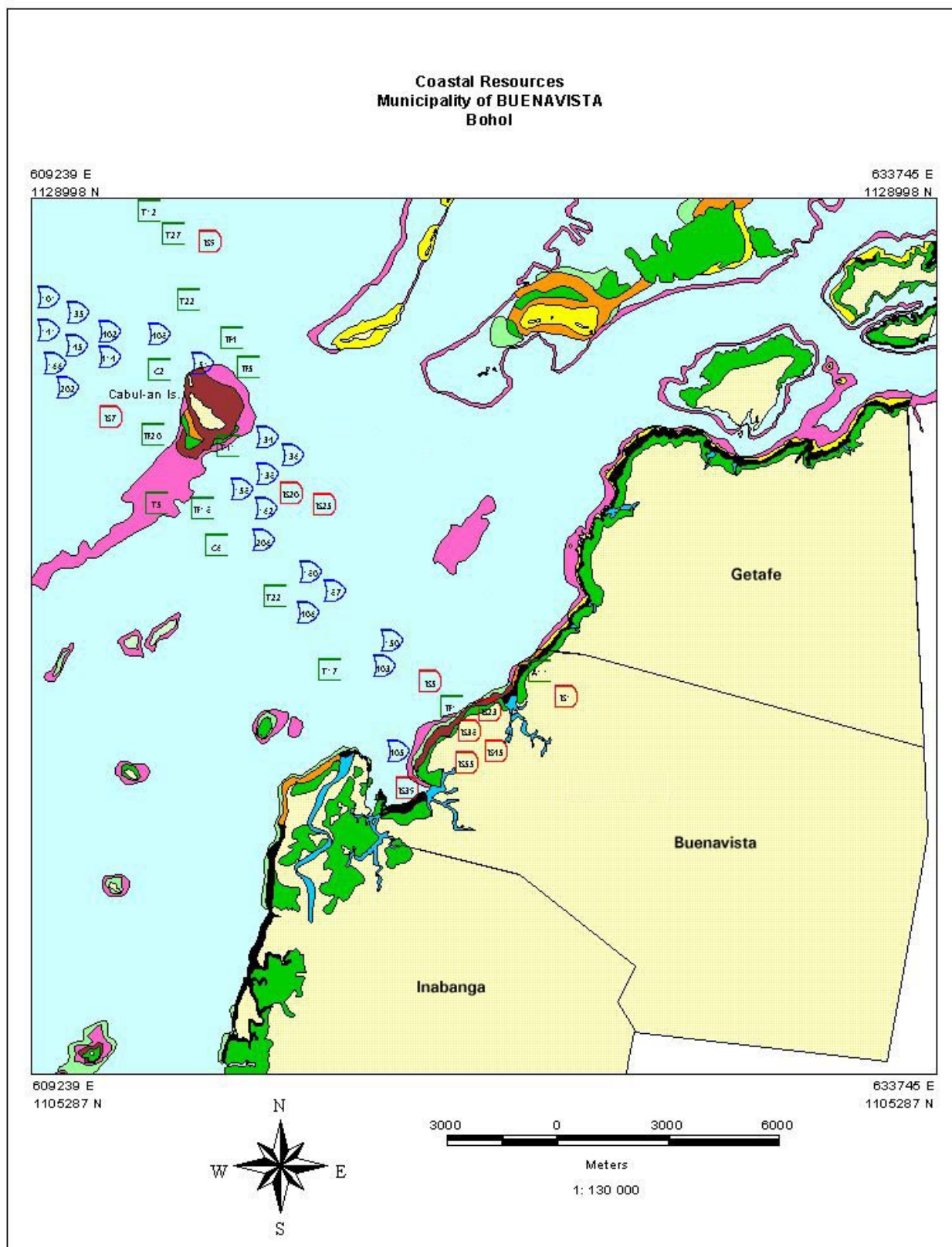
	Anchovies
	Fusiliers
	Garfish, needlefish
	Goatfish
	Groupers, seabasses, perchlets
	Halfbeaks
	Jacks and cavallas
	Milkfish
	Moray eels
	Mullets
	Parrotfish
	Rabbitfish, spinefoot
	Sardines and herrings
	Large shrimps and prawns
	Blue crabs
	Nautilus
	Giant red squids

**USES**

	Fishponds/shrimp ponds
	Protected areas
	Drive-in nets with various scaring devices
	Modified danish seines
	Poisons/noxious substances
	Crab lift nets
	Fish corrals
	Fish pots and crab pots
	Hook and lines/handlines/droplines
	Jiggers
	Multiple hook and lines

**ISSUES**

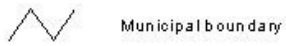
	Abandoned/unproductive fishponds
	Beach/shoreline erosion
	Breakage of corals
	Declining fish catch
	Destructive fishing
	Encroachment on the fishing ground by outsiders
	Illegal fishing
	Illegal fishponds
	Overfishing
	Reclamation
	Siltation
	Boundary dispute



**Figure 3.7. Coastal resource map of Buenavista, Bohol.**

BUENAVISTA

**Legend:**



**HABITATS**

- Sandy Beach
- Rocky Shoreline
- Inshore Flats
- Seagrass Beds
- Coral Reef
- Estuary
- Mangrove
- Terrestrial Zone
- Marine Zone
- Mudflats
- Offshore sandbars

**RESOURCES**

- Anchovies
- Fusiliers
- Garfish, needlefish
- Goatfish
- Groupers, seabasses, perchlets
- Halfbeaks
- Jacks and cavallas
- Milkfish
- Mojarra
- Parrotfish
- Rabbitfish, spinefeet
- Sardines and herrings
- Slipmouths
- Stingrays
- Tunas and mackerels
- Wrasses
- Cuttlefish
- Large shrimps and prawns

- Mud/mangrove crabs
- Blue crabs
- Octopuses
- Squids

**USES**

- Fishponds/shrimp ponds
- Compressor
- Trawls
- Drive-in net with bamboo/tree trunk and scare devices
- Explosives
- Fine mesh nets (<3cm) for unexempted species
- Gears banned by local legislation (e.g. beach seines, baby trawls, modified danish seines)
- Poisons/noxious substances
- Bottom set gill nets
- Drift gill nets
- Fish corrals
- Hook and lines/handlines/droplines
- Multiple hook and lines
- Spears

**ISSUES**

- Abandoned/unproductive fishponds
- Coliform pollution
- Coral extraction
- Declining fish catch
- Fishing gear conflicts
- High cost of fishing inputs
- Illegal fishing
- Mangrove conversion
- Mangrove overharvesting
- Reclamation
- Waste dumping

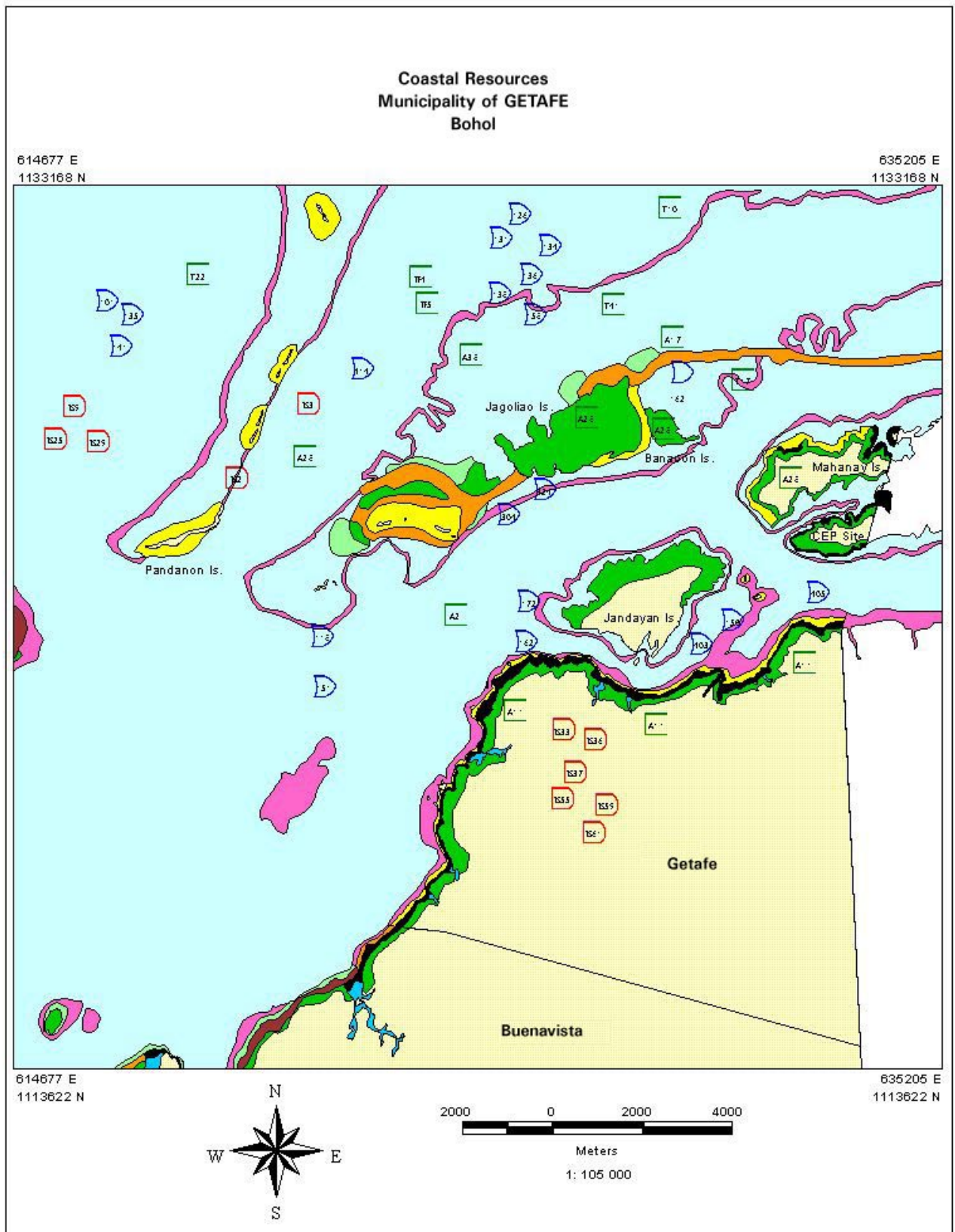




Figure 3.8. Coastal resource map of Getafe, Bohol.

GETAFE

**Legend:**



-  Municipal boundary
-  CEP Coastal Environment Program

**HABITATS**












-  Sandy Beach
-  Rocky Shoreline
-  Inshore Flats
-  Seagrass Beds
-  Coral Reef
-  Estuary
-  Mangrove
-  Terrestrial Zone
-  Marine Zone
-  Mudflats
-  Offshore sandbars

**RESOURCES**

-  101 Anchovies
-  118 Croakers
-  126 Emperor breems
-  131 Flatheads
-  134 Fusiliers
-  135 Garfish, needlefish
-  136 Goatfish
-  138 Groupers, seabasses, perchlets
-  141 Halfbeaks
-  150 Milkfish
-  151 Mojarras
-  159 Parrotfish
-  162 Rabbitfish, spinefeet
-  172 Seahorses
-  204 Bubble shells
-  324 Miter shells
-  400 Large shrimps and prawns

-  405 Mud/mangrove crabs
-  414 Squids

**USES**

-  A2 Anchorage
-  A11 Fishponds/shrimp ponds
-  A17 Mangrove plantations
-  A28 Protected areas
-  A38 Seaweed culture
-  IF4 Explosives
-  IFS Fine mesh nets (<3cm) for unexempted species
-  T10 Dip nets
-  T17 Fish corrals
-  T22 Hook and lines/handlines/droplines
-  T41 Spears

**ISSUES**

-  IS2 Beach/shoreline erosion
-  IS3 Breakage of corals
-  IS9 Declining fish catch
-  IS25 Illegal fishing
-  IS29 Lack of law enforcement
-  IS30 Lack of social services
-  IS36 Low environmental awareness
-  IS37 Low prices of fishery products
-  IS55 Waste dumping
-  IS59 Lack of funding for CRM activities
-  IS61 Rapid population growth



Confiscated illegal fishing gear on show at the "Saulog sa Dagat" or Festival of the Sea.



Fiddler crabs in a mangrove area... each small organism contributes to the high productivity of mangrove areas.



Planning for management with coastal community members. (Photo by Calixto Yao)



CRMP enterprise development specialist, discusses the pros and cons of Eucheuma farming.



An island community mapping their resources through a participatory coastal resource activity.



Fisherfolk of Cabilao Island, conducting regular community-based monitoring along fixed transect in Cabacongan, Cabilao, Loon, Bohol.



Starting them young... schoolchildren planting mangroves. - Inabanga. (Photo by Calixto Yao)



*Squid jigger in Buenavista. An average catch of 2-3 kg per night is considered lucky nowadays.*



*Typical sailboats, Inabanga*



*Nipa palms are economically important in Bohol but the demand for nipa thatch as roofing material has declined in recent years.*



*Governor Rene Relampagos (with mangrove bonsai) and Vice-Governor Edgar Chatto at the CRMP booth during the Saulog sa Dagat Celebration in Buenavista.*



*By-catch from a beach seine. This fishing gear scrapes the bottom of the sea and destroys the very habitat upon which fishes and other organisms depend.*



*Collecting tihi-tihi (sea urchin roe). After crushing the sea urchins (tuyom, sawaki), the roe is scraped, placed inside empty rum bottles (lapad), and sold at P30-50 per lapad.*

**SUMMARY**

Deposits of copper, manganese, silica and phosphate have been reported as present in the northwestern municipalities of Bohol. Mining and quarrying, however, have been concentrated on limestone and river sand for construction purposes. The collection of sand especially from small islands has created a controversy with the reported disappearance of some islands off Tubigon and Clarin. Meanwhile, the municipalities have no major forest resources except mangrove areas some of which are classified as "protection forests".

The coastline of northwestern Bohol has many of the coastal resources and ecosystems typical to the Philippines. Mangroves, for example, stabilize coastal erosion, filter the water that flows towards the sea, serve as breeding ground for various fish species, and provide a habitat for economically important organisms such as shellfishes and crustaceans. The nearshore areas are mainly seagrass and algal beds while the open waters have a high population of zooplankton. Good coral growth has been observed on reef slopes but there is no excellent live hard coral (LHC). More than 100 species of fish, mostly reef-associated, have been recorded. This is low by Philippine standards and can be attributed to the intense fishing effort on most reefs regardless of coral cover. Most of the fish are undersize, also indicating severe overfishing in the area.