

# About resources



**55. Let us talk about what coral reefs can give us. Tell me something about that.**

I guess after listening to me about fish, shrimp, crab and lobster brings fish food to mind!

The reefs abound with food fish. Most of them live in the lagoon. Some fish like tuna and sharks live outside the reef but come closer to the reef to feed on the small fish. The biological productivity of the reefs is very high. We can get from a unit reef area as much fish as from rich fishing grounds like the Peruvian upwelling known for record anchovy catches.



**56. But I don't see any major fishing units near the reef.**

Fortunately, it is not easy to catch all reef fish as we do elsewhere with trawlers and seiners. The nature of the rocky bottom, presence of corals that can tear away the nets and the abrupt variations in depth, guarantee that no fishing net of mass catches can be used in a reef. Most of the fish can be caught only with lines or traps. Often what can be caught this way is more than enough for local needs.



**57. What about the small colourful fish? We can't eat them, of course.**

No, but we can sell them to aquarium hobbyists. The ornamental fish from reefs are far more colourful and diverse than those from freshwaters. The demand for these fish worldwide is so great that it is a lucrative industry in several third world countries. The Philippines is known to export every year aquarium fish worth several million dollars from her reefs.



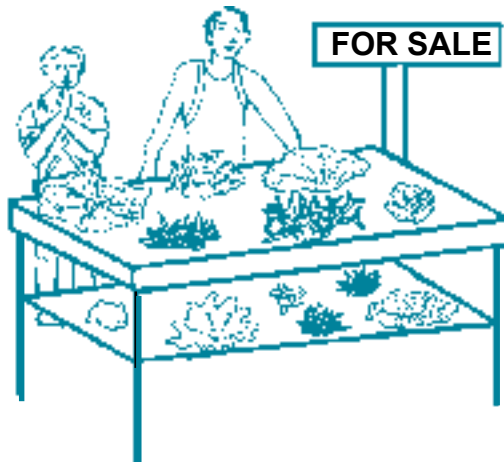
**58. What else is edible?**

The sea weeds, if you have a liking for them! In India, we don't eat them but some of these weeds are used for producing jellies, agar and cosmetics. There is a good potential for collecting seaweeds from the reef or even cultivating them in the lagoon. In some reef areas the local people relish the Octopus and the giant Clam.



**59. What other useful things has the reef to offer us?**

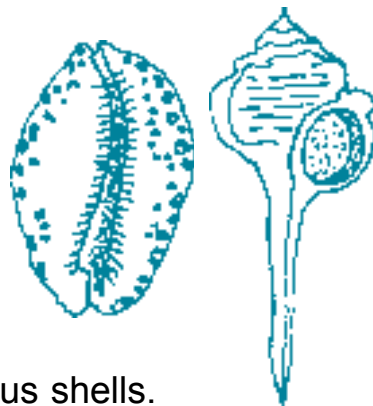
The corals themselves, of course. In most of the villages bordering coral reefs, houses are built only with coral stones and mortar from coral debris. Even whitewashing is done with coral lime paste. At an industrial level, the coral sand rich in calcium is a potential raw material for the cement industry.



Most often corals, particularly the branching ones, are also collected and sold as souvenirs. Curio shops near the reefs have stocks of them though it is forbidden.

**60. I have also seen shells being sold.**

Yes. The cowrie shells are the most popular though a large variety of other shells are also sold. Some shells are collected for industrial purposes also.



Do you know that, before the advent of plastics, even shirt buttons were made from the trochus shells.

Some large shells are cut and polished and sold as ornaments and bangles, ear-rings, studs, necklaces, pendants, finger-rings etc. This is again a large industry in the Indo-Pacific reefs, generating several million dollars worth of business every year.

**61. I read sometime back that corals can also be used as transplants. Is that correct?**

Yes. A substance for use as bone transplant should have nearly the same chemical composition as the bone, should be tough to give mechanical strength and at the same time porous enough to allow fine blood vessels to pass through. Among the several bio-materials, corals like the massive *Goniopora* are the best choice. Either we can cut a bone-shaped structure from the coral and use it as a transplant or better still, convert the skeletal material to hydroxyapatite, which is the mineral component of the bone. This forms a bond directly with the bone and hence can be used as a bone-replacing material; on implantation, this promotes new bone growth.

Coral skeletons also find use in dental applications, as materials to fill in cavities.

**62. Can we get medicines from corals?**

Not from hard corals, though some Ayurvedic preparations may include them. Most other organisms like soft corals, sponges, bryozoans, sea slugs, pufferfish secrete compounds that are bio-active.

It is like this. In a coral reef space is at a premium. Every organism tends to protect its space and when others encroach, it secretes some compounds to repulse them. These are basically antibiotics but may prove useful drugs for some human ailments.



The possibility of discovering novel products from these organisms has generated considerable interest worldwide. In India, NIO is doing research in this area for the last two decades. Some products extracted from sponges and soft corals have shown anti-viral properties.

### **63. What else can we get from reefs?**

Protection to our coasts. The reefs are natural walls that stop the strong waves and storm surges from reaching the shores. That is how the lagoon is calm even when the sea outside the reef is rough. This prevents shore erosion.



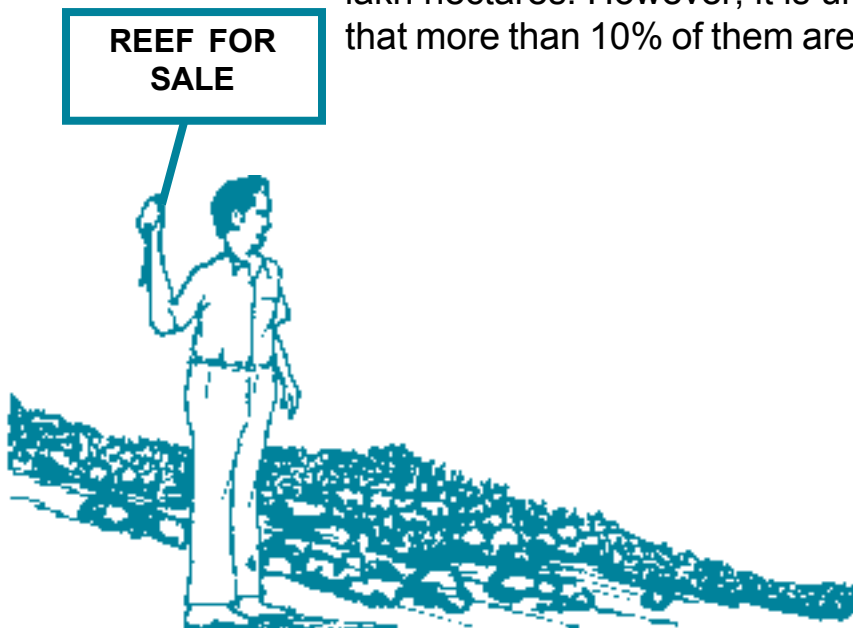
This type of protection is critical to the islands. Most of our

coral islands are small and low-lying. Even little erosion can affect them dramatically.

**64. Impressive! Can you put all these together and tell me what is the worth of a reef in hard currency?**

Difficult, because the extent of uses varies from reef to reef. Again the economic value of an activity is modified from region to region by cultural beliefs and traditions. On an average, the total economic value, in terms of extractive uses, is about 2750 US \$ per hectare reef area per year. Globally, all the reefs together (62 million hectares) have therefore a resource use value of about 170 billion US \$ per year. This is only a potential estimate since not all reefs are accessible at present.

Indian reefs cover an estimated area of about one lakh hectares. However, it is unlikely that more than 10% of them are used



them are used at present. Even at this level, the economic value of our reefs could be about 30 million US \$ (about 120 crore Indian rupees). But this is only half the story.

**65. This is very interesting. Tell me what is the other half?**

Tourism. What the reefs can offer you by way of aesthetics, recreation, and adventure cannot be matched by any other ecosystem, except perhaps tropical rain forests.

Tourism to coral reefs is a massive industry worldwide involving transporters, hoteliers, boat crew, diving gear operators, guides and a host of other auxiliary services. The current estimate of the economic value of coral reefs from this source alone is as much as that from other uses, and together can take the total economic value of coral reefs to more than 350 billion US \$ a year. If the present trend is any indication, it is ever- increasing.

