

## Harmless Trade? The Hidden Cost of Coral Souvenirs

By: Daniel (Ziyin) Liu

“Don’t put it in your carry-on,” the woman whispers. She pushes a calcified, bone-white branch across the table, wrapped in an old newspaper. “The scanners at the airport will flag the shape. Use the postal service, or hide it in the trunk of your car. If they ask, tell them it’s just a sea stone flower.”



*Picture 1.* Coral reef fragments packaged for retail sale in Xidao. (Photo by author)

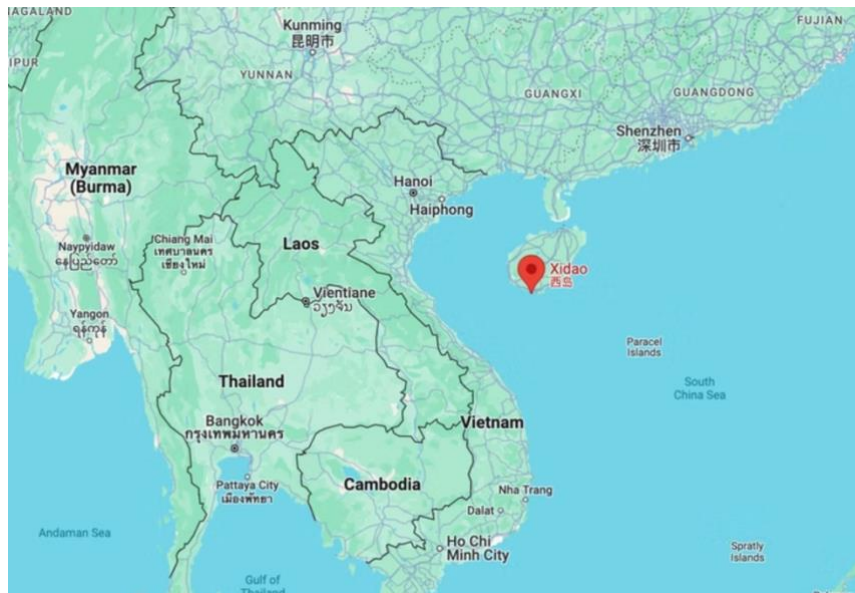
This conversation happened two years ago when I visited Xidao, a fishing village off Hainan Island. The island is home to a thriving domestic coral nature reserve. Yet it has also become a frontline for the illegal harvesting and sale of coral reefs. During my visit, I conducted a small field investigation into this coral transaction. What I found was alarming. While these coral reefs are sold for as little as 20 yuan (about 3 USD) in local alleys, their removal represents a catastrophic loss for regional fisheries and the broader marine ecosystem (Liu 2024). The illegal coral trade in Xidao reveals how small souvenir markets can undermine fisheries sustainability.

Many people view coral reefs as underwater decorations. However, they serve as essential fish habitats, providing spawning, nursery, and foraging grounds for countless marine species, including commercially significant stocks. Empirical research from the Great Barrier Reef demonstrates that declines in live coral cover directly reduce the maximum sustainable yield of commercial reef fisheries, highlighting the dependence of fishery productivity on coral reef habitat (Liu, Li & Solow 2025).

Coral reefs are biological structures built over thousands of years through calcium carbonate secretions of tiny polyps. They act as natural breakwaters, absorbing up to 97% of wave energy while

supporting nutrient cycling in tropical waters (Coral Reef Alliance 2024). Despite covering less than 1% of the ocean floor, coral reefs support more than 4,000 species of fish and approximately 25% of all marine life (UNEP 2024). This biodiversity includes commercial stocks such as groupers, which rely on the coral reef for spawning and protection from predators (Coral Reef Alliance 2024).

Because most corals grow at a very slow rate, often less than two centimeters per year, the removal of a single coral reef represents the destruction of decades of biological growth (NOAA National Ocean Service, 2024). When these coral reefs are removed, the foundation of the marine environment is put at risk.



Picture 2. Geographical location of Xidao. It resides at the very southern end of the Hainan province of China. (Photo by Google Map).

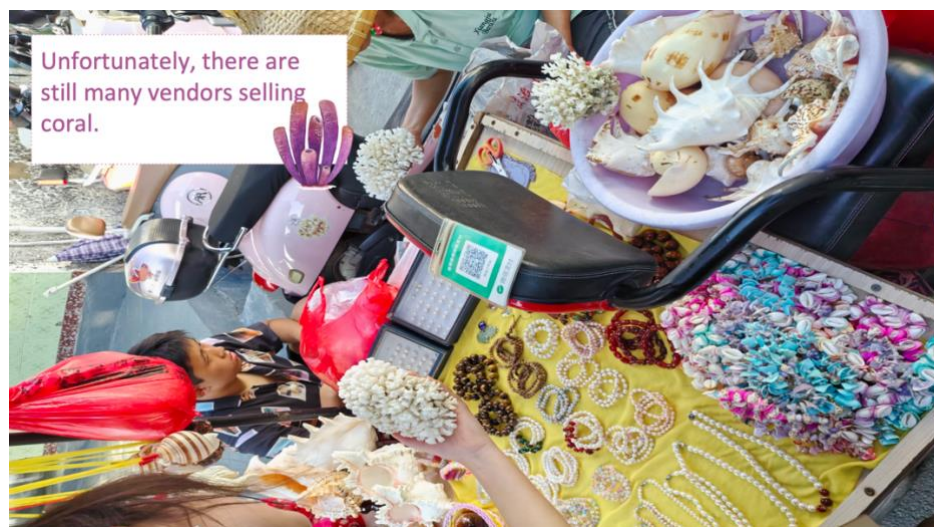
In southern Hainan, coral reef coverage has decreased to approximately 11%. More importantly, the coral cover rate in eastern Hainan plummeted from 32.2% to just 6.67% between 2006 and 2018 (Liu 2024). Although climate change could cause the bleaching of coral reef, this decline in the population of coral reef is not just a result of climate change. It is also driven by local human activity. On Xidao, research reveals that a staggering 83% of marine craft shops sell coral or provide channels to purchase it. Of the five local vendors interviewed, four were involved in the trade, often hiding coral bone pieces, typically 10 x 10 x 10 cm in size. These vendors would call it the “sea stone flowers” (Liu 2024).

Many vendors, like those encountered in the Xidao alleys, claim their stock is harmless and natural or simply selling old stock. In fact, many vendors would have ships go out in the middle of night and have divers to collect coral reefs from the ocean.

	Character image	Can I buy coral?	Do they know that coral is an illegal trade item?	Coral Reef Price (Yuan)
Subject A	Next to the alley, the owner of the roadside eatery is a middle-aged local woman who is warm and hospitable. The stalls are lined with a dazzling array of shell crafts, all legally sold and unrelated to any illegal transactions, showcasing the simple charm of rural life.	The store doesn't have it, but we can call someone or have someone introduce us to a purchasing channel.	Yes	200~10000
Subject B	The street and alley vendors specializing in marine craft items are an elderly couple, local villagers. (Inside the shop, there is a piece of coral bone approximately 10*10*10 in size).	Yes	Understood. They claim that what they are selling is not coral but "sea stone flowers," which are flowers that grow out of stones.	25
Subject C	The owner of a small shop selling marine craft products in the street's alley, middle-aged, and a local villager. (The shop also has a piece of coral bone with dimensions of 10*10*10.)	Yes, there are several pieces of coral hidden in the shop.	Well-versed in the field, calling coral "sea stone flowers," air transport is prohibited, only postal and self-driving delivery are allowed. Selling stock, claiming it is harmless and natural.	25~30
Subject D	The owner of a small shop in a street alley, a middle-aged woman, came to the area twenty years ago. (The shop is not a removable stall, and the products are clearly categorized.)	No, everything for sale is legal.	Understand very well, and also know about the process of coral being sold, but do not sell coral.	N/A

*Table 1.* Summary of field investigation findings documenting vendor participation in coral trade, awareness of illegality, and pricing ranges (Liu 2024).

The vast majority of vendors are fully aware that their actions are illegal. This highlights a critical failure in enforcement and a prioritization of short term economic gain over long term sustainability. This could result in the collapse of local fishery stocks, like groupers, which local fisherman from Xidao depend on for their livelihoods (Liu 2024).



*Picture 3.* Coral fragments openly displayed for sale in Xidao. (Photo by author)

When reef structures are removed, the complexity of the habitat is lost. Reef structural complexity directly influences fish recruitment, biomass, and catch yields. Juvenile fish depend on branching corals for shelter from predators, while many commercially important species such as groupers and snappers rely on reef habitats during critical life stages (Castaño et al. 2021). This does not only happen in Xidao. According to a report by the National Oceanic and Atmospheric Administration,

hundreds of thousands of kilograms of corals and live rock are traded each year alongside to satisfy the global demand for marine aquaria and souvenirs (Bruckner 2001). This will result in a threat to the economic stability of coastal communities.

Protecting coral reefs requires moving beyond awareness toward active preservation. Stricter enforcement of existing regulations with punishments, improved inspection standards, and coordinated monitoring of trade routes are necessary to disrupt illegal supply chains. Public education must also target tourists, who drive demand by purchasing coral souvenirs. Without demand, there will not be supply. Refusing to buy coral reduces the amount of people that harvest coral reefs illegally. Finally, education to the people within local communities can help shift perspectives toward recognizing coral reefs as long-term ecological assets rather than short-term profits.

**NOT A DECORATION, CORAL REEFS BELONG IN THE OCEAN.**

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