Chapter 9
FISHERS (AND SCIENTISTS) ARE TALKING ABOUT...
(Issues and Management Considerations)

It is not always readily obvious how some of the issues identified by San Vicente's fishers in the resource mapping and transect diagramming sessions relate to coastal resource management. It is not easy to connect, for example, the lack of clean water or schools or health facilities to marine conservation.

A closer look at the lives of the people in coastal villages, however, leads to a greater understanding of the daily constraints they face as they strive to earn a living amid the uncertainties of their existence. The problem of lack of schools takes on a new dimension when placed in the context of young people being driven into early marriages by lack of educational opportunities, thereby exacerbating population pressures that lead to greater resource exploitation.

Another problem often mentioned is the absence of adequate health care in most villages. When a member of the family gets sick, the patient has to be transported to town centers for treatment, and the family gets mired in debt. To raise money, some households resort to illegal but

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highly profitable fishing methods, such as dynamite fishing, so they can pay off their debts.

Lack of potable water is also related to the cycle of illness and debt, and it also has an impact on the people's ability to produce food for themselves especially during the lean fishing season. Without water, residents cannot have vegetable gardens and have to rely on rain for their rice farms.

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The absence of roads, and bridges that need repair, cause problems in marketing fish catch. Even when the fishers enjoy a bountiful catch, they are not able to profit from the sale of their harvest. Without farm-to-market roads (or, in this case, fishing village-to-market roads), fishers have to depend on buyers who go to their villages and dictate seafood prices.

In the Silliman University study, researchers identified the use of sodium cyanide, dynamite, and compressor-aided fishing as the primary causes of coral reef degradation in San Vicente. They also mentioned trends leading towards greater exploitation of marine resources – that is, overfishing — as another cause for concern.

Participants in the barangay mapping sessions identified 30 issues prevalent in most communities. These issues are listed in Figure 9.1, and are also found in the coastal resource maps of each barangay (see Chapter 4).

Most of the issues identified by the fishers fall under four rough categories: impact of land-based activities, resource use, resource access, and social services. These issues were also mentioned and sometimes explained in greater detail during the transect diagram session and interviews conducted by the PCRA team. Table 9.1 summarizes these issues and puts them in the context of habitat, so it is easier to see where the problems are and what solutions can be prescribed. Again, it is important to note that the perpetrators of some activities — for example, illegal fishing – are not necessarily residents of San Vicente.

The International Marinelife Alliance - Philippines, in its 1996 study on San Vicente, also asked villagers about particular issues related to destructive fishing. The group reported that most fishers interviewed were hesitant to talk about the use of

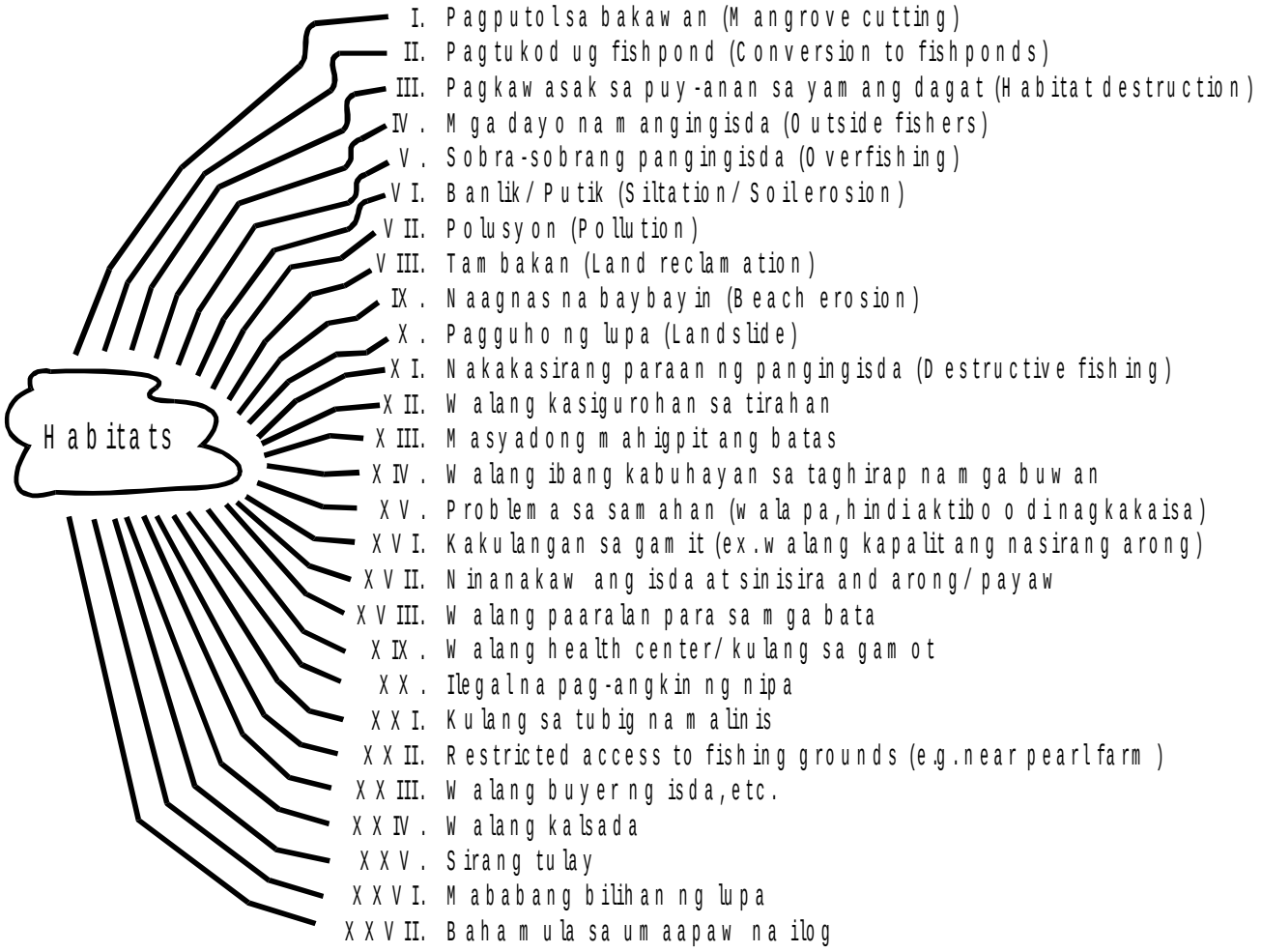

Figure 9.1. Major coastal resource management issues in San Vicente, PCRA 1997.

sodium cyanide. It also noted that the "Baywatch team" of the municipality lacked personnel, gasoline for their patrol boats, and other logistical needs. Moreover, the dismissal of many illegal fishing cases by the local court discouraged authorities from strictly enforcing fishery laws. The study cited "lack of political will on the part of local officials" as a factor in the continuing use of destructive fishing methods in San Vicente, without going into details.

During the PCRA session on Trend Diagrams, the facilitators found it difficult to measure fish catch and establish trends because of the transient nature of most fishing communities and the highly seasonal cycle of their sources of livelihood. In

Table 9.1. Summary of coastal resource management issues in San Vicente, PCRA 1997.

CATEGORY OF ISSUES	BEACH	INSHORE FLAT	LAGOON/ BAY	OFFSHORE CORAL REEF	ISLAND/ MANGROVE	DEEP OCEAN
Impact of Land-Based Activities Resource Use	● pollution from silica mine and domestic waste ● landslide ● erosion ● floods due to logging	● diminishing bangus fry due to pollution from silica mine ● fewer shells due to siltation ● use of *tubli*		● siltation from logging		
Resource Access	● squatting ● land reclamation for logging camp ● lack of alternative livelihood ● weak organization ● land sales	● lack of knowhow in bangus fry harvest ● too much gleaning	● strict laws ● fewer fish, more fishers ● use of baby purse seine ● pearl farm bans fishers	● muro-ami fishing ● use of compressor, dynamite & cyanide ● theft of *arong* ● pollution from big boats	● illegal construction of fishpond ● cutting of mangrove forests	● dynamite & cyanide fishing ● use of compressor ● lack of gear (e.g. nets, big boats) ● use of *pangulong*
Basic & Social	● no land tenure ● restricted access to homestead (Caruray) and fishing grounds (Sto. Niño) ● lack of roads		● users' rights ● outsider owns fish corral (Catalat) ● use of compressor ● lack of fishing gear	● outside fishers causing decline in fish catch	● restricted area ● ownership of island (Garcia in Caruray) in question ● illegal nipa claim	● commercial fishers from other provinces getting all the fish ● too many fishers
Services Environmental Factors	● lack of nutrition ● dense population ● lack of schools, communication system, seaports, cooperatives, credit facilities, clean water, health centers ● *lumot* & garbage during southwest monsoon ● floods	● channel for boats too narrow (old site in Caruray)		● no market for fish catch		
			● channel for boats too narrow (old site in Caruray)		● cannot fish when the sea is rough (Isla Manok)	

many villages, most fishers engage in farming during the rainy season. Also, they use different gears depending on what is considered the most efficient during a certain period, so the volume of fish catch may not necessarily reflect the productivity of the sea through the years. For example, the rampant use of illegal fishing methods and bigger nets in the mid-1980s could be the main reason for better catch during that period and not the presumably relatively healthier conditions of the coastal environment (See Figures 9.2, 9.3, 9.4, 9.5).

The dismissal of many illegal fishing cases by the local court discouraged authorities from strictly enforcing fishery laws.

Our interviewees in San Vicente agreed that fish catch had been declining steadily in recent years, following the national trend. Most of them attributed the decline to the introduction of highly efficient but destructive methods, such as the use of dynamite and *muro ami* in catching fish. In areas where fishery productivity showed improvement in the last three years, interviewees credited the municipal government's marine conservation programs for increases in their fish catch. There were questions about the sustainability of these programs, however, given the weakening of fishers' organizations and lack of material support for their projects.

Samples of the trend diagrams drawn by the fishers of San Vicente are shown in Figures 9.2 to 9.5.

An analysis of management issues for Port Barton is presented in Table 9.2. This reveals a tale of problems somewhat indicative of the whole of San Vicente and Palawan Island.

Table 9.2. Management issues and their causes Port Barton

I. Impact issues		
use/activity	***environmental change***	***impact of social concern***
1. blast fishing, mostly by migrant fishers and occa sionally by locals	overfishing, destruction of reef structure, decreased habitat diversity, major changes in the biological communities on reefs	decreased fish yield, decreased tourism attraction, decreased income, waste of resources
2. fishing for live food fish using sodium cyanide	death of corals and other marine organisms, major changes in the biological communities on reefs	decreased fish yield, decreased tourism attraction, public health hazard
3. fishing using drag nets like beach seines	destruction of seagrass beds, physical alteration of sea bottom, disturbance of benthic communities, growth overfishing	decreased fish yield, decreased income
4. spearfishing with the aid of compressor	depletion of large bottom, slow growing, late maturing, low fecundity, sequentially hermaphrodite species	decreased fish yield, decreased income, health hazard (lung damage)
5. fishing using fine-mesh fish nets	growth overfishing, high incidence and waste of by-catch	decreased fish yield, waste of resources
6. fishing using Danish seines	growth overfishing, non-selective extraction, physical alteration of sea bottom	decreased fish yield, conflict among fishers
7. encroachment of commercial fishing boats using highly efficient gears	overfishing	decreased fish yield, conflict between commercial and municipal fishers, decreased income
8. catching of spawners	recruitment overfishing	decreased fish yield
9. catching of protected species like marine turtles	extirpation/local extinction of protected species	loss of biodiversity
10. intensive fishing effort	overexploitation of fish stocks	decline in overall catch, reduction in size of individuals taken, changes in species composition, longer fishing time, reduced profitability or incurrence of losses
11. encroachment of tourism facilities like cottages, bars and moorings in foreshore lands and beaches	physical alteration/in-filling, potential interference with natural patterns of longshore sediment movement eutrophication, spread of pathogens,	increased coastal hazard, reduced aesthetic quality, conflict with local population over access, site degradation
12. discharge of domestic and tourist solid and liquid waste	contamination of fish and shellfish, beach pollution coral damage, disturbance of other	public health hazard, coral reef degradation, decreased fish yield, decreased tourism attraction
13. boat anchoring on the reefs	benthic organisms physical damage of coral reefs	reduced aesthetic quality
14. increasing number of tourists	erosion, increased sediment load of	reduced aesthetic quality
15. inappropriate agricultural practices	coastal waters, coral damage increased sediment load of coastal	decrease in fish yield
16. deforestation	waters, coral damage physical alteration/in-filling, potential	decrease in fish yield
17. local residential development in beaches and foreshore lands	interference with natural patterns of longshore sediment movement	increased coastal hazard, reduced aesthetic quality, site degradation

II. Institutional issues

1. weak fish warden association
2. inactive community organizations
3. community organizations lack capital build-up and experience in running income generating projects
4. lack of knowledge about fishery laws, particularly their specific prohibitions, penal provisions and rationale
5. low public awareness about marine mammal conservation
6. non-enforcement of the beach seine ban
7. theft of mooring buoys
8. lack of implementation of measures to limit fishing effort
9. absence of information campaign about existing fish sanctuaries
10. inadequate logistical and legal support for law enforcement

III. Development/planning needs

1. tourism management that is sustainable, equitable, compatible with both visitor satisfaction and reef health, and within limits of acceptable change
2. non-capture fisheries-based livelihood promotion that uses local materials and includes skills training, financing and marketing support
3. family planning campaign to reduce population growth and pressure on the natural resources

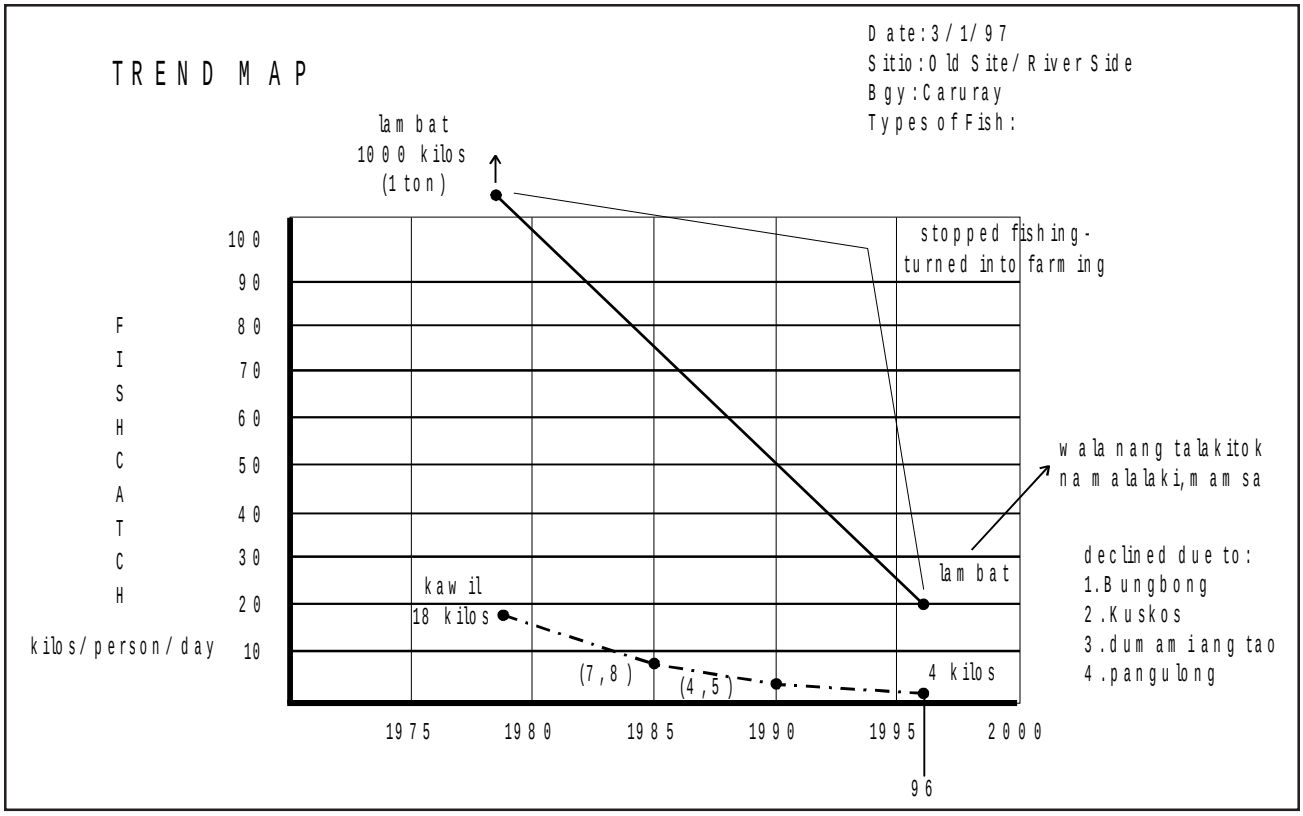

Figure 9.2. Trend diagram for Sitio Old Site, Caruray.

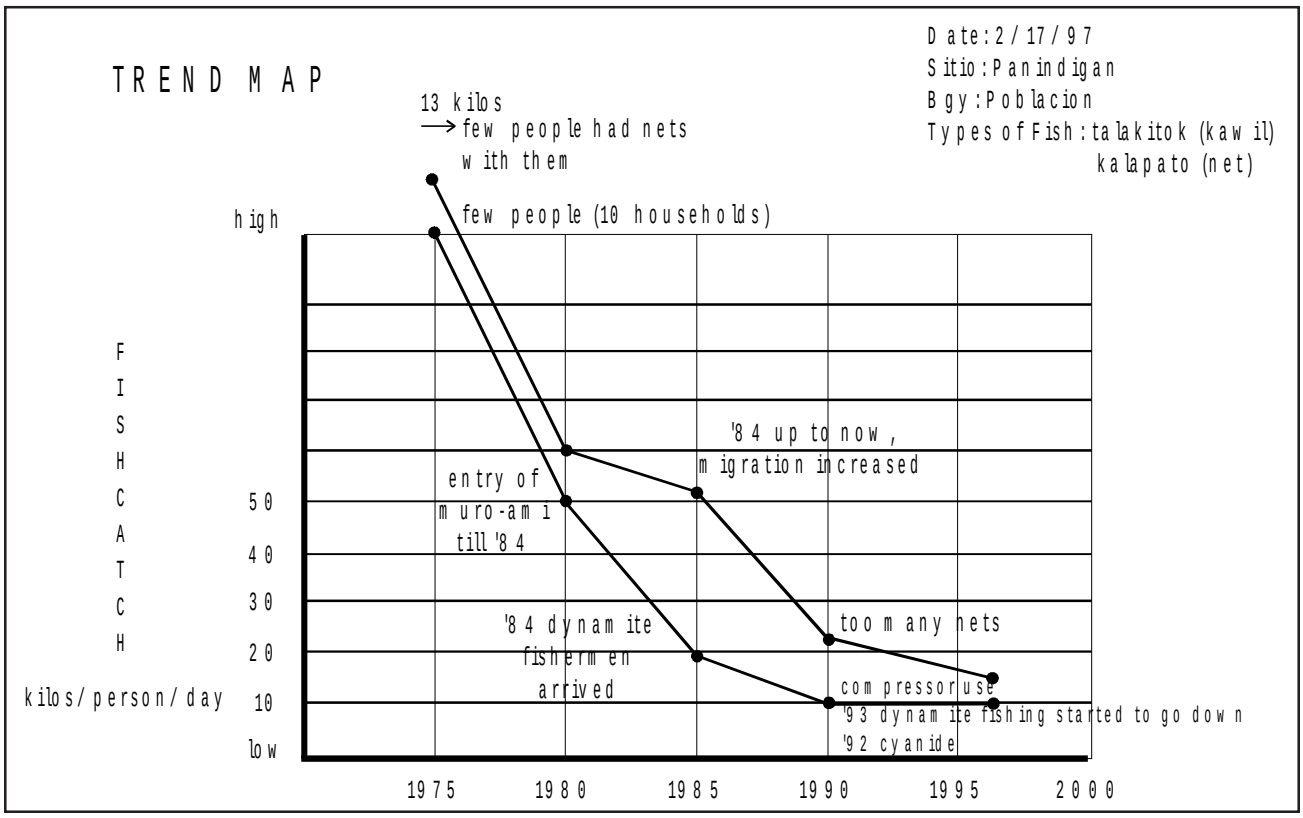

Figure 9.3. Trend diagram for Sitio Panindigan, Poblacion.

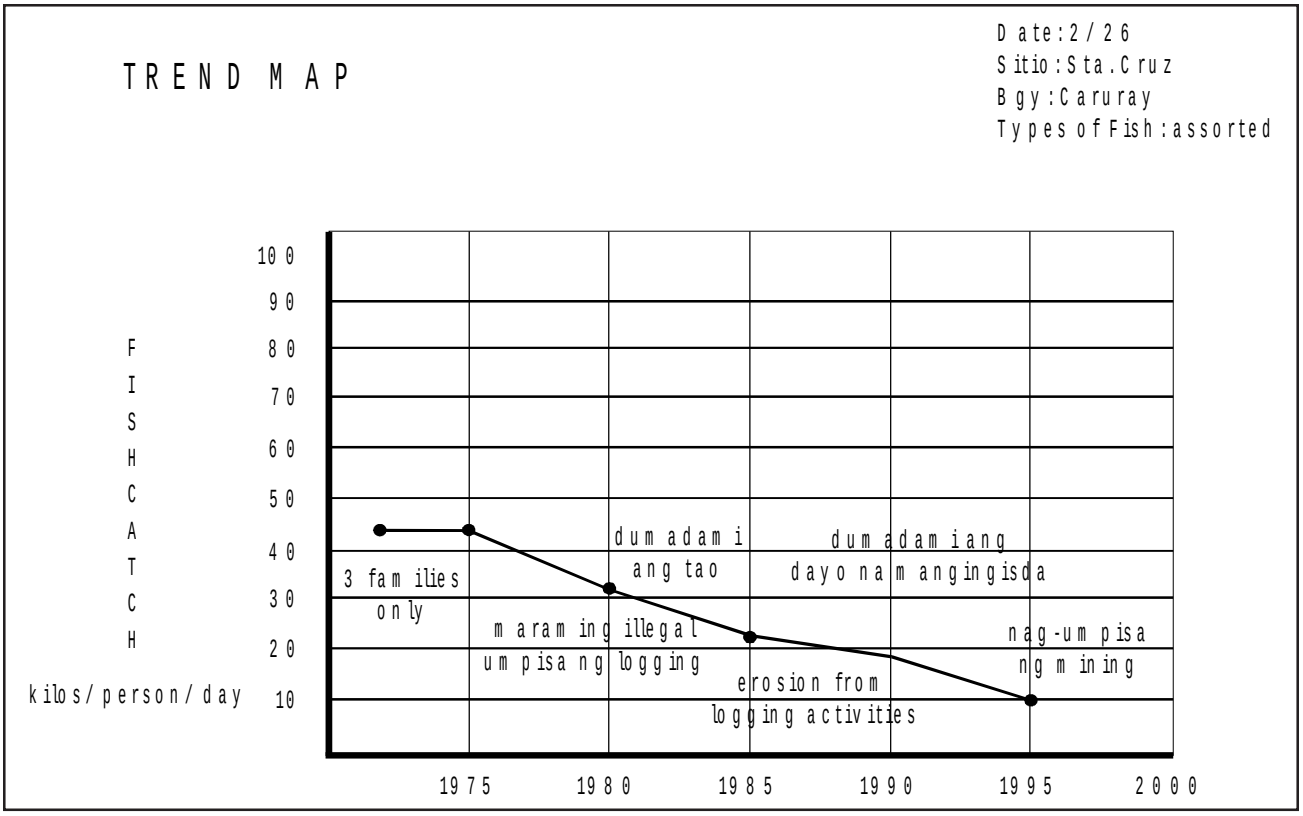

Figure 9.4. Trend diagram for Sitio Sta. Cruz, Caruray.

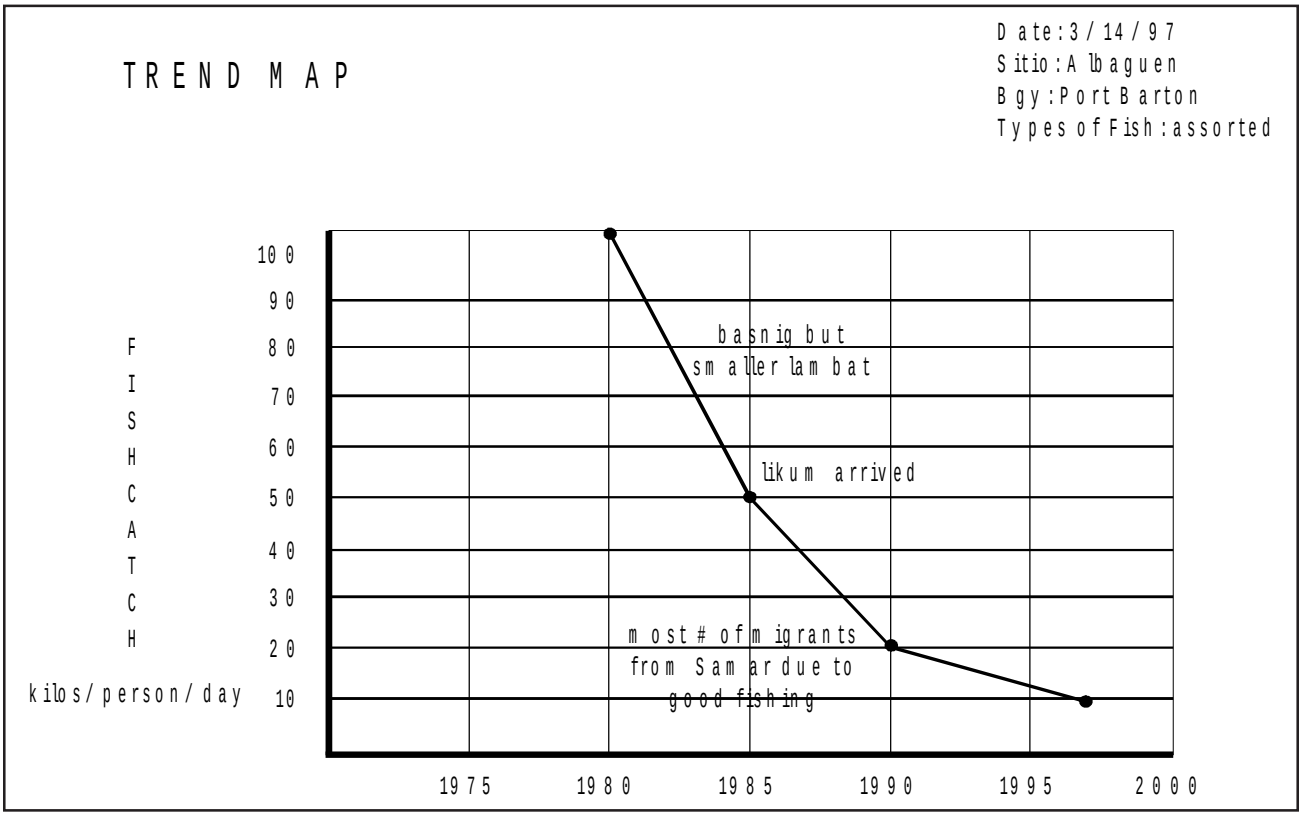

Figure 9.5. Trend diagram for Sitio Albaguen, Port Barton.