

## SMALL-SCALE FISHERIES IN THE TIME OF CHOLERA\*

Max Agüero Negrete

An ancient, small and dangerous visitor has returned to the Southwest Coast of Latin America, after hundreds of years, it is the *Vibrio cholerae* bacterium which causes the deadly cholera disease, showing its devastating effects first in Peru a few months ago and recently threatening neighboring countries like Colombia, Ecuador and Chile.

The cholera bacterium is transmitted among humans through the consumption of food produced with or in contact with contaminated waters. Vegetables irrigated with untreated waste water or fish in contact with contaminated water are the main vehicles for transmission of the disease. The *Vibrio cholerae* bacteria localize in the muscle tissue and digestive system of fish and crustaceans from where they are transmitted to humans.

Sanitary and preventive control measures aiming at the avoidance of consumption of fresh vegetables and fisheries produce has brought significant losses and damages to the fisheries sector, especially small-scale fisheries, in these countries.

In Peru, cholera has claimed several hundred lives since it first appeared early this year. A recent uncirculated government document reports that extractive activities in the fisheries sector have suffered a reduction of 23.3% between January and April this year as a consequence of the epidemic. Total direct consumption of fisheries products has declined 35% with respect to the same period last year, falling from 258,000 t in 1990 to 168,000 t in 1991 (Jan-April). Moreover, fresh fish consumption sharply declined by nearly 59% during the same period. Losses due to fish spoilage or inactivity of small-scale fishermen, who the main suppliers of fresh fish for human consumption, were very large.

In Chile, the disease has not yet reached an epidemic stage. However, it has caused significant concern among the population and government officials. Preventive

measures have caused losses to the small-scale fisheries sector due to unsold fish, reductions in demand and temporary fall in prices. News about the devastating effects of cholera in Peru induced massive reactions against consumption of fisheries products in local markets of Chile, with persistent changes in consumption behavior. Several tonnes of fisheries products were dumped in the streets of Santiago in mid-April, as a protest reaction of fish brokers to governmental campaigns against consumption of fresh fisheries products.

In Ecuador, according to Luis Arriaga O., Director of the National Fisheries Institute (INP), concern about the possibility of transmission of the bacteria via shrimp (larval and adult stage) has triggered a quality control campaign and the creation of a Committee for the Prevention of Cholera. This committee, composed of top government officials and fishing/shrimp industry representatives, is responsible for the overall planning, implementation and surveillance of appropriate control mechanisms in order to prevent the entrance and spread of cholera in the country. Regulations for cholera control and monitoring are according to standards proposed by the *Codex Alimentarius* of FAO and the United States Food and Drug Administration (FDA).

According to official data from the INP, total production of shrimp in Ecuador for 1990 was 76,505 t of which 91% was produced by shrimp farming activities in a total of 126,000 ha. The value of total shrimp exports the same year was US\$340

million (FOB) which amounted to about 15% of the total national export earning including oil exports. The shrimp industry provides employment to approximately 250,000 people in Ecuador.

One of the main concerns of the Ecuador shrimp industry with respect to cholera, is the possibility that *Vibrio cholerae* bacteria may enter the digestive system of the shrimp which is usually exported to the US markets fresh or quick frozen. Because of the stringent regulations in the US market, a slight contamination problem could lead to a ban on imports from Ecuador, similar to the grape situation in Chile a few years ago, with catastrophic results for the Ecuador shrimp industry.

In Colombia *Vibrio cholerae* bacteria may threaten the city of Tumaco's newly developing shrimp farming industry (approximately 1,000 ha in production), where untreated waste waters are dumped directly into Tumaco Bay.

Although by the end of June the cholera problem in the region seems to be fading away, the possibility of a reappearance in countries like Peru is still high. The general impoverished conditions of some countries of the region are the best environment for the bacteria to survive and reappear. Therefore, strong sanitary and preventive measures will be needed for some time before the area is cholera-free.

ICLARM / CEPAL  
Casilla de correos 179-D  
Santiago, Chile