

# Dynamite Fishing in Sierra Leone

JAN MICHAEL VAKILY

ICLARM

**H**e is 52. He looks much older. I will call him Mohamed. It is not his real name. I did not ask him. It was already difficult enough to convince him to meet me. For obvious reasons. Mohamed is a dynamite fisher. Dynamite fishing is illegal in Sierra Leone. It has always been illegal. Thus, he is reluctant to speak about it.

Mohamed lives in Kingtom, a bustling neighborhood at the outskirts of Freetown, the capital of Sierra Leone. He has practiced dynamite fishing since the 1960s until a few years ago. Why did he give up on it? A sad smile appears on his face and he looks down on his right hand. "This accident..." Two fingers are all that remain of his right hand.

Mohamed's life story reveals something unexpected: he has never been a fisher in the traditional sense. In his 20s he was a driver of transport vehicles going "up-line", i.e., to the provinces of Sierra Leone. This has been his main occupation for the past years.

How then did he happen to practice dynamite fishing? The answer reveals the dilemma of the less fortunate in a declining economy: his income as a driver was not sufficient to cover the fees and other necessary expenditures for his children to be sent to school. So he was looking for an additional source of income, compatible with his frequent travel outside

Freetown. The answer was dynamite fishing.

In those years, obtaining the material necessary for dynamite fishing seemed to be fairly easy. An expanding mining industry in the diamond-rich eastern provinces, the construction of a huge water reservoir in the vicinity of Freetown, these were sources of a constant (though unofficial) supply of dynamite and accessories. How does a dynamite fisher obtain his supply nowadays? Mohamed

affirms that this has become quite difficult. The supplier keeps the material at a hidden place, making a deal only with those he either knows or who have a person that guarantees for them.

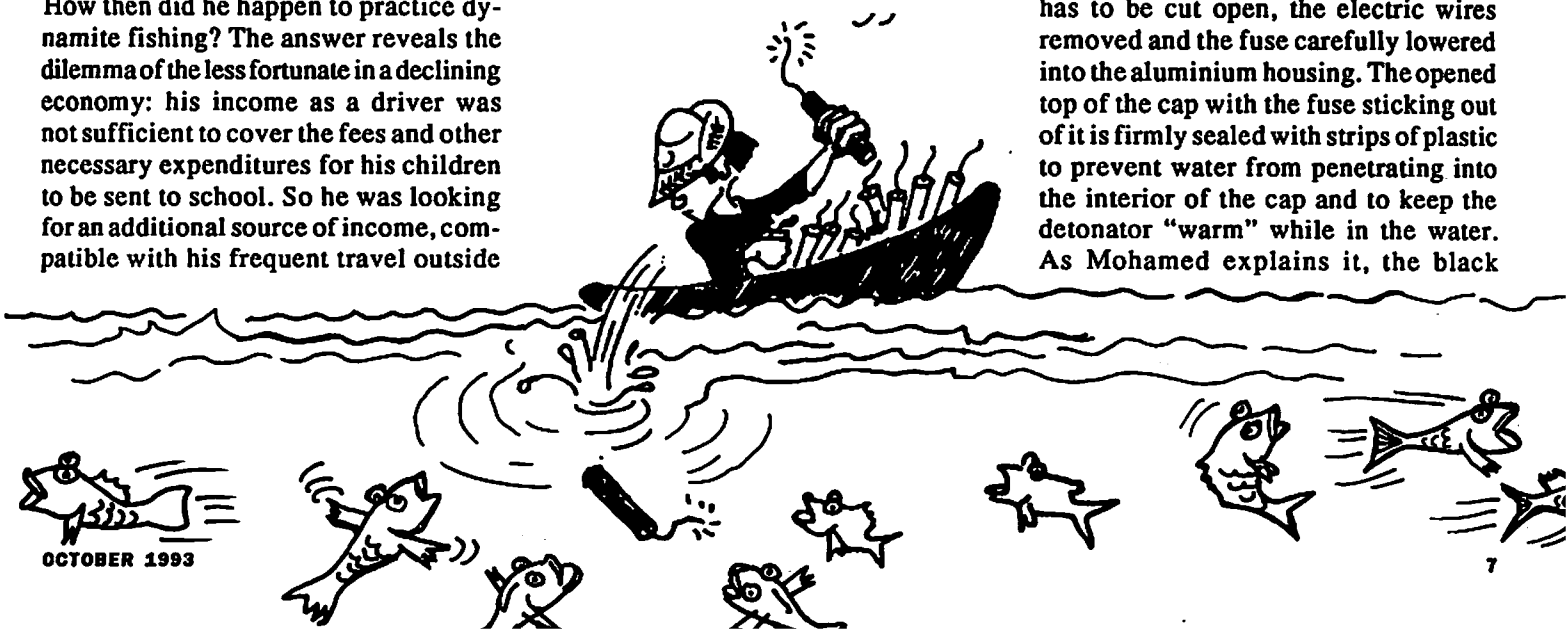
## The Material

Mohamed pulls out of his pocket something nonchalantly wrapped in a piece of paper: a small plastic bag filled with dynamite powder, the detonator, and the "fuse", a black cord about 7-8 cm long. The dynamite powder is called *kanya*, because of its similarity to a local specialty based on cassava flour mixed with sugar, a favorite among school children. The detonator, or cap, is a small cylindrical aluminium capsule, containing highly explosive black powder, with two wires emanating at the top. It is obviously the type of detonator used for remote ignition of blasting charges via electric cables.

To be useful to a dynamite fisher, the top of the detonator has to be cut open, the electric wires removed and the fuse carefully lowered into the aluminium housing. The opened top of the cap with the fuse sticking out of it is firmly sealed with strips of plastic to prevent water from penetrating into the interior of the cap and to keep the detonator "warm" while in the water. As Mohamed explains it, the black



The 'Ingredients' needed for dynamite fishing (from left to right): detonator, fuse and dynamite powder.



explosive powder inside the capsule loses some of its reactivity at lower temperatures.

The fuse, which - once ignited - continues to burn even under water, has the same function as the electrical wire: it leads the spark inside the detonator and explodes the powder in the capsule. The length of the fuse determines the time it takes to detonate the explosive charge. A length of 7 cm provides four minutes before the blast goes off. Up in the provinces, Mohamed says, they often use fuses of around 30 cm. After the charge is thrown into the water, the fish are attracted to the spot by feeding them for a few minutes, which leads to a higher concentration of fish at the moment of the explosion.

The actual explosive device needed to kill the fish is made by moulding the plastic bag containing the dynamite around the modified detonator such that only the top part of the fuse is still visible, while the rest of the detonator rests within the dynamite powder. The whole lot is then wrapped in a large piece of cement bag paper, with a string firmly tied around it, again making sure that a small part of the fuse still protrudes from the package. Cement bag paper is preferred because of its water-repellant properties.

In order to make the charge sink, stones are fastened to it.

This looks all fairly simple and straightforward. So, what makes this business so dangerous? Mohamed's voice becomes slightly hesitant. "It is when you cut open the caps..." The metal of the knife, when cutting into the explosive powder, can easily start the reaction that leads to the explosion of the detonator, especially

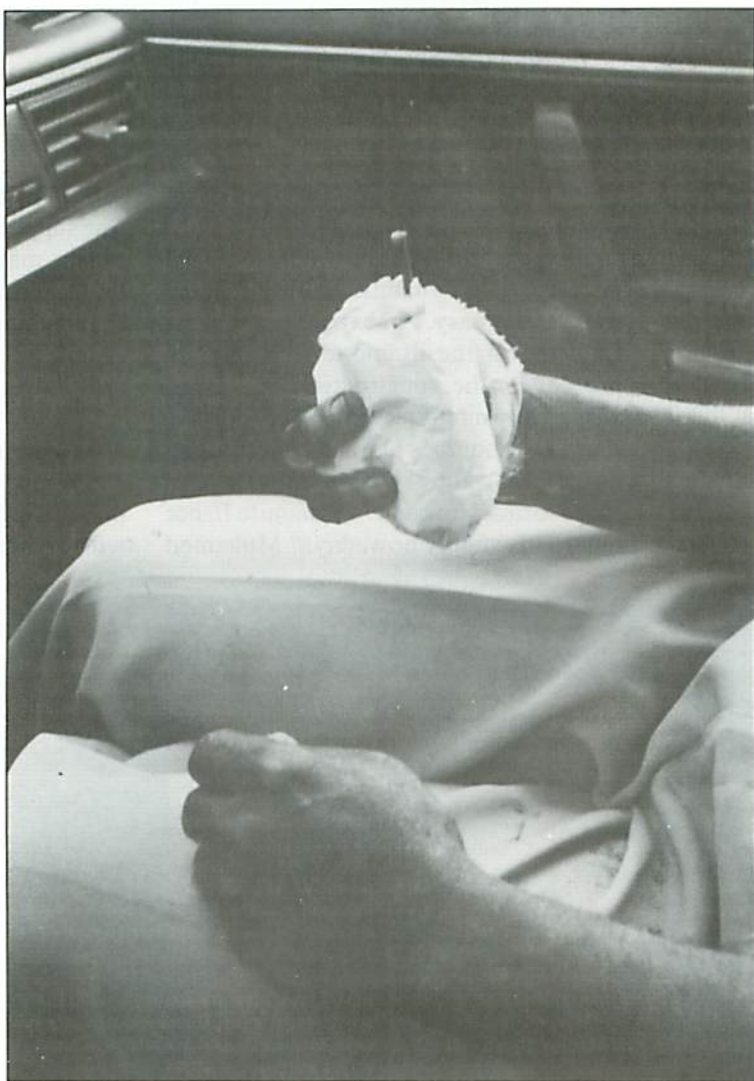
when the ambient temperature is very high. And then there are differences in quality! The European-made detonators are considered fairly reliable. But dynamite fishers in Sierra Leone often use detonators of Chinese origin, in which

Another bay a little further north near Congo Town was also notorious for this type of fishing, but its proximity to the naval base and a change of attitude by the military towards this kind of activity, has made it now off-limits.

The decision whether to go dynamite fishing depends largely on the observation of fish movements in the bay. If schools of small pelagics, such as sardines (*Sardinella maderensis*) or bonga (*Ethmalosa fimbriata*) are seen breaking the surface in the bay, the fisher knows by experience that these schools are usually followed by their larger predators, such as carangids or barracudas. This aggregation of fish in the bay seems to happen throughout the year without any pronounced seasonality.

If things look promising, the dynamite fisher would proceed to a place from which he could directly observe the fish in the water, such as protruding rocks or an abandoned jetty, or he would use a boat to go further into the bay. For the operation to be successful, clear water is essential. As Mohamed points out, from an elevated point one can easily detect the larger fish that swim beneath the small pelagics. The ventral part of their body reflects the light when they are quickly moving around in pursuit of their prey.

Once the dynamite fisher is convinced that he has a sufficiently large quantity of fish in his reach, he lights the fuse of the charge and drops it into the water. Though the immediate effect of the charge plunging into the water is that the fish are scared away, the four-minute interval before the charge explodes gives the fish ample time to return - and the fisher to run for cover. If the fuse has no hole, the spark is led into the aluminium capsule,



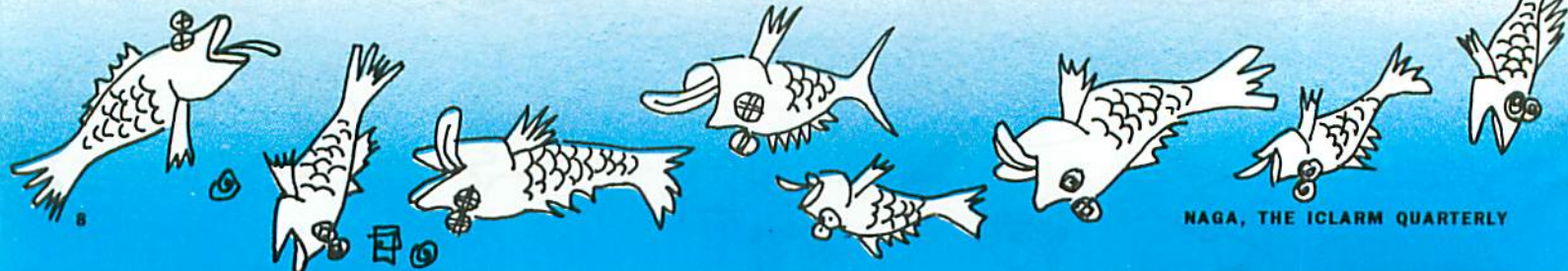
Approximate arrangement of the water bomb before being wrapped in cement bag paper. Note the fuse sticking out of the package at the top.

it is more difficult to tell how full of explosive is the capsule. It was while opening one of these detonators that Mohamed had his accident, resulting in the loss of three fingers.

### Mode of Operation

Dynamite fishing is traditionally done in "Kroo Bay", a large bay off Kingtom.

sufficiently large quantity of fish in his reach, he lights the fuse of the charge and drops it into the water. Though the immediate effect of the charge plunging into the water is that the fish are scared away, the four-minute interval before the charge explodes gives the fish ample time to return - and the fisher to run for cover. If the fuse has no hole, the spark is led into the aluminium capsule,



where it detonates the explosive charge, which in turn causes the whole dynamite package to explode. It is the shock-wave created by this explosion that kills or paralyzes the fish.

After the explosion, many of the smaller fish float while the larger ones usually sink to the bottom. There seem to be, however, differences between species in that even very large *cowreh* (*Caranx hippos*) always float. Those fish that have sunk to the bottom have to be recovered by diving, while fish at the surface are simply collected by hand. According to Mohamed, the fish do not show any visible damage from the explosion, and thus fetch good prices on the market.

Who are these people who take the risk of bodily harm and prosecution,

dynamite charge (dynamite, detonator, fuse) costs at present 7,500 Leone (around US\$13), which is the equivalent of five to six medium-sized fish. A large barracuda or *cowreh* can easily fetch twice this amount on the market.

When asked about the ecological consequences of dynamite blasts under water, Mohamed is only aware of damages inflicted on shore structures. He admits that catch volumes have declined since he started dynamite fishing. His explanation, though, is interesting: it is the increased activity of the trawler fleet further offshore that has significantly reduced the number of sharks. This, in turn, has diminished the pressure on the pelagics to take refuge in shallow bays into which the sharks would not follow.

What is the situation these days in Kroo Bay? There is still dynamite fishing going on, but at very irregular intervals. Sometimes for weeks there is none, and then all of a sudden activities resume, with loud explosions almost every day during the early morning hours. But things have become difficult for the dynamite fisher. Military and police stationed in the Kingtom area seem to be determined to eradicate this problem. They are actively supported in this endeavor by residents living at the waterfront, who have become aware of the damage caused to their houses by the powerful detonations. Thus, a dynamite fisher does not have much time any more to collect his fish after a blast.

Another reason for the much reduced activities of the dynamite fisher is the scarcity of the ingredients necessary to build the underwater bombs. Since the new military government came to power in 1992, measures to end an ongoing rebel war in the eastern provinces of Sierra Leone comprised among others the setting-up of a large number of road-blocks, where cars are regularly searched. Any person found with dynamite or other parts of explosive devices would have little chance to prove that he is not a rebel. Given that the kind of treatment administered to captured rebels is widely known, few people will be willing to smuggle dynamite to Freetown.

What does Mohamed think about dynamite fishing nowadays? For a moment his friendly face takes on a hard look: "Nobody should be allowed to do dynamite fishing!" His accident taught him a bitter lesson. And if one of his children wants to follow the father's example, would he allow it? "Oh no! Not at all! God forbid!" is the earnest answer.



The other side of dynamite fishing: a mutilated hand.

because of their illegal activities? As it turns out, Mohamed's case is rather the exception. Most dynamite fishers in the Kingtom area are primarily small-scale fishers operating nondestructive gears such as gill nets or hook and line. Dynamite fishing is to them an additional source of income, irregularly carried out, mainly when the catch with their normal gear is poor. And the economics of this activity makes sense to them. A complete

Apparently, there seems to be no conflict between the dynamite fishers and traditional small-scale fishers in Kroo Bay. The major reason might be that only a few traditional fishers operate from Kingtom. They set their gear usually far outside the bay. Mohamed still recalls the time, when he had every assistance from other fishers to collect the fish after a blast, which was then shared amongst them.

**J.M VAKILY** is an ICLARM Scientist outposted at the Institute of Marine Biology and Oceanography, P.O. Box 1399, Freetown, Sierra Leone.

ICLARM Contribution No. 982

