

Zag Fishing (Fish Aggregating Device-FAD): Threatening Activities against Indigenous Fish Species in the Meghna River Estuary

ABM Arman Hossain*, Gazi Muhammad Abdullah Mahdi and Abul Kalam Azad

Southwest Area Integrated Water Resources Planning and Management Project-Additional Financing, DevConsultants Limited, Bangladesh

***Corresponding Author:** ABM Arman Hossain, Fisheries Development Specialist, Southwest Area Integrated Water Resources Planning and Management Project- Additional Financing, DevConsultants Limited, Bangladesh.

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Inland open water fisheries provide an important source of food and livelihood for coastal people. As a result, they adopt several techniques to catch fishes. *Zag fishing* is one of the native techniques to use for capture indigenous species and mostly responsible for declination of inland open water fishes. *Zag fishing* is an aggregating device for attracting fish, usually made with branches of bushy trees like hizole (*Barringtonia acutangula*), gamboling (*Diospyros peregrina*), babra (*Acacia* sp.), shewra (*Sterbulus* sp.), black berry (*Syzygium cumini*), jarul (*Lagerstroemia speciosa*), gab (*Diospyros peregrine*) and tamarind (*Tamarindus indica*) and are usually constructed when water begins to recede. The whole *zag* is supported by bamboo poles fixed around it to prevent downstream drifting of tree branches by water current. Water hyacinth (*Eichhornia crassipes*) and sometimes Helencha (*Enhydra fluctuans*) are used to cover the surface. Bamboo pole with 20 - 25 hand long and branches of bushy trees with 8 - 10 hand long are the essential materials for *zag* construction. Two types of *zag* are available in Chandpur of Meghna river estuary, which are small and large, comprises of 2 - 2.5 and 4 - 6 decimal of waterbed in the river respectively. 40 pcs bamboo pole with 200 pcs boughs and 80 - 90 pcs bamboo pole with 500 pcs bough and entire cost of 30,000 Tk. and 1,00,000 Tk. is required for construction of small and large *zag* respectively. In Chandpur, a number of fisher groups (8 - 10 fishers in a group) are available for setting up the *zag* after selecting the site up to fish harvesting finally. *Zag fishing* normally done by the rich and powerful (generally non-fishers), since *zag* construction is costly. General fishers mostly worked there as daily laborers. Initially the *zag* investor offers these groups for setting *zag*, all investment and operating cost bear by the investor while the outcomes from fishing divided in equal interval without deducting all cost. Usually, *zag* set up in the river from October to November and remain up until May. In these interim periods fishers can harvest fish 5 - 6 times from *zag*. First harvest done after two months followed by 1 month and 20 days interval for subsequent harvesting. For complete harvesting need 1 - 2 days and 4 - 5 days for small and large *Zag* respectively. The following fish species available in first 4 month are boal (*Wallago attu*), air (*Sperata aor*), rui (*Labeo rohita*), calta (*Catla catla*), chitol (*Notopterus chitala*), different types of chingri (fresh water prawn), gojar (*Channa marulius*), baim (*Mastacembelus armatus*), koral (*Lates calcarifer*) etc.

Mustard oil cake, wheat bran and a variety of spicy are commonly used as feed for *zag fishing*; feed applied for 4 - 5 days in respect of new moon and full moon of a month. For last two months the fishers usually bring simple change in *zag fishing*, water hyacinth (*Eichhornia crassipes*) picking up from the *zag* and feeding ingredients are also different, like chira, coconut oil cake, sesame oil cake and boiled wheat flour are used as feed, no spicy added to supply with feed. At that time the harvesting species are mainly different types of fresh water prawn (locally called chingri) and bele (*Glossogobius giuris*). Broadly speaking, mosquito net (seine net) is used to gird the whole area while net's mesh size enables catching all types of fish. This is a very thorough method of fishing, which not just wipes out all the fish, but also the fry, fingerlings, brood stock, gravid fish and berried prawn as a whole. Traditional fishers in Chandpur complained during the survey that due to *Zag fishing* indigenous fish species/production decreased considerably. The indiscriminate use of mosquito nets in *Zag fishing* not only causes a negative impact on fisheries, but also causes immense damage to other aquatic flora and fauna. In most cases,

zag occupied most of the space of traditional fishing grounds, depriving general fishers their normal catch. Conflict between *zag* operators and general fishers occurred when *zag* owners refused to allow general fishers to fish around the *zag*, thinking that it would damage their traps and disturb the safe shelter of the fish. In the Meghna River estuary, conflicts between *zag* operators and general fishers are common. Due to demographic changes, lack of employment opportunity and realization of the potential as a source of income, generally non-fishers started to engage in fishing. It was strongly felt that the crop of neo-fishers gave rise to conflicts in river fisheries. These new fishers took the open access of the river as an opportunity to take up fishing as an occupation. Inasmuch as fishing was not their traditional occupation, neo-fishers usually used to destructive fishing, which allowed them to fish with less work and which came into conflict with traditional fishing. The 1985 Protection and Conservation of Fish Rules prohibit *zag*, which specifies that no persons shall erect or use *zag* in rivers, canals, khals and beels. Due to lack of enforcement of such rules, however, *zag* remains in many water bodies of Bangladesh. Inland open water fisheries under intense exploitation, needs a management regime as it is not inexhaustible. Consequently, management measures should be used in such a style that new fish are protected to grow before capture and breeding stock for future generations. I tend to think that Bangladesh has already lost their many indigenous fish species due to illegal fishing. We don't want to lose it anymore. So, take tougher action against it.



Figure: A typical Zag.

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