

# Banking on closure

An octopus bank on the island of KisiwaPanza in Tanzania witnesses a large return on investment after a three month no-take period

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Fishers of the island of KisiwaPanza in the region of Pemba in Tanzania, caught some very large octopus in the first week of July this year. It was a Thursday morning; the 2 of July. More than 600 fishers had converged on the reef flat known as Ngazi, and when the octopi were sighted, pandemonium broke out as people ran to reach the best octopus holes first. One woman pulled an 8 kg giant out from its den, an extremely rare find in KisiwaPanza, where on average 65 per cent of the catch is 600 g or less. The reason for the excitement, and for the big catch, was that this was the first day the Ngazi fishing ground had been opened after a three-month period of closure. The results of the trial closure have been hugely encouraging.

Octopus fishing is an important livelihood source for both women and men, with over 60 per cent of the inhabitants of KisiwaPanza considering the day octopus (*Octopus cyanea*) the most important income resource for the family. Actually, very few local people eat octopus; almost all of the catch is shipped internationally to Spain, Italy, France and Portugal, with some going to tourist hotels in Unguja, the main island of Zanzibar.

Fishers' lives in KisiwaPanza are dictated by the moon; there are two eight-day fishing seasons in a month referred to as *bamvua* in

Kiswahili, which are linked to the spring tides of the new- and full-moon periods when the reef areas are the most exposed. The four or five days in between the spring tides are 'rest days' when other domestic tasks are taken care of. Traditionally, people walk the shallow reef at low tide and use sticks made from mangrove roots for digging the octopus out of their holes amongst the coral rubble.

The day octopus has a short life cycle and rarely lives beyond 24 months. Both females and males breed only once in their lifetime. Once she has mated, the female barricades herself in a den amongst coral on the lower reaches of the reef. Here she lays her eggs and attaches them to the ceiling of the den. She stays there for a month without eating, protecting her eggs and gently aerating them with a flow of fresh seawater. She is very vulnerable at this time. The young hatch after 30 days and disperse with the ocean currents, before settling again on the reef flat where they subsist on small fish and crustaceans. The mother octopus, known as *koo* in Kiswahili, uses all her bodily resources when brooding eggs, and rarely survives for long after the young have hatched.

Many things have changed, however, in KisiwaPanza over the last 25 years and all is not well with the octopus population. Traditional sticks for hunting have now been replaced with more efficient hooked iron rods, and many men who fish now have access to masks and fins to fish for octopus in deeper waters. Some even use scuba gear. The fishing pressure has increased as the local village population has grown, together with the burgeoning demand for export. Today, fewer fishers take rest on the traditional days, continuing instead to fish throughout the month. The mature female octopus is being fished out of her breeding den and young octopus seldom get the chance to grow much beyond 500 grams, a size too small for breeding.

Fortunately, the day octopus is one species that can rebound relatively quickly with the right management regime. This is because they grow so fast—they are capable of doubling their size in just two months, and reaching 12 kg in 18 months. Thus if the fishing pressure is removed for just two to three months, the resulting catch is convincing and the females get a chance to breed undisturbed for the required length of time for the eggs to hatch. This management model has been adapted to good effect in recent years in Madagascar and Rodrigues in Mauritius.

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The island of KisiwaPanza lies within the Marine Managed Area known as PECCA (Pemba Channel Conservation Area). Discussions among the Smartfish programme of the Indian Ocean Commission, the Mwambao Coastal Community Network, Fauna & Flora International, PECCA and KisiwaPanza community members began in November 2014, and the community decided to pilot this approach. These partners have also been working with communities and authorities to build the capacity of the local fisheries committees so that they may play an active and legitimate role in governance and management of all of their marine resources.

The villagers selected 60 hectares for closure, also known as a no-take zone (NTZ) and a sub-committee was formed to patrol the area for three months. As members of Mwambao, we trained monitors to record the catch and capture any increases in production. We also worked with the sub-committee and with PECCA staff to create by-laws and to carry out awareness-raising campaigns in neighbouring villages. Women had a major role in deciding on the timing of the NTZ; they suggested that lifting the closure in the expensive month of Ramadan would really help with all the additional costs at this time—in effect,

the reserve would act as an octopus ‘bank.’ The closure began with village approval in mid-March and everything progressed according to plan, with only one minor poaching incident reported. The community decided that, at the opening, no hooked metal rods but only the traditional sticks would be used, giving the smaller immature octopus a greater chance of surviving.

This is the first pilot closure for octopus in the islands and it is a valuable demonstration of successful collaborative management for the Marine Conservation Unit and PECCA authorities. The Deputy Minister for the Ministry of Livestock and Fisheries Development officially cut the ribbon at Ngazi on the 2 of July and everyone was encouraged by the outcome.

Not all of the 600 or so fishers managed to catch an octopus but there were lively discussions about increasing the fishery closure area next time. Octopus ‘banks’ are an exciting first step towards building capacity and engagement at the village level to improve the management of their fisheries.

Mwambao hopes to expand this initiative to more villages in 2016 and to also increase the ‘bank deposit’, as it were, in KisiwaPanza, by helping them extend the area of the temporary no-take zone. ❏

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