

Fishing Competitions as a Means of Data Collection

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A research project being funded by the Australian Centre for International Agricultural Research (ACIAR) has successfully used fishing competitions as a means for the collection of fish samples in the Solomon Islands. A collaborative research project being undertaken by scientists from the Commonwealth Scientific and Industrial Research Organisation (CSIRO) of Australia in conjunction with Officers from the Fisheries Division of the Solomon Islands Government into the biology of baitfish species important to the pole-and-line tuna industry in Solomon Islands have used this method on five occasions to supplement the normal sampling techniques.

A major aim of the project is to quantify the effects of the extraction of the baitfish from the shallow lagoonal areas by the commercial fishing fleet, on the coral reef fish communities which make up an important part of the diet of the local people living close to these areas. It has been necessary therefore to establish which fish species prey on the baitfish. Gill nets were used to catch samples of the fish in order that gut analyses could be done. Although the gill nets were reasonably successful, catches were limited to certain species of fish only. Some of the main predatory fish (coastal pelagics such as *Euthynnus affinis*, *Scomberomorus commerson*, *Sphyræna* spp., etc.) were only being caught in small numbers or not at all. It was also not possible to sample adequate numbers of such fish from local catches as there are no collection/marketing centres and most fish are gutted immediately after capture. However local fishermen do use techniques to catch the species required and so competitions were arranged so that fishermen would 'weigh-in' their catch at a specific time and place and all fish could be sampled as necessary.

The five competitions produced an overall total of 3,548 fish of 183 species with a combined weight of 989 kg. As well as providing fish samples for analysis of their gut content, the competitions also allowed the research team to assess the types of fish being caught in the subsistence fishery at the research sites.

Results from this work indicate that it is mainly the pelagic species which prey on baitfish. These species are generally caught using the trolling technique in the subsistence fishery. Trolling as a fishing method within this fishery is not considered to be of great importance with the methods of handlining and spear fishing appearing to account for a far larger amount of the local fish catches. More detailed results from this work can be found in an MS entitled "Diets of Lagoon Fishes of the Solomon Islands: Predators of Tuna Baitfish and Trophic Effects of Baitfishing on the Subsistence Fishery" by S.J.M. Blaber, D.A. Milton, N.J.F. Rawlinson, G. Tiroba and P.V. Nichols.

In conclusion, fishing competitions have proved a very successful way to supplement other sampling methods for the collection of fish in Solomon Islands. They have allowed the involvement of the local fishermen/women and the use of their knowledge and fishing skills to catch samples of fish which have been difficult to collect in adequate quantities using conventional sampling methods. They have also proved successful in areas where local fish catches are difficult to sample due to the lack of collection centres and have allowed valuable data on the species and size composition of catches made by local fishermen using particular fishing techniques to be collected. The competitions have been inexpensive when considering the time and effort that would be required by a research team to collect the equivalent number of samples. The cost of prizes can also be kept to a minimum by asking for a sponsorship from local businesses. The use of prizes is also a good way to bias the fishing methods carried out by the competitors and therefore the species composition of the fish being caught, if so required. Lastly the competitions have acted as an excellent public relations exercise in the areas where the research is being carried out and have helped to increase the awareness of people towards the aims and objectives of the project.

