Science and tradition secure a fishier future for Fiji

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In a world where fish catches are collapsing around the globe, Fijian fish are on the comeback trail thanks to a remarkable blend of centuries-old tradition and the latest science.

In Kubulau District, Fiji, local fishers, marine biologists and staff of the Wildlife Conservation Society (WCS) are combining ancient tabu (taboo) customs and modern science to manage fish stocks.

The communities of Kubulau – pronounced Kumbulau – have extended their network of Marine Protected Areas (MPAs) to cover almost half their traditional fisheries area using a mix of traditional and "western" management styles.

"The practice of establishing a tabu – which places temporary bans on fishing in certain areas – goes back hundreds of years in Fijian history," says Dr Rebecca Weeks from the ARC Centre of Excellence for Coral Reef Studies (CoECRS), Australia and James Cook University. "But growing populations, modern fishing methods, increasing water pollution, climate change and deforestation have seen fish stocks dwindle.

"By working together to create a network of tabu areas, and adding some large, permanently closed MPAs, the communities in Kubulau are making sure that their management efforts are better able to address the problem of sustainable fishing in the 21st century."

In July 2011, Dr Weeks and her colleague, Dr Stacy Jupiter, Director of the WCS Fiji Country Program, along with WCS staff, facilitated a workshop for local fishers and community leaders, following which the communities of Kubulau added five new MPAs to their existing network. Three villages significantly increased the size of their MPAs, and 500 metre buffer zones were added to the three permanent reserves for the district.

"This means an additional 35 square kilometres of marine area has been protected, increasing the total area of the MPA network to 120 sq km or 44 per cent of the Kubulau District traditional fisheries area," explains Dr Weeks.

"Considering that the target for protection of marine habitats under the Convention on Biological Diversity's new strategic plan is only 10 per cent, the communities of Kubulau are setting a leading example in helping Fiji meet its international commitments."

The key ingredient to this success is the respect and trust between the marine scientists and the local communities that has created a powerful working partnership, she says.

Designs for more effective protection did not only come from the scientists. Ratu Apenisa Vuki, high chief of Kubulau District, established a new tabu area next to where the young men harvest bêche-de-mer (sea cucumber). He explains this means the young men can keep an eye on the tabu area while they are out working, ensuring the area remains closed to fishing.

"Through our network of Marine Protected Areas, Kubulau's communities are working together to ensure the future of our fisheries, which will benefit our future generations as well," says Ratu Vuki.

Dr Jupiter says that they were pleased with the outcome of the workshop.

"Since the first network of MPAs was established in 2005, we've been collecting information from the community, and from the ocean, looking at how well the MPAs were working. Some MPAs are showing increasing numbers of fish, while other areas are no better off than fished areas.

"When we presented the results of the monitoring back to representatives from the communities in July 2011, people became motivated to change the management rules and the boundaries of the MPAs," she says.

"They could see that in some cases things were not working and they wanted to take action to improve the benefits of their management in terms of fish to eat and income from fisheries resources."

"WCS has nurtured this success through its sensitive approach to community management of marine resources that stretches back nearly 10 years and has won the support of local chiefs as well as positive coverage in the Fijian press," says Dr Weeks.

"Science doesn't have to be complicated. When we explained that some key fish travel over large areas that the smaller MPAs didn't cover, the community decided to increase the size of these MPAs. To address the problem of fishing over MPA boundaries we encouraged the Kubulau communities to move these boundaries to the edge of recognisable reef features."

In Fiji, upwards of 200 villages have established locally managed MPA networks in co-operation with organisations like WCS. These communities are finding effective ways to adapt ancient management

practices to fit with the latest science in coral reef fisheries management. In harnessing the best of both worlds they are not only regaining their livelihoods but contributing to international efforts to safeguard the oceans.

More information: Weeks, R. and Jupiter, S. Adaptive Co-management of a Marine Protected Area Network, *Conservation Biology*. onlinelibrary.wiley.com/doi/10 … /cobi.12153/abstract

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