

# Conservation news

## **EXCITED: Expanding Conservation Impacts Through Enterprise Development**

Fauna & Flora International, together with Practical Action Consulting, and the University of Cambridge's Department of Geography and the Centre for Social Innovation at the Judge Business School, recently published two key outputs from the EXCITED project. This action learning partnership ran from October 2015 to March 2017 and was funded through the Cambridge Conservation Initiative Collaborative Fund with support from Arcadia. The published outputs are a Learning Brief that captures reflections from early experiences in using a Participatory Market System Development approach as part of a conservation strategy, and a Market System Selection Tool that provides guidance on how to identify which market systems have the most potential to make positive contributions to both livelihoods and biodiversity.

Over the years, conservation organizations have made significant investments in alternative livelihoods to try to compensate people for restricted access to natural resources and/or to incentivise behavioural changes to reduce threats to biodiversity. However, rigorous evidence for positive impact on both well-being and biodiversity is lacking. Anecdotal information indicates interventions are often poorly targeted, lack understanding of the dynamic complexity of rural livelihoods, and put vulnerable communities at risk. Such efforts are also often small scale, providing short-term inputs and services that act as subsidies, distorting markets, and resulting in any well-being benefits failing to endure once the project has ended. The rationale for the links between a project's livelihoods interventions and intended conservation impacts is often weak, and poorly understood by stakeholders. To address the latter issue, conservation projects frequently target handicraft or eco-friendly niche markets. However, in such markets supply often exceeds demand, or poor, marginalized producers face high barriers to entry (such as requirements for complex and/or costly independent certification to international standards).

To date, little attention has been paid to taking a market systems approach to benefit both livelihoods and biodiversity. Through action learning and peer exchange, the EXCITED project has sought to break new ground by taking such an approach, combining the skills and expertise of a biodiversity conservation organization, an international development agency and academia.

Participatory Market System Development is about facilitating transformations in market systems to make them more sustainable, efficient, inclusive and equitable. In this approach a market system comprises the chain of actors

that trade a particular product or service, the supporting markets that provide the chain with inputs and services, and the enabling environment of rules and norms that shape the way the chain functions. In an economic development context, this transformation aims to have positive impacts for a large number of poor or otherwise marginalized people. In a conservation context, the scale of impact could be measured by the number of hectares of land or sea of high conservation value under sustainable management, or by how important the conservation target is, regardless of its size. For example, the EXCITED project aims to facilitate the emergence of sustainable business models for communities to sustainably exploit non-timber forest products in high conservation value forest landscapes. In this way, incentives are created for the communities, buyers and government agents to use forest resources sustainably and conserve biodiversity.

Although it is too early yet to see biodiversity and well-being impacts at the pilot sites, this collaboration has enabled partners to build the capacity of their own staff and local partners, and of a number of MBA students, to take a more systemic approach to linking livelihoods and conservation. We hope that by sharing project outputs more widely, other conservation organizations and the communities they work with will also benefit from our learning.

For further information see <http://cambridgeconservation.org/collaboration/expanding-conservation-impact-through-enterprise-development-excited> or contact Dr Helen Schneider.

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## **Myanmar endorses its first Locally Managed Marine Areas**

Myanmar's 2,278 km coastline has a diversity of habitats, including coral reefs, seagrass beds, mudflats and mangrove forests that are home to rare and threatened wildlife of global significance. In March 2017 the Myanmar Government endorsed the creation of three Locally Managed Marine Areas, a joint initiative between the Myanmar Department of Fisheries and three fishing communities.

Poverty rates in Myanmar are high and, as a result of the many years of political isolation under the previous military government, education levels are low and there is limited capacity for managing natural resources. The new democratic government has little budget for biodiversity conservation, yet there are many threats to the marine environment, including illegal, unreported and unregulated

fishing, sedimentation as a result of land-use change, pollution, and development of coastal infrastructure. With limited resources, the country is looking to its people to play an active role in protecting and managing marine resources.

In 2012 Fauna & Flora International (FFI) began engaging the Myanmar Government to support sustainable management and conservation of its marine resources. Following the training of Myanmar's first research scuba team, FFI carried out research during 2013–2016 on the coral reefs of the Myeik Archipelago. Although the research found a degraded ecosystem affected by anthropogenic impacts, a number of reefs had a high diversity of corals and fish and up to 92% coral cover. Reefs in the Langann and Thayawthadangi Island Groups included two Endangered (*Acropora roseni* and *Acropora rudis*) and five Vulnerable coral species (*Acropora acuminata*, *Pachyseris rugosa*, *Pavona venosa*, *Anomastreaa irregularis*, *Turbinaria mesenterina*), the Near Threatened orange-spotted grouper *Epinephelus coioides*, chevron butterflyfish *Chaetodon trifascialis*, and bentfin devil ray *Mobula thurstoni*, the Vulnerable smooth-coated otter *Lutrogale perspicillata*, and the Critically Endangered hawksbill turtle *Eretmochelys imbricata*.

However, sharks, rays and other large predators were notably uncommon on these and other reefs. FFI therefore initiated socio-economic surveys in five island communities, to examine resource use and threats to livelihoods and to identify ways to address these pressures. The communities are diverse both socially and in terms of livelihoods, with three ethnicities, Karen, Burma and the Moken. Although most are fishers (some are farmers) their methods are varied, with spear fishing, stationary and drift nets, hand-lining and reef gleaning. All those interviewed noted a decline in marine resources and attributed this to an unregulated, open access fishery with excessive commercial trawlers and light boats (boats that use artificial light to attract their catch). Although fishers from these islands fish across the archipelago they were keen to have, at least, an area near their village that is free of trawlers, some of which drive through villagers' nets. Working alongside the Myanmar Fisheries Department the concept of Locally Managed Marine Areas was proposed. After 2 years and many discussions, the first of three Locally Managed Marine Area notifications was submitted to the Director General of the Fisheries Department in June 2016. Each notification included delimitation of a boundary, location of no-take and seasonal no-take zones, and appropriate rules and regulations. The notifications were approved, and the three areas (Langann, Don Pale Aw and Lin Lon/Parawa Locally Managed Marine Areas) were gazetted on 31 March 2017. These are the first such notifications designed specifically for marine co-managed fisheries in Myanmar.

Each Area is managed by a 12–15 member committee, including a mix of ethnicities, fisher types and sexes. Management plans for each site have been submitted to

the Fisheries Department for approval, and FFI has provided a patrol boat to each Area, to help enforce regulations in collaboration with Fisheries Department officers. Over the past year FFI has also provided these communities with small grants that allow local people to manage livelihood projects. These have included the establishment of two crab banks for blue-swimmer crabs, illegal fishing net exchange, pig rearing and agroforestry.

The establishment of the Locally Managed Marine Areas has engendered considerable interest amongst fishing communities in the Myeik Archipelago, with 10 more communities coming forward to indicate their enthusiasm for the idea. The Fisheries Department and the Tanintharyi State Regional Government have also taken an interest in this approach, as it is a way to involve communities in decision making and managing their own resources, and a step towards sustainable fisheries management for the country.

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### First comprehensive database of tree species

The question is one that has long eluded botanists: how many tree species are there? The answer is 60,065, provided by Botanic Gardens Conservation International (BGCI) in a recent article (Beech et al., 2017, *Journal of Sustainable Forestry*, [dx.doi.org/10.1080/10549811.2017.1310049](https://doi.org/10.1080/10549811.2017.1310049)).

The number of tree species has been calculated from GlobalTreeSearch, a new publicly available database at [www.bgci.org/globaltreesearch](http://www.bgci.org/globaltreesearch). This is the first comprehensive list of tree species and their country-level distributions. Previous estimates were between 40,000 and 100,000 species, and were generally based on broad estimates or models. BGCI began compiling the database over 2 years ago and GlobalTreeSearch now comprises 375,500 records collated from 500 sources.

GlobalTreeSearch offers some interesting statistics. Nearly half of all tree species are found in just 10 families, with the Leguminosae, Rubiaceae and Myrtaceae having the most. Brazil, Colombia and Indonesia are the countries with the greatest diversity of trees. Surprisingly, 58% of tree species are endemic to a single country, with hotspots in Brazil, Madagascar and Australia. Some of the results are as expected; the Neotropic biome is the most diverse, with 23,000 species, and the region with the least tree diversity is the Nearctic region of North America, with fewer than 1,400 species. There are no tree species in the Antarctic.

Although it seems extraordinary that it has taken until 2017 to publish the first global, authoritative list of tree species, it is worth remembering that GlobalTreeSearch represents a huge scientific effort encompassing the discovery, collection and describing of tens of thousands of plant