

# Building Capacity for Community-based Marine Conservation in Myanmar

Final Technical Report to Lighthouse

*January 2013- December 2014*



July 2015

*Fauna & Flora International (FFI)*

## Summary

Support from the 'Lighthouse Foundation' to FFI's wider marine program in Tanintharyi has helped to support Myanmar's first national marine research dive team which has continued to undertake over 200 surveys, collect valuable data on the Myeik Archipelago's coral reef ecosystem and given us crucial insights into their status. The foundation also supported a liveboard dive expedition which involved international researchers studying a range of biological parameters and supporting the Myanmar team. This work is being used to prioritize key biodiverse areas within the archipelago to inform the development of a marine protected area network. Through Lighthouse Foundation support, FFI has supported three local communities to establish the country's first community managed marine areas. Draft boundaries and zonation plans have been agreed with the Department of Fisheries Myanmar (DoF) under Ministry of Livestock, Fisheries and Rural Development (MLFRD) and final government notification is expected before the end of 2015.

## Results against planned indicators

### 1. MoU signed with at least one government department

Memorandum of Understanding signed with the Forest Department (FD) of the Ministry of Environmental Conservation and Forestry (MOECAF) in 2013. Objective of the MOU is to:

- Support the efforts of the FD of MOECAF in promoting and supporting the conservation of endangered species and ecosystems, environmental services as well as promoting sustainable development in Tanintharyi Region.

Letter of Agreement (LOA) signed with DoF, MLFRD in 2014. LOA objectives include:

1. Conserving endangered freshwater species and ecosystems, and environmental services in Kachin and Tanintharyi Regions.
2. Conserving marine species and ecosystems and environmental services in Tanintharyi Region and Ayeywaddy and Rakhine States.

### 2. Marine conservation objectives and planning process agreed

From the training and activities supported by the foundation in 2013, in which information of the status of the reefs was able to be collected, FFI was able to co-host a conservation workshop in October 2014 with IUCN. The workshop was held in Myeik, Tanintharyi Region in which Marine Protected Areas (MPAs) were discussed in a bid to conserve Myeik Archipelago's unique biodiversity and support sustainable fisheries which was met with enthusiasm from a host of stakeholders, including the DoF of the MLFRD, MOECAF, the Myanmar Fisheries Federation and local civil society organisations. The bringing together of policy makers, managers, commercial operators and conservationist's in this forum enabled participants to agree on important next steps as noted below under point 5 for LMMAs.

### 3. Increased capacity of NGO and government partners in relevant areas of responsibility / expertise

In 2013 the foundation co-supported FFI Myanmar's newest scuba divers to undertake their first independent Reef Check surveys of the Myeik Archipelago. These divers have now gone onto to do

over 200 surveys and 250 dives of Myanmar's reefs paving the way for other divers trained during the life of the project. Lighthouse Foundation funding in that year also supported training to staff from three government departments (MOECAF and Myanmar Navy) and 2 staff from the FFI-Myanmar programme on Locally Managed Marine Area (LMMA) and Marine Protected Area (MPA) establishment and funded a delegation from the government and navy to partake in a LMMA study tour to Bali, Indonesia to learn first-hand about some of the benefits and challenges of LMMA establishment.

In 2014 Myanmar's scuba diving capacity was expanded to 14 staff with support from Lighthouse foundation and included staff from MOECAF, DoF, Mawlamyine University and Myanmar Navy all trained to international dive standards (PADI Advanced Open Water) and four of FFI staff trained to Rescue Diver level. This was coupled with training in coral reef survey techniques including Reef Check methodology, coral family identification and coral recruit survey techniques. FFI staff also received further training in general coral reef ecology, marine wildlife classification and report writing. The newly trained FFI and partner staff then supported coral reef surveys during two liveaboard expeditions (see point 6).

4. *Remote sensing analysis of marine ecosystems (identification of ecosystems and their status, using low resolution data (LANDSAT, MODIS) to prioritise detailed field assessments.*

FFI has undertaken low resolution remote sensing analysis of most of Tanintharyi's coastal and nearshore areas. High-turbidity of near shore waters and the resulting low visibility due to coastal disbursement of sediments by the Tanintharyi River does not allow for a reliable assessment of coral reefs and seagrass beds. For a few priority areas FFI purchased high-resolution images, nevertheless the high turbidity renders remote sensing based assessments impossible. However using Rapid Eye high resolution images FFI completed a detailed mangrove assessment, supported by extensive field surveys. The final report will be published in September 2015.

5. *Stakeholder assessment and consultation reports to identify uses and threats to marine biodiversity*

From the initial dive surveys in 2013 and experience from the LMMA study tour to Bali, supported by Lighthouse foundation, extensive socio-economic surveys in the Myeik archipelago, co-funded by BOBLME<sup>1</sup> were conducted in a number of fishing villages throughout the archipelago. These were assisted by staff from DoF, MOECAF, Dawei Research Association (DRA) and Mawlamyine University. The team identified three initial communities interested in establishing Locally Managed Marine Areas (LMMAs). All three communities include Moken people – an indigenous, often marginalized group of sea nomads. This was launched with high-level consultations with Regional government officials, and a multi-stakeholder Marine Protected Area (MPA) workshop (noted under point 2) in which participants agreed on important next steps including piloting and establishing MPAs and LMMAs in key sites, with the workshop participants accepting FFI's recommendation to initiate the LMMA establishment in Langann Island Group.

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<sup>1</sup> BOBLME- FAO-GEF Bay of Bengal Large Marine Ecosystem (BOBLME) Project

## Reports:

- Saw Han Shein, A. M., Salai Mon Nyi Nyi Lin and Zau Lunn (2013). Socio-economics survey in the villages along Thayawthadangyi Kyun Group, Kyunsu Township, Tanintharyi Region, Myanmar. Report No. 1/2013 Fauna & Flora International.
- Schneider, H., Soe Thiha, Pontillas, M. and Marie Ponce de Leon, E. (2014). Socio-economic baseline assessment: Thayawthatangyi and Langann Islands, Myeik Archipelago, Myanmar. Report No. 10 of the Tanintharyi Conservation Programme, a joint initiative of Fauna & Flora International (FFI) and the Myanmar Forest Department, FFI, Yangon, and the Bay of Bengal Large Marine Ecosystem project (BOBLME).
- Andriamalala, G (2015) Implementation of Locally Managed Marine Areas (LMMAs) in the Myeik Archipelago, Myanmar. Scoping trip report. Report No. 11 of the Tanintharyi Conservation Programme, a joint initiative of Fauna & Flora International (FFI) and the Myanmar Forest Department. FFI, Yangon

### 6. Coral reef field assessment reports

FFI and its local government and civil society partners have now generated a very comprehensive baseline of information on both the biological and socio-economic aspects of the archipelago which will be used to design a marine protected area network and to monitor the impact of such a management tool over time.

FFI's dive team has collected baseline data on coral reefs in Myeik Archipelago with over 200 sites surveyed since 2013 (see Annex 1). These surveys were complemented with two liveboard expeditions in March and December 2014 in which the FFI dive team was accompanied by teams of international scientists conducting over 70 more in-depth dive surveys. The teams consisted of both local researchers and internationally-renowned coral reef scientists from the Smithsonian Institute, CORDIO East Africa, IUCN, Prince of Songkla University, The Swire Institute of Marine Science, Northern Territory Museum, the Myanmar Forest Department, the Myanmar Environmental Conservation Department, the Myanmar Fisheries Department, Myanmar Navy, Mawlamyine University and FFI. Along with the Reef Check surveys being conducted by the FFI dive team the expedition collected data on reef resilience, invertebrate diversity, fish taxonomy, fish biomass, coral disease prevalence, sponge diversity and connectivity and coral recruitment and connectivity. The data collected from all these surveys is now being used as part of a marine spatial planning process for the archipelago in which key biodiverse areas can be identified leading to the development of a marine protected area network and provide recommendations to DoF and those involved in the fishing industry on sustainable marine resource management.

Preliminary results from the Reef Check surveys and two expeditions show some reefs had up to 92% hard coral coverage – classing them as 'excellent' on standardised global scales – with interesting reef systems built on granite bedrock. In total the surveys recorded 287 coral species, over 300 other invertebrates, and over 400 species of fish, including a number of unidentified specimens that may prove new to science. Data from FFI coral assessments in 2013-14 mean it is now possible to include the marine component within the park management objectives, with the goal of making the first real MPA in Myanmar.

## Reports:

- Cox, T., Zau Lunn, Cameron, A. and Benbow, S. (2013). Preliminary assessment of the Myeik Archipelago coral reef ecosystem, Myanmar. Fauna & Flora International, Cambridge: 28.
- Mya Than Tun (2013) Preliminary Report on Coral Survey Liveboard Training in Myeik Archipelago. Forestry Department, Myanmar and Fauna & Flora International.
- Obura, D.O., Benbow, S. and Zau Lunn (2014) Coral Diversity And Reef Resilience In The Northern Myeik Archipelago, Myanmar. Report No. 3 of the Tanintharyi Conservation Programme, a joint initiative of Fauna and Flora International (FFI) and the Myanmar Forest Department. FFI, Yangon
- Howard, R., Zau Lunn, Antt Maung, Salai Mon Nyi Nyi Len, Soe Thiha and Soe Tint Aung (2014). Assessment of the Myeik Archipelago Coral Reef Ecosystem, Reef Check Surveys, January 2013 to May 2014. Report No. 5 of the Tanintharyi Conservation Programme, a joint initiative of Fauna & Flora International (FFI) and the Myanmar Forest Department. FFI, Yangon
- Howard, R. ed (2015). Preliminary Expedition Report: FFI Liveboard Dive Surveys. Report No.11 of the Tanintharyi Conservation Programme, a joint initiative of Fauna & Flora International (FFI) and the Myanmar Forest Department. FFI, Yangon

### 7. Local fisheries and socio-economic assessment reports

See point 5. Stakeholder assessment and consultation reports to identify uses and threats to marine biodiversity

### 8. Improved marine conservation awareness and introduction of the LMMA concept to local fishing communities

The initial study tour to Bali in 2013 funded by Lighthouse helped to build the capacity of local staff in developing a strong foundation for LMMA awareness and establishment. Since the study tour, with support from other projects, FFI staff and partners have held numerous meetings with the three target communities for LMMA establishment including formal presentations and informal 'one on one' meetings with fishers, traders and other business people on the islands. The results from these meetings have enabled communities to start mapping their resource use, identify the LMMA area which they want to co-manage with the Department of Fisheries (DoF) and develop draft zoning plans. The draft selection of LMMA committees in each of the three sites will also ensure this awareness continues and provides an avenue for further educational programmes which the committee themselves can help to design and implement.

The endorsement by the Department of Fisheries (DoF), through a new LOA since December 2014 has indicated a wide understanding of and interest in co-management in the marine ecosystems, including in sustainable fisheries and locally management marine areas (LMMAs), by the lead government agency involved in fisheries management.

## **Conclusion**

The support from the Lighthouse Foundation has enabled FFI and local partners to build a strong foundation for marine conservation in Myanmar and leveraged significant co-financing to build Myanmar's first marine conservation programme and therewith helped to shape the future of marine conservation in Myanmar. The most lasting impact of the foundation's support has been the investment in personnel and institutional capacity of local staff and partners which has contributed to the long-term sustainability of conservation efforts in Myanmar. The support has also facilitated the project in developing an extensive baseline to measure the outcomes of management interventions, including information on both the marine ecosystems and socioeconomic elements the Myeik Archipelago. This data will help inform the marine spatial planning process which the Foundation helped to initiate and guide the development of marine protected zones and sustainable fishery management. Considering Myanmar's history of fence and fine policies for conservation Lighthouse has supported the development of a collaborative marine conservation approach, pioneering the country's first locally managed marine areas.

# Annex 1: Maps

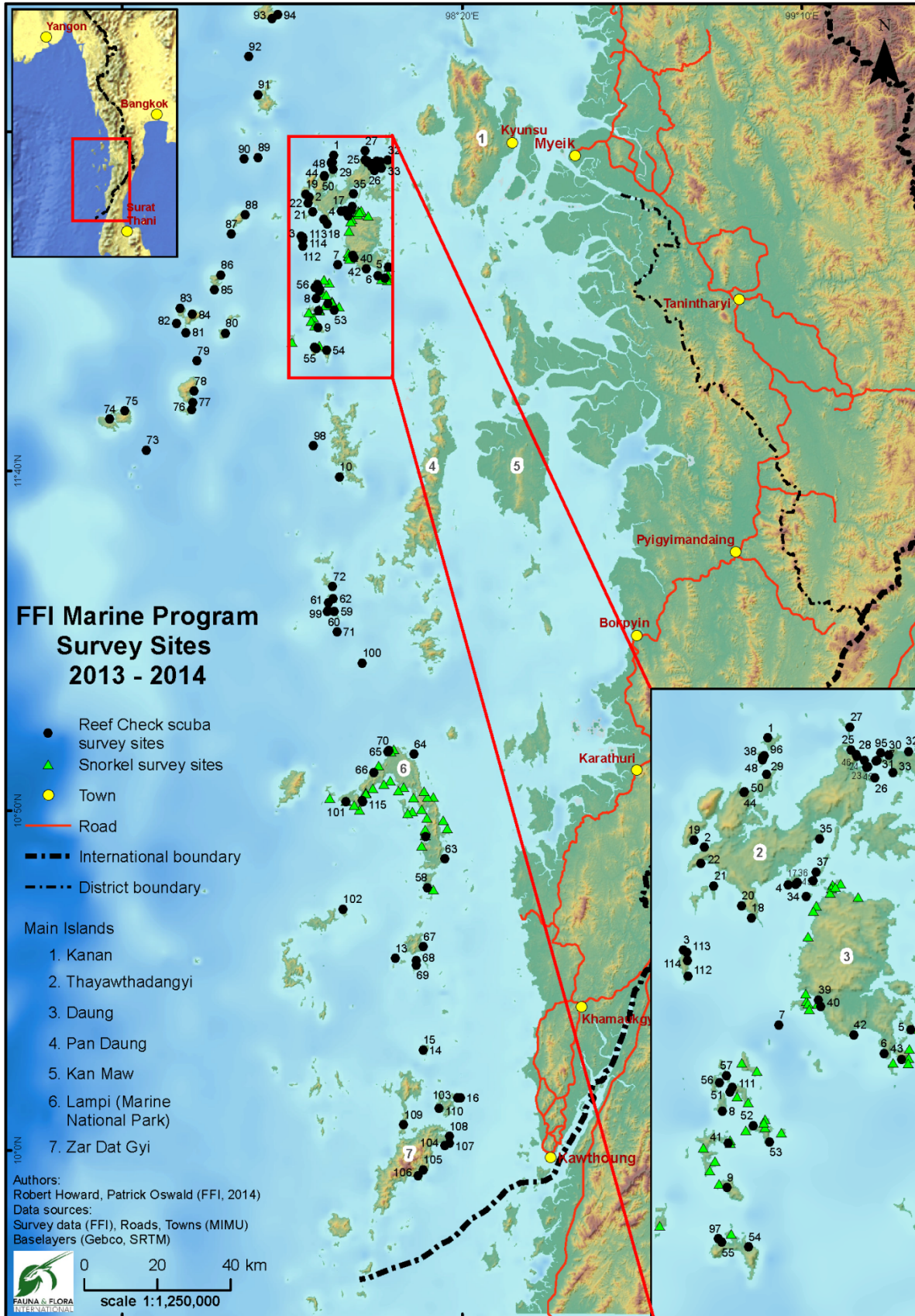


Figure 1 Reef Check and snorkel survey sites from 2013 to 2014 in Myeik Archipelago, Myanmar

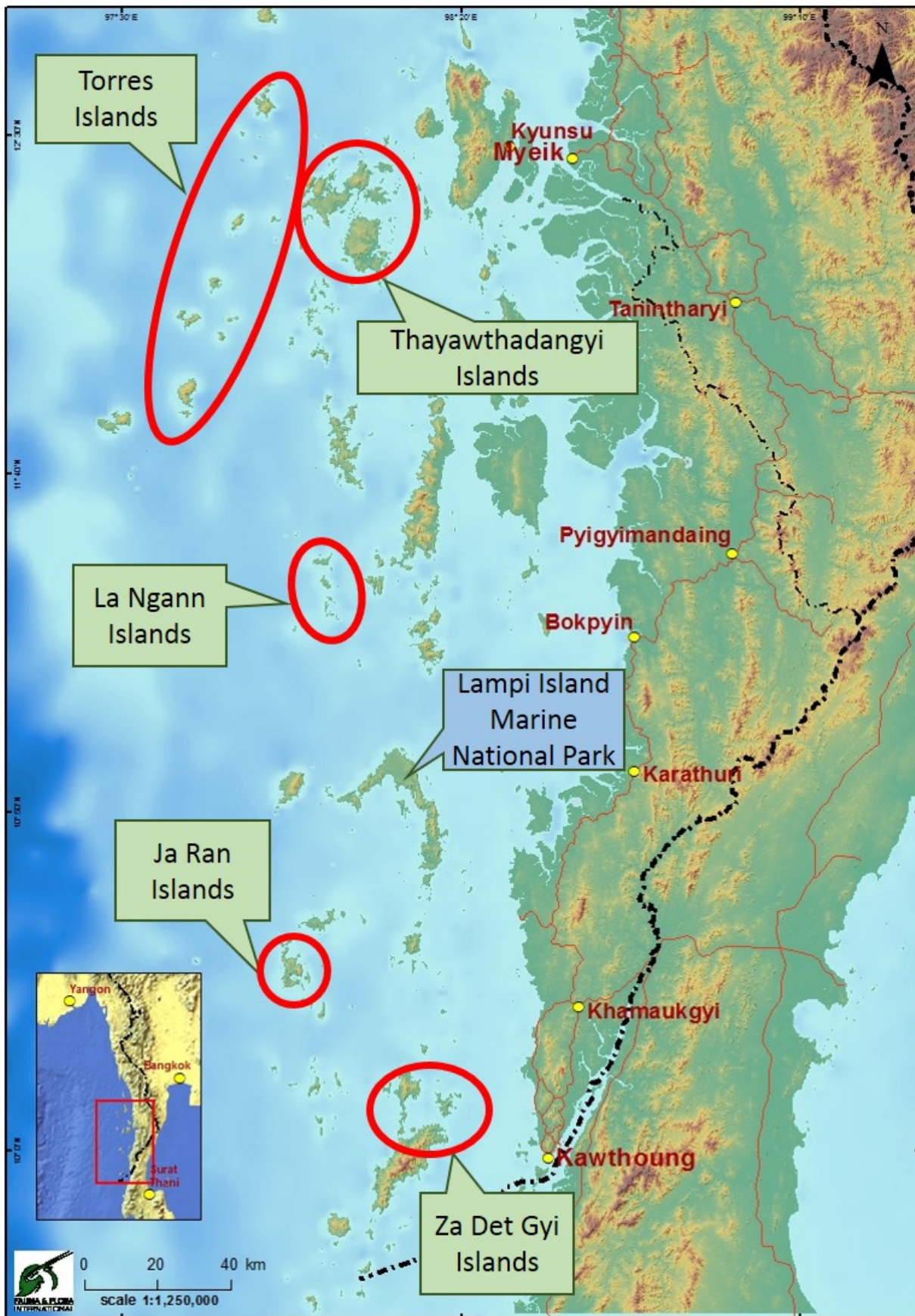


Figure 2 Key biodiverse areas in Myeik Archipelago, Myanmar





Figure 3 Don Pale Aw draft LMMA zoning map.

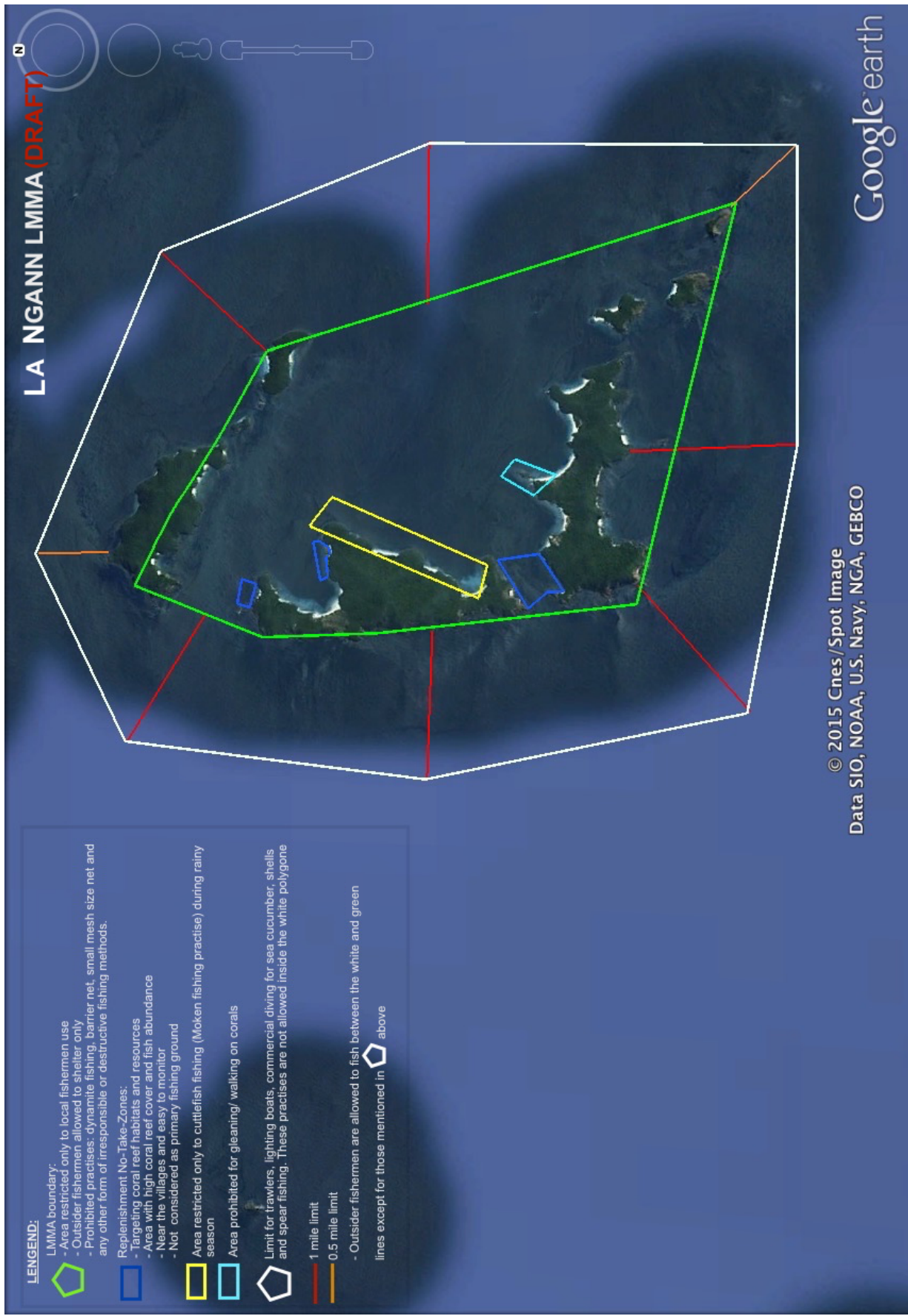


Figure 4 Lagnann draft LMMA zoning map.



Figure 5 Lin Long draft LMMA zoning map.

## Annex 2: Photos of Project Activities



First aid CPR training



Rescue dive course training



Reef check training



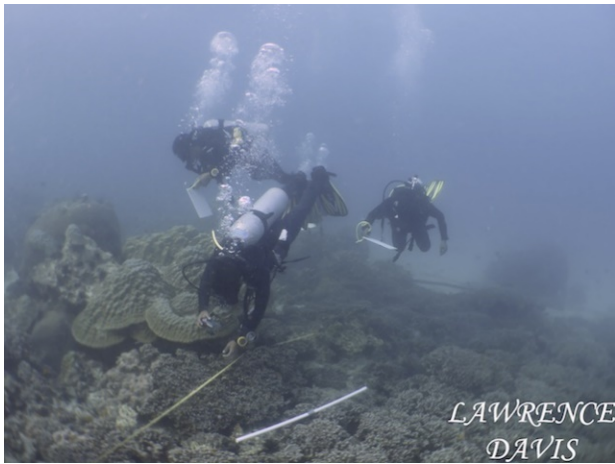
Openwater dive training



Marine resource mapping with Moken fishers in Langann



LMMA boundary mapping in Lin Long village



Reef Check surveys



Dr Chris Freeman sorting collected sponge samples



Dr Barry Russell undertaking fish surveys



Workshops participant s agreeing on LMMA establishment

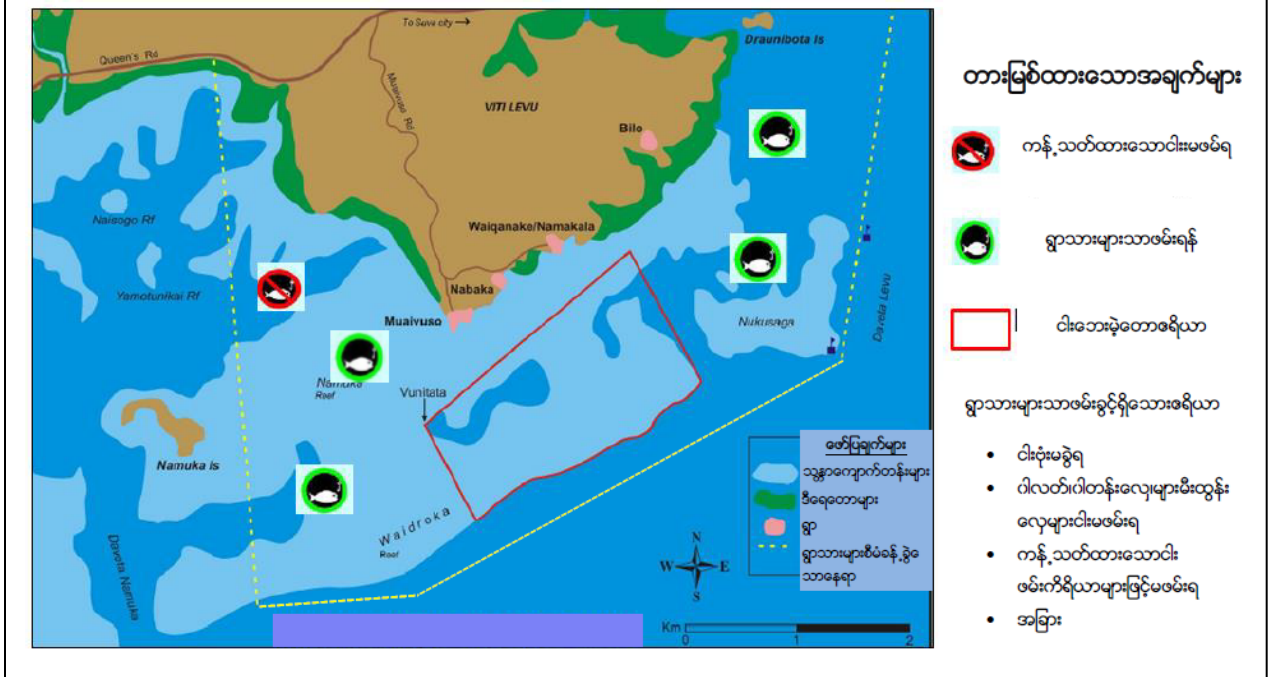


Diverse coral reef within Langann Island group



Excellent coral cover within Langann Island group

ဒေသခံရေလုပ်သားများနှင့်ပူးပေါင်းကာကွယ်ထိန်းသိမ်းသောအလှူငါ့ ရေပြင်ဧရိယာပြမြေပုံနမူနာ



Example of LMMA awareness poster used in fishing communities