UN23: Accelerating capacity development transformation in the Western Pacific – Regional Network of Training and Research Centers (RTRCs) on Marine Science

Regional Training and Research Center on Reef Management and Restoration

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Presentation Outline

01 | Introduction

02 | Timeline

03 | Activities and Progress

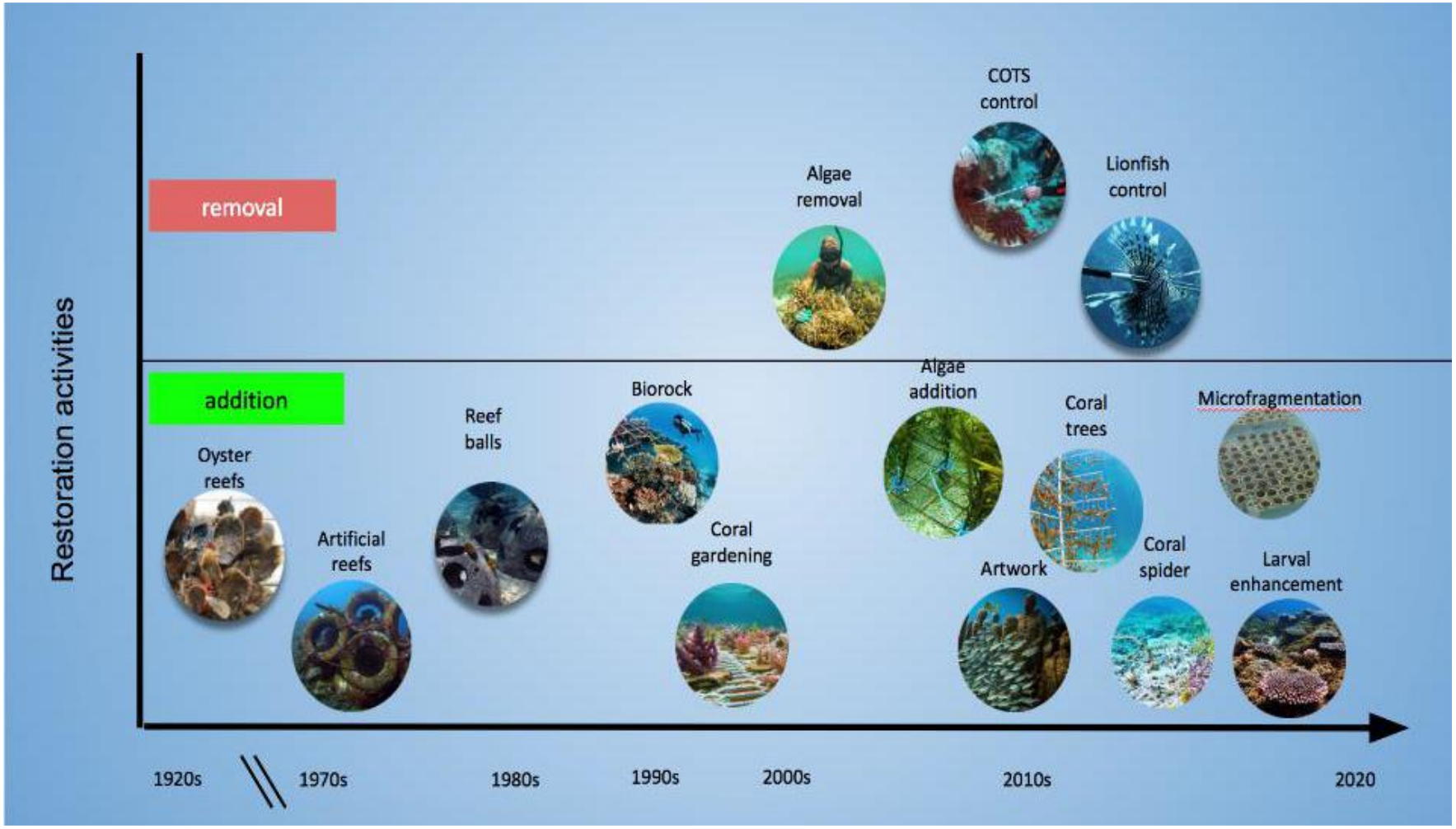
04 | Impacts of Activities

05 | Challenges, Opportunities and Ways Forward

Objectives

(1) Strengthen the capability human resources, especially students and young scientists of the member states in the Western Pacific
(2) Network scientists on reef management and restoration in the Western Pacific
(3) Promote sharing of information on reef management and restoration efforts
(4) Review and assess the restoration techniques practiced in different countries in the region
(5) Present recent advances on coral restoration techniques
(6) Contribute to the sustainable development and conservation of marine and coastal resources through research and training
(7) Develop general protocols on appropriate application of these techniques

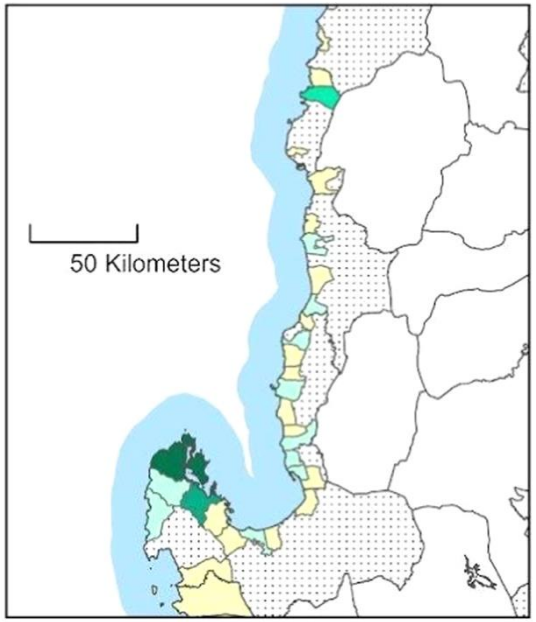
Global history of coral restoration

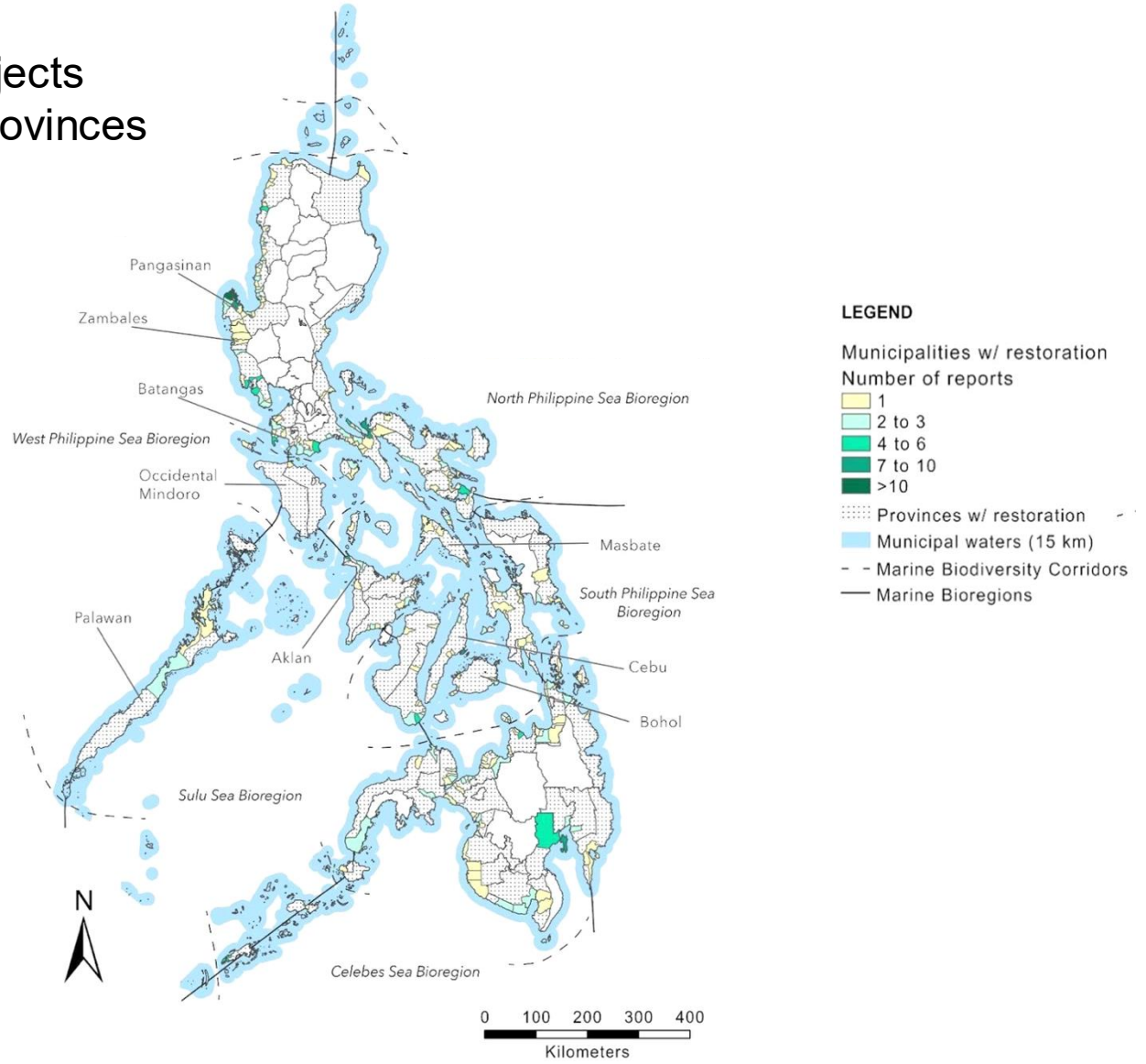


Adam Smith, Ian McLeod, Nathan Cook, Boze Hancock
James Cook University
Reef Futures Symposium 2018, Florida

Municipalities and provinces with known coral restoration projects.

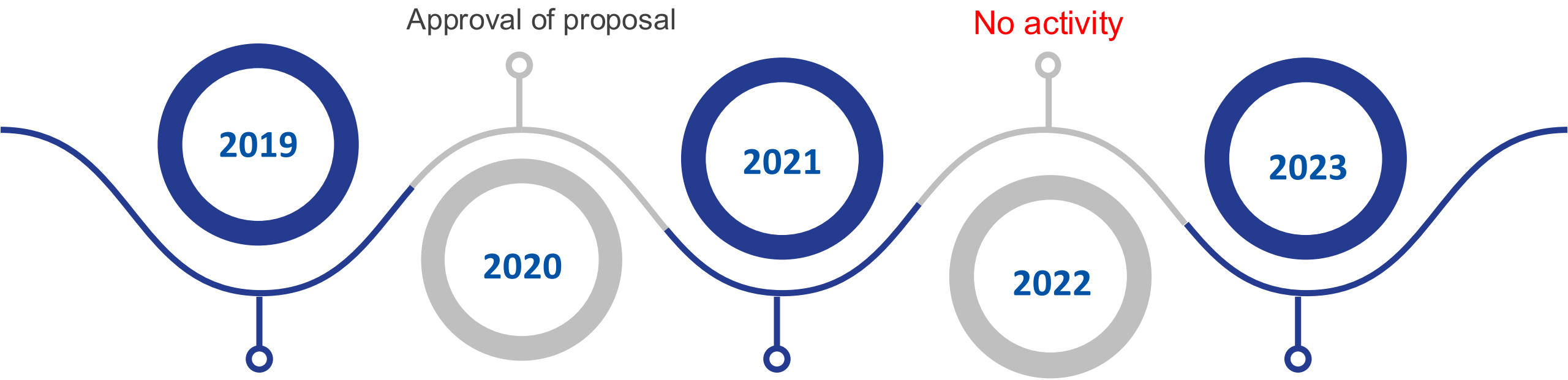
- Northwest Luzon with restoration projects across adjacent municipalities and provinces





Regional Training and Research Center on Reef Management and Restoration

Time course of development



Submitted a proposal to IOC-WESTPAC

Approval of proposal

No activity

No activity

Conducted Training

Coral larval reseeding training

With growing necessity for ecological restoration efforts, a training workshop on coral restoration was conducted in partnership with IOC Sub-Commission for the Western Pacific (WESTPAC), UP Marine Science Institute.



Participants of the training workshop on coral larval reseeding from different member countries.

Workshop objectives

Activities and progresses:

01

- Review and evaluate the most common biological restoration techniques
- Present recent advances on other restoration techniques among countries

02

- Develop general protocols on appropriate application of these techniques, especially on coral larval reseeding

03

- Establish network of scientists and students who are interested in advancing coral restoration techniques

04

- Develop collaborative research on coral reproduction and reef connectivity

Workshop overview

Activities and progresses:

01

- Lecture sessions of resource speakers
- Demonstration of coral spawning setups

02

- In situ coral spawning methods
- Ex situ coral spawning methods

03

- Workshop feedback and discussion on collaborative research on coral reproduction and reef connectivity

Lectures on coral restoration









Researchers from Thailand, Malaysia, Vietnam, and Indonesia took part in intensive series of lecture regarding coral restoration

Lectures on coral restoration









Lecture session of resource speakers on coral biology, reproduction, restoration, larval reseeding method, governance aspect and more.

Demonstration of coral spawning setups







Tour of outdoor hatchery facility and coral spawning setup.



Inflatable pontoon setup to be used in the field was introduced to the participants.

In situ coral spawning methods







Participants performed rapid sampling to assess the reproductive status of corals.

In situ coral spawning methods

- The participants practiced setting up the inflatable pontoon used for coral larvae rearing and reseeding in one the the restoration sites in Hundred Islands National Park, Philippines.

- Innovation to methods of coral larval rearing and reseeding techniques in the field and setup of inflatable pontoon was discussed.









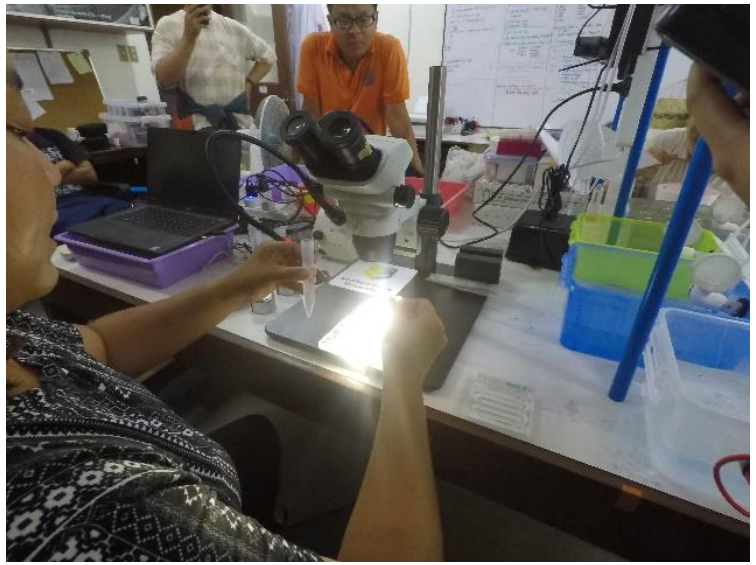
Ex situ coral spawning methods





Ex situ coral spawning in hatchery was accomplished after nights of observation. Participants of the workshop joined in processing the gamètes for fertilization.

Fertilization rate and total larvae count







Participants practiced calculation of fertilization rate and estimation of total coral larvae.

Feedback and discussion







The participants shared their own restoration program or experiments and gave feedback about the training. Establishment of regional research network on coral reef restoration studies was also discussed.

Impacts of activities

01

- Capacitated all participants on the conduct of coral restoration

02

- Establishment of regional research network on coral reef restoration studies was also discussed.

Challenges:

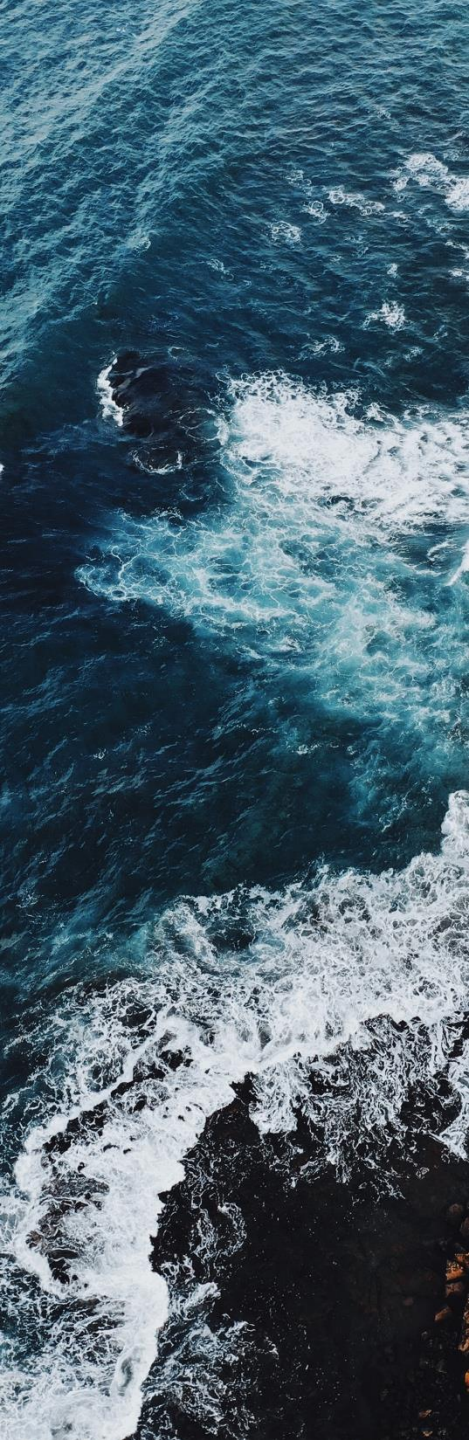
- Funding and financial support
- Timing of coral spawning is unpredictable to some extent, and difficult to match the workshop schedule

Opportunities:

- Expansion of research on coral reproduction at a regional scale
- Examination of climate resilient coral in different parts of the region

Recommendation on the ways forward

- RTRC on reef management and restoration can continue to host training workshops on coral larval reseeding and other management tools
- Member states apply for funding to conduct research coral reproduction and restoration using climate resilient corals



Thank You !

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