

Terms of Reference for the *ad hoc* committee on reef restoration
adopted on December 7th, 2018 at the 33rd ICRI General Meeting (Monaco)

Background:

In response to the recent disturbances affecting coral reefs, most notably the global mass coral bleaching event 2015-17, there has been a resurgence in interest in coral reef restoration techniques (Anthony et al. 2017). Since the adoption of ICRI Resolution on Artificial Coral Reef Restoration and Rehabilitation (2005), international reef restoration activities across the US, SE Asia and the Red Sea are growing in scale and are improving in efficiency and effectiveness (Rinkevich 2015, Hein et al. 2017). However, progress is slow and, at present, unlikely to achieve restoration at ecologically relevant scales, or assist reefs to adapt to future conditions. Considering that current climate models forecast that sea temperatures will exceed the thermal tolerances of corals within the next 10-20 years, there is an urgent need to develop new methods and breakthroughs in the scale and rates of deployment and cost to meet current and future challenges.

Australia has established a Reef Restoration and Adaptation Program (RRAP) to develop new interventions and delivery methods to assist the Great Barrier Reef to recover from major disturbances and to assist its adaptation to a changing climate. The resulting technology is expected to be used to help coral reefs worldwide. The program is currently in the concept feasibility and design phase, with a targeted research and development program commencing in 2019.

In parallel, a review on ‘*Interventions to Increase the Resilience of Coral Reefs*’ is currently underway by an expert committee for the US National Academies of Sciences, Engineering and Medicine (NASEM), chaired by Dr Stephen R. Palumbi from Stanford University.

For these and various other restoration and adaptation initiatives it is essential to join forces, exchange knowledge and collaborate to maximise outcomes in the minimum amount of time. A virtual working group, under the auspices of ICRI, will provide a suitable vehicle to advance this research and development collaboration.

The **objectives** of the *ad hoc* committee will be to:

- Assess and document global needs and priorities for current and future reef restoration and adaptation programs;
- Assess and document global research and development priorities to deliver the methods, productivity and cost breakthroughs needed to support restoration and adaptation program objectives.

- Identify mechanism(s) to improve joint planning and delivery of reef restoration and adaptation research and development
- Identify opportunities to partner on reef restoration and adaptation research and development activities
- Identify opportunities to fund a small team to co-ordinate the activities of the Working Group and collate and report outcomes and other outputs.

Chair: Australia

Members: experts from the ICRI Membership across reef bearing regions of the world

Duration: the *ad hoc* committee will last not more than one year, with the final report to be presented at the ICRI General Meeting in December 2019. The report will be available on the ICRI Forum.

Working procedures: the *ad hoc* committee will conduct its work via email, telephone, video conference and, when necessary, internet-based services.

References

- Anthony K, Bay LK, Costanza R, Firn J, Gunn J, Harrison P, Heyward A, Lundgren P, Mead D, Moore T, Mumby PJ, van Oppen MJH, Robertson J, Runge MC, Suggett DJ, Schaffelke B, Wachenfeld D, Walshe T (2017) New interventions are needed to save coral reefs. *Nature Ecology & Evolution* 1:1420-1422
- Hein MY, Willis BL, Beeden R, Birtles A (2017) The need for broader ecological and socioeconomic tools to evaluate the effectiveness of coral restoration programs. *Restor Ecol* 25:873-883
- Rinkevich B (2015) Climate Change and Active Reef Restoration—Ways of Constructing the “Reefs of Tomorrow”. *Journal of Marine Science and Engineering* 3:111