International Coral Reef Initiative (ICRI)

Member's Report | 37th General Meeting

19th – 23rd September 2023 Hawai'i, – United States of America

Reporting Period: 2021 – 2023

A. Member Information:

- Name of ICRI member: Institute of Oceanography, Vietnam Academy of Science and Technology (VAST)
- Name of person(s) completing member's report: Nguyen Van Long
- Email: longhdh@gmail.com
- Are you a Focal Point: ☒ Yes ☐ No
  - If no, who are you completing the form on behalf of:
- Which was the last General Meeting you attended:
- Will you be attending the 37th ICRI General Meeting: ☐ Yes ☒ No
- Member social media:
  - Twitter: @
  - LinkedIn:

B. Reporting on the implementation of ICRI Plan of Action 2021-2024: turning the tide for coral reefs. *Your responses will help inform the Secretariat about members' contributions toward the current Plan of Action*

Theme 1 - Preparing for the Future: Promoting Resilient Coral Reefs

1.A - Strengthening policies - Supporting conservation and recovery of coral reefs and associated ecosystems through resilience-based management frameworks.

- (ICRI) How have you embedded resilience-based management into your policies? *(Tip – refer to the RBM policy brief: https://icriforum.org/resilience-hub/)*

Answer: Vietnam has not prepared the strengthening policies to supporting conservation and recovery of coral reefs and associated ecosystems through resilience-based management frameworks. However, recommendations for resilient-based management of coral reefs based on recent studies related to resilience of coral reefs have been delivered to high levels including Ministry of Natural Resources and Environment (MONRE), Ministry of Agriculture and Rural Development (MARD) and Ministry of Science and Technology (MOST) through national forum or conferences, especially in the areas of South-Central of Vietnam where upwelling system has annually occurred.
The findings from recent studies indicate that coral reef resilience is driven by not only parameters on physical conditions but also on reef health, recovery and anthropogenic threats, the project focused on coral recruitment in the whole field trips in parallel with collecting data on coral cover, genus diversity and impacts of human activities. A cumulative analysis of the study in Khanh Hoa province (Vo et al., 2019) enables researchers to divide the studied reefs into four categories based on varying levels of reef health to support resilience, recovery, and vulnerability in the case of increased water temperature.
The studies on genetic structure and population connectivity of reef fishes of Amphiprion perideraion (Dao et al., 2022) and Siganus guttatus (Nguyen et al., 2023) among marine habitats in the coastal waters of Vietnam indicated that there existed different distinct populations. In the light of the findings, we recommended that the establishment of MPA networks should be based on ecological connectivity among marine areas and habitats to ensure the inclusion of different genetic units as much as possible.

1.B - Promote capacity building for applying resilience-based management approaches to coral conservation Ad Hoc Committee on Resilience-based Management.

- (ICRI) Please list any examples of leading practices, techniques and strategies for building reef resilience that your organisation/country is involved in. Include their location and extent, methods of implementation, financing, and an assessment of their results (or likely results), with links for more information if possible.

Answer: The three year's data on the parameters related to ocean acidification collected in reef and non-reef areas under support from USAID project entitled "Study on coral reef resilience in comparative areas in South Vietnam for marine biodiversity conservation in a changing world" (Code: AID-OAA-A-11-0012) in the period of 2017-2019 was provided to UNESCO/IOC database for tracking implementation of SGD 14 in Vietnam. The publications on this issue (Le et al., 2021, Vo et al., 2021) have mapped the figure on distribution of parameters related to ocean acidification in south-western South China Sea. This study also gave some suggestions for method improvement via practical experiments monitor, and understand how coral reefs are responding to ocean acidification.
Currently, UNESCO/IOC WESTPAC has supported the Institute of Oceanography to use an integrated approach for development of a manual for coral reef monitoring which are not only considered biophysical indicators but also socio-economic indicators (fisheries and tourism) and emerging issues such as plastic debris and ocean acidification. The integrated manual for coral reef monitoring in Vietnam will be completed in December 2023 and then distributed to MPAs in Vietnam for further monitoring of coral reefs.

- (ICRI) Have you developed, or are you aware of, training materials that you can share?

Answer: The integrated manual for coral reef monitoring in Vietnam could be shared as completed with approval of UNESCO/IOC WESTPAC.

1.C - Promote and build capacity for the restoration of resilient coral reefs Ad Hoc Committee on Reef Restoration

- (ICRI) Please list any examples of reef restoration mechanisms that your organisation/country is involved in. Include their limits, conditions of implementation, financing and an assessment of their results, with links for more information if possible.

Answer: Recent studies related to coral bleaching show that Acropora corals were severely affected in Nha Trang bay, Ninh Thuan reefs and Phu Quoc islands but not impacted in Con Dao islands. The Porites, Montipora, Millepora genera were quite vulnerable in all sites but no bleaching was observed for Galaxea and Diploastrea genera. The further study highlighted apparent shifts in susceptibility of some genera to bleaching from 1998 to 2019, especially of Acropora. This suggested further studies on changes of susceptibility of coral genera should aid scientific understanding and adaptive management in Con Dao National Park (Vo et al., 2020). *Under technology transferring and guidance from the Institute of Oceanography on restoration of coral reefs, a total of 0.05 ha of nursery gardens for corals (coral nursery garden) has been developed by MPA authorities in Phu Quoc (0.03 ha) and Cu Lao Cham (0.02 ha) together with some 0.2 ha of degraded coral reefs in Cu Lao Cham MPA rehabilitated.* *With the support from Phu Quoc MPA, restorations of hard corals and pearl oysters were conducted by Ngoc Hien Pearl Company at 2 sites aiming marine conservation and tourism. Monitoring data made by the project in April 2022 indicate that coral reefs and seagrass beds at 2 sites have been improved through multiyear management. Monitoring the growth rate of pearl oysters indicated that the restored population in December 2019 included different size groups ranging from 11–20 mm to 161–170 mm at which size some oysters would be mature.* *In terms of management, the participation of private sector in oyster restoration exhibited a useful policy of MPA authorities in engaging local stakeholders in management of marine resources (Vo & Hua, 2021).*

Theme 2 – Coral Reef Science and Oceanography: Advancing and Utilizing the Latest Science and Technology

2.A – Coral monitoring capacity building

- (ICRI) Do you have information / case studies that could contribute to the update of the "Methods for ecological monitoring of coral reefs" (https://portals.iucn.org/library/efiles/documents/2004-023.pdf), especially related to the use of new technologies.

Answer: No

- (ICRI) Are you aware, developing, or involved with, any capacity building activities related to the use of coral reef monitoring mechanisms, especially regarding the advancement of monitoring practices (noting technology)?

Answer: No

2.B – The Global Coral Reef Monitoring Network (GCRMN)

The GCRMN would like to receive feedback on the Status of Coral Reefs of the World: 2020 report to improve the production of future regional and global reports. As such, please kindly respond accordingly to the questions below:

- (ICRI) In reference to the Status of Coral Reefs of the World: 2020 report:
  - Have you read the report?
  - Did you utilise the report and/or use the results and contents?
  - How could the next report be improved (considering the entire process from data acquisition to reporting)?

Answer: Yes, I read the report and used information from some parts of the report to inform national and provincial management agencies and local stakeholders through workshops and conferences. Improvement of the next report should be focused on: 1) Enhancement of data collection with similar techniques/methods; 2) Trend of temporal changes should be based on analysis from the datasets of permanent monitoring sites instead of using total number of sites; 3) Policy recommendations for conservation and management effort should be more practicable and actionable.

- (ICRI) The GCRMN intends to establish time-bound task forces to address specific priority issues and to build capability and capacity across the network. As a first priority, a Data Task Force was established. The Task Force brings together subject matter experts to increase the transparency, reproducibility, and robustness of future GCRMN reports alongside capacity in monitoring, data collection, analysis, management and sharing of coral reefs and associated ecosystems. The Task Force will focus on:

  - Improving data integration and analyses to facilitate the production of GCRMN regional and global reports; and
  - Promoting good data management practices based on FAIR data principles for the coral reef scientific community.

  Tell us is if you will be interested in joining the Data Task Force, or upcoming task forces. More so, please inform us if you have data to contribute to upcoming regional, or global, reports and if you will be organising and/or partaking in any capacity building activities regarding data monitoring:

Answer: We can contribute our data from annual monitoring of coral reefs and other studies that have been undertaken.

Theme 3 - Local Threat Reduction: Integrating Response Planning Frameworks

Please tick the most appropriate box/boxes:

- (ICRI) Do you have (or in the process of developing) a coral reef response plan(s) on, for example, but not limited to:
  - ☐ coral disease
  - ☐ vessel groundings
  - ☐ bleaching
  - ☐ invasive species outbreaks (lionfish and COTS)
  - ☐ large storm events
  - ☐ other:

  If yes, please provide us with more information.

Answer: No plans are official consideration at provincial and national levels.

Theme 4 - Diversity and Inclusion: Expanding the Coral Reef Community

4.A – Connect with youth audiences:

- (ICRI) Are you developing (or planning to develop) any communication campaigns or outreach materials? What will your primary target audiences be and what would your key messages include?

Answer: We have no official plans for this theme, however we will try to get young people/staff from MPAs and local stakeholder involved in training of coral reef monitoring, COTS management and coral reef restoration as much as possible.

4.B - Collaborate with Indigenous people and seek to incorporate indigenous and local knowledge into policies and management plans:

- (ICRI) How do you incorporate indigenous and local knowledge into policies and management frameworks. Please provide us with some examples. Do you have any plans or strategies to further promote this incorporation?

Answer: No

- (ICRI) Do you have any, or know of, best practices to solicit Indigenous and local community knowledge?

Answer: No

C. Kunming-Montreal Global biodiversity framework

- (ICRI) Do your current National Biodiversity Strategies and Action Plans (NBSAP) incorporate coral reefs? If not, what kind of material will be useful for your Country/organisation to ensure coral reefs are integrated in the revision of NBSAPs?

Answer: Yes, coral reefs are considered as a target in National Biodiversity Strategies and Action Plans.

- (ICRI) How are you planning to implement the Kunming-Montreal Global biodiversity framework. For you, which targets are the most relevant for coral reefs?

Answer:

D. Upcoming events

Please tick the most appropriate box/boxes:

☐ September 19th – 23rd 2023: 37th ICRI GM, USA, Hawaii

☐ 30th November – 12th December 2023: 28th Conference of the Parties to the United Nations Framework Convention on Climate Change

☐ 26th February – 1st March 2024: 6th session of the United Nations Environment Assembly

☐ 10th – 12th April 2024: 2024 UN Ocean Decade Conference, Barcelona, Spain.

☐ 2024: United Nations Biodiversity Conference (COP16) of the Parties to the UN Convention on Biological Diversity (CBD), Turkey.

☐ Other

Please list any upcoming regional / international events relevant to ICRI that your organisation plans to attend:

Answer: We have had no funding to support for participating these events from the Institute of Oceanography.

E. Publications. Please list relevant publications / reports you have released recently (+ add a link if possible)

Publication	**URL**
Long V. Nguyen, Dat X. Mai, Quang M. Thai and Tuan S. Vo, 2023. Juvenile yield and adult abundance, genetic diversity and structure, and linkages among marine habitats for goldlined spinefoot (*Siganus guttatus*) in the coastal waters of Vietnam. Fishery Bulletin, 121:17–29.	https://doi: 10.7755/FB.121.1-2.2
Chan Y.K.S., Affendi Y.A., Ang P.O., Baria-Rodriguez M.V., Chen C.A., Chui A.P.Y., Giyanto, Glue M., Huang H., Kuo C-Y., Kim S.W., Lam V.Y.Y., Lane D.J.W., Lian J.S., Lin S.M.N.N., Lunn Z., Nañola Jr C.L., Nguyen V.L., Park H.S., Suharsono, Sutthacheep M., Vo S.T., Vibol O., Waheed Z., Yamano H., Yeemin T., Yong E., Kimura T., Tun K., Chou L.M. and D. Huang, 2023. Decadal stability in coral cover could mask hidden changes on reefs in the East Asian Seas. Communications Biology 6, Article number: 630.	https://doi.org/10.1038/s42003-023-05000-z
Nguyen Van Long and Tong Phuoc Hoang Son, 2023. Status and temporal change in the distribution of seagrass beds and coral reefs in the waters of Phu Quoc islands, Kien Giang province. Vietnam Journal of Marine Science and Technology 2023, 23(1).	https://doi.org/10.15625/1859-3097/16621
Si Tuan Vo, Son Lam Ho, Kim Hoang Phan, Van Than Doan, Tran Tu Tram Đang, Van Long Nguyen & Peter Lynton Harrison, 2022. Varied spawning patterns of reef corals in Nha Trang Bay, Vietnam, western South China Sea. Regional Studies in Marine Science, 55.	https://doi.org/10.1016/j.rsma.2022.102631
Dao Tan Hoc, Ho Van The, Vo Si Tuan, Nguyen Van Long, Phan Kim Hoang, Thai Minh Quang, Mai Xuan Dat & Dean R. Jerry, 2022. Investigation of population genetic structure of the pink anemonefish (*Amphiprion perideraion*) in the Southern coast of Viet Nam. International Journal of Agriculture & Environmental Science, 9(3): 25-34.	https://doi.org/10.14445/23942568/IJAES-V9I3P104
Nguyen Van Long & Vo Si Tuan, 2022. National chapter report on status and trends of coral reefs in Vietnam. In "*Status and Trends of East Asian Coral Reefs: 1983-2019*" (Kimura *et al*. eds.). Global Coral Reef Monitoring Network, East Asia Region. Ministry of Environment of Japan: 193-200.	https://gcrmn.net/wp-content/uploads/2022/09/Status-and-Trends-of-East-Asian-Coral-Reefs-

	%E2%80%93-1983-2019.pdf
Vo Si Tuan and Hua Thai Tuyen, 2021. Restoration of the silver-lipped pearl oyster *Pinctada maxima* (Jameson, 1901) in Phu Quoc Marine Protected Area, Viet Nam. Phuket Marine Biological Center Research Bulletin, 78: 117–124.	doi: 10.14456/pmbcrb.2021.8
Vo Tran Tuan Linh, Phan Kim Hoang, Le Hung Phu, Nguyen Hong Thu, Phan Minh Thu and Vo Si Tuan, 2021. Coral calcification in the southern part of Vietnam, studied with a new method. Phuket Marine Biological Center Research Bulletin, 78: 29-38.	http://113.160.249.209:8080/xmlui/handle/123456789/20404
Le Hung Phu, Vo Tran Tuan Linh and Pham Hong Ngoc, 2021. An initial study on ocean acidification in southern waters of Vietnam. Vietnam Journal of Marine Science and Technology, 21(1): 47-55.	https://doi.org/10.15625/1859-3097/16051
Si Tuan Vo, Thai Tuyen Hua & Kim Hoang, 2019. A study of coral reef resilience and implications of adaptive management and rehabilitation in Khanh Hoa Province, Vietnam. Acta Oceanol. Sin., 38(1): 112–117	https://doi.org/10.1007/s13131-019-1377-7

F. ICRI Member Feedback. What do you find most valuable about being a member of ICRI as well as completing the ICRI member reports? If you have any ideas to improve the Member Reports, please list below:

Answer: To me, ICRI is a good platform to share and exchange ideas, best practices and concerns on coral reef conservation and management from member countries and international organisations around the world which contribute to build and enhance our capacity in restoration, conservation and management of coral reefs.

G. Contact information & member information. (Note that this information will be posted on the ICRI website on your member page: https://icriforum.org/members/).

Please use the table below to provide us updates to your member's focal points as well as the blank cells to indicate changes to information (please add more rows, as needed):

Focal Point 1:	
Name:	**Nguyen Van Long**
Title/Organisation:	**Institute of Oceanography (IO), Vietnam Academy of Science and Technology (VAST)**
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Focal Point 2:	
Name:	

Title/Organisation:	
Email:	
Focal Point 3:	
Name:	
Title/Organisation:	
Email:	
Member page updates:	
Section	*Update*
Do you have new resources (reports, guidelines etc.) that you would like to display?	
Resource description	*URL*

Thank you very much for sharing your valuable experiences and information with ICRI. Members reports, meeting outputs and resources will be uploaded to: https://icriforum.org/events/37th-icri-general-meeting/