



2021 United Nations Decade
2030 of Ocean Science
for Sustainable Development



ECOP
Early Career
Ocean Professionals

2022-2023 India Survey Report



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Introduction

In November 2022, the [ECOP Asia group](#) disseminated their first national survey for India (see **Appendix**), leaving it open until early April 2023. Following up on the 2021 ECOP Asia questionnaire¹, the aim of this national survey was to continue raising awareness of the [United Nations Decade of Ocean Science for Sustainable Development \(2021-2030\)](#) (hereinafter referred to as the “UN Ocean Decade”) among ECOPs in India, while better understanding the barriers they face and the resources they need to thrive, advance knowledge, and develop their ocean-related careers. This report will mainly present the results of the national ECOP survey for India, and also highlight some progress made towards establishing a prospective national node in the country. During a period of 6 months (Nov 2022 – April 2023), the ECOP Asia intern focused on the following tasks:

1. Compiling a comprehensive database or registry of ECOPs in India, containing contact details of ECOPs interested in joining the ECOP network,
2. Creating and disseminating a national ECOP survey, in order to gain a better understanding of the challenges, needs and priorities of Indian ECOPs,
3. Building the foundations of a future national ECOP network in India, with the goal of enhancing cross-generational and cross-sectoral knowledge exchanges and collaborations among its members, as well as facilitating interactions between ECOPs and other key ocean stakeholders in India,
4. Conducting ‘Ocean Literacy’ workshops to raise awareness of the UN Ocean Decade and to contribute to mainstreaming ocean education,
5. Engaging with national and regional ocean stakeholders to foster collaboration and exchange of ideas.

1. Survey Demographics

1.1 Gender Composition and Geographical Distribution of Indian ECOPs

The survey was answered by a total of **124 respondents**, whose gender is slightly skewed towards males (56%), as displayed in **Figure 1**. In terms of geographic distribution, 93% of survey respondents are residing in India, while the remaining 7% are living abroad in countries such as Bangladesh, Canada, Italy, Qatar, The Republic of Korea, the United Arab Emirates (UAE) and the United States.

Out of the 109 respondents who provided details on their state or Union Territory of residence in India, 78% came from coastal states, namely: West Bengal (15.5%), Goa (15.5%), Kerala (13.7%), Maharashtra (9%), Karnataka (6%), Tamil Nadu (5.5%), Odisha (4.5%), Gujarat (4.5%) and Andhra Pradesh (2.7%), as shown in **Figures 2 and 3**. In total, 18 different states and Union Territories were represented in the survey. Most of the marine institutions, research organizations, NGOs, and other professional sectors and ocean careers are located in coastal states; hence, it is not surprising to see a majority of Indian ECOPs based in those areas.

¹ Results from the 2021 ECOP Asia survey, which were broken down by country (including India), can be consulted in this 2022 ECOP Asia report: <https://www.ecopdecade.org/wp-content/uploads/2022/08/ECOP-Asia-Intermediary-Report-public-version2.pdf>

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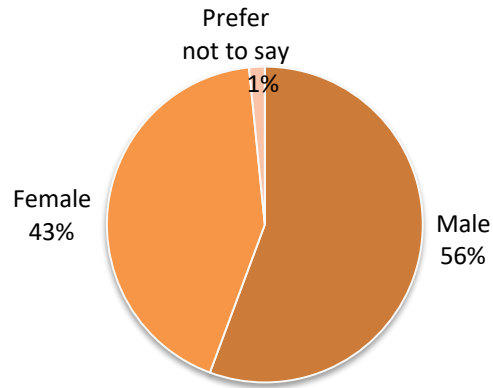


Figure 1. Gender Composition (%)

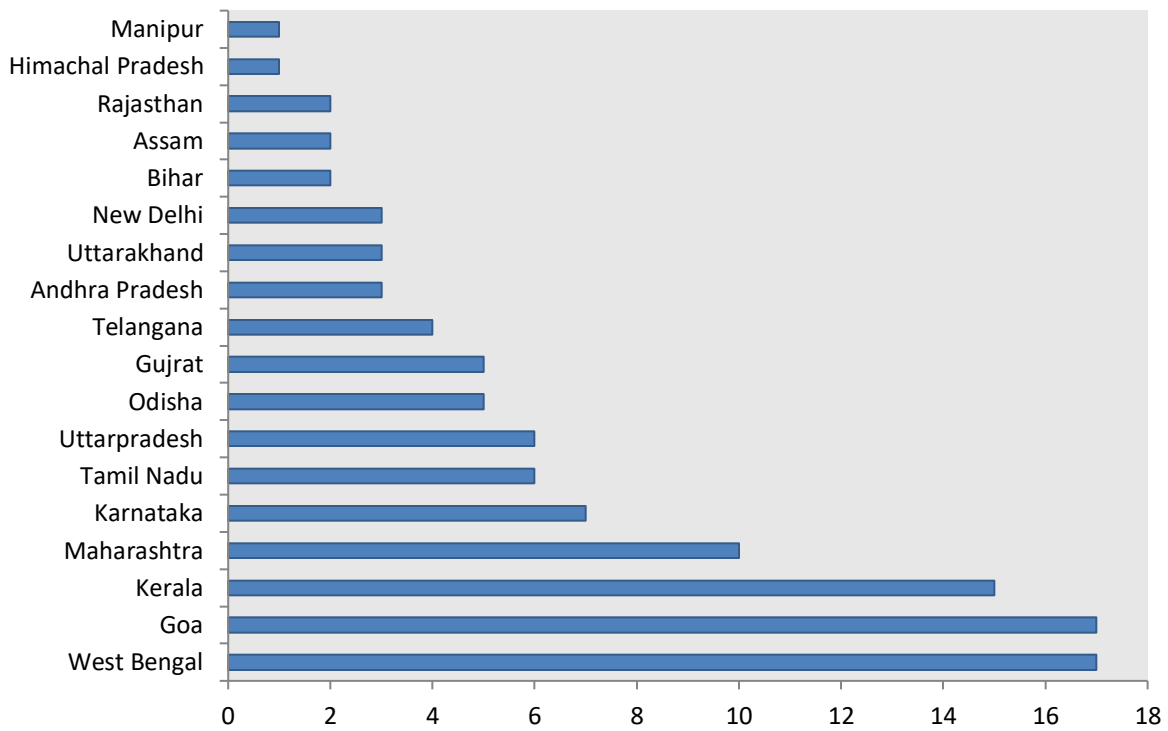


Figure 2. Number of survey respondents across Indian states and Union Territories

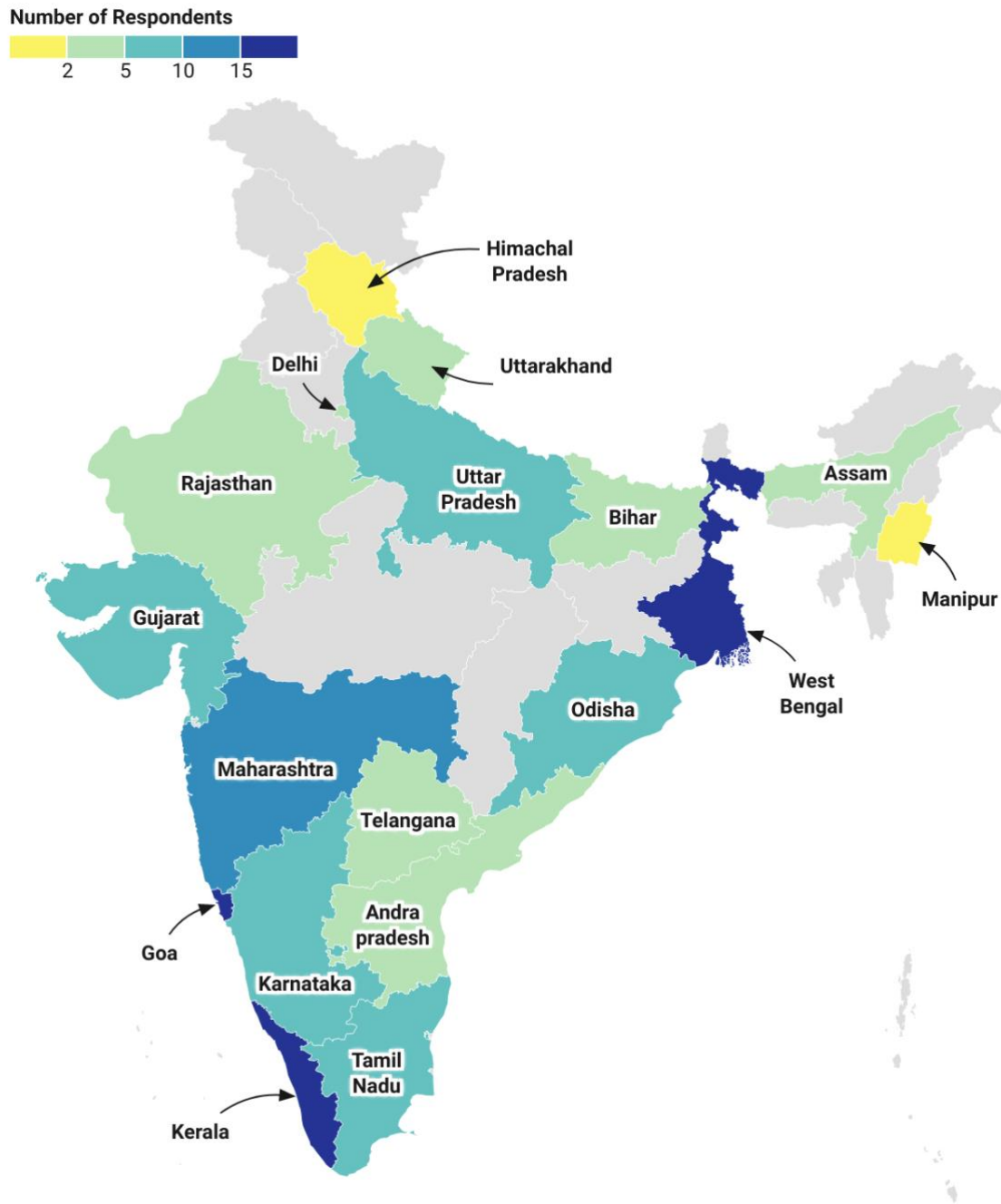


Figure 3. Geographic distribution of survey respondents across Indian states and Union Territories. *This choropleth map was created with [Datavrapper](https://datavrapper.com/).*



1.2 Areas of Expertise

When it comes to the respondents' area(s) of expertise, the majority are involved in natural sciences, such as climate science (46%), ecology (46%), oceanography (45%), biology (42%) and biogeochemistry (25%), which is shown in **Figure 4** below. Other important disciplines and focus areas represented include education (15%), data science (13%), geography (12%), ocean literacy (11%), communication (9%) and engineering (5%), which highlight the multidisciplinary expertise of Indian ECOPs. It is also worth mentioning that a non-negligible proportion of respondents specialize in freshwater systems (16%) (**Figure 4**), which also matter in the context of the UN Ocean Decade.

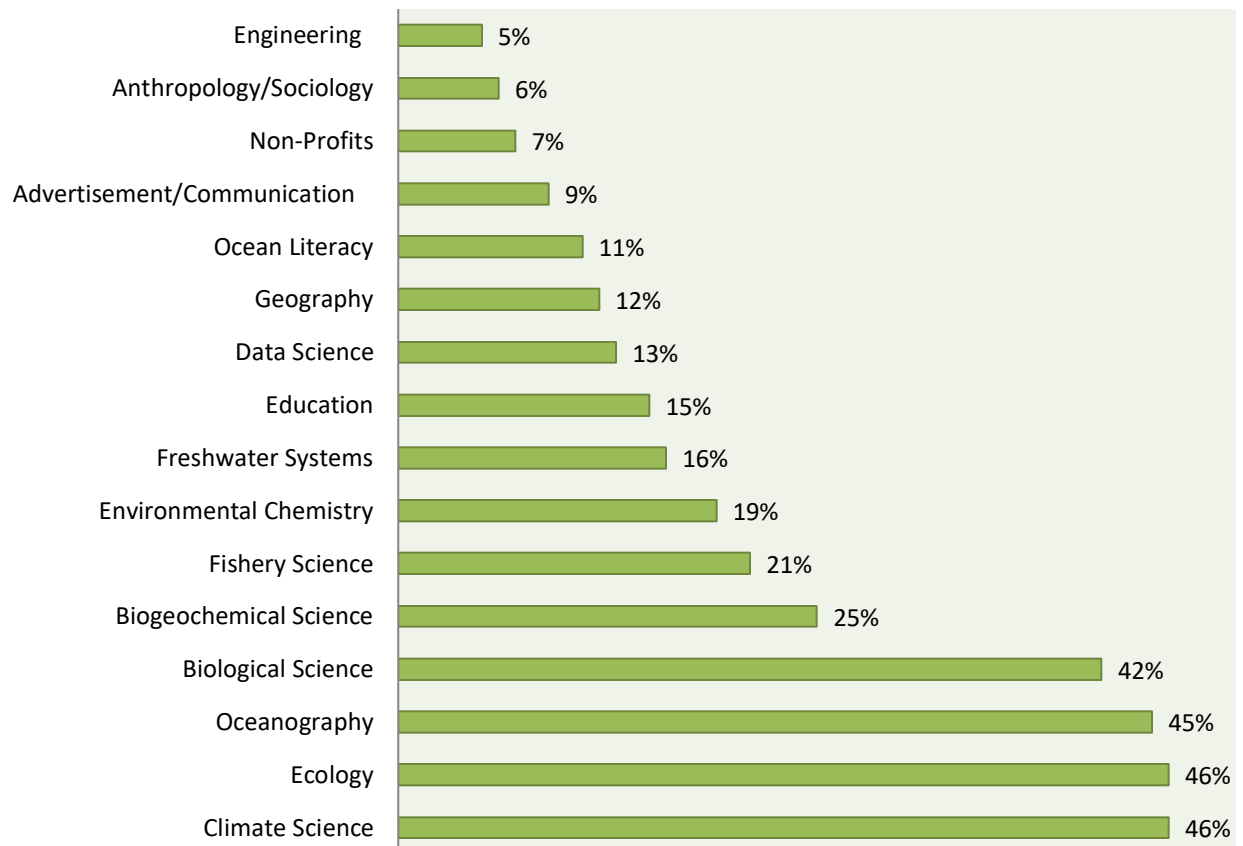


Figure 4. Areas of Expertise (% respondents)

Some respondents (< 5%) mentioned areas of expertise that were not pre-selected in the survey, including, *inter alia*: “Remote Sensing and GIS”, “Microbiome Studies”, “Coastal Processes”, “Indigenous knowledge”, “Geoinformatics”, “Forestry and Environmental Management”, “Ethology”, “Transdisciplinary Ocean Science”, “Wildlife Science”, “Ocean Policies and Management” and “Coastal Disaster Management”.

2. Awareness Levels of ECOP Programme and UN Ocean Decade

According to the official definition provided by the global ECOP Programme, an Early Career Ocean Professional “is a person who self-identifies as being early in their career (i.e., 10 years or less of professional experience) within any field and sector related to the ocean (not only employed/paid positions).” When respondents were asked whether they self-identify as an ECOP or not, the majority (74%) answered “Yes”, although 14% answered “No” and 13% said they were “Not Sure” (Figure 5).

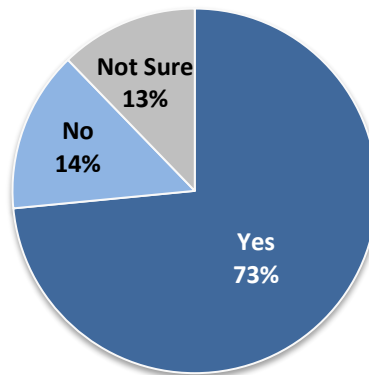


Figure 5. Self-identification as an ECOP (% of respondents)

Regarding their understanding of the global UN Ocean Decade framework, only 16% of survey respondents know a lot about it and already participated in Decade Actions (e.g., endorsed Activities, Contributions, Programmes and Projects) and related initiatives (Figure 6). More than half (66%) read about the UN Ocean Decade but never participated in it, whereas 8% of respondents never heard about it altogether. Another 10% heard about the UN Ocean Decade but never tried to know more about it (Figure 6).

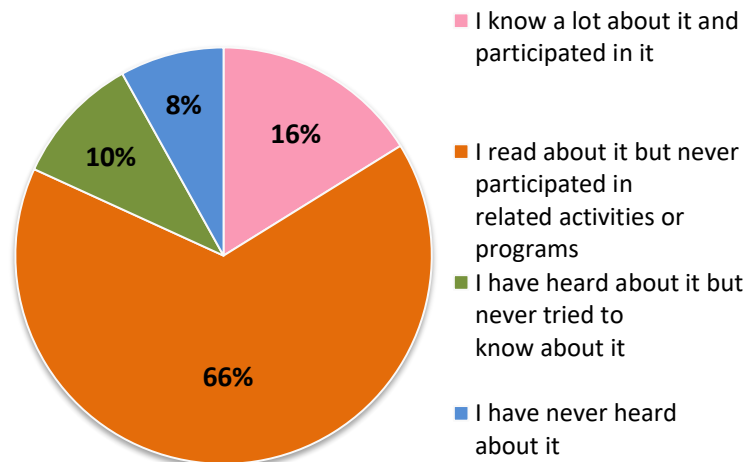


Figure 6. Understanding of the UN Ocean Decade (% of respondents)

3. Connecting to the UN Ocean Decade Outcomes

The survey also investigated which [UN Ocean Decade Outcomes](#)² aligned the most with ECOPs' primary area(s) of involvement (multiple choice available). Results from [Figure 7](#) show that a majority of Indian ECOPs (69%) are contributing towards "A Healthy and Resilient Ocean", followed closely by "A Clean Ocean" (50%) and "An Inspiring and Engaging Ocean (50)". On the other hand, selected by 36% of respondents, "An Accessible Ocean" was the least represented Ocean Decade Outcome.

Overall, Indian ECOPs allocate efforts relatively equally across all seven Ocean Decade Outcomes, with a notable preference for the "Healthy and Resilient Ocean" Outcome.

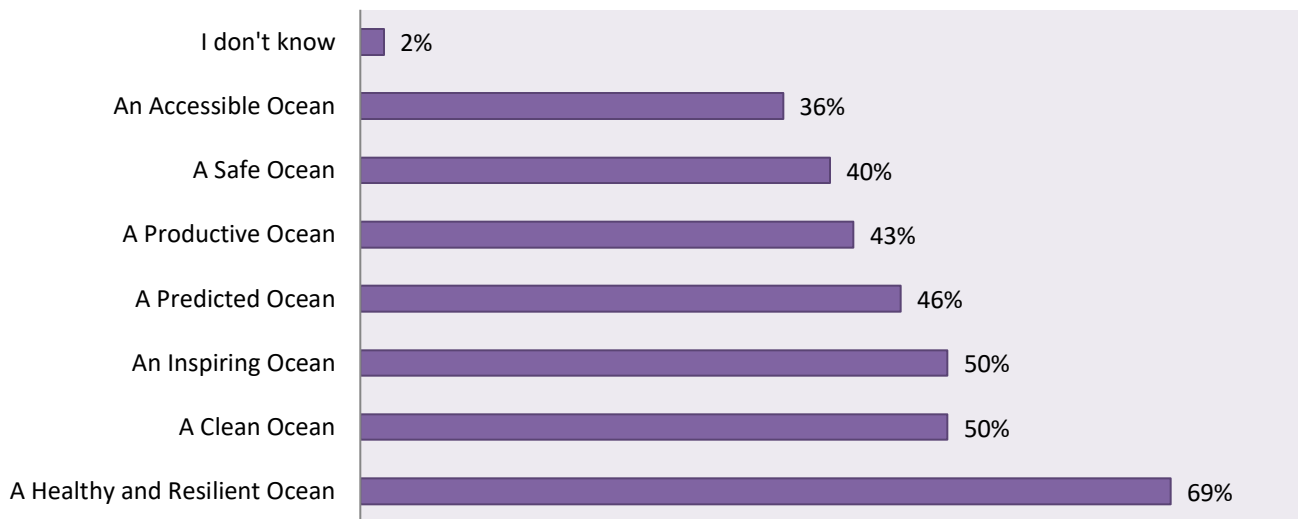


Figure 7. Connecting to the Seven UN Ocean Decade Outcomes (% respondents)

4. Identifying the Challenges, Needs, and Priorities of Indian ECOPs

4.1 General Challenges and Barriers in India

In India, [Figure 8](#) reveals that ECOPs are facing four major obstacles related to: **(1)** funding (80%), **(2)** career opportunities (71%), **(3)** training opportunities (71%), and a **(4)** lack of community and network (68%). Two other important challenges that deserve attention are gender inequality (24%) and language barriers (18%). A few respondents also mentioned a general "lack of awareness and knowledge", "lack of field exposure" and lack of recognition for engaging in ocean-related disciplines.

² For more information on the 10 Challenges and 7 Outcomes of the UN Ocean Decade, please refer to the summary of the Implementation plan here: <https://unesdoc.unesco.org/ark:/48223/pf0000376780>

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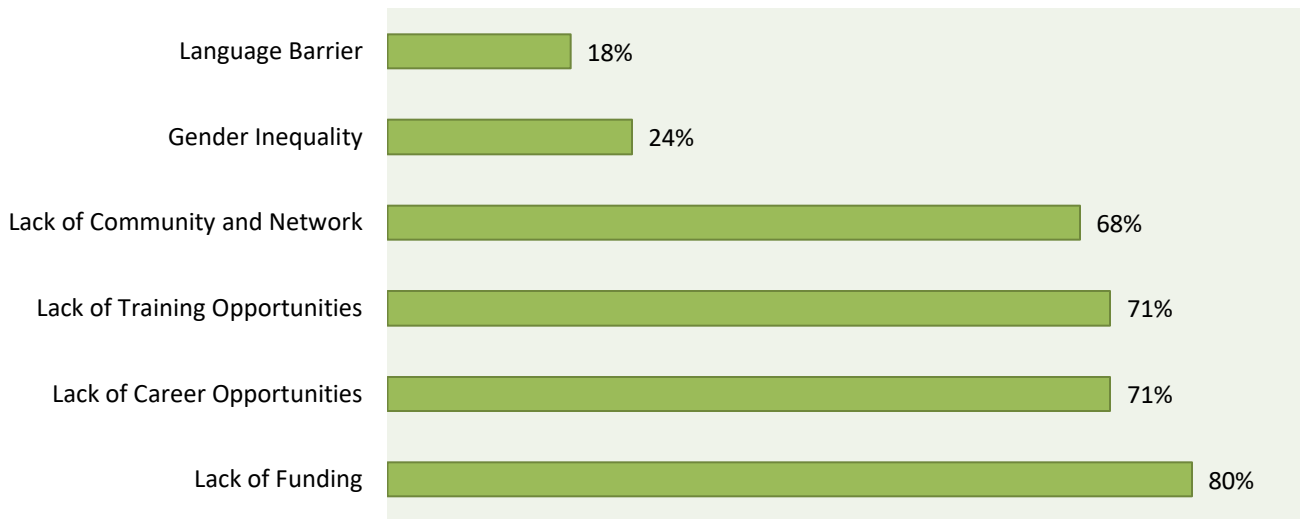


Figure 8. Challenges and barriers faced by ECOPs (% respondents)

The biggest challenges identified in the ECOP India survey are consistent with the pan-Asia results of the [2021 ECOP Asia questionnaire](#), with a lack of funding remaining the largest issue. Digging further into that matter, a follow-up question asked respondents to rate five different funding options by degree of importance. Specifically, the question used a 5-point Likert scale to assess how important each funding option was to survey respondents: (i) “Very Important”, (ii) “Important”, (iii) “Neutral”, (iv) “Slightly Important” and (v) “Not at all important”.

The results indicated that the top three funding pathways prioritized by Indian ECOPs, based on the percentage of respondents who assessed them as “*very important*”, were financial support for research activities (including grants) (80%), academic scholarships (68.5%), and in-person travel to conferences, workshops and trainings (67%). Providing funding for young startups and NGOs (59%), as well as paid internships (53%), were ranked as important, but to a lesser degree.

Other interesting ideas put forward by some respondents include, *inter alia*:

- “Funding for community-based work and grassroots engagement”,
- “Funding for conducting marine surveys”,
- “Individual fellowships for marine entrepreneurship and ocean innovation”,
- Financial assistance towards “citizen science initiatives and platforms”,
- “Funding for organizing free trainings”,
- “Grants which can enable participants to afford SCUBA diving courses such as scientific diving or activities that are expensive to gain experience”,
- “Funding for awareness campaign”,
- “Individual funding for non-affiliated people based on proposal”.



4.2 Constraints in Participating in the ECOP Programme

This question was of special relevance to the core team of the ECOP Programme, as its intent was to receive concrete feedback on what can be done better at the global but especially national level. Indeed, the Programme is still developing and strategizing its way forward, with the hope of being as culturally literate and inclusive as possible. **Figure 9** reveals that, for Indian ECOPs, the primary barrier when engaging with the ECOP Programme is the “lack of networks to receive relevant information” (68%). In addition, 46% of respondents do not know how to participate and register themselves as ECOPs, while 16% are unsure about the purpose of the ECOP Programme and what participating in it would mean for them (**Figure 9**).

This critical feedback emphasizes the need for the ECOP Programme to enhance its outreach and two-way communication strategy at the national level, establishing a platform for and led by ECOPs in India. What also transpires from these results is the necessity to clarify and demonstrate the benefits of getting involved with the ECOP Programme, whether passively (e.g., [subscribing to the monthly ECOP newsletter](#), receiving regular ocean-related updates and opportunities on social media and other communication platforms, etc.) and/or actively (e.g., joining national ECOP committees or task teams, organizing and participating in workshops, webinars and trainings, etc.). With the prospective emergence of a national ECOP node for India, more tangible engagement pathways will open up and be made available to the Indian ECOP community living both in India and abroad.

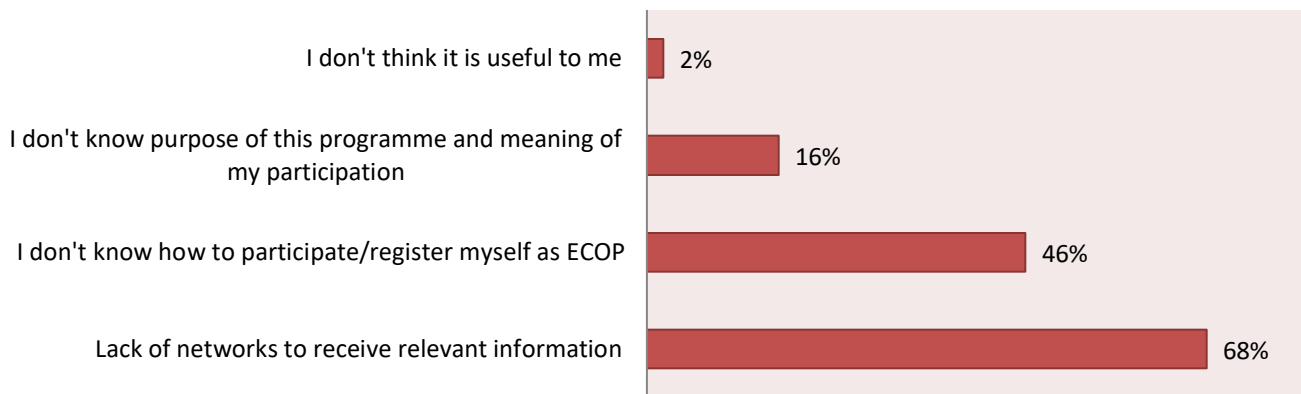


Figure 9. Barriers which constrain participation in the ECOP Programme (% respondents)

5. Ocean-related and/or Early Career Networks and Initiatives in India

When asked whether respondents are part of any ocean-related and/or early career networks and initiatives, 26% responded “Yes”, whereas a large majority (74%) answered “No” (see **Figure 10**). Notably, 94% of the latter group expressed interest in joining such networks and initiatives, highlighting the intrinsic motivation of Indian ECOPs and their desire to be better involved in ocean-related endeavors, including UN Ocean Decade activities.

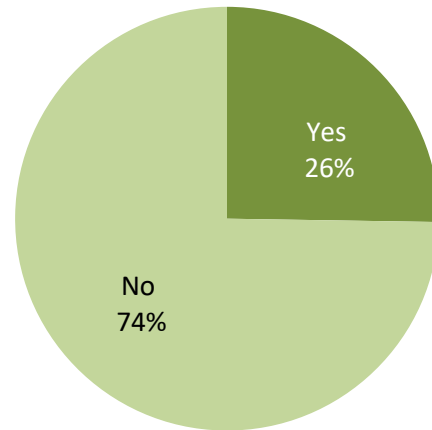


Figure 10. Percentage (%) of survey respondents involved in ocean-related and/or early-career networks and initiatives (whether locally, nationally or internationally).

A list of early career networks and ocean-related organizations that 26% of respondents (**Figure 10**) said they were involved in are compiled in **Table 1** below.

Table 1. List of ocean-related and/or early-career networks/initiatives that survey respondents are involved in [alongside a <i>weblink if available</i>]
<ul style="list-style-type: none"> - Bombay Natural History Society (BNHS), - Deep Ocean Stewardship Initiative (DOSI) [link], - Early Career Ocean Professional Programme (ECOP Programme) [link], - Early Career Scientist Network of the 2nd International Indian Ocean Expedition (IIOE-2 ECSN) [link], - Estuarine and Coastal Studies Foundation, India [link], - 2nd International Indian Ocean Expedition (IIOE-2) [link], - International Union for Conservation of Nature (IUCN) [link], - IOC-UNESCO Project office for the “International Oceanographic Data and Information Exchange” Programme (IODE) [link], - National Centre for Sustainable Coastal Management (NCSCM) [link], - North Pacific Marine Science Organization (PICES) [link], - OceanExpert [link], - Ocean Literacy Task Team of the ECOP Programme [link], - Past Global Changes (PAGES) Early-Career Network [link], - Prameya Foundation, India [link], - Scientific Committee on Antarctic Research (SCAR) [link], - UN Ocean Literacy Portal [link], - Young Earth System Sciences Community (YESS) [link],

6. Building Relationships with Key Ocean Stakeholders in India

India is one of the 33 countries that have already established a National Decade Committee (NDC), as of June 2023. The Indian NDC is hosted by the [Indian National Centre for Ocean Information Services \(INCOIS\), at the Ministry of Earth Sciences, Government of India](#). NDCs are multi-agency and multi-stakeholder national platforms that support the formal governance and coordination structure of the UN Ocean Decade³. An up-to-date list of established NDCs globally can be consulted [here](#).

In addition, INCOIS is also hosting the recently established [Decade Collaborative Centre for the Indian Ocean Region \(DCC-IOR\)](#). The DCC-IOR will provide technical, logistical, and financial support for scientific coordination and planning, identify opportunities for collaboration, conduct outreach and stakeholder engagement, and facilitate technical and scientific capacities to support Ocean Decade Actions.

Importantly, through the [Early Career Scientist Network \(ECSN\) of the 2nd International Indian Ocean Expedition \(IIOE-2 ECSN\)](#), INCOIS is also coordinating regional ECOP engagement by bringing together the young scientists working on the Indian Ocean region. As of June 2023, the ECOP Programme has established strong relationships with India's NDC and the IIOE-2 ECSN. They will work together to uphold the values and goals of the UN Ocean Decade, while leveraging the voices of ECOPs and ensuring that their needs are met in the region. Further synergies are expected with the recent endorsement of IIOE2-ECSN's Ocean Decade project: "[Devising Early-Career Capacity Development in the Indian Ocean region \(DECCaD-IO\)](#)", which is hosted under the umbrella of the ECOP Programme. Some joint activities are also expected with the DCC-IOR.

Nonetheless, while these initial relationships will be vital to the future development of a national ECOP node in the country, further efforts are needed to build bridges with other ocean-related institutions in India, and thus ensure appropriate representation across geographies and sectors.

7. ECOP India Database and Future National Node

Since November 2022, a registry of Indian ECOPs has been maintained to record the details of all registered ECOPs from and/or based in India. As of June 2023, the database comprises around **120 members**, representing various ocean sectors, including marine institutions, research labs, government agencies and non-profit organizations.

The establishment of national ECOP nodes across the globe is one of the major goals of the ECOP Programme⁴. A national ECOP chapter in India is expected to be launched later in 2023, which will help provide sustainable support to empower Indian ECOPs.

³ More information about National Decade Committees can be found in the recently published Best Practices manual from IOC-UNESCO (June 2023), which can be consulted here <https://unesdoc.unesco.org/ark:/48223/pf0000385533>

⁴ To learn more about the regional and national ECOP nodes that have an online presence on the ECOP Programme website, please visit: <https://www.ecopdecade.org/nodes/>

Acknowledgements

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Contacts


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Appendix: 2022 ECOP India Survey content

Note: Asterisks (*) identify mandatory questions. This questionnaire was created and made accessible on Google Forms.

*This online survey is brought to you by the Asian node of the **Early Career Ocean Professionals (ECOP) Programme** (www.ecopdecade.org/), which was endorsed by the UN Decade of Ocean Science for Sustainable Development in 2021. The ECOP Programme is established to empower ECOPs, who self-identify as being early in their career in any field and sector related to the Ocean.*

ECOPs are the next wave of the UN Ocean Decade. Our vision is to elevate and strengthen the diverse perspectives of new generations of ocean professionals through a collective voice, ensuring that knowledge is transferred between experienced professionals and ECOPs to promote ocean sustainability for “The Ocean We Want”. We will achieve this by empowering ECOPs with meaningful networking and professional development opportunities with each other and with local to global institutions through the framework of the [UN Ocean Decade](#).

* The [regional ECOP node in Asia](#) ('ECOP Asia') is aiming to reach the Early Career Ocean Professionals of India and further understand the diverse needs and priorities of ECOPs in the region. This will be critical as we strive to co-design meaningful capacity-building approaches for ECOPs, co-deliver professional development opportunities, build a stronger sense of community belonging and establish the framework of the future “**ECOP India National Node**.” ECOP Asia is planning to assign positions of leadership to interested and motivated ECOPs of India, connecting them with high-level officials to help decide future Ocean Decade activities and events in India.*

*★ We would highly appreciate your participation in this survey, which **should take between 3-8 minutes** to complete. Responses given to this survey will be treated with the utmost confidentiality. We will make sure to report results, insights and impacts back to you! For any inquiries on the survey and our Asian ECOP node, contact us: asia@ecopdecade.org.*



1. Which gender do you identify with?*

- Female
- Male
- Prefer not to answer
- Other (*open-ended answer*)

2. What is your country of residence?*

- India
- Other (*open-ended answer*)

3. If you are currently living in India, which state are you based in?

[*Short answer*]

4. Which one best describes your understanding of the United Nations Decade of Ocean Science for Sustainable Development (2021-30)?*

- I know a lot about it and participated in it
- I read about it but never participated in related activities or programs
- I have heard about it but never tried to know about it
- I have never heard about it

5. In which of the UN Ocean Decade Outcomes is your primary area(s) of involvement? (Select all that apply)*

- Outcome 1:** A clean ocean where sources of pollution are identified and reduced or removed
- Outcome 2:** A healthy and resilient ocean where marine ecosystems are understood, protected, restored and managed
- Outcome 3:** A productive ocean supporting sustainable food supply and a sustainable ocean economy
- Outcome 4:** A predicted ocean where society understands and can respond to changing ocean conditions
- Outcome 5:** A safe ocean where life and livelihoods and protected from ocean-related hazards
- Outcome 6:** An accessible ocean with open and equitable access to data, information and technology and innovation
- Outcome 7:** An inspiring and engaging ocean where society understands and values the ocean in relation human well-being and sustainable development
- I don't know

6. Which best describes your area(s) of expertise? (*Select all that apply*)*

- Advertisement/Communication
- Anthropology/Sociology
- Biogeochemical Science
- Biological Science
- Business & Economics



- Climate Science
- Data Science
- Ecology
- Education
- Engineering
- Environmental Chemistry
- Fishery Science
- Freshwater Systems
- Geography
- Journalism
- Law/Political Science
- Non-Profits
- Oceanography
- Ocean Literacy
- Physical Science
- Psychology
- Public Policy
- Others (*open-ended answer*)

7. Do you self-identify as an Early Career Ocean Professional (ECOP)? An ECOP is a person who self-identifies as being early in their career (10 years or less of professional experience, within any field and sector related to the ocean (not only employed/paid positions)*)

- Yes
- No
- Not sure

8. Are you part of any Ocean related or Early Career Networks and initiatives? (Including UN Decade Actions)*

- Yes
- No

9. If “Yes”, can you share their names and key focus areas? [*Optional*]
[*Short answer*]

10. If you answered “No”, would you be interested in becoming part of a network and/or in joining a UN Decade Action? [*Optional*]

- Yes
- No
- Maybe



11. What do you think are the challenges ECOPs face in India? What barriers are constraining their work/studies and what resources do they need to thrive?*

- Lack of funding
- Lack of career opportunities
- Lack of community and network
- Lack of training opportunities
- Language barrier
- Gender inequality
- Others (*open-ended answer*)

12. How important to you are the following funding options for ECOPs in India?

(The rating of each option followed the Likert scale: (i) 'Not at all important', (ii) 'Slightly important', (iii) 'Neutral', (iv) 'Important', (v) 'Very important', and (vi) 'I Don't know')*

- Travel, accommodation & registration fees to attend in-person events (e.g., training, workshops and conferences)
- Academic scholarships/bursaries
- Research funding and Grants
- Paid internships
- Financial support to start-ups and NGOs

13. Other funding options that should be prioritized in India? (Please specify)

[Short/Long answer]

14. What barriers constrain your participation in the ECOP Programme? (Select all that apply)*

- I don't know the purpose of this Programme and the meaning of my participation
- I don't know how to participate/register myself as ECOP
- Lack of networks to receive relevant information
- I don't think it is useful to me
- Others (*open-ended answer*)

15. What would you like the future national ECOP node in India to look like? What activities should ECOP India focus on in the context of the UN Ocean Decade?

Please feel free to indicate whether you would be willing to contribute to ECOP India and in what capacity (e.g., communication, national coordinator, sub-national representative for an Indian state, liaison agent with another institute etc.) *[Optional]*

[Short/Long answer]

16. Any other thoughts, comments or questions you would like to share with us? *[Optional]*

[short or long answer]

17. Name & Email address *[Optional]*

[short answer]

