Empowering women from LDCs, LLDCs and SIDS in deep-sea research

EXECUTIVE SUMMARY

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UN-OHRLLS

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Background and rationale

The impact of the historical gender gap in science, technology, engineering and mathematics (STEM) is reflected in the gender inequality seen today in most sectors, including several ocean-based sectors and the mining sector. Unless systemic change is introduced to reduce the gender gap in ocean science today, particularly in highly technical fields, emerging and future ocean-based sectors such as marine energy and marine minerals will also suffer from the same lack of gender parity.

Recognizing that the challenge of underrepresentation of women in ocean science constitutes a significant impediment to the implementation of the United Nations Convention on the Law of the Sea (UNCLOS) and the achievement of the goals and targets of the 2030 Agenda for Sustainable Development, the International Seabed Authority (ISA), in partnership with the United Nations Office of the High Representative of the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) launched the Women in Deep-Sea Research (WIDSR) project in 2021. This partnership aims to address the critical challenges faced by women scientists from developing States in actively participating in and accessing opportunities for career development and leadership roles in highly qualified sectors such as deep-sea research, with a view to contributing to strengthening the resource base of such countries in such highly technical areas of work.

The first area of action of the WIDSR project aims to improve the availability of data and information to provide better understanding of gender specific barriers and solutions in deep-sea research, particularly for least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing States (SIDS).

Objective

This report summarizes the key findings of a gender mapping exercise of the deep-sea research field and related disciplines and activities in LDCs, LLDCs and SIDS. Additionally, it summarizes the key findings of an analysis conducted to identify the critical barriers faced by women scientists from LDCs, LLDCs and SIDS in participating and accessing leadership positions in this field of work.

It is intended to inform all relevant stakeholders including governments, donor agencies, international and regional organizations, multilateral development banks, academia, industry, civil society and the international scientific community working in ocean affairs. It is also anticipated that the findings of this report will stimulate discussions on how to foster international and regional cooperation towards concrete actions in support of women's empowerment and leadership in deep-sea research.

Photo: TMC

Scope and process

GENDER MAPPING

Baseline data on women and men's participation in deep-sea research from LDCs, LLDCs and SIDS.

7 PRIMARY INDICATORS

- National contribution
- Employment Demographics
- Policies
- Education and skills training
- Funding for education and research
- Transition to employment
- Career progression and leadership

NATIONAL AND INSTITUTIONAL SURVEYS

CRITICAL BARRIERS ANALYSIS

Identification of critical barriers to women's participation and access to leadership roles in deep-sea research from LDCs, LLDCs and SIDS.

8 PRIMARY INDICATORS

- Personal demographics
- Career choices and transition to employment
- Employment environment
- Career progression and leadership
- Research funding and remuneration
- Work-life balance
- Social norms and attitudes
- Discrimination and harassment

INDIVIDUAL SURVEY

3 INTERVIEWS (LDC, LLDC, SIDS)

LDC, LLDC AND SIDS SUB REPORTS

Analysis of gender mapping data and policies in place that could be used to address critical barriers.

LITERATURE REVIEW

SCAN OF NATIONAL AND REGIONAL GENDER AND STEM POLICIES

NATIONAL AND INSTITUTIONAL SURVEYS

13 COUNTRY PROFILES

COUNTRY	COUNTRY TYPE		
	LDC	LLDC	SIDS
Bangladesh	●		
Botswana		●	
Fiji			●
Kiribati	●		●
Lesotho	●	●	
Malawi	●	●	
Mauritius			●
Mongolia		●	
Mozambique	●		
Nauru			●
Nepal	●	●	
St. Kitts and Nevis			●
Trinidad and Tobago			●

23 COUNTRIES

COUNTRY	REGION			COUNTRY TYPE			INCOME			
	Africa	Asia-Pacific	Latin America and the Caribbean	LDC	LLDC	SIDS	Low	Lower Middle	Upper Middle	High
Bangladesh		●		●				●		
Belize			●			●		●		
Botswana	●				●				●	
Cook Islands		●				●			●	
Fiji		●				●			●	
Jamaica			●			●			●	
Kiribati		●		●		●		●		
Lesotho	●			●	●			●		
Madagascar	●			●			●			
Malawi	●			●	●		●			
Maldives		●				●			●	
Mauritius	●					●			●	
Mongolia		●			●			●		
Mozambique	●			●			●			
Myanmar		●		●				●		
Nauru		●				●				●
Nepal		●		●	●			●		
Seychelles	●					●				●
Singapore		●				●				●
St. Kitts and Nevis			●			●				●
Tonga		●				●			●	
Trinidad and Tobago			●			●				●

14 SIDS (1 LDC) | **5** LLDCs (3 LDCs) | **4** LDCs

3 REGIONS

Africa, Asia-Pacific, Latin America and the Caribbean

4 INCOME CLASSES

LOWER | LOWER MIDDLE | UPPER MIDDLE | HIGH

4 Empowering women from LDCs, LLDCs and SIDS in deep-sea research

SURVEY RESPONSES

The report focuses on LDCs, LLDCs and SIDS.

The field of interest of this report is "deep-sea research and related disciplines and activities". Deep-sea research is defined as a sub-field of ocean science that focuses on the study of the deep ocean below 200 m depth. Considering that direct capacity in such a highly technical field is low in the targeted countries and that most of the LLDCs report low or no ocean science capacity, the scope of this study was broadened to include disciplines and activities with skills transferable to deep-sea research.

Deep-sea research (as used in this study)

Deep-sea related research disciplines:

1. Marine biology
2. Marine biogeochemistry
3. Marine microbiology
4. Marine biotechnology
5. Marine ecology
6. Marine geology
7. Geological oceanography
8. Marine geochemistry
9. Marine geophysics
10. Marine engineering and technology
11. Ocean observation and technology
12. Physical oceanography
13. Other – ocean science
14. Other – related disciplines

Deep-sea related activities:

1. Off-shore/marine industry
   - a) Shipping
   - b) Maritime engineering
   - c) Maritime transport and logistics
2. Deep-sea mining
   - a) Subsurface resource exploration and development
   - b) Seabed exploration and mining
3. Marine energy
   - a) Off-shore renewable energy
   - b) Off-shore engineering
   - c) Oil and gas (ocean drilling)
4. Fisheries and aquaculture
5. Conservation
6. Other – related research discipline
7. Other – related industry field
8. On-shore/inland:
   - a) Oil and gas extraction
   - b) Mining
   - c) Shipping
   - d) Fisheries and aquaculture
   - e) Other – related research discipline
   - f) Other – Related industry field

To ensure a representative sample across regions, income levels, and country types, ISA invited the participation of 43 countries from the three categories (LDCs, LLDCs and SIDS). In response, 23 of these countries (25.5 per cent of all LDCs, LLDCs and SIDS listed by UN-OHRLLS) nominated national data focal points.

These national data focal points were instrumental in enabling the collection of primary and secondary data from 52 institutions and 128 individuals (105 women and 23 men) in these countries, via surveys at national, institutional and individual levels. Additionally, targeted interviews were conducted with individuals from each of the three categories of country.

Gender mapping to assess the current participation of women scientists from LDCs, LLDCs and SIDS in deep-sea research and related disciplines and activities as well as the identification of critical barriers were done against key indicators, and a thorough review of relevant national policies and country profile data of a focus group of participating countries was conducted.

Project staff consulted throughout the project with a specially created Advisory Committee to receive strategic inputs and guidance. The Advisory Committee comprised representatives and experts from UN agencies (International Labor Organization; UN Department for Economic and Social Affairs; UNOHRLLS) and other relevant intergovernmental organizations (Organisation for Economic Co-operation and Devel-

opment; Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development; the Pacific Community), research institutions (National Institute of Oceanography and Fisheries of Egypt; National Oceanography Centre of the UK). The Committee provided an insightful platform where all experts were able to exchange ideas and suggestions leading to the development of the report.

Photo: TMC

Key findings

- The majority of the participating countries (73%) highlight engaging and investing in deep-sea research as very important for their countries. This is notably the case for SIDS, 92 per cent of which reported investing in deep-sea research as very important, followed by 60 per cent of LDCs and 40 per cent of LLDCs.
- Almost all of the participating countries (95%) highlight the need to put in place measures to support gender equality in deep-sea research as very important for their countries.
- Data availability is limited particularly in relation to national budgetary contributions in support of deep-sea research as well as gender-disaggregated information in relation to education and skills training.
- Most scholarships and research grants in deep-sea research received by women in the participating countries were awarded by international organizations, highlighting the importance of the role of international and regional organizations in developing the capacity of women scientists from LDCs, LLDCs and SIDS in deep-sea research.

- While most of the participating countries address gender in their constitutions and have high-level policies and visions for gender equality in varying degrees, sectoral policies related to ocean, fisheries, mining etc. were found not to specifically address women and gender aspects.
- Education policies among the participating countries varied. While gender aspects were covered in a few education policies related to STEM fields, no specific gender related policy was found for ocean science in the participating countries.
- Although many of the participating institutions had different siloed policy provisions related to health plans, parental leave, flexible working hours, anti-harassment and equal pay that may apply to gender related issues, less than 10 per cent of the institutions had a holistic gender specific policy addressing all aspects of gender equality. Notably, institutional policies on child care support were found to be the least common, although this was identified as a key barrier and need by the participating individuals.
- Despite high-level policies for gender equality being present in the majority of participating countries, the gendered analysis of the deep-sea research sector across countries and institutions showed that women are underrepresented in all areas of employment, career progression and leadership:

Data show that in the participating LDCs, LLDCs and SIDS:

- Fewer women are employed in deep-sea research than men. They are also underrepresented at all stages of the profession.
- More women hold temporary or contractual positions (which are more precarious and uncertain positions) in deep-sea research than men, who hold more permanent positions.
- Fewer women are hired in deep-sea research compared to men.
- Fewer women have received research grants in deep-sea research compared to men.
- Fewer women than men have opportunities to participate in field/at-sea work.
- Women in deep-sea research are underrepresented in opportunities to progress their careers as well as in the leadership space.

- Fewer women than men have published as lead or co-authors.
- Fewer women than men have attended or presented in conferences.
- Fewer women than men have received a promotion in the last five years.
- Fewer women than men lead as heads of institutions.
- Fewer women than men are in different leadership or managerial positions.
- Fewer women than men are on institutional boards of directors.
- Fewer women than men are on institutional governing councils.
- Fewer women than men are have been invited to participate in ministerial committees.

- The analysis of the barriers encountered by women working in deep-sea research in the participating LDCs, LLDCs and SIDS shows that some key systemic issues continue to be inhibiting factors to their participation and success in this field, such as child-care and work-life balance, discrimination, harassment and cultural norms related to gender. While many of these systemic issues may also apply to gender inequality in other sectors, these barriers can be exacerbated in deep-sea research and related activities given the need for higher capacity in terms of education and skills, and the time demand for field/at-sea work and international travel and cooperation.
- The analysis of critical barriers that women scientists from LDCs, LLDCs, and SIDS face in participating and accessing leadership roles in deep-sea research and related activities is based on the direct inputs received from 128 individuals (105 women and 23 men) working in these fields in the 23 participating LDCs, LLDCs and SIDS.

Inputs received from 128 individuals in 23 LDCs, LLDCs and SIDS show that:

- Financial or gender related reasons (care for children, parents and/or other dependents, gender norms, cultural expectations, safety, pregnancy) have led to more than half of the women to decline opportunities to work or study abroad.
- Parental leave distribution between men and women does not allow for alternative or additional support in the early phases of child-rearing, which can be difficult to manage in jobs that require lot of travel and field work.
- Almost half the women have reported being discriminated against at work either on the basis of gender or age. Most of the women perceived that their achievements were not evaluated or rewarded; they felt ignored or isolated at work; and they received offensive remarks.
- Over 15 per cent of women have faced harassment at work as well as during the early stages of their career and studies, with sexual harassment being the most commonly experienced form of harassment. One-third of the women have been the recipient of unwanted leers, sexual comments, noises or gestures at their workplace.
- The key challenges faced by (women) students in deep-sea research are lack of career guidance and internship opportunities, lack of financial capacity to support field work, lack of job opportunities in the country and related engineering disciplines at universities being very male-dominated.
- Lack of financial, institutional (including infrastructure such as access to laboratories, ships) and human capacity were reported as the main challenges affecting women's participation and success in deep-sea research, followed by challenges related to lack of opportunities and support in career choice and career progression.
- Lack of engagement with the international ocean science community was seen as a particular barrier for women from LLDCs.

Recommendations

Building on the findings of the analysis undertaken, several recommendations can be made. The following recommendations are directed to governments of LDCs, LLDCs and SIDS and their relevant ministries and departments; governments of donor States; international and regional organizations and international donor agencies globally, working in ocean affairs. These recommendations can be regrouped in four main categories:

Key gaps	Recommendations to advance participation and empowerment of women in deep-sea research in LDCs, LLDCs and SIDS
Data	**Limited gender-disaggregated and budgetary data in deep-sea research.** • Governments, particularly in LDCs, LLDCs and SIDS, corresponding national statistics offices, institutions, and companies should promote standardisation of gender-disaggregated data collection and reporting in fields related to deep-sea research. • Organizations involved in international classification systems, including UNESCO, ILO and OECD, should enable integration of deep-sea research related activities into existing international standardized occupational and educational classifications to better facilitate standardized gender-disaggregated data.
Capacity	**Financial, institutional and human capacity identified as the main challenges for women in LDCs, LLDCs and SIDS to succeed in deep-sea research.** • Governments of LDCs, LLDCs and SIDS could increase budgetary allocation in deep-sea research and include gender considerations in the expenditure. • ISA members, other States, contractors, relevant international and regional organizations, multilateral development banks, academic, scientific and technical institutions, philanthropic organizations, corporations and private persons should support the targeted initiatives identified by ISA in its programmatic approach to capacity development aimed at addressing the capacity needs identified by LDCs, LLDCs and SIDS in relation to the participation and empowerment of women in deep-sea research. • Governments, particularly in LDCs, LLDCs and SIDS, should be encouraged to support the participation of women deep-sea researchers in international ocean science initiatives, such as conferences, meetings, workshops and joint research cruises. • ISA members should be encouraged to support opportunities for paid internships in international scientific institutions and international organizations, including ISA, for women engaged in deep-sea research from developing countries, particularly LDCs, LLDCs and SIDS. • ISA should encourage all contractors to make at least 50 per cent of placements in the Contractors' Training Programme available to women.

Systemic barriers

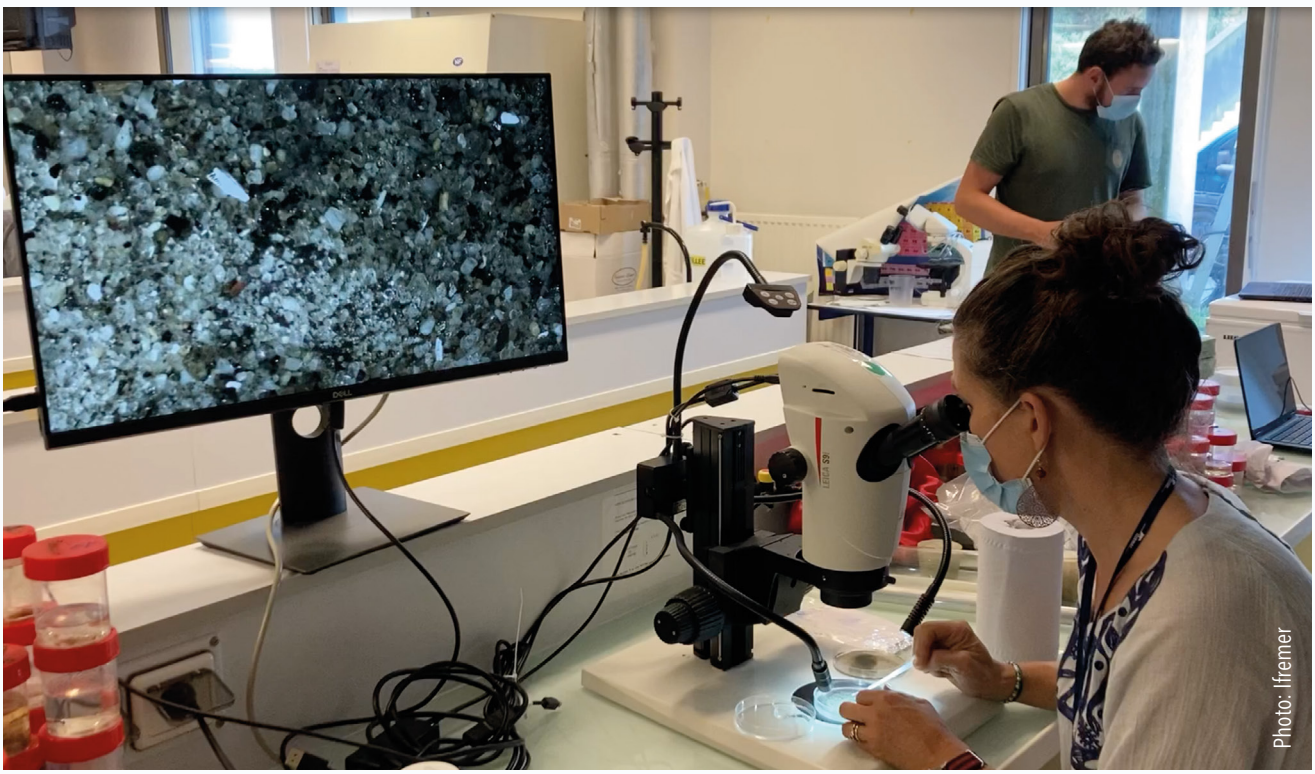
More than half of the women interviewed have turned down career opportunities due to financial or gender related reasons, among many other disadvantages discussed in this report.

- Governments, particularly in LDCs, LLDCs and SIDS, should take measures to address the workplace issues identified in the present report that act as impediments to the full participation of women in deep-sea research (sexual harassment, parental leave, career breaks, flexible working hours, access to childcare, nap time in pods etc.).
- Regional organizations could lead regional level assessments of such systemic and invisible barriers that may be specific to their regions to inform policy and programmes of national entities in deep-sea research in the region.
- Government ministries and departments working in deep-sea research should promote integration of specific gender elements to address such barriers in their sectoral policies and action plans.
- ISA Members, research institutions, and contractors should adopt anti-sexual harassment policies aimed at protecting women aboard scientific research vessels.

Leadership support

Women were found to be underrepresented in all leadership roles. The majority of women had no access to leadership trainings or relevant opportunities for field and at-sea work.

- ISA, in collaboration with international and regional organizations, should promote and support early career mentoring programmes for women in deep-sea research.
- International organizations, regional organizations, multilateral development banks, international donor agencies, donor States, national governments and private sector working in ocean affairs could mobilize financial or in-kind resources to support leadership and mentoring programmes.



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2021 2030 United Nations Decade of Ocean Science for Sustainable Development

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