

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



UN-OHRLLS

© International Seabed Authority 2022

Publications of the International Seabed Authority enjoy copyright. Nevertheless, short excerpts may be reproduced without authorization, on condition that the source is indicated. For rights of reproduction or translation, a request should be addressed to:

International Seabed Authority
14-20 Port Royal Street
Kingston, Jamaica
E-mail: news@isa.org.jm
Tel: +1 876 922-9105
www.isa.org.jm

Empowering women from LDCs, LLDCs and SIDS in deep-sea research
ISBN 978-976-8313-23-2 (pbk)
ISBN 978-976-8313-24-9 (ebk)

DISCLAIMER

The designations employed in ISA publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the Secretariat of the International Seabed Authority concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

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

Table of contents

ACKNOWLEDGEMENTS 08

ACRONYMS AND
ABBREVIATIONS 09

FOREWORD 10

EXECUTIVE SUMMARY 12

01

INTRODUCTION

1.1. Background and rationale 18

1.2. Objective 19

02

METHODOLOGY

2.1. Scope and process 20

2.2. Data collection and analysis 24

2.3. Study limitations 27

03

RESULTS PART 1: GENDER MAPPING IN DEEP-SEA RESEARCH 28

3.1. National perspectives on deep-sea
Research and Gender Equality 28

3.2. National contribution related to deep-
sea research (Indicator #1) 28

3.3. Employment (Indicator #2) 32

3.4. Gender-related policies, infrastructure,
and employment supports (Indicator #3) 34

3.5. Education and skills training
(Indicator #4) 36

3.6. Funding for education and research
(Indicator #5) 36

3.7 Hiring practices (Indicator #6) 38

3.8. Career progression and leadership
- National and institutional perspective
(Indicator #7) 38

3.9. Analysis of LDCs, LLDCs and SIDS
against the Global Gender Gap Index 42

04

RESULTS PART 2 – ANALYSIS OF CRITICAL BARRIERS 44

4.1. Personal demographics (Indicator #8)	44
4.2. Career choices and transition to employment (Indicator #9)	46
4.3. Employment environment (Indicator #10)	48
4.4. Work-life balance (Indicator #11)	48
4.5. Career progression and leadership - Individual perspective (Indicator #12)	50
4.6. Research funding and remuneration (Indicator #13)	53
4.7. Social norms and attitudes (Indicator #14)	53
4.8. Discrimination and harassment (Indicator #15)	54
4.9. Student responses	59
4.10. Top five challenges perceived by women	60

05

PART 3: IN FOCUS POLICY ANALYSIS - RESULTS 62

5.1. In Focus - LDCs	62
5.2. In Focus - LLDCs	68
5.3. In Focus - SIDS	74

06

PART 4: SUMMARY AND DISCUSSIONS 81

07

CONCLUSION AND RECOMMENDATIONS 87

LIST OF FIGURES 91

LIST OF TABLES 92

REFERENCES 93

Annex A - Study indicators 101

Annex B - Country profiles: data notes and sources 119

Annex C - Classifications 119

Acknowledgements

This report was commissioned as part of the activities under the Women in Deep-Sea Research (WIDSR) project implemented by the International Seabed Authority (ISA) in partnership with the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) and more than twenty governments, international and regional organizations, research institutions, private sector entities, and non-governmental organizations.

This publication has been produced by the ISA Secretariat under the overall supervision of Dr. Sonakshi Mishra, Programme Management Officer and Dr. Marie Bourrel-McKinnon, Senior Policy Officer and Special Assistant to the Secretary-General, with the assistance of Ms. Asenaca Navoti, Senior Liaison Assistant.

The report benefitted from the work of consultants, CarolAnne Black Consulting Science Writers, who were selected through a global recruitment process. The Secretariat wishes to particularly acknowledge the contributions of Ms. CarolAnne Black, Mr. Craig Burkett, Ms. Amberlee Williams, Dr. Susan Buckingham and Dr. Wendy Watson-Wright from CarolAnne Black, Consulting Science Writers.

The Secretariat also expresses deep appreciation to the members of the advisory committee established under the WIDSR project to provide inputs and strategic guidance in the development of the methodology used for the analysis and the preparation of this report, namely: Ms. Isabelle Ramdoo and Ms. Ege Tekinbas from the Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development; Ms. Claire Jolly from the Organisation for Economic Co-operation and Development; Ms. Camila Pereira Rego Meireles from the International Labour Organization; Dr. Katy Soapi from the Pacific Community; Dr. Suzan Mohamed El-Gharabawy from the National Institute of

Oceanography and Fisheries, Egypt; Mr Alan Evans from the National Oceanography Centre of the UK; Ms. Shifaana Thowfeequ from UN-OHRLLS; and Mr Sainivalati Navoti from the UN Department of Economic and Social Affairs. Each of them made an important contribution at all steps of the process and added significant value by giving their time and sharing their expertise.

In addition, the Secretariat wishes to thank all representatives of Member States and particularly those individuals and experts who have been nominated as national data focal points and who agreed to allocate their time and effort for the purpose of this report. In particular, the ISA Secretariat wishes to commend the dedication and commitment of (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, Vanuatu).

The Communications Unit of ISA must be commended for the preparation of this report for publication, in particular, Ms. Stefanie Neno, Communications Specialist, Ms. Shanique Gregory, Senior Communications Assistant, Mr. Andrew Benton, Digital Communications Consultant and Mr. Pablo Rebaque Moran, Graphic Designer Consultant.

Acronyms and abbreviations

BGR

Federal Institute for Geosciences and Natural Resources,
Germany

CEO

Chief Executive Officer

Ocean Decade

United Nations Decade of Ocean Science for
Sustainable Development

OECD

Organisation for Economic Co-operation and Development

DORD

Deep Ocean Resources Development Co. Ltd.

EEZ

Exclusive Economic Zone

GGI

World Economic Forum's Global Gender Gap Index

GSR

Global Sea Mineral Resources

IGF

Intergovernmental Forum on Mining, Minerals,
Metals and Sustainable Development

IHO

International Hydrographic Organization

IMO

International Maritime Organization

IOC-UNESCO

Intergovernmental Oceanographic Commission
of UNESCO

IORA

Indian Ocean Rim Association

ILO

International Labour Organization

ISA

International Seabed Authority

ISCO

International Standard Classification of Occupations

LDC

Least developed country

LLDC

Landlocked developing country

MABIK

National Marine Biodiversity Institute of Korea

MARAWA

Marawa Research and Exploration Ltd.

N/A

Not applicable

NGO

Non-governmental Organization

NIOF

National Institute of Oceanography and
Fisheries, Egypt

NORI

NORI - Nauru Ocean Resources Inc.

SDGs

United Nations Sustainable Development Goals

SIDS

Small island developing States

SPC

Pacific Community

STEM

Science, Technology, Engineering, and Mathematics

TOML

TOML - Tonga Offshore Mining Limited

UN

United Nations

UNFCCC

United Nations Framework Convention on
Climate Change

UN-OHRLLS

United Nations Office of the High
Representative for the LDCs, LLDCs and SIDS

UNCLOS

United Nations Convention on the Law Of the Sea

UNDESA

United Nations Department of Economic and
Social Affairs

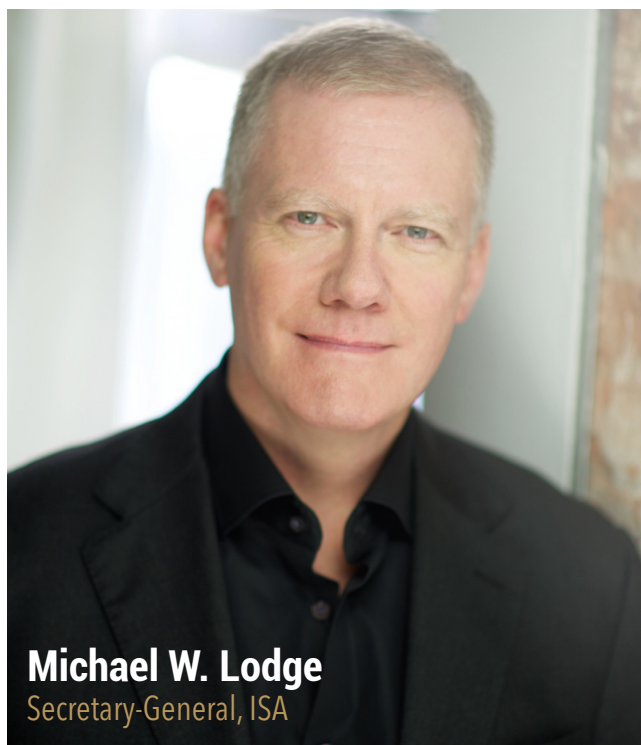
UNESCO

United Nations Educational, Scientific and
Cultural Organization

WIDSR

Women In Deep-Sea Research Project

Foreword



Michael W. Lodge
Secretary-General, ISA

It gives me the greatest pleasure to introduce this report which contains key findings from the first ever gender mapping of the deep-sea research field and related disciplines and activities in least developed countries, landlocked developing countries and small island developing States as well as an analysis of the barriers women face in participating and accessing leadership positions in these fields.

Science, technology and innovation are the foundations for finding solutions to the economic, social, and environmental dimensions of the 2030 Agenda for Sustainable Development. Yet, the scientific and technological advances on which the Sustainable Development Goals and associated targets depend, rely on the full and effective participation of women in science and scientific industries. The vital role of women in contributing to these global commitments and in particular to SDG 14 is well recognised and has been repeatedly reaffirmed by governments and key international conferences and meetings, including the agreed conclusions of the Commission on the Status of Women in 2011, the UN resolution on Science, Technology, and Innovation for Development in 2013. In 2019, World Oceans Day was dedicated to the theme of Gender and the Ocean.

Notwithstanding, women remain severely under-represented in many areas of ocean affairs, including in highly technical and emerging fields of ocean science and engineering, and in decision-making roles. This reflects a historical gender gap in science, technology, engineering and mathematics. In this context, and unless systematic change is introduced to reduce the gender gap, existing ocean-based sectors as well as emerging and future ocean-based sectors such as marine energy and marine minerals will continue to suffer from lack of gender parity.

It is, therefore, urgent and necessary that collective efforts be engaged to ensure that women are provided with the opportunity to fully participate in all aspects of ocean related issues. This must include increased efforts to support women's empowerment and leadership in all fields of ocean governance and ocean science. ISA's commitment to this objective, which we have embraced since 2017, is reflected in the different initiatives undertaken under the Women in Deep-Sea Research project. Implemented in close collaboration with the UUN-OHRLLS, and in partnership with more than twenty entities representing governments (Argentina, Kiribati, Malta, Nauru, South Africa, Madagascar, Cook Islands), international

and regional organizations (UN DESA, IGF, IHO, IORA, SPC), research institutions (MABIK, Korea; NIOF, Egypt; NOC, UK) and the private sector (BGR, DORD, GSR, Ifremer, MARAWA, NORI, TOML, West P&I), the WIDSR project aims at addressing the critical challenges faced by women scientists from developing States, particularly from the LDCs, LLDCs and SIDS, in accessing opportunities for careers and leadership roles in deep sea research with a view to strengthening the resource base of such countries in highly technical and emerging areas of knowledge.

Building on the priorities identified in the Strategic Plan and the High-Level Action Plan of ISA for 2019-2023, the action areas identified in the Roadmap for Accelerated Implementation of the Vienna Programme of Action, the Doha Programme of Action for Least Developed Countries and more recently in the ISA Action Plan in support of the UN Decade of Ocean Science for Sustainable Development, this project centres around four key areas of action: policy development, capacity development, sustainability and partnerships, and communication and outreach.

This report is one of the first activities of the WIDSR project. It focuses on improving the availability of data and information on the current status of women scientists in deep-sea research in LDCs, LLDCs and SIDS and identifying critical barriers and potential solutions in relation to women's participation and leadership in deep-sea research and related fields and activities. I hope it provides timely and necessary evidence to support the urgent need to accelerate collective efforts in support of enhancing the role of women in marine scientific research.

I am very grateful to all of those involved in the preparation of this important report, and particularly the experts of the advisory committee: Ms. Isabelle Ramdoo, Ms. Ege Tekinbas, Ms. Claire Jolly, Ms. Camila Pereira Rego Meireles, Dr. Katy Soapi, Dr. Suzan Mohamed El-Gharabawy, Mr. Alan Evans, Ms. Shifaana Thowfeequ and Mr. Sainivalati Navoti who gave freely of their time and expertise throughout the preparation of this report.

I also wish to express my sincere gratitude to all the members of the Authority which have actively engaged in this process including by nominating national data focal points without which this report would have not been possible.

My thanks also go to the project team and in particular to Dr. Sonakshi Mishra, Dr. Marie Bourrel-McKinnon and Ms. Asenaca Navoti.

I commend the report and the recommendations contained in it and look forward to progressing the work initiated with all our current and future partners to make sure that collectively, we will deliver transformative actions towards women empowerment and leadership in deep-sea research.

Executive Summary

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.

This report 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.



Scope and process

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.

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 the Advisory Committee to receive strategic inputs and guidance. The Advisory committee comprised representatives and experts from UN agencies (International Labor Organization; UN Department of Economic and Social Affairs; UN-OHRLLS) and other relevant intergovernmental organizations (Organization for Economic Cooperation and Development (OECD); Intergovernmental Forum on Mining, Minerals, Metals and Sustainable Development; the Pacific Community), and research institutions (National Institute of Oceanography and Fisheries of Egypt, National Oceanography Centre of the UK) which provided an insightful platform where all members were able to exchange ideas and suggestions leading to the development of this report.

Key findings

The majority of the participating countries (73 per cent) 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 per cent) 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 and institutional 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 related aspects were covered in a few 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 women 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.

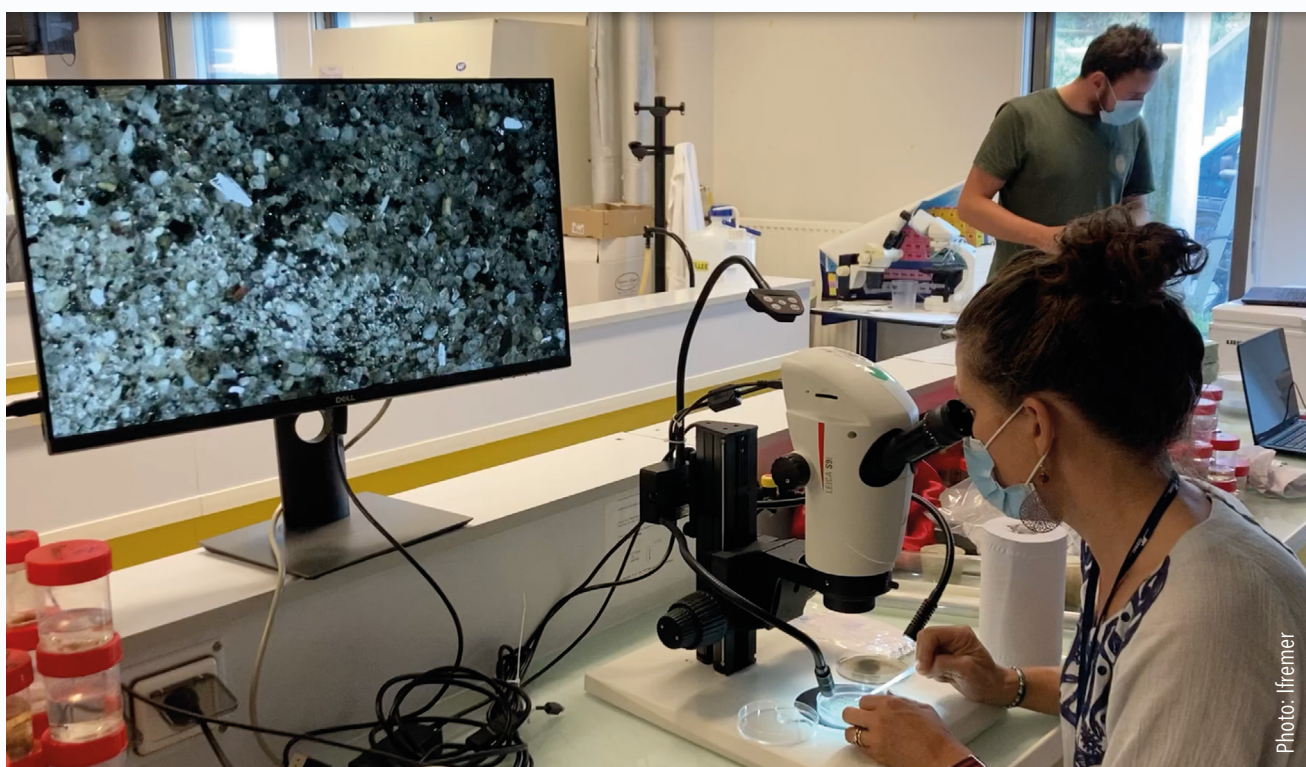


Photo: Ifremer

1. Introduction

1.1. 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 sectors¹ and the mining sector.² 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.

The study of the deep sea (>200 m depth) that forms the largest part of the world's ocean, is a highly technical, emerging and rapidly growing field of ocean science. More than half of the world's deep seabed area falls outside national jurisdictions and is recognized as the common heritage of all of humankind by the United Nations Convention on the Law of the Sea (UNCLOS) on behalf of which ISA acts.³

International Seabed Authority (ISA) is mandated under UNCLOS to promote and encourage the conduct of marine scientific research in the international seabed area (the Area) by ensuring that programmes are developed for the benefit of developing States and technologically less-developed States with a view to strengthening their research capabilities and fostering the employment of their qualified personnel in research in the Area (Article 143, UNCLOS). Building on its exclusive mandate under UNCLOS and the 1994 Agreement in relation to marine scientific research, ISA has formalized its contribution to the societal objectives of the United Nations Decade of Ocean Science for Sustainable Development through the adoption of a dedicated Action Plan⁴

in 2020 which expressly identifies the need to advance women's empowerment and leadership in marine scientific research, as well as to address the specific capacity development needs identified by least developed countries (LDCs), landlocked developing countries (LLDCs) and small island developing states (SIDS).

Recognizing that the challenge of underrepresentation of women in ocean science represents a significant impediment to the implementation of UNCLOS and the achievement of the goals and targets of the 2030 Agenda for Sustainable Development through which developing States can benefit fully from the promises of the sustainable ocean economy, ISA in partnership with the United Nations Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (UN-OHRLLS) launched in 2021, the Women in Deep-Sea Research (WIDSR) project. This partnership aims to address the critical challenges faced by women scientists from developing States in actively participating 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 for a better understanding of gender specific barriers and solutions in deep-sea research and related disciplines and activities, particularly for LDCs, LLDCs and SIDS.

¹ BIMCO, ICS (2021)

² <https://www.igfmining.org/gender/women-mine-future/>

³ Part XI of UNCLOS

⁴ ISBA/26/A/17

Best available global estimates in ocean science were provided in 2020 through the Global Ocean Science Report GOSR (IOC-UNESCO, 2020). Data provided by 40 countries⁵ in the report shows that on average women make up to 37 per cent of ocean science personnel, with the range between 7 per cent to 72 per cent. No LLDC, 2 SIDS and 7 LDCs are included in that list. Furthermore, activities related to deep-sea research are not yet captured in international occupational classifications (ILO, 2016) which can present challenges for a gendered-analysis of the sector.

The current study attempts to improve the availability of data and information on the current status of participation of women in deep-sea research in LDCs, LLDCs⁶ and SIDS and identify critical barriers that may be preventing their participation and progression to leadership.

1.2. 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, that was conducted in this study. Additionally, the report 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.

This report 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.



⁵ Figure ES.4., Global Ocean Science Report 2020

⁶ Note that the scope of deep-sea research and related activities in this study has been expanded to include transferable skills from expertise in related sectors in land-locked countries. Details on list of definitions can be found in Chapter 2 on Methodology.

2. Methodology

2.1. Scope and process

2.1.1. Geographical scope of the study

The focus of this report is on LDCs, LLDCs and SIDS. Globally, 91 countries are recognized by UN-OHRLLS as LDCs, LLDCs and SIDS (46 LDCs, 32 LLDCs and 38 SIDS).

To ensure a representative sample of countries based on a balance of region, income level and country type (LDC, LLDC, SIDS) in this study, ISA solicited engagement from 43 LDCs, LLDCs and SIDS of which 23 indicated their interest to participate in the study and nominated national data focal points (see Figure 1 and Figure 2). This represents a coverage of 25.5 per cent of all LDCs, LLDCs and SIDS globally in this study.



Figure 1: Map of LDCs, LLDCs and SIDS highlighting countries participating in the study.

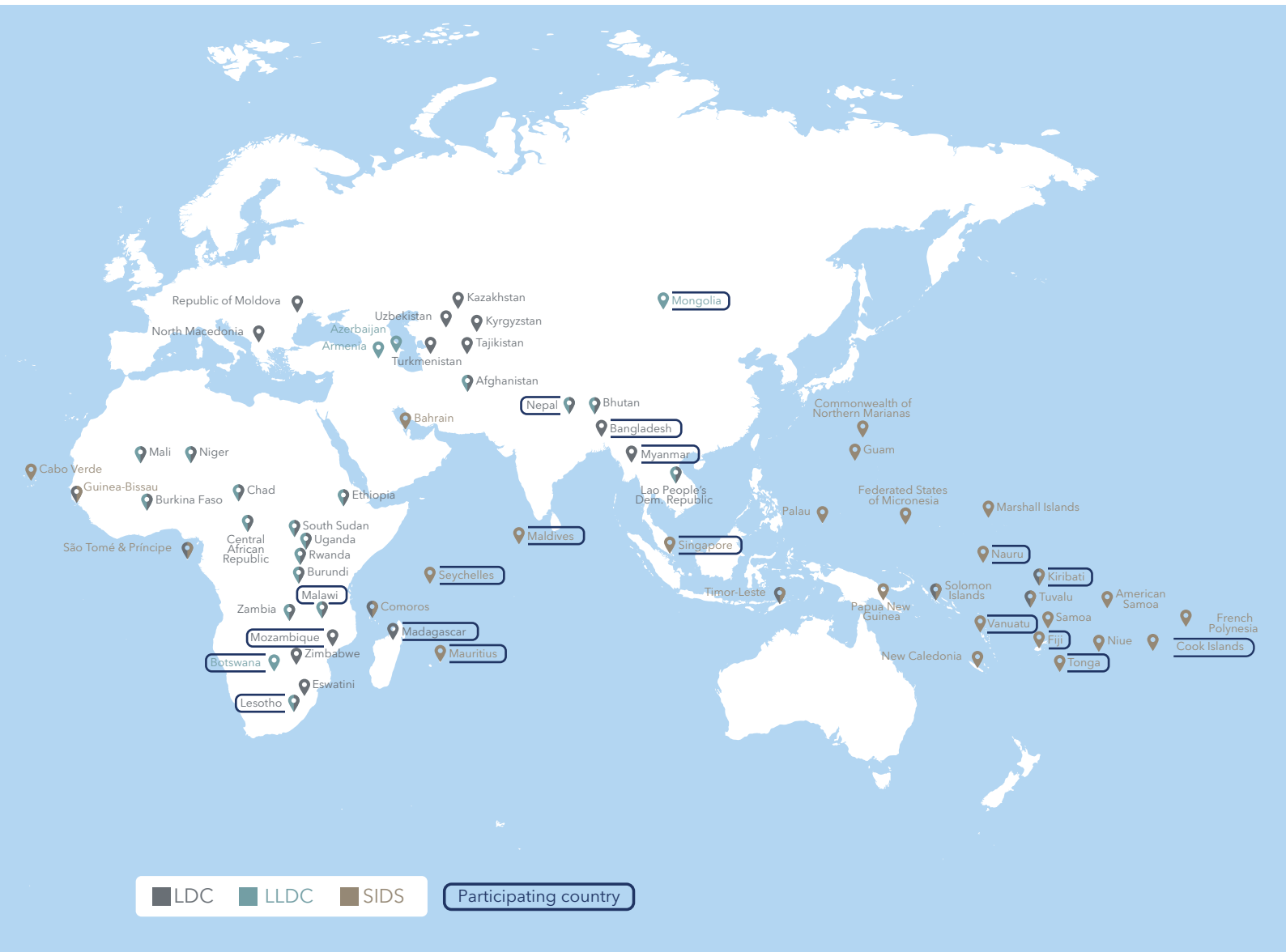
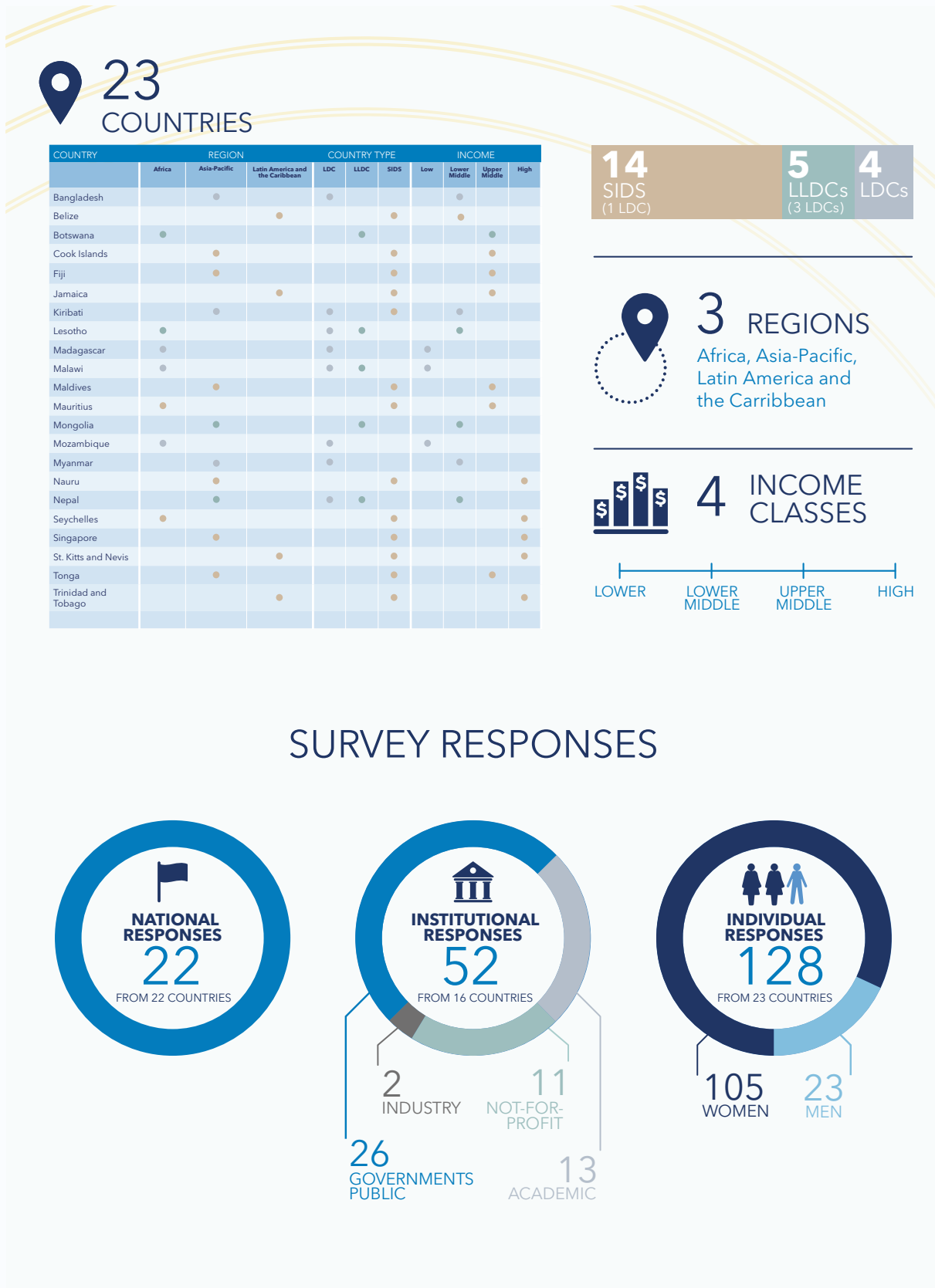


Figure 2. Reach of surveys



SURVEY RESPONSES



2.1.2. Definitions

The overall field of interest for this study is deep-sea research and related disciplines and activities. Deep-sea research is a sub-field of ocean science⁷ that focuses on the deep ocean below 200 m depth.

Because this study explores the human capacity of LLDCs, LDCs, and SIDS in deep-sea research and related disciplines and activities where direct capacity may be low (these are emerging and highly technical areas and most LLDCs do not have ocean science capacity), the definition was broadened to contain related STEM based fields and occupations requiring qualifications that may be transferable to deep-sea research. Therefore, for the purpose of this study, the term “deep-sea research” encompasses the indicative list of research disciplines and activities listed in Table 1, unless stated otherwise.

Table 1: List of deep-sea research related disciplines and activities

Deep-sea research (as used in this study)	Deep-sea related research disciplines:	
	1. Marine biology	8. Marine geochemistry
	2. Marine biogeochemistry	9. Marine geophysics
	3. Marine microbiology	10. Marine engineering and technology
	4. Marine biotechnology	11. Ocean observation and technology
	5. Marine ecology	12. Physical oceanography
	6. Marine geology	13. Other - ocean science
	7. Geological oceanography	14. Other - related disciplines
	Deep-sea related activities:	
	1. Off-shore/marine industry	4. Fisheries and aquaculture
	a) Shipping	5. Conservation
	b) Maritime engineering	6. Other - related research discipline
	c) Maritime transport and logistics	7. Other - related industry field
	2. Deep-sea mining	8. On-shore/inland:
a) Subsurface resource exploration and development	a) Oil and gas extraction	
b) Seabed exploration and mining	b) Mining	
3. Marine energy	c) Shipping	
a) Off-shore renewable energy	d) Fisheries and aquaculture	
b) Off-shore engineering	e) Other - related research discipline	
c) Oil and gas (ocean drilling)	f) Other - Related industry field	

⁷ Ocean science: “encompasses natural and social science disciplines, including interdisciplinary approaches; the technology and infrastructure that supports ocean science; the application of ocean science for societal benefits, including knowledge transfer and applications in regions that are currently lacking science capacity; as well as science-policy and science-innovation interfaces.” (IOC-UNESCO, 2020)

2.2. Data collection and analysis

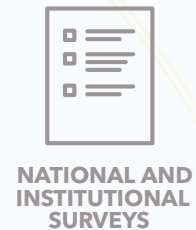
Figure 3. Overview of methodology⁸

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



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



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			●

⁸ National survey submissions were received from all countries in Figure 2 except Tonga

This study is based on primary and secondary data collected through the national data focal points nominated by the participating countries and targeted to three segments of research (see Figure 3):

1. Gender mapping of the deep-sea research sector against key indicators (surveys)
2. Identification and analysis of critical barriers against key indicators (surveys and targeted interviews)
3. Review of key policies in LDCs, LLDCs and SIDS (literature review)

2.2.1. Surveys:

Three different surveys were designed for three types of survey respondents in order to enable a holistic mapping of the gender trends and analysis of barriers at all levels (national, institutional, and individual levels).

1. National Survey:⁹ This first category of survey aimed to collect country-level data. It was completed by nominated¹⁰ national data focal points on behalf of their countries. Additionally, national data focal points were asked to: (i) identify the institutions engaged in STEM¹¹ and their corresponding institutional focal points and (ii) distribute the institutional survey to the institutional focal points. National survey submissions were received from 22 countries (see Figure 2).
2. Institutional Survey: This second category of survey aimed to collect institutional data at STEM institutions identified by each national focal point. The institutional surveys were completed by nominated institutional focal points. Additionally, institutional focal points were asked to: (i) identify staff members engaged in deep-sea research and (ii) distribute the individual survey to these staff members. Institutional surveys were received from 52 institutions¹² (see Figure 2).
3. Individual Survey: This third category of survey was designed to collect data related to the experiences and perceptions of students and working professionals engaged in deep-sea research.¹³ A total of 128 individuals from 23 countries participated in this survey, of which 108 were women and 23 were men (see Figure 2).

Surveys were open from 4 December 2021 to 28 February 2022. All survey data is kept confidential, and individual survey responses have been grouped to maintain anonymity.

2.2.1.1 Study (survey) indicators

The surveys were designed around 15 indicators, seven of them pertaining to the gender mapping and eight pertaining to the identification of the critical barriers analysis (see Figure 3). Each comprised associated sub-indicators, which were reflected in specific survey questions (see Annex A - Study Indicators).

Gender mapping indicators were developed to cover institution type (government and public, academic, industry, not for profit), career stage (education, transition to employment, participation, progression and leadership) and type of resource (human, infrastructure, and policy).

⁹ Note that in the analysis of National Survey data in this study, countries that are listed as both a LLDC and LDC by UN-OHRLLS were counted as LLDCs, and countries that are listed as both a SIDS and a LDC by UN-OHRLLS were counted as LDCs. For example, in this study Kiribati is assessed as a LDC and Lesotho, Malawi and Nepal as LLDCs. This method facilitates higher coverage for LDCs and LLDCs, as the number of participating LDCs and LLDCs were lower than those of SIDS. See Figure 2 on Reach of Surveys.

¹⁰ Through their governments

¹¹ Institution types: Government and Public, Industry, not for profit, and Academic

¹² Bangladesh (10), Belize (5), Botswana (4), Fiji (5), Jamaica (1), Lesotho (1), Malawi (2), Maldives (1), Mauritius (4), Mozambique (6), Seychelles (1), Singapore (1), St. Kitts and Nevis (3), Tonga (1), Trinidad and Tobago (6), and Vanuatu (1). Number of responding institutions noted in parentheses.

¹³ In the analysis of the Individual Survey data, where questions posed to students aligned with questions posed to employees, student responses were incorporated, otherwise student specific questions were analysed separately.

Critical barriers indicators were based on those of the Model Questionnaire in UNESCO’s Measuring gender equality in science and engineering: the SAGA survey of drivers and barriers to careers in science and engineering (UNESCO, 2018). They were tailored to the topics of interest of this study, such as experiences in the field. An indicator was also added to examine women’s progression and attainment of leadership roles.







2.2.2. Targeted interviews

Interviews were conducted with women respondents of the Individual Survey who volunteered. One interview was conducted for each country type - LDC, LLDC and SIDS. The results highlight individual women’s experiences, and are presented in the Results Part 3: Policy Analysis chapter under the sections for LDCs, LLDCs, and SIDS respectively.

2.2.3. Policy analysis

A review of publicly available policies and information was conducted for a subset of 13 participating countries, selected on the basis of country type, income level, and region, as well as survey response rate (see Table 2). The resulting country profiles present country-level gender data and an analysis across national policy landscapes that examines constitutional rights and policies related to education, ocean economy and related sectors as they relate to gender equality. Gender-related policies were also requested through the National and Institutional Surveys.

Table 2: Countries covered under policy analysis

	Country	Region	Income
LDCs 	Bangladesh	Asia-Pacific	Lower-middle
	Kiribati	Africa-Pacific	Low
	Malawi 	Africa	Low
	Mozambique	Asia-Pacific	Lower-middle
LLDCs 	Botswana	Africa	Upper-middle
	Mongolia	Asia-Pacific	Lower-middle
	Lesotho 	Africa	Lower-middle
	Nepal 	Asia-Pacific	Lower-middle
SIDS 	Fiji	Asia-Pacific	Upper-middle
	Mauritius	Africa	Upper-middle
	Nauru	Asia-Pacific	High
	St. Kitts and Nevis	Latin America and the Caribbean	High
	Trinidad & Tobago	Latin America and the Caribbean	High

2.3. Study limitations

Survey data for this study was collected from voluntary participation at all levels, resulting in a sample that is not randomised, and survey analysis cannot, therefore, lead to generalised conclusions beyond the sample.

Exceptional circumstances also created challenges during the data collection phase of the study, notably the volcanic eruption and tsunami in Tonga in February 2022 and COVID-19 country-wide lockdowns in Lesotho and Kiribati in March-April 2022.

In understanding gender equality, it is essential to collect gender-disaggregated data in order to compare the experiences (subjective and objective) of women and men. The engagement of men in the individual survey was much lower than that of women, despite the institutional and national surveys finding that men are overrepresented, which also corresponds with global trends in ocean science (IOC-UNESCO, 2017, 2020). Low engagement by men with the individual survey means that it was not possible to conduct quantitative comparisons between the genders. Engagement by students was also low, and so a quantitative analysis of survey responses by students, including comparing student responses to those of employees in deep-sea research, were not feasible.



3. Results Part 1: Gender mapping in deep-sea research

This section presents the results of the collection and analysis of a foundational dataset, mapping the status of women's participation and leadership in deep-sea research in participating LDCs, LLDCs, and SIDS against key indicators listed below. This analysis is based on the results of the national and institutional surveys. National survey submissions were received from 22 countries and institutional survey submissions were received from 52 institutions of 16 countries (see Figure 2).

The gendered mapping was conducted against seven indicators listed below. Each indicator has associated sub-indicators that are reflected in the national and institutional survey questions. (See Annex A - Study Indicators for sub-indicators and associated questions).

1. National contribution related to deep-sea research
2. Employment
3. Gender-related policies, infrastructure, and employment supports
4. Education and skills training
5. Funding for education and research
6. Transition to employment
7. Career progression and leadership (national and institutional level perspective)

3.1. National perspectives on deep-sea research and gender equality

Participating countries were asked to assess the importance of deep-sea research and gender equality. The results show that 73 per cent of participating countries see deep-sea research as very important for their countries. And 95 per cent of the participating countries consider that putting in place dedicated measures to support gender equality in deep-sea research is very important (see Figures 4 and 5).

Participating countries were asked to assess the importance of engaging and investing in deep-sea research. More than half of the participating countries (59 per cent) consider investing in deep-sea research as very important to their countries, of which 92 per cent are SIDS followed by 60 per cent of LDCs and 40 per cent of LLDCs (see Figures 4 and 5).

3.2. National contribution related to deep sea research (Indicator #1)

A necessary metric for assessing women's representation in deep-sea research is national budgetary contributions to the field. While the survey had questions on investments and budgetary contributions, overall, data availability is low, inconsistent and comprised only of estimates. Therefore, for the purpose of this study, national contributions in support of deep-sea research were assessed by reporting on institutional capacity in the form of the number of government departments and public and academic institutions with engagement in deep-sea research.

All the participating countries report similar institutional presences with at least one or more government departments or public and academic institutions with engagement in deep-sea research, except Nepal,¹⁴ which reported no government department or public institution with existing engagement in deep-sea research (see Table 3).

¹⁴ Both LDC and LLDC.

Figure 4. Importance of deep-sea research for participating countries

National Focal Points* were asked to assess qualitatively the importance of gender equality and deep-sea research in their country.

IMPORTANCE OF DEEP-SEA RESEARCH

- VERY IMPORTANT
- SOMEWHAT IMPORTANT
- NOT IMPORTANT AT ALL



IMPORTANCE OF PUTTING IN PLACE MEASURES AND INITIATIVES TO SUPPORT GENDER EQUALITY AND WOMEN'S PARTICIPATION IN DEEP-SEA RESEARCH

- VERY IMPORTANT
- SOMEWHAT IMPORTANT
- NOT IMPORTANT AT ALL



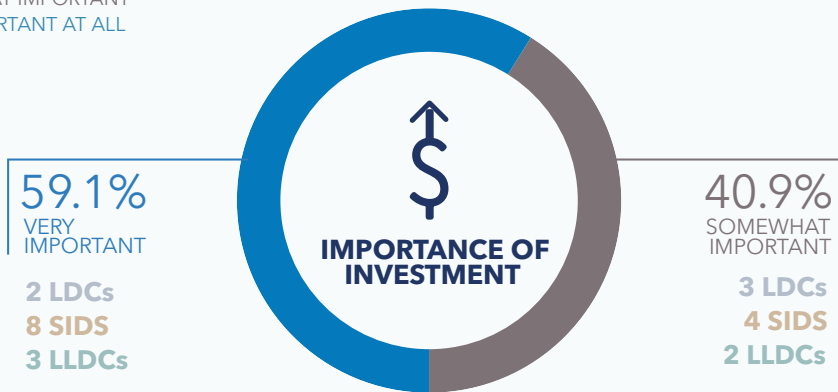
*Data source: National Survey

Figure 5. Importance of gender equality in deep-sea research

National Focal Points* were asked to assess, in the context of the international seabed area and its resources having been declared the common heritage of humankind under the UNCLOS:

IMPORTANCE OF INVESTMENT IN DEEP-SEA RESEARCH

- VERY IMPORTANT
- SOMEWHAT IMPORTANT
- NOT IMPORTANT AT ALL



REASON ENGAGEMENT IN DEEP-SEA RESEARCH IS IMPORTANT

COUNTRY	Bangladesh	Belize	Botswana	Cook Islands	Fiji	Jamaica	Kiribati	Lesotho	Madagascar	Malawi	Maldives	Mauritius	Mongolia	Mozambique	Myanmar	Nauru	Nepal	Seychelles	Singapore	St. Kitts & Nevis	Trinidad & Tobago	Vanuatu	
Economic opportunity	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Conservation	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Capacity development	●		●	●	●	●	●				●	●	●	●	●	●	●	●	●	●	●	●	●

*Data source: National Survey

Table 3: Number of institutions engaged in deep-sea research from participating countries.
Data source: National survey.

	Country	Government departments	Public institutions	Academic institutions
LDCs	Bangladesh	>10	>10	6-10
	Kiribati	1-2	1-2	1-2
	Madagascar	3-5	3-5	6-10
	Mozambique	3-5	3-5	3-5
	Myanmar	1-2	0	1-2
LLDCs	Botswana	3-5	1-2	1-2
	Mongolia	1-2	0	0
	Lesotho	6-10	3-5	3-5
	Malawi	3-5	6-10	3-5
	Nepal	0	0	0
SIDS	Belize	3-5	3-5	1-2
	Cook Islands	3-5	1-2	1-2
	Fiji	3-5	1-2	3-5
	Jamaica	6-10	3-5	3-5
	Maldives	3-5	3-5	3-5
	Mauritius	3-5	3-5	1-2
	Nauru	1-2	3-5	1-2
	Seychelles	1-2	3-5	1-2
	Singapore	1-2	1-2	1-2
	St. Kitts and Nevis	3-5	1-2	1-2
	Trinidad & Tobago	3-5	0	1-2
Vanuatu	1-2	0	1-2	

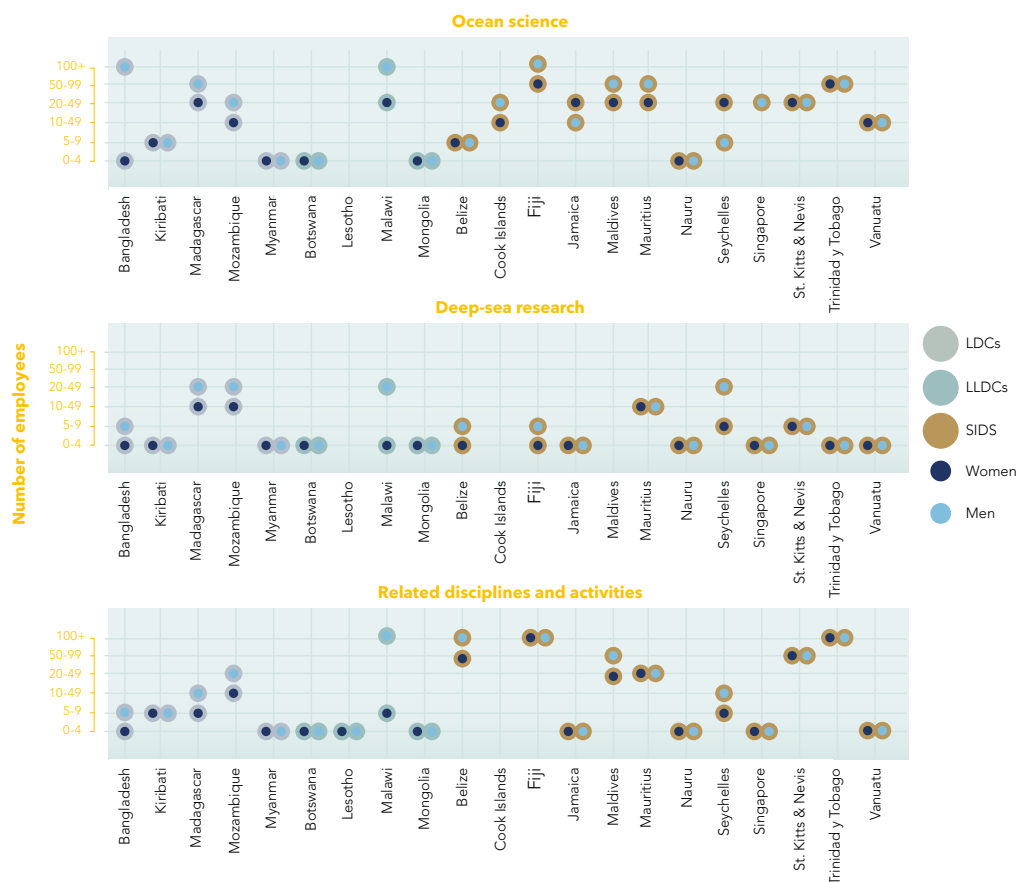
3.3. Employment (Indicator #2)

Women were found to be underrepresented in deep-sea research in the participating countries at both national and institutional levels. National estimates of the number of women and men employed in deep-sea research, by category (ocean science, deep-sea research, related disciplines and activities) show that in all instances but one, women are equally represented or are underrepresented in ocean science, deep-sea research and related fields (see Figure 6). The exception, Jamaica, reported more women (20 to 49) than men (10 to 19) in ocean science. Women make up 35 per cent of staff in deep-sea research¹⁵ (284 men, 155 women)¹⁶ in respondent institutions.

An assessment of the nature of employment (contractual versus permanent) in deep-sea research among participating countries suggested that while there were more permanent than contractual staff overall, fewer women hold permanent positions compared to men (see Figure 7).

An assessment of the number of years of professional experience of women and men engaged in deep-sea research suggests that women are underrepresented in all categories of experience – 0 to 5 years, 5 to 10 years, and 10 year and more (see Figure 8). An assessment of women and men's participation in deep-sea research distributed by age suggests that women are more underrepresented in older age groups (30 – 39 years; and 40 + years) compared to younger age groups (20 – 29 years) (see Figure 9).

Figure 6. National data on employment in deep-sea research, by country type (LDC, LLDC, SIDS) and gender (women, men). Data source: National survey. Total number of responses: 21.



Note that the definition of deep-sea research used in this figure has been split into its constituent parts (ocean science, deep-sea research, related disciplines and activities).

¹⁵ Combined field of deep-sea research, i.e., data is not split into constituent fields.

¹⁶ Twenty-five of 52 institutions provided staffing data.

Figure 7. Contract versus permanent employment in deep-sea research. Data source: National survey; total number of responses: 16.

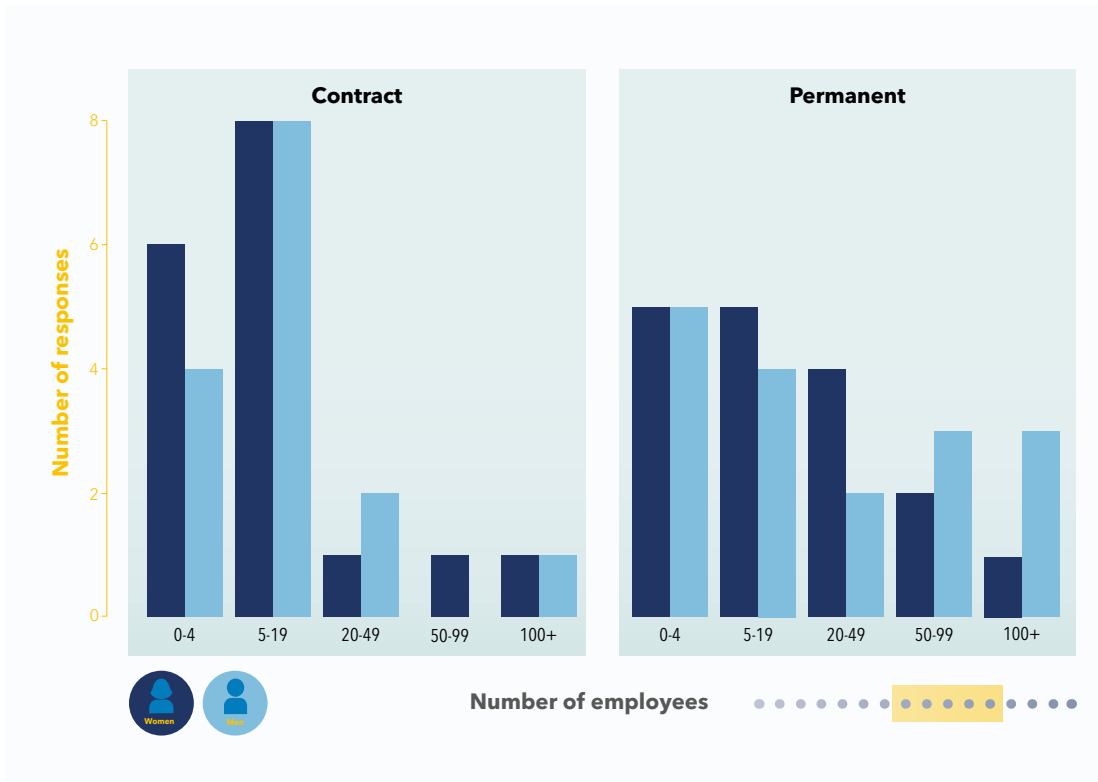


Figure 8. National employment in deep-sea research by professional experience (0-5 years, 5-10 years, 10+ years). Data source: National Survey. Total number of responses: 14.

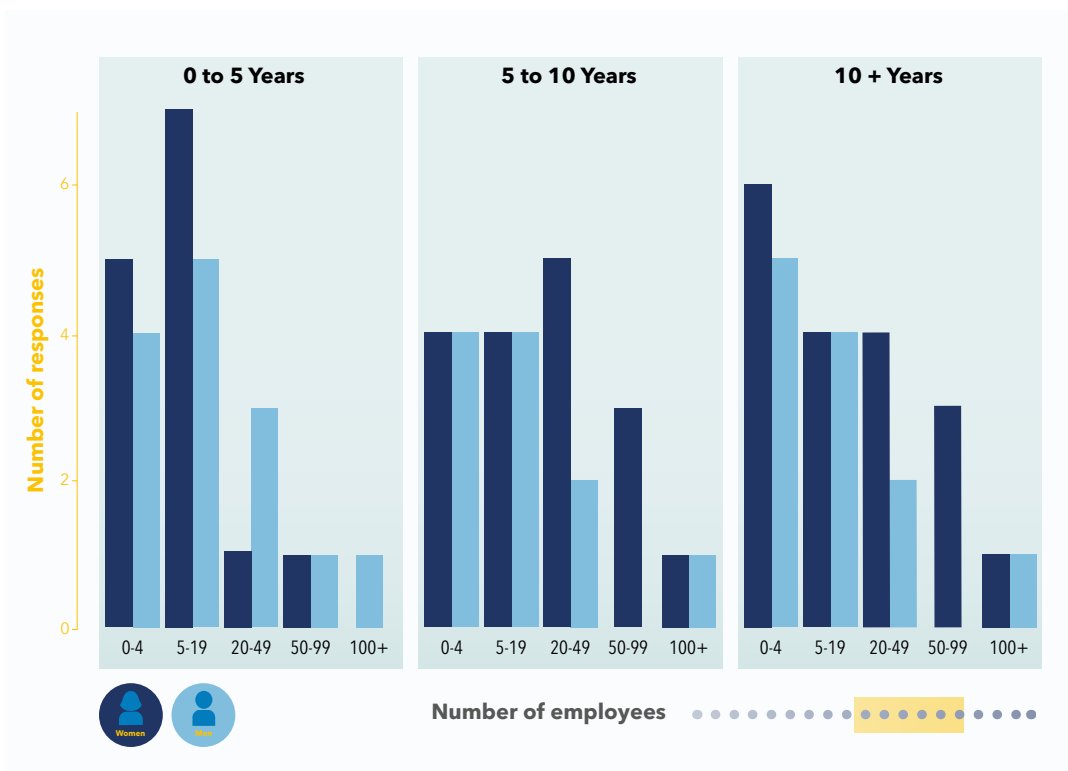
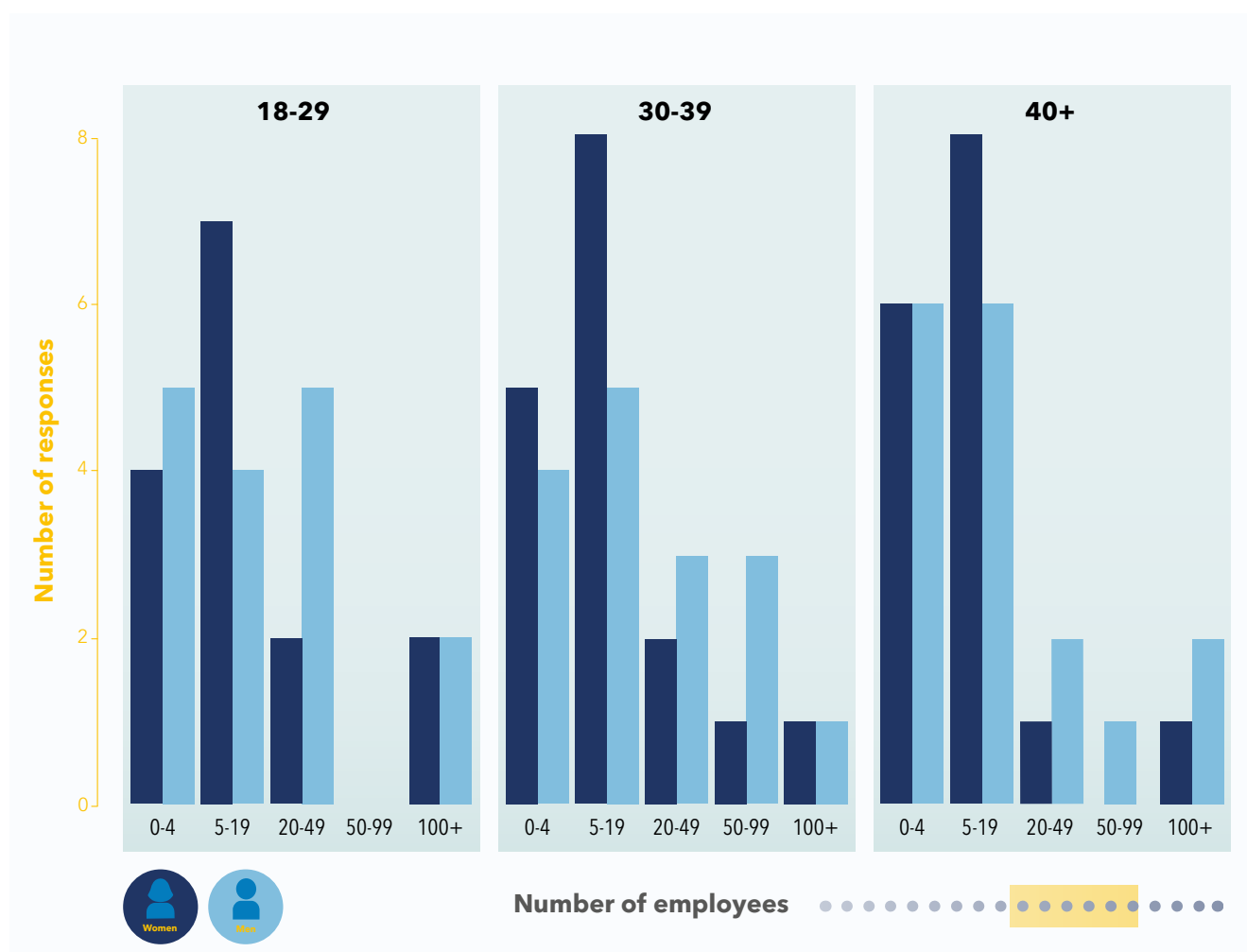


Figure 9. National employment in deep-sea research by age (18-29 years, 30-39 years, 40+ years). Data source: National survey. Total number of responses: 16.



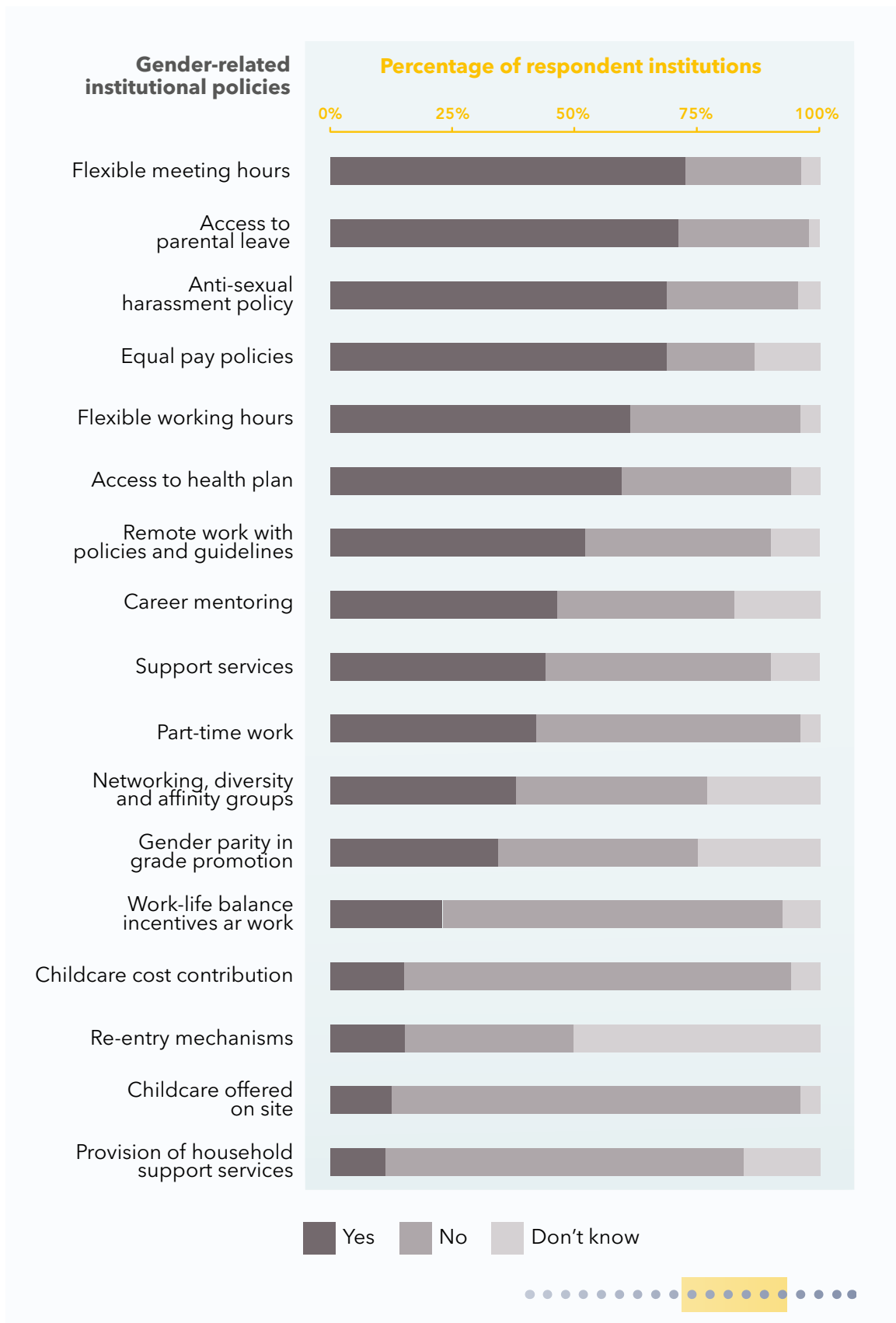
3.4. Gender-related policies, infrastructure, and employment supports (Indicator #3)

An assessment of gender related policies suggested that institutional policies linked to childcare support (on site at work/financial contributions) and work-life balance were found to be the least common (less than 25 per cent of institutions reported having any). Over 50 per cent of the participating institutions reported having different policies and provisions related to flexible meeting hours, parental leave, equal pay, anti-harassment, flexible work hours, health plans, and telework (see Figure 10). Only three institutions (of 52) and 13 countries (of 22)¹⁷ reported having a holistic, high-level policy covering all aspects of gender equality at the institutional or national level.

¹⁷ Bangladesh, Belize, Fiji, Jamaica, Kiribati, Lesotho, Madagascar, Malawi, Maldives, Mauritius, Nepal, Seychelles and Trinidad and Tobago



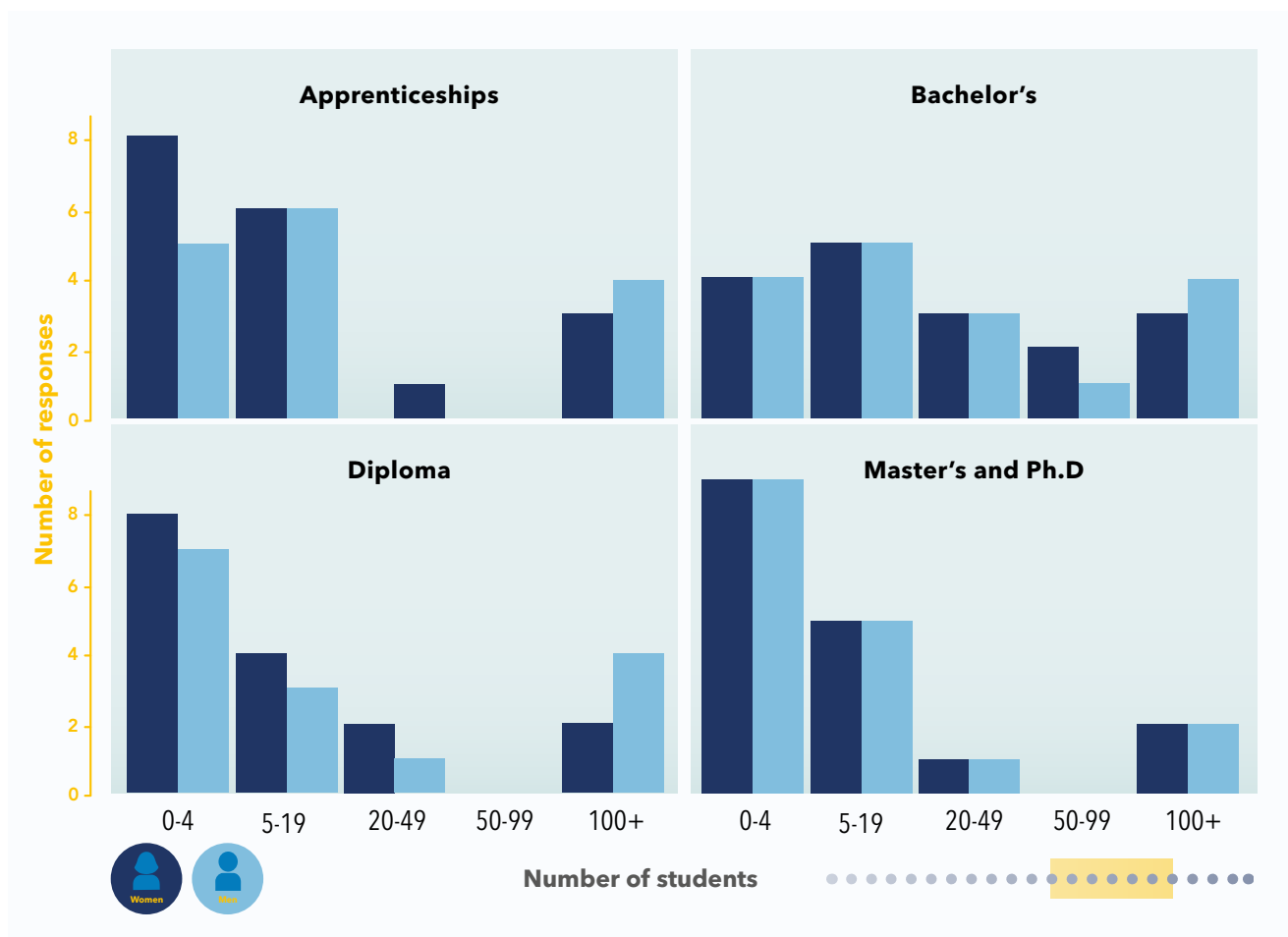
Figure 10. Institutional policies in place.
Data source: Institutional survey. Number of responses: 52.



3.5. Education and skills training (Indicator #4)

An assessment of the number of women and men receiving education in deep-sea research in participating countries suggests women are equally or slightly underrepresented in bachelor’s programs, and equally represented in master’s and doctoral programs (see Figure 11).

Figure 11. Educational training in deep-sea research.
Data source: National survey. Total number of responses: 17.



3.6. Funding for education and research (Indicator #5)

An assessment of funding for education and research in deep-sea research at national level found that 16 participating countries (of 22) have in place international or national scholarships or other initiatives to support women’s education. However, more international scholarships are available compared to national scholarships; and overall scholarships were more common among SIDS compared to LDCs and LLDCs (see Figure 12).

An assessment of access to funding for education and research in deep-sea research at institutional level found fewer female researchers are awarded research grants than male researchers at the participating institutions (see Figure 13).

Figure 12. Scholarships to support women's education in deep-sea research by country. Data source: National survey. Total number of responses: 22.

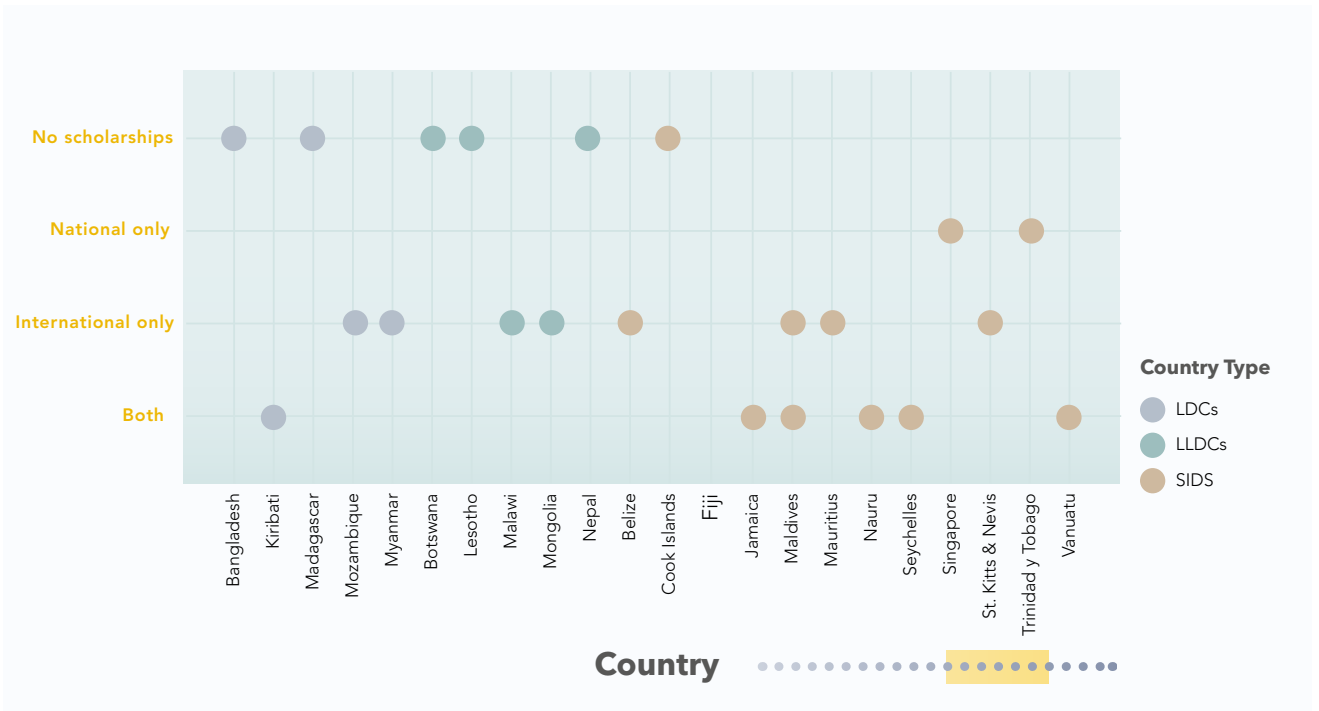
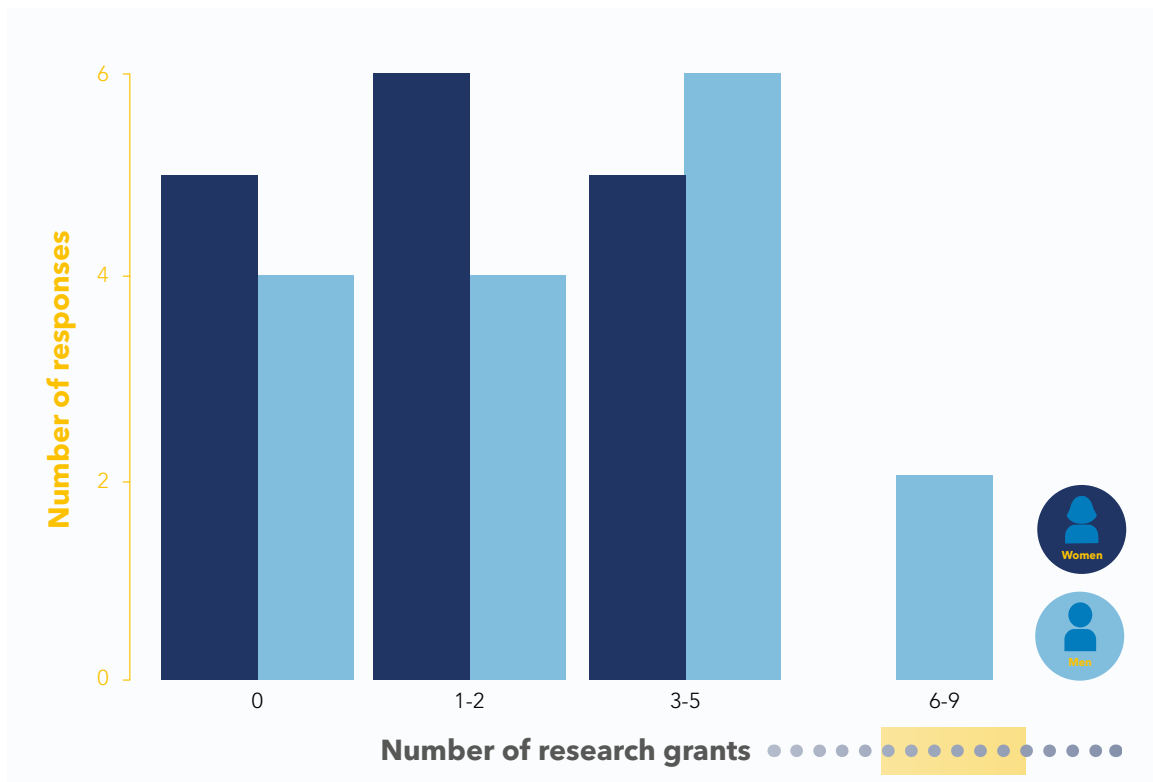


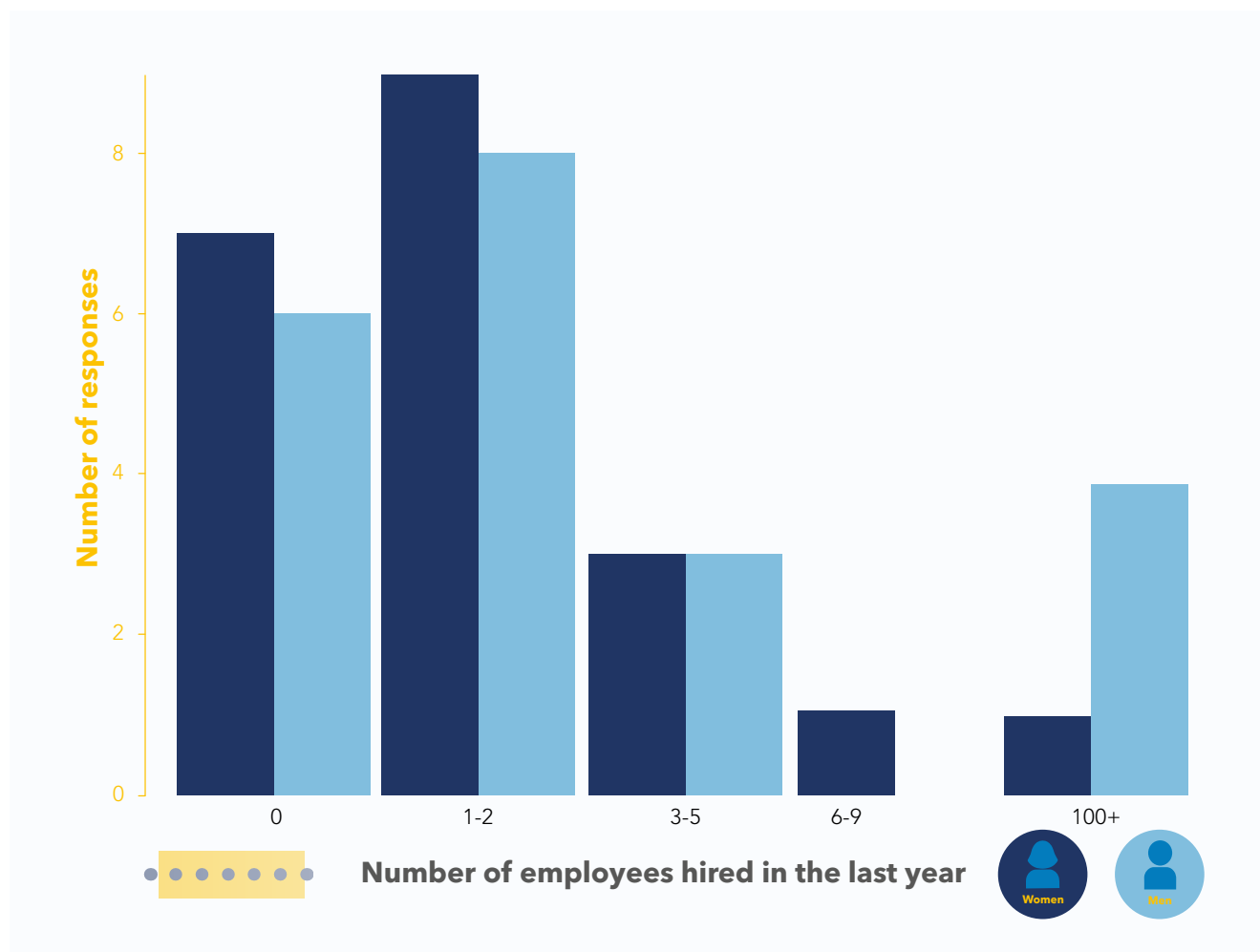
Figure 13. Grants obtained by researchers. Data source: Institutional survey. Total number of responses: 16.



3.7. Hiring Practices (Indicator #6)

An assessment of hiring practices among respondent institutions in the last year (2021) found that women were underrepresented for deep-sea research positions (see Figure 14).

Figure 14. Employees in deep-sea research hired in the last year, as reported by institutions. Data source: Institutional survey. Total number of responses: 21.



3.8. Career progression and leadership - National and institutional perspective (Indicator #7)

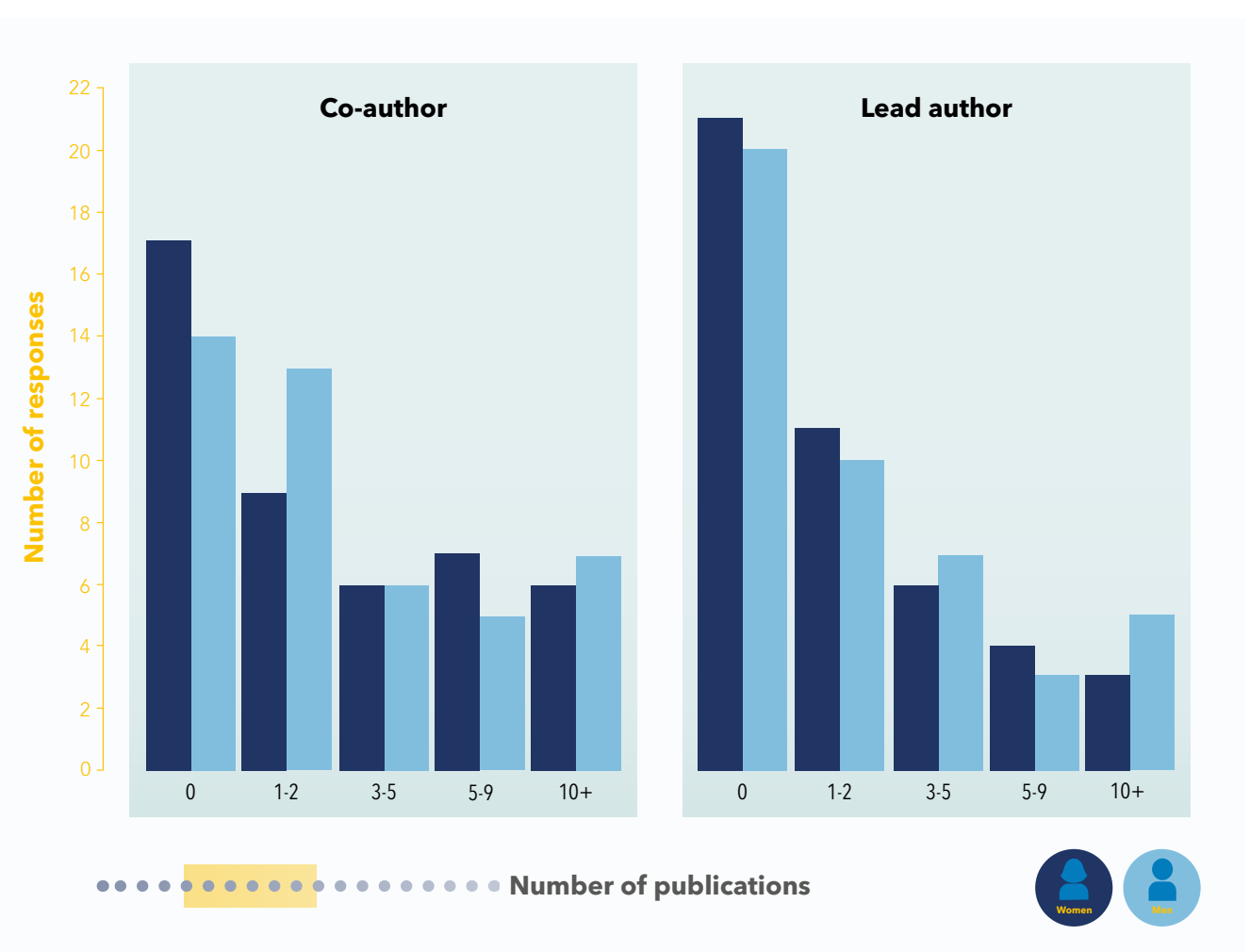
An assessment of career progression and leadership was undertaken under selected sub-indicators: (i) authorship of peer-reviewed publications; (ii) attendance and presentations at conferences; (iii) promotions; (iv) heads of institutions; (v) leadership roles and; (vi) composition of boards of directors. The assessment found that women were underrepresented in all the sub-indicators.

Institutional data suggested that women are underrepresented compared to men as lead or co-authors (Figure 15) and in conference attendance and presentations (Figure 16).

Institutional data found that fewer women than men received a promotion in the last five years (see Figure 17). Only 29 per cent of respondent institutions (15 of 52) provided leadership training specifically for women.¹⁸

Institutional data found that only 35 per cent of the respondent institutions (18 of 52) are led by a woman as the head of institution (see Figure 18). The data also suggested that more men than women hold different leadership positions¹⁹ (see Figure 19). Only six per cent of institutions (3 of 52) have women representing half or more of their institutional board of directors (see Figure 20).

Figure 15. Publications as co-author or lead author in the last five years.
Data source: Institutional survey. Total number of responses: 45.



¹⁸ Figure not shown here.

¹⁹ Uses a broad definition of leadership positions; see Annex C for the list of leadership positions used for the study.

Figure 16. Attending and presenting at conferences.
 Data source: Institutional survey. Total number of responses: 49.

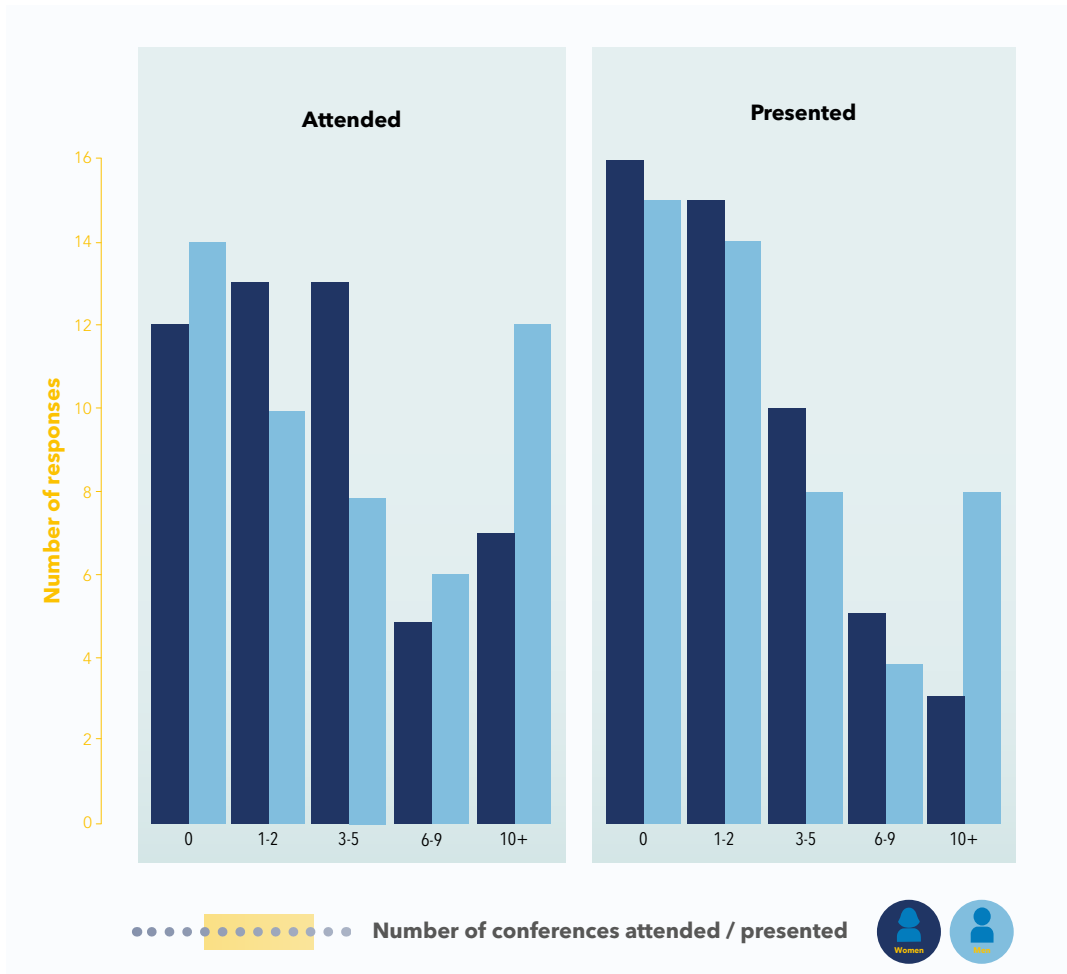


Figure 17. Internal promotions.
 Data source: Institutional survey. Total number of responses: 52.

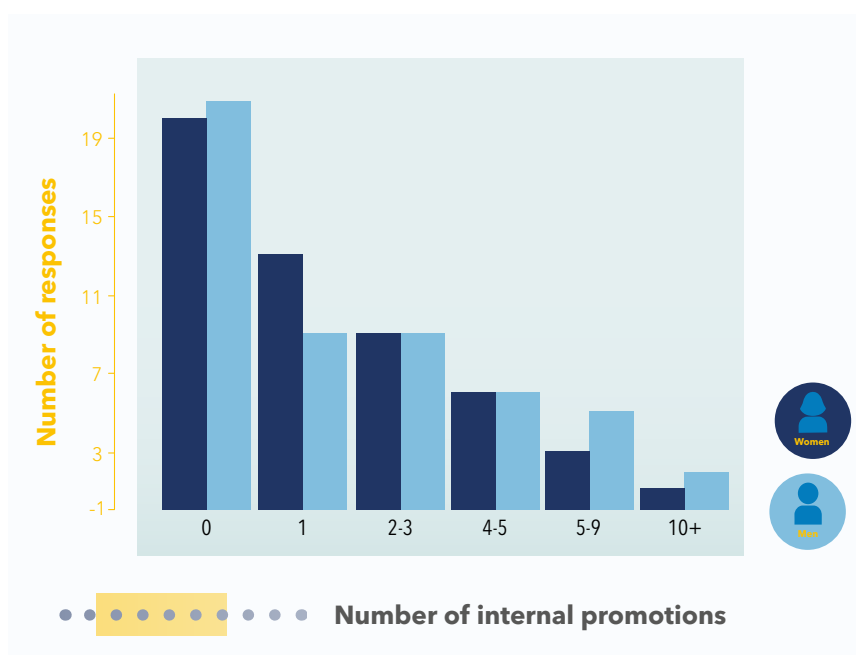


Figure 18. Gender of head of institution.
 Data source: Institutional survey. Total number of responses: 51.

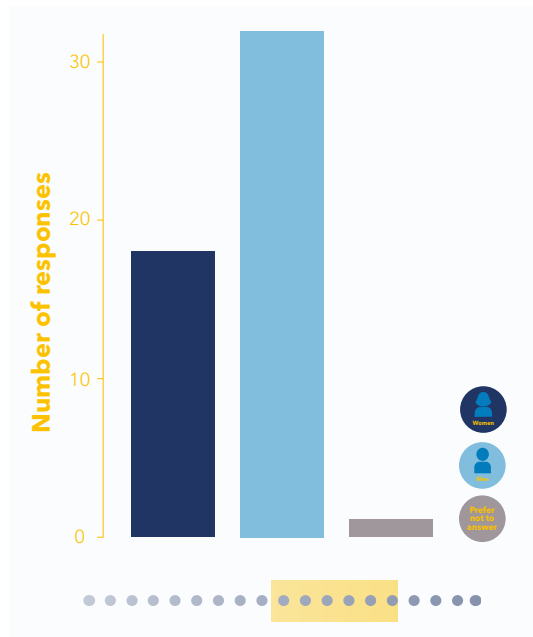
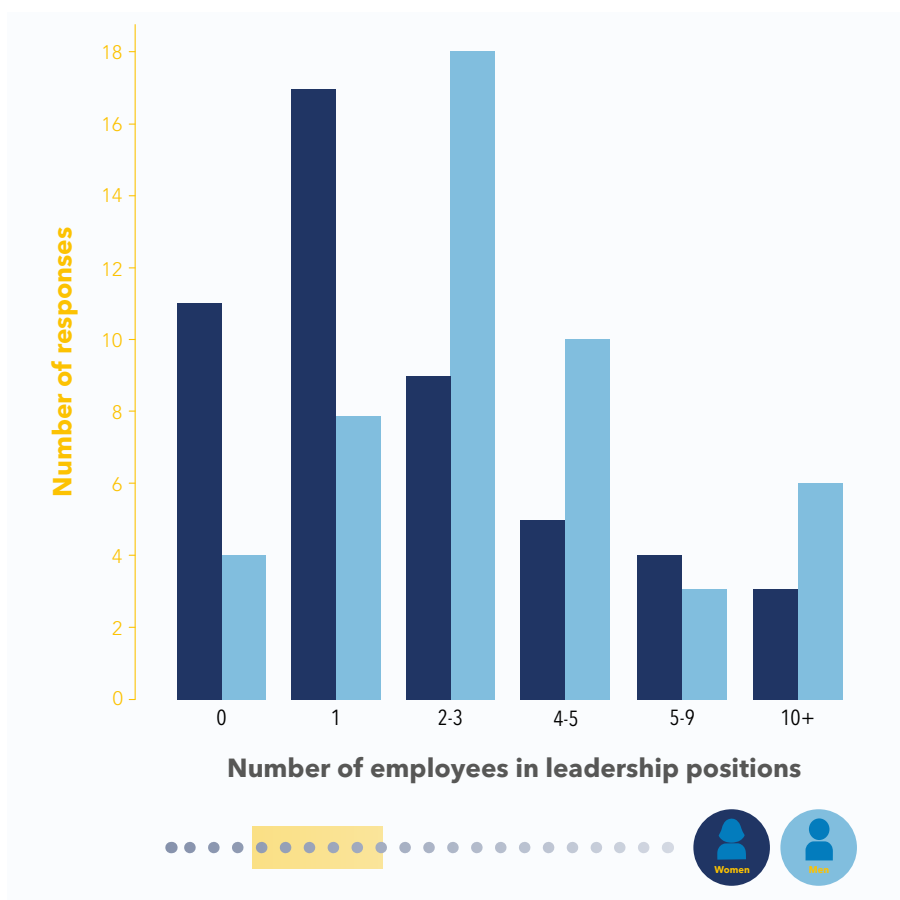
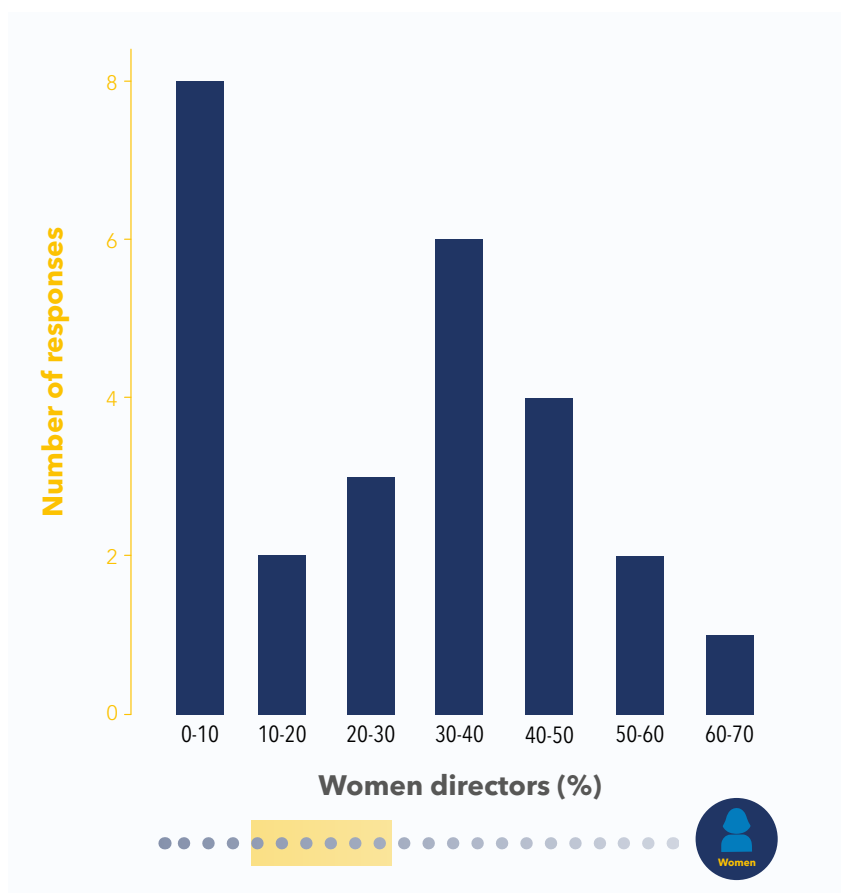


Figure 19. Employees in leadership²⁰ positions.
 Data source: Institutional survey. Total number of responses: 49.



²⁰ Leadership positions refers to: President or CEO, Rector or VP, Dean or Vice-dean, Executive, Director, Vice-director or Head of institution, Head of department, Head of research team, Project lead, Team lead, Supervisor (see Annex C)

Figure 20. Percentage of women on boards of directors.
Data source: Institutional survey. Total number of responses: 26.



3.9. Analysis of LDCs, LLDCs and SIDS against the Global Gender Gap Index

The World Economic Forum’s Global Gender Gap Index (GGI) is a tool which assesses countries over a multitude of metrics on a scale from zero (where women’s participation is zero) to one (where gender parity has been reached)²¹ to produce an overall gender equality score. The GGI can therefore indicate where gender equality policy support could impact women’s participation and leadership in deep-sea research.²² The population-weighted average GGI scores by country type are LDCs: 0.68, LLDCs: 0.67, and SIDS: 0.70, which are close to the global population-weighted average of 0.68 (see Figure 21).

Educational attainment, a metric of the GGI that is of key importance to women’s access to education that would allow them to participate in deep-sea research, examines the ratio of women’s and men’s literacy rates as well as enrolment in primary, secondary and tertiary education. For most participating countries, educational attainment is close to one (with the global average score of 0.95). Notable outliers at or below 0.95 are Bangladesh, Malawi, Mozambique, Nepal, and Vanuatu, all of which except Vanuatu are LDCs (see Figure 22).

²¹ For more on how the GGI is determined, see <https://www.weforum.org/reports/global-gender-gap-report-2021>.

²² Participating countries not assessed by the GGI – Cook Islands, Kiribati, Nauru, Seychelles, St. Kitts and Nevis (all SIDS) – are an indication of the unavailability of gender-disaggregated data needed to assess gender equality trends.

Figure 21. How participating countries compare worldwide against the Gender Gap Index. Population-weighted averages noted on the plot: global, LDC, LLDC, SIDS.

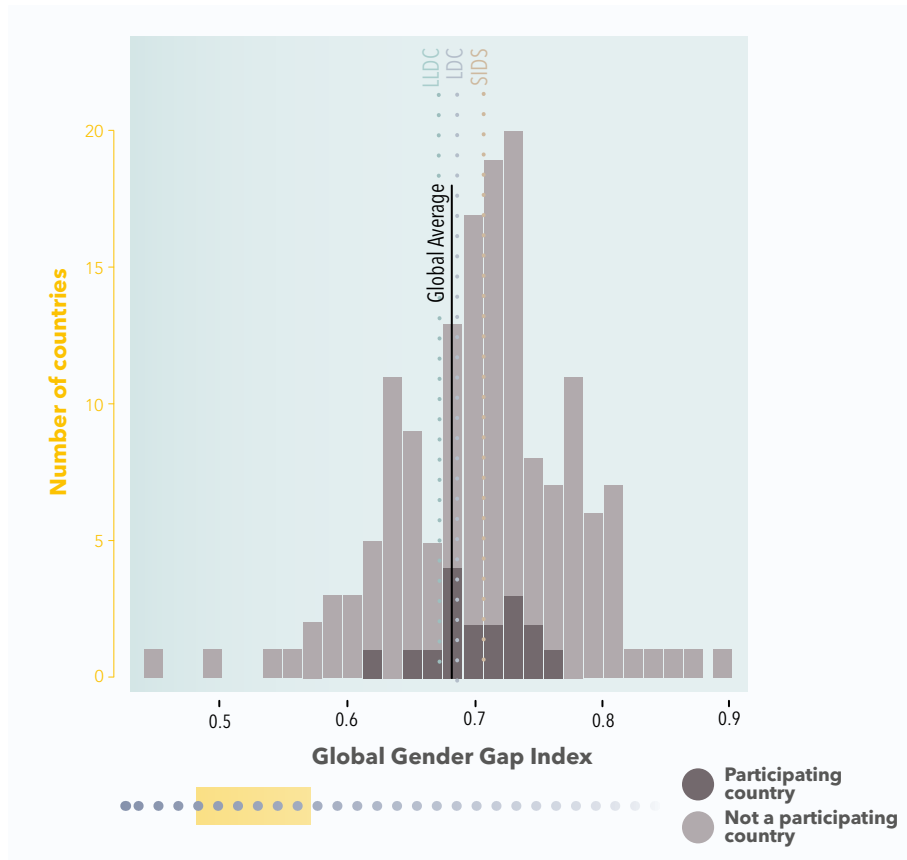
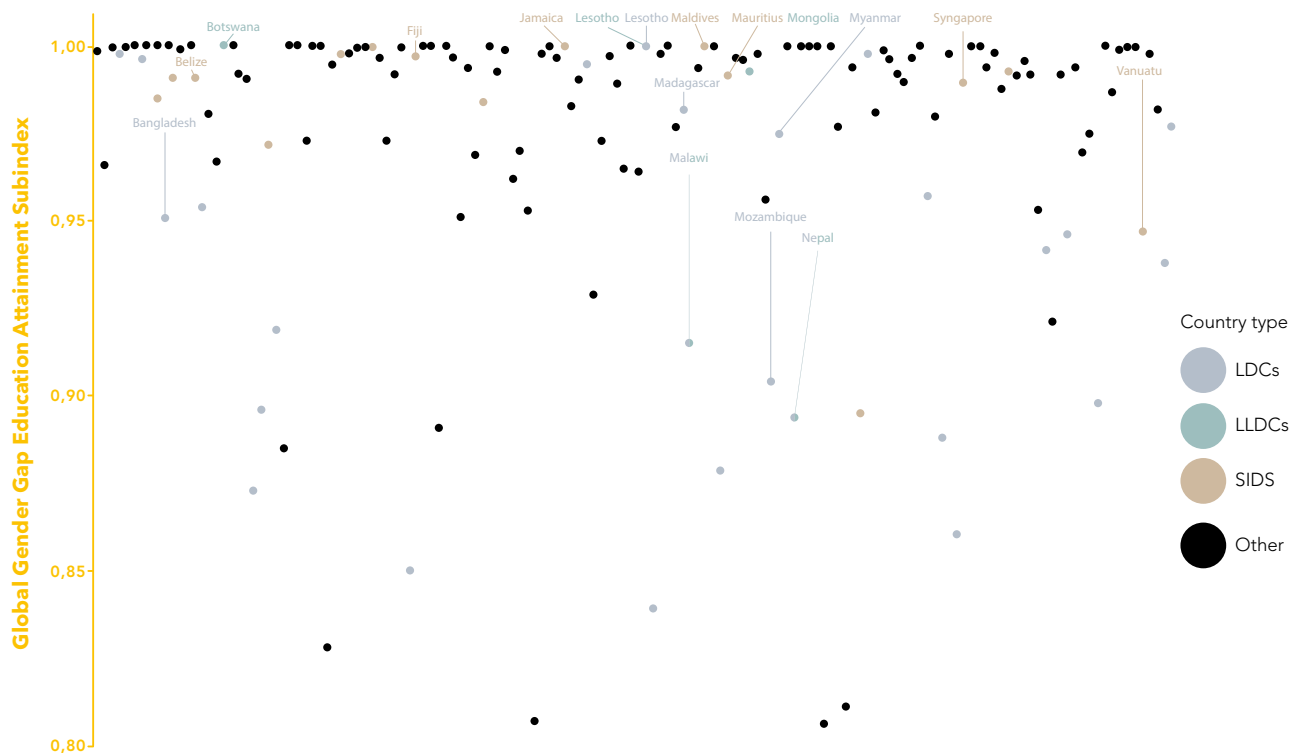


Figure 22. Educational attainment metric of the Gender Gap Index. Participating countries are noted on the figure, and country types are colour-coded.



4. Results Part 2 - Analysis of critical barriers

This section presents an analysis of critical barriers that women scientists from LDCs, LLDCs, and SIDS face in participating and accessing leadership roles in deep-sea research. The analysis is based on the results of the individual surveys with inputs from 128 individuals (105 women and 23 men) working in deep-sea research in the 23 participating countries, and a focus on their experiences and perceptions of the field using the eight indicators listed below. Additionally, women scientists were also asked to list the top five challenges they have faced or still face in deep-sea research.

The analysis of critical barriers was conducted using the eight indicators listed below. Each indicator has associated sub-indicators that are reflected in the Individual Survey questions. (See Annex A - Study Indicators for sub-indicators and related questions).

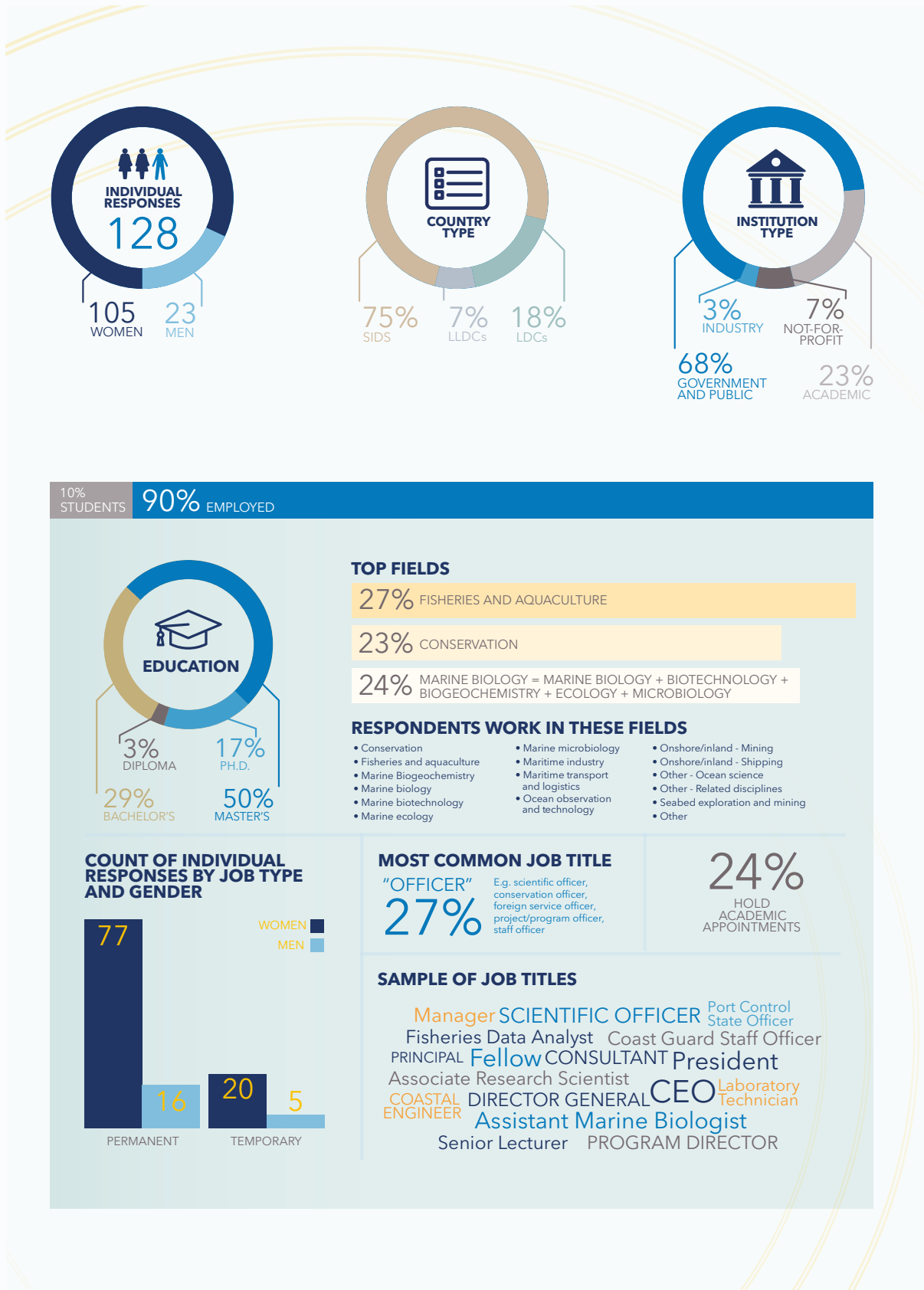
1. Personal demographics
2. Career choices and transition to employment
3. Employment environment
4. Work-life balance
5. Career progression and leadership - Individual perspective
6. Research funding and remuneration
7. Social norms and attitudes
8. Discrimination and harassment

Of note throughout this section is the difference in the Individual Survey sample size between men and women, country types, and employees and students. The Individual Survey received 82 per cent of its responses from women (105) and 18 per cent from men (23). Recognizing the difference in sample size between women's and men's responses and the effect this has on maintaining statistical significance, the conclusions drawn from the results do not directly compare women's and men's responses unless highlighted otherwise. Results are also not addressed by country type in this section to maintain respondent anonymity (75 per cent of responses came from SIDS (96), 18 per cent from LDCs (23), and 7 per cent from LLDCs (9)). Students comprised 10 per cent (12) of respondents.

4.1. Personal demographics (Indicator #8)

An analysis of the demographics of respondents focused on their occupations (see Figure 23). Respondents' fields of occupation are wide-ranging, with the top fields being fisheries and aquaculture, conservation and marine biology. Results of an analysis of contract types suggest that women respondents are more likely to hold temporary contracts (more precarious positions) than men respondents.

Figure 23. Individual survey respondents



4.2. Career choices and transition to employment (Indicator #9)

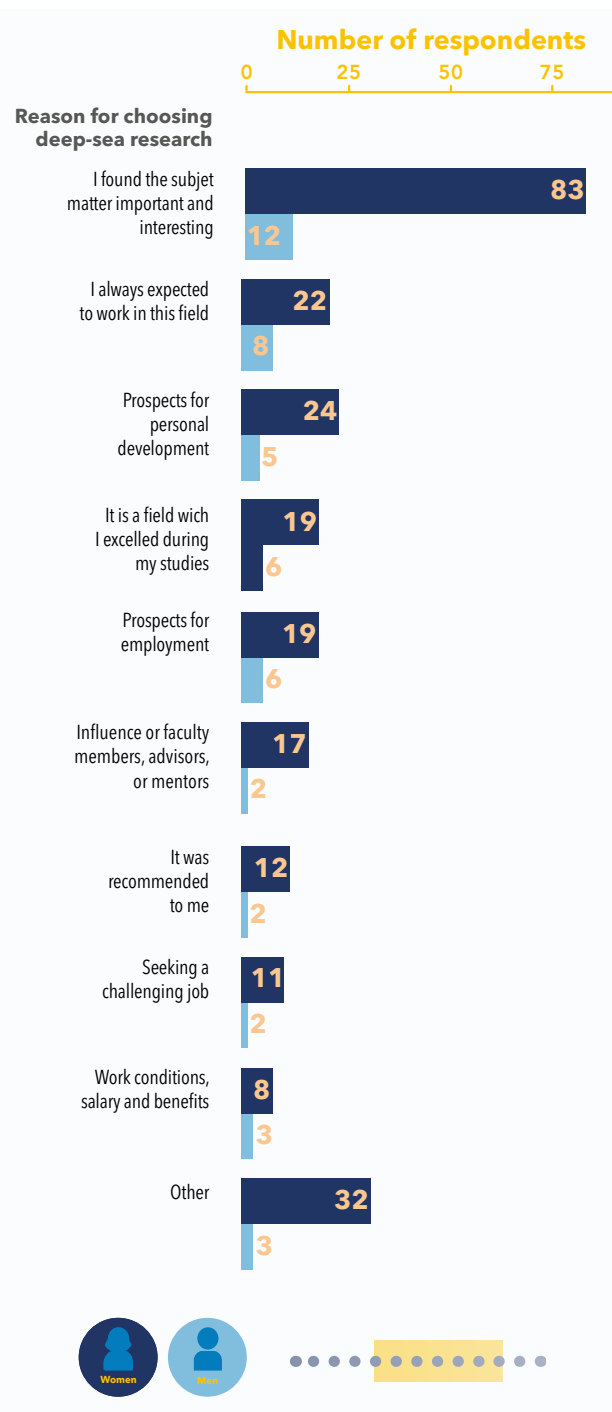
Each person working in deep-sea research made choices that led them to the field. An assessment of those career choices, as well as perceptions of prospects for work in the field, was conducted to better understand respondents' career paths. The results of this assessment could inform policies and programmes to support and encourage future generations of women scientists to study and work in deep-sea research.

Results show that respondents (both men and women) predominantly chose to study and/or work in deep-sea research because they "found the subject matter interesting and important" (see Figure 24).

In identifying the people who most influenced their choice of career, female respondents most commonly selected "mother". The second most common response was "teacher", which may indicate an opportunity for increased deep-sea literacy programming among educators to support students in exploring possibilities in deep-sea research. With "father" as the third most common response, parents account for 31 per cent of responses (82 of 267)²³, reinforcing the importance of societal attitudes towards STEM and deep-sea careers for women (see Figure 25).

Survey respondents perceive job prospects in the field to be lacking. Fifty per cent of respondents (58 of 115) perceive job prospects in deep-sea research in their country as being "poor" or "unsatisfactory", with women being more likely than men to have chosen "poor" (see Figure 26).

Figure 24. Reasons for pursuing education and career in deep-sea research. Data source: Individual survey. Total number of respondents: 128.



²³ Respondents were asked to select all that apply.

Figure 25. Who most influenced your choice of career?²⁴
 Data source: Individual survey. Total number of respondents: 127.

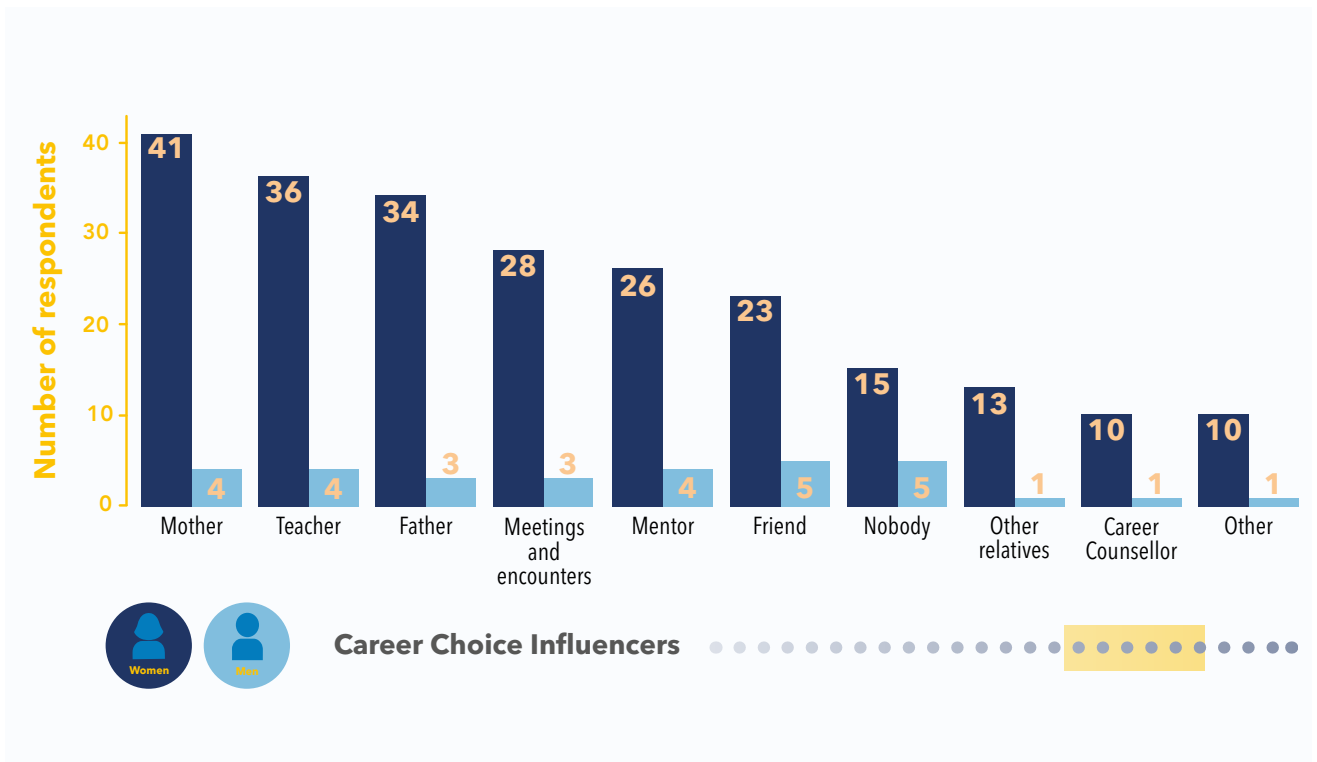
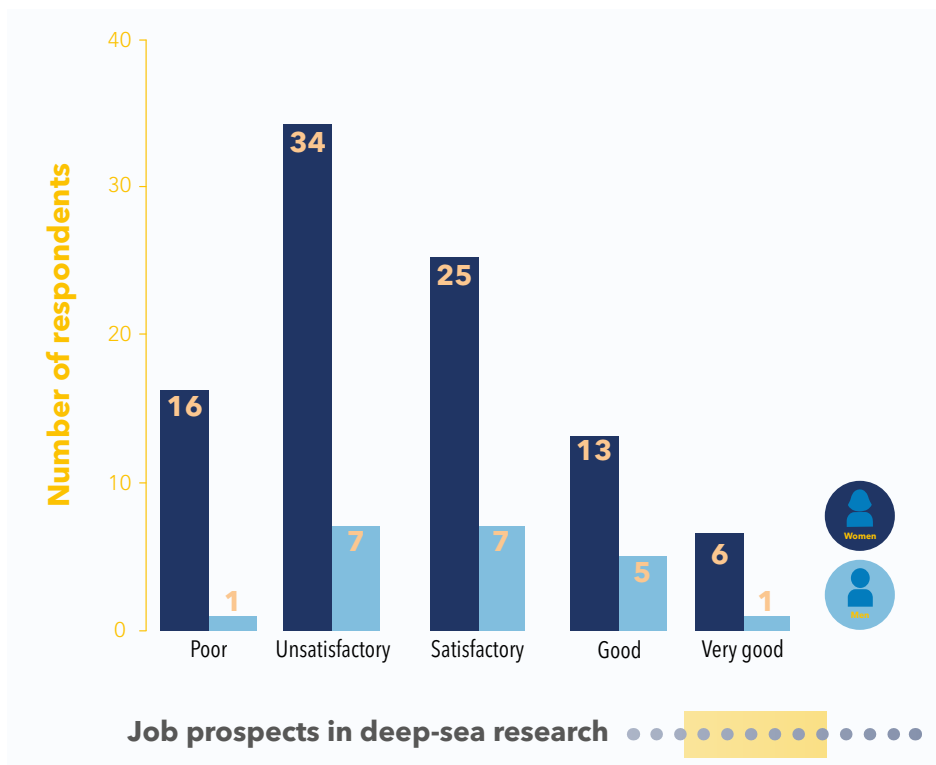


Figure 26. Individual survey responses by assessment of job prospects and gender.
 Data source: Individual survey. Total number of respondents: 115.



²⁴ Respondents were asked to select all that apply.

4.3. Employment environment (Indicator #10)

An assessment of employment satisfaction through an assessment of their intentions and reasons to continue or leave their workplace showed no particular trends.²⁵ Almost 80 per cent of female respondents have never left a job in their field, and the same number have no intention of leaving their current position. Female respondents who left a job in the past did so predominantly because they found one with better working conditions. Less commonly, some women left jobs due to discrimination and harassment (of others or themselves), or being offered a better salary.²⁶ The reasons given by respondents who are looking for a new position are mainly: (i) to look for work that better uses their professional training and skills (nine responses); and (ii) seeking a better work environment (seven responses).²⁷ Other (open) responses corresponded to respondents' access to permanent employment, equitable salaries, and career progress and leadership.

4.4. Work-life balance (Indicator #11)

An assessment of work-life balance was conducted by examining the ease of travelling for work and study and access to parental leave, which are areas that may impact women's ability to fully participate and advance their careers in deep-sea research.

Results showed that 59 per cent of the female respondents (62 of 105) have turned down opportunities to travel abroad for work or study, which are often vital to careers in deep-sea re-

search. Financial restrictions was found to be the most commonly reported reason at 61 per cent (38 of 62 responses). Reasons relating to gender (care for children, care for other dependents, gender norms, cultural expectations, safety, care for parents, pregnancy) accounted for a total of 67 per cent of women's responses (41 of 62). For comparison, none of the men reported gender and cultural norms as a reason or barrier (see Figure 27). Critically, 15 per cent of women reported turning down opportunities due to safety concerns.

Results found that in most cases the partners of women were not allowed to take any parental leave and where available, the partner's parental leave was in the range of '1 to 4' weeks. Women, on the other hand, most commonly reported being allowed '8 to 12' or '12 to 16' weeks (see Figure 28). These results indicate that in terms of the parental leave policy, provisions to distribute parental care between women and men is not equal and the maximum parental leave available to the respondent women is no more than 16 weeks.



²⁵ Response rate was 10-15 responses per question.

²⁶ Counts for male respondents are too low to see a trend.

²⁷ Seven women gave reasons for seeking a new position: 'Looking for work that is better used to my professional training and experience' (2 responses), 'Seeking a better work environment' (3 responses), 'Better work-life balance' (1 response), and 'Looking for a contract that lasts longer than 6 months' (1 response).

Figure 27. Did you ever have to turn down the opportunity to travel abroad to study, teach, work or conduct research (including sabbatical year)? If so, for what reasons?
 Data source: Individual survey. Total number of respondents: 86.

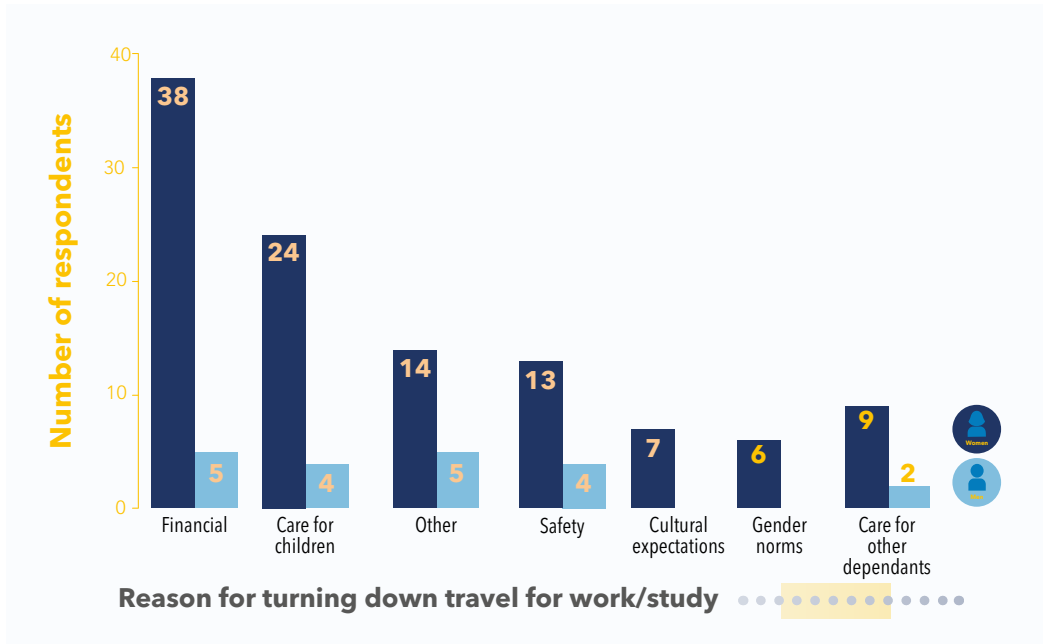
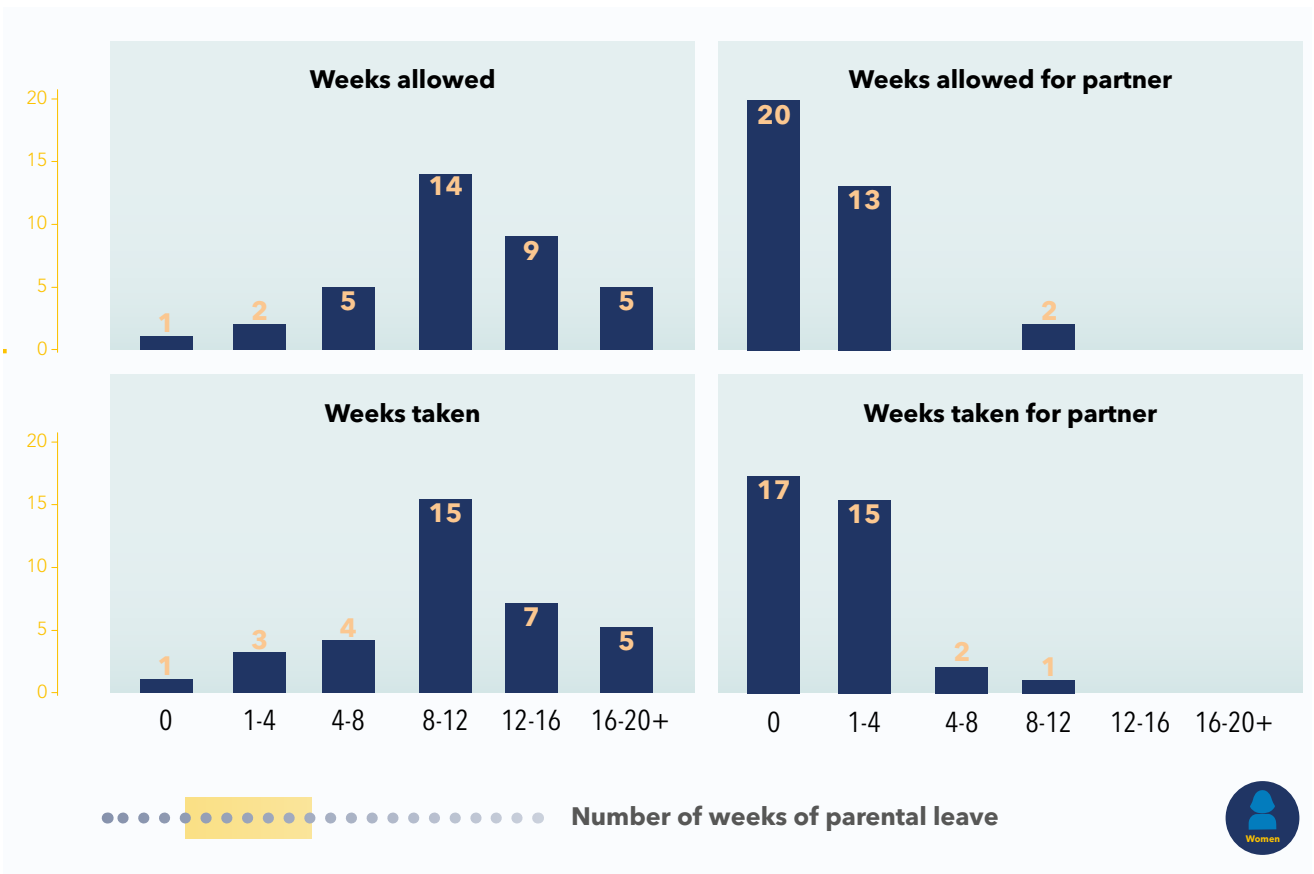


Figure 28. Weeks of parental leave allowed (top) and taken (bottom) by women.
 Data source: Individual survey. Total number of respondents: 35 women.



4.5. Career progression and leadership – Individual perspective (Indicator #12)

Work in the field and at-sea can be essential for career advancement and access to leadership positions in deep-sea research. Of women for whom fieldwork or time at sea is relevant to their career (43 of 80 responses), 54 per cent report that they have not been given adequate field (at-sea) opportunities to progress their careers, compared to only 26 per cent of men (five of 19) (see Figure 29). Only 52 per cent of women feel they have been adequately supported to take on leadership roles (48 of 93), compared to nearly all men (see Figure 30).

To quantify the availability of career supports, respondents were asked whether they have received support in five key areas: (i) access to career information, (ii) leadership training, (iii) mentorship, (iv) networking groups, and (v) professional development opportunities. In all five areas, over 50 per cent of women reported that they have not been provided with support, with only just over one quarter having accessed leadership training (see Figure 31).

As a proxy for leadership, in terms of recognition of expertise and leadership in the field, respondents were asked if they have been invited to provide policy advice or participated in governing councils at their institution. They were also asked if they hold the highest leadership positions at their institution. The results show that 56 per cent of men respondents have been invited to participate in committees by the ministries responsible for ocean science, deep-sea research or mining in their country compared to only 33 per cent of women (see Figure 32). Sixteen per cent of women respondents have participated in governing councils at their institution (elected or appointed), compared to 30 per cent of men (see Figure 33). Based on the ILO ISCO definition of Manager (comprising CEOs, presidents, vice chancellors, etc.), 30 per cent of women respondents (31 of 105) occupy Manager positions compared to 48 per cent of men (or 11 of 23 men) (see Figure 34).

Figure 29. Access to field or at-sea work.
Data source: Individual survey. Number of respondents: 99.

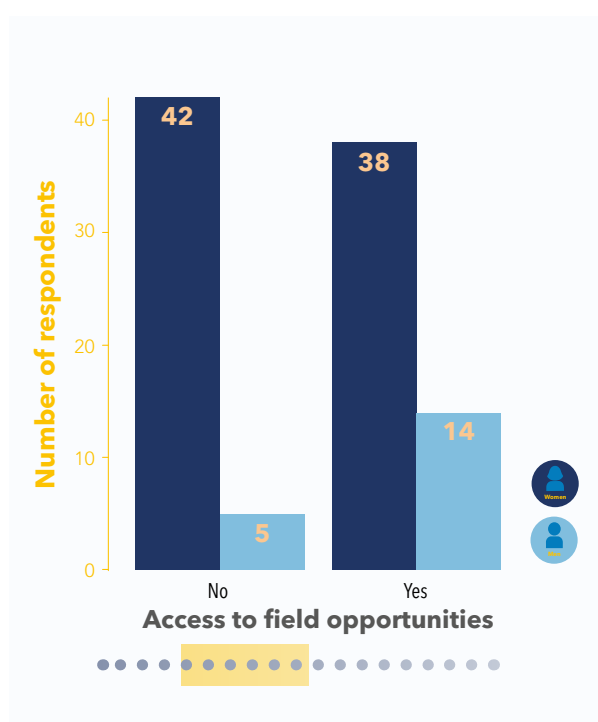




Figure 30. Receiving leadership support.

Data source: Individual survey. Total number of respondents: 114.

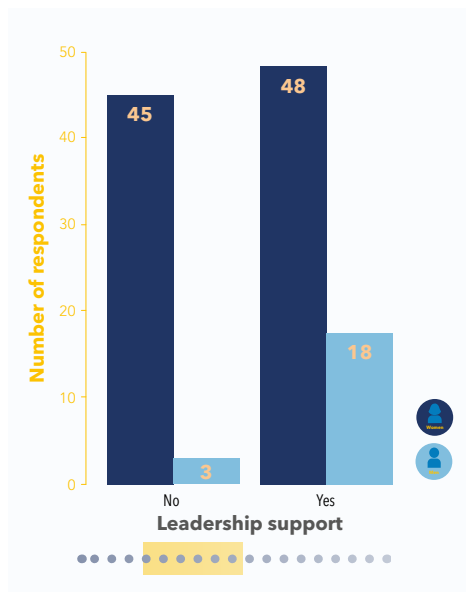


Figure 31. Receiving career support. Total numbers of responses by gender are noted as dotted lines on the plot to show the gap in access to career supports.

Data source: Individual survey. Total number of respondents: 99

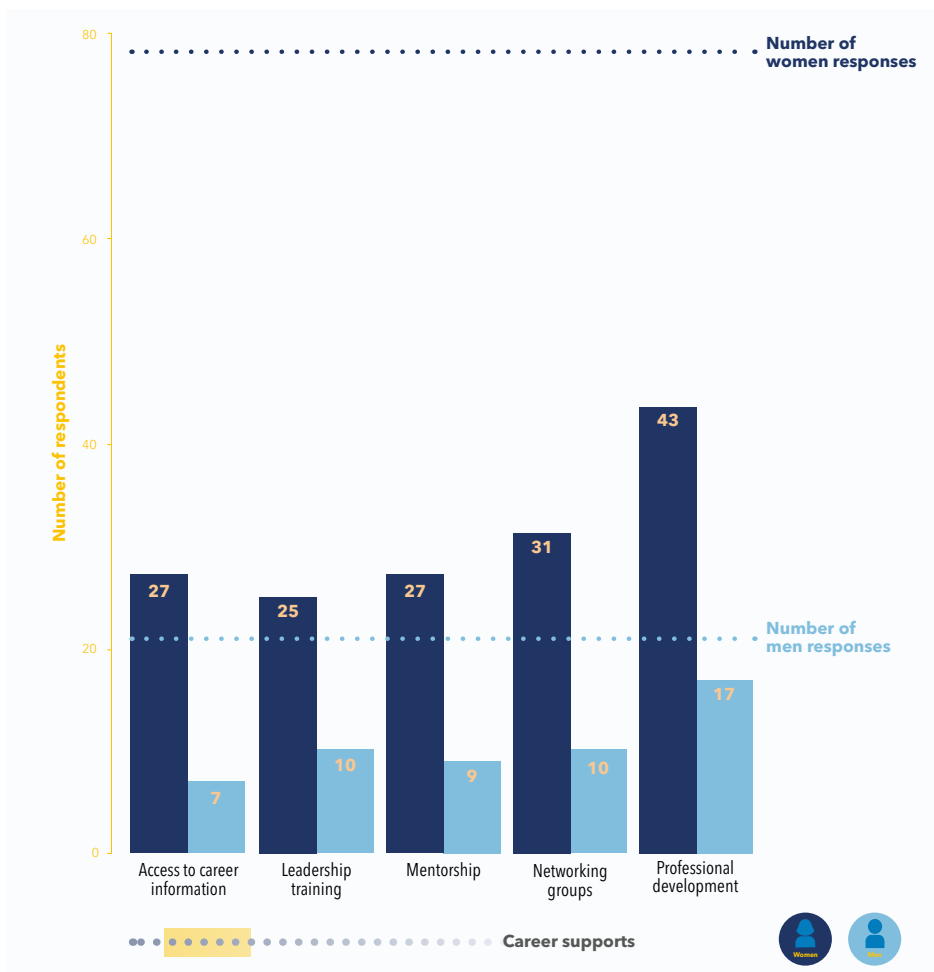


Figure 32. Invited to participate in committees by the ministry responsible for ocean science, deep-sea research or mining in their country.
 Data source: Individual survey. Total number of respondents: 116.

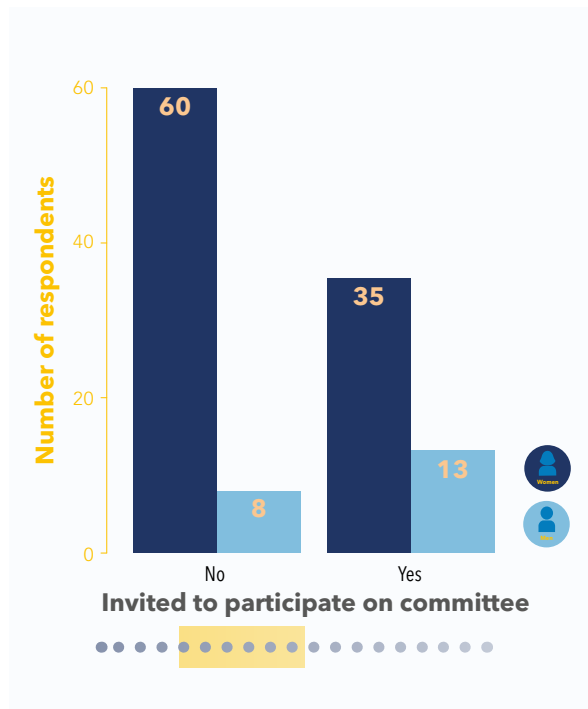


Figure 33. Participated in governing councils at their institution.
 Data source: Individual survey. Total number of respondents: 116.

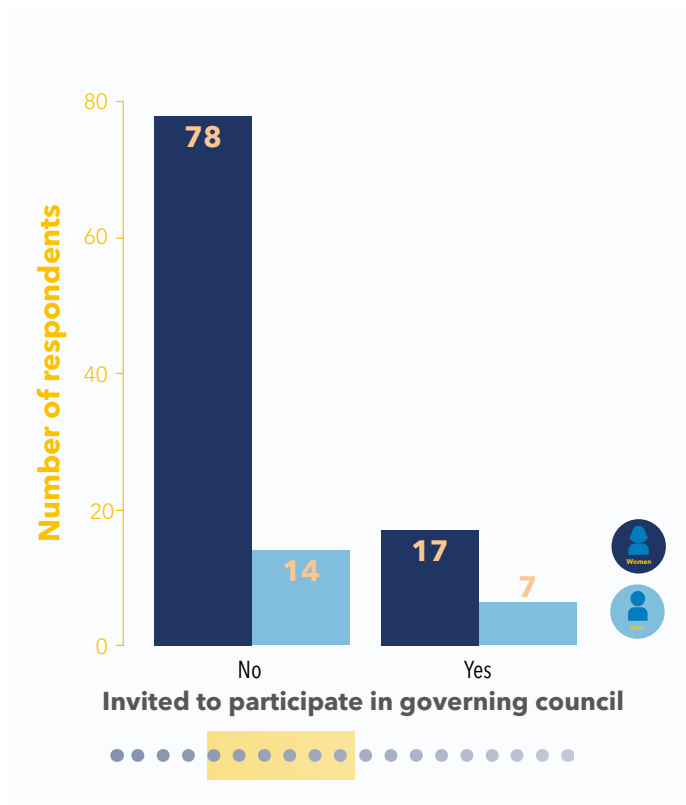
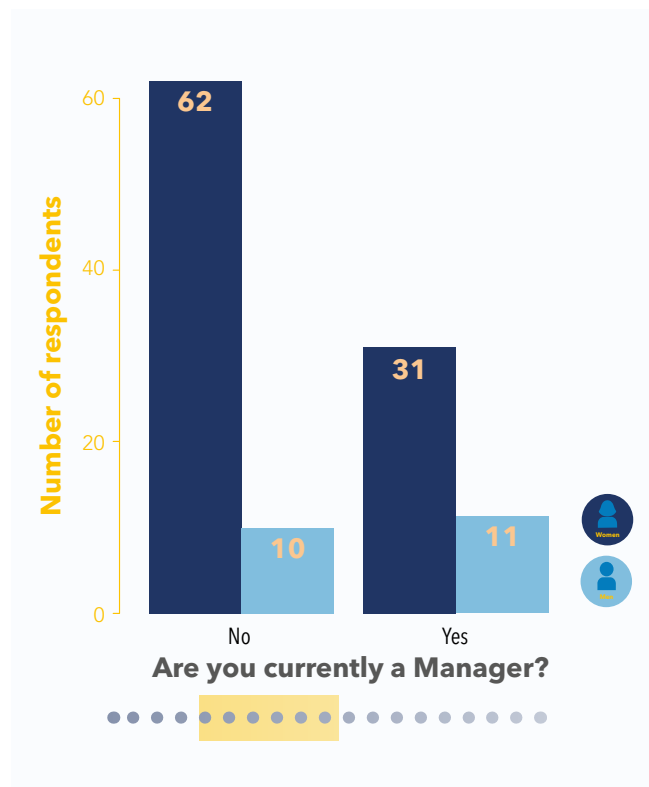


Figure 34. Managers, based on the ILO ISCO definition (CEOs, presidents, vice chancellors, etc.). Data source: Individual survey. Total number of respondents: 114.



4.6. Research funding and remuneration (Indicator #13)

Under this indicator, data was collected relating to respondents' access to funds for research and remuneration. Access to research funding was assessed as it relates to the awarding of grants to support research and opportunities to teach, attend conferences or conduct research abroad. Respondents were asked to report on national/domestic and international grants awarded, as well as whether they were the primary investigator (PI) or a member of the research team. While no gendered trends were observed, it was seen that more grants are being awarded to both women and men respondents in deep-sea research by international granting agencies than by national ones.²⁸ Similarly, while no gendered trends were visible in remuneration, data showed that vast majority of men and women make less than USD30,000 in their current jobs.²⁹

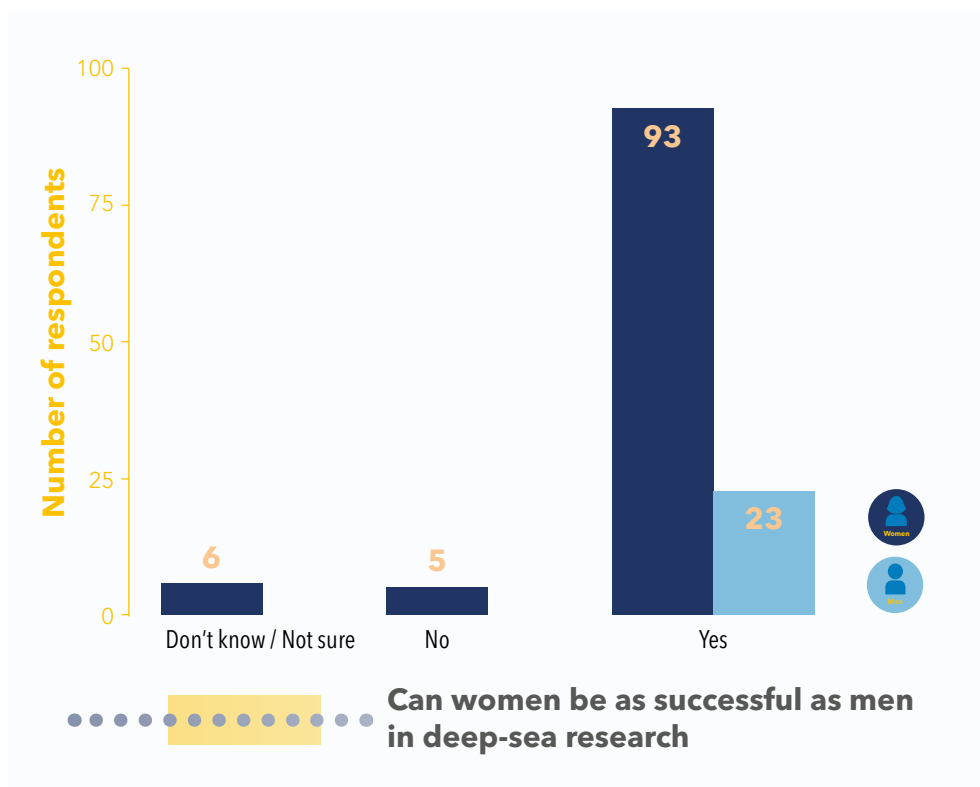
4.7. Social norms and attitudes (Indicator #14)

An assessment was conducted to understand the broader social norms and attitudes connected to gender which impact all women, including those engaged in deep-sea research. The results show that both women and men overwhelmingly agree that women can be as successful in deep-sea research as men (see Figure 35). The only respondents who expressed uncertainty on whether women could be as successful as men in deep-sea research were women themselves.

²⁸ Figure not shown here.

²⁹ Figure not shown here.

Figure 35. Can women be as successful as men?
 Data source: Individual survey. Total number of respondents: 127.



4.8. Discrimination and harassment (Indicator #15)

An assessment of survey respondents' experiences of discrimination and harassment at various stages of their career was conducted to identify differences in the types of experiences and their impacts.³⁰

Most starkly, 46 per cent of women (48 of 105) have felt discriminated against at work, compared to 22 per cent (5 of 23) of men (see Figure 36).

Women most commonly reported the *nature* of the discrimination as "evaluation or rewarding of their achievements," followed by "isolated or ignored at work," "offensive remarks," and "not offered a job or promotion" (see Figure 37); and the *basis* of the discrimination as "gender," followed by "age," "race or ethnicity," and "personal or family situation" (see Figure 37). Men reported the *nature* of the discrimination in the same subjects as women. However, no men reported the *basis* as "gender." An interview with a woman who participated in the individual survey offers this example of gender-based discrimination:

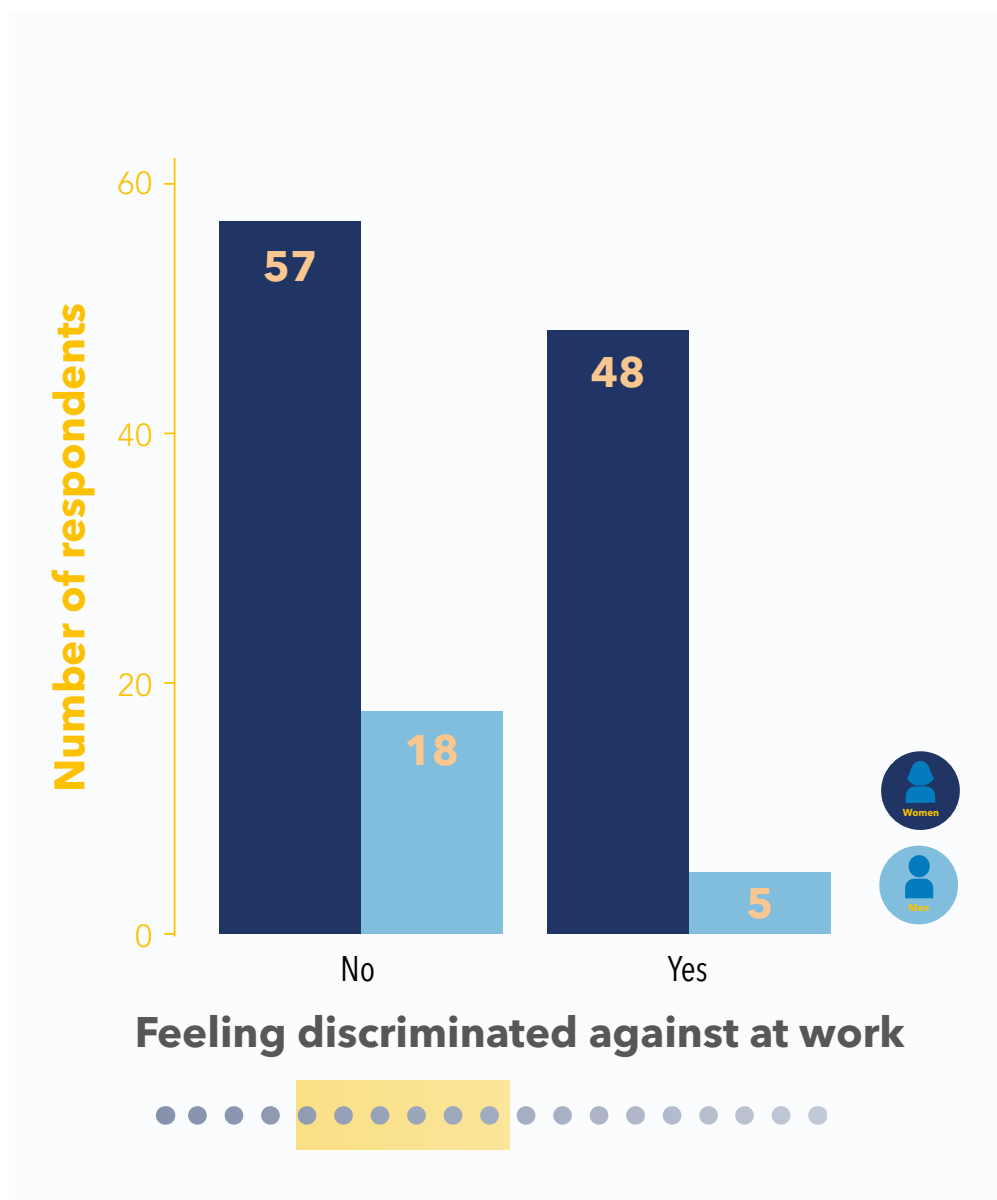
Having just been recruited, she went into the field as the only woman in the group, to capture fish to stock a fish farm, which required a group member to take each batch of fish to the farm. She recalls someone saying, "She'll be the first one to leave. We need men around here, not women." She says, "I was doing it [capturing fish] like everyone else, but I was sent back with the first batch of fish."

³⁰ For definitions of discrimination and harassment, see *Measuring gender equality in science and engineering: the SAGA survey of drivers and barriers to careers in science and engineering* (UNESCO, 2018)

Respondents who have experienced discrimination were asked how it has affected their career. A sample of women's responses is found in Figure 38.

Over 15 per cent of women have been harassed in their work environment and during the early stages of their career (at job placements, internships and apprenticeships, and during their studies) (see Figure 39).³¹ When asked to provide the details of the harassment, women most commonly reported 'sexual', implying gender-based sexual harassment. Twenty-nine per cent of women (30 of 105)³² have been the recipient of unwanted leers, sexual comments, noises or gestures at their workplace (see Figure 40).

Figure 36. Feeling discriminated against at work.
Data source: Individual survey. Total number of respondents: 128.



³¹ The response count from men was very low at 4.

³² In comparison to 3 out of 23 of men.



Figure 37. Nature of discrimination (left) and basis of discrimination (right) experienced at work. Data source: Individual survey. Total number of respondents: 128.



Figure 38. Individual survey responses on "How has discrimination affected you?"³³

HOW HAS DISCRIMINATION AFFECTED YOUR CAREER?
WOMEN'S RESPONSES

I am not sure if it has had an effect on my career, but has definitely affected me mentally.

My career has been delayed for many years. I had to wait 8 years after Ph.D. award for an academic appointment.

There are opportunities that are not given to women because of their gender, for instance equal opportunities to participate in research cruises or opportunities to lead projects.

A feeling of not being valued, unmotivated at time, wanting to withdraw and stay quiet.

I thought I was not good enough at the beginning but finally I overcame and made them realize they were wrong to judge me.

I changed the work and started my own business.

Being paid minimum wage have led to immense pressure by family to leave this position for a better paid job that is not involved in the ocean research field, despite the contentment felt in this job.

I have lost interest in work.

These situations have made me very guarded and distant in professional social interactions with peers or colleagues at all levels.

It devalues my potential and capabilities.

It has probably affected the opportunities I can obtain, but most significantly, discrimination redirects my loyalty, commitment and willingness to stay.

It has just made me realize that no matter where I go, there is always the chance of being harassed by men.

This kind of discrimination demotivates me and diminishes my working spirit. Moreover, it makes me lose my confidence.

³³ Sample responses from men: 'It's challenging when I try to progress up the ladder but despite it, I just put my head down, concentrate on my work and let the result speak for itself'; 'Affect my promotion.'

Figure 39. Experiences of harassment.
Data source: Individual survey. Total number of respondents: 128.

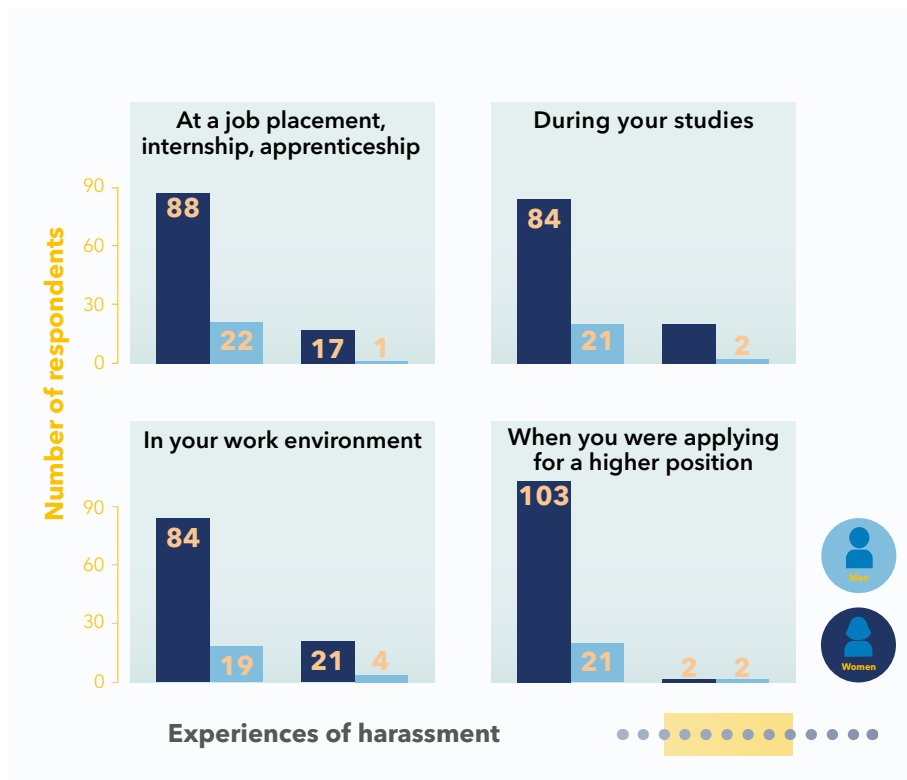
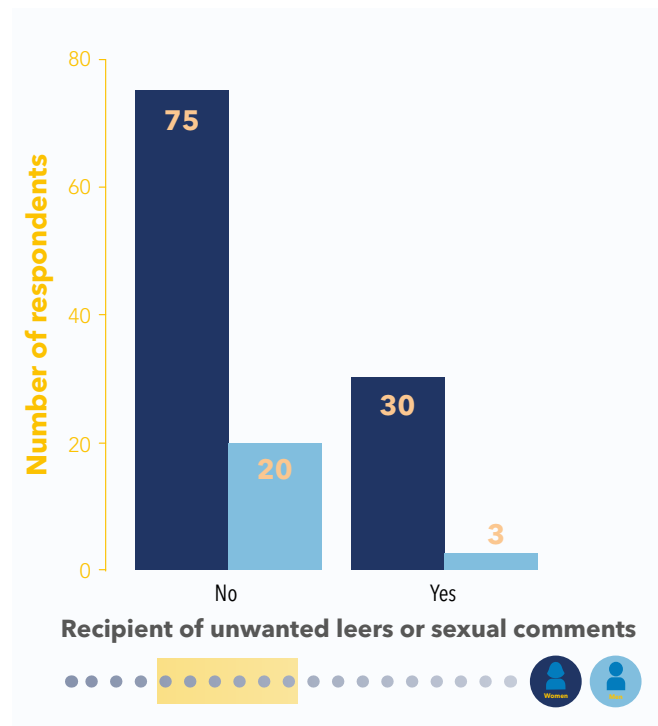


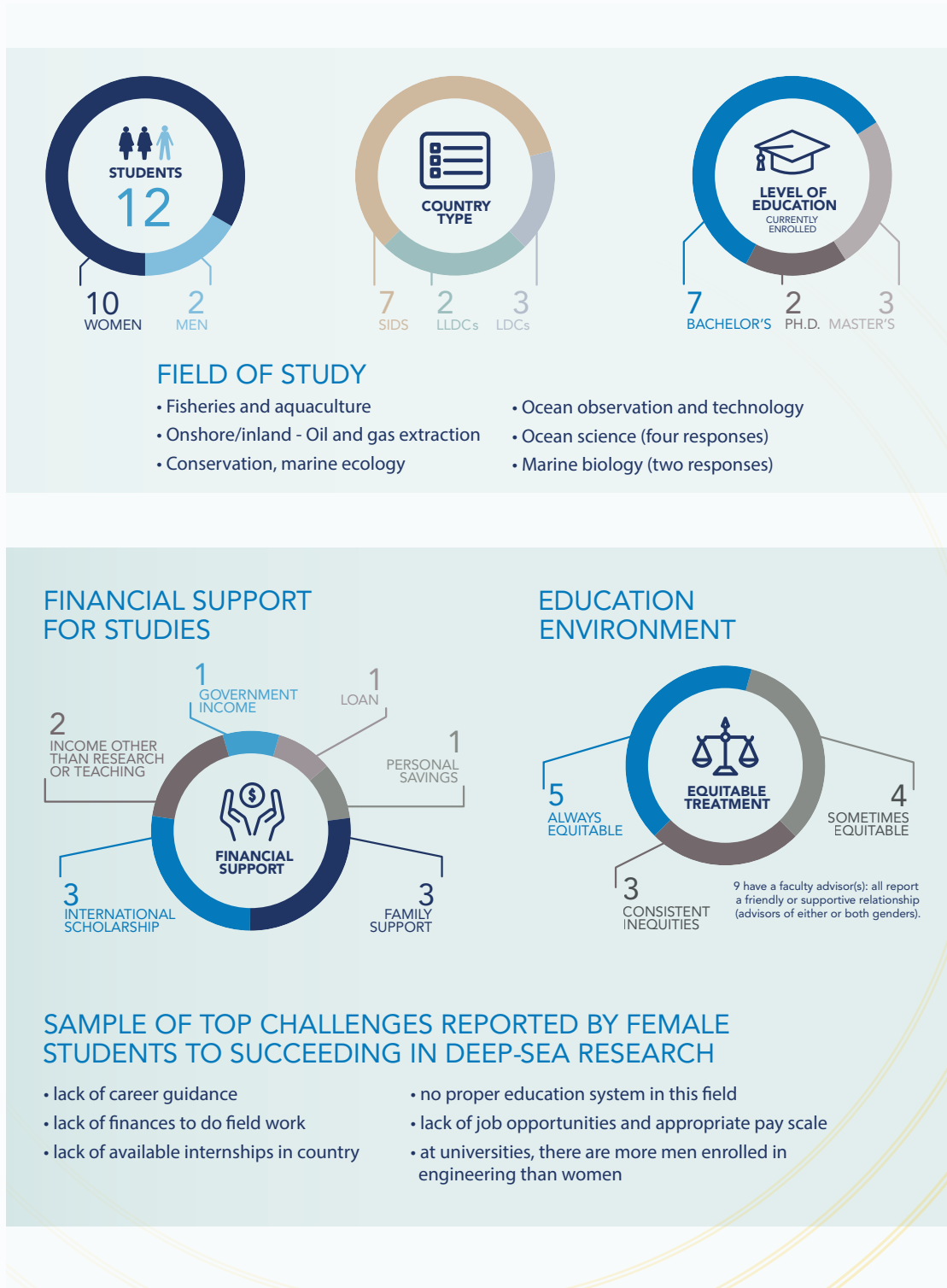
Figure 40. Have you ever been the recipient of unwanted leers, sexual comments, noises or gestures at your workplace?
Data source: Individual survey. Total number of respondents: 128.



4.9. Student responses

Twelve students participated in the individual survey. Their responses were aggregated with the data received from those working in deep-sea research. An overview of student responses is given in below Figure 41.

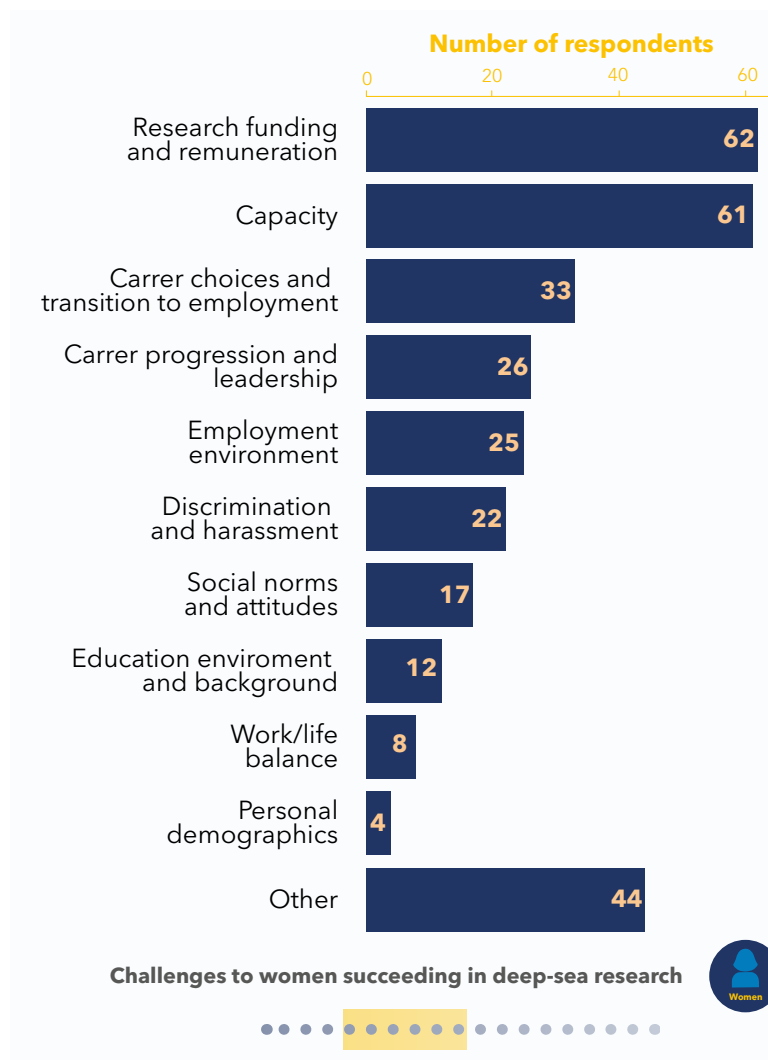
Figure 41. Individual survey responses by students



4.10. Top five challenges perceived by women

Respondents were asked to list their top five challenges for success in deep-sea research (see Figure 42). The responses were grouped by the indicators of the current study section³⁴ and an additional category, 'Capacity', to account for responses relating to a lack of human, institutional or infrastructure capacity. The top challenges identified by women engaged in deep-sea research to succeed are: (i) research funding and remuneration; (ii) capacity; (iii) career choices and transition to employment; (iv) career progression and leadership; and (v) employment environment. Of note is that responses under research funding and remuneration predominantly correspond to a lack of adequate research funding, which is linked to financial capacity. See Figure 43 for examples of challenges reported under each category.

Figure 42. Top challenges to women succeeding in deep-sea research. Data source: Individual survey. Total number of respondents: 96. Miscellaneous reasons reported under category "other" provided below.³⁵



³⁴ Personal demographics (Indicator 8), Career choices and transition to employment (Indicator 9), Employment environment (Indicator 10), Work-life balance (Indicator 11), Career progression and leadership – Individual perspective (Indicator 12), Research funding and remuneration (Indicator 13), Social norms and attitudes (Indicator 14), and Discrimination and harassment (Indicator 15).

³⁵ Responses categorized under "Other" include, for example, COVID-19 restrictions, bureaucratic processes, finding opportunities to establish research collaborations, participation in underwater field activities which are physically demanding, challenges relating to publishing and time for writing, lack of data sharing, political factors and teaching obligations.

Figure 43. Individual survey responses on "Top career challenges faced by women"

**WOMEN'S
TOP CAREER
CHALLENGES**
WOMEN'S RESPONSES

**CAREER CHOICES AND
TRANSITION TO EMPLOYMENT**

*Lack of career
guidance*

**Limited job
opportunities
in my country,
especially at-
sea/offshore
opportunities
for women**

**RESEARCH FUNDING AND
REMUNERATION**

*Lack of funding
for laboratory
equipment, hiring
student research
assistants, and
field work*

Inadequate pay

DISCRIMINATION AND HARASSMENT

**Lack of opportunities for poorer
classed individuals at entry level
positions**

EMPLOYMENT ENVIRONMENT

**Unequal opportunities for women
to participate in research cruises**

*Not easy to network in a field dominated by
men*

**CAREER PROGRESSION AND
LEADERSHIP**

*Lack of
recognition and
acknowledgement*

*Ignored during
decision-making*

CAPACITY

*This area is not highly explored in the country, due
to the lack of resources and the real understanding
of its importance in the country and the world*

**Inadequate laboratory and
field instruments**

SOCIAL NORMS AND ATTITUDES

**Marriage and
motherhood**

Lack of support by family

EDUCATION ENVIRONMENT

**Lack of
availability of
courses and
experts from
the region**

OTHER

COVID-19 restrictions
Cumbersome bureaucratic processes

WORK-LIFE BALANCE

**Juggling home and work
responsibilities**

Family obligations

5. Results part 3: policy review



5.1. In Focus - LDCs

“LDCs represent the poorest and most vulnerable States in the world.” (UN-OHRLLS, 2022)

LDCs are defined by an average per capita annual income of below USD1,018, low health and education outcomes (such as maternal mortality and below gender parity for secondary school enrolment), and high economic and environmental vulnerability. Globally, 46 countries are classified as LDCs (UN-OHRLLS, 2022).

LDCs experience strong societal barriers to women which impacts all aspects of women’s lives and makes their participation in deep-sea research, a technology-based field, an enormous challenge. In 2019, for example, only 15 per cent of women in LDCs had access to the Internet (UN Women, 2021a). Also, in LDCs, the COVID-19 pandemic has most severely affected women due to their “over-representation in the labour-intensive, low-skilled activities that were most affected by lockdowns” (UN, 2021).

LDCs in this study:



Bangladesh, Kiribati,³⁶ Lesotho,³⁷ Madagascar, Malawi, Mozambique, Myanmar, Nepal³⁸

This section first presents the findings of an interview with a female respondent to the Individual Survey showcasing the experience of a woman from a LDC working in deep-sea research (see Figure 44). It is followed by a series of country profiles and policy analyses for four LDCs (Bangladesh, Kiribati, Malawi and Mozambique) with relevant high-level data from national and institutional surveys in this study and other sources.³⁹

³⁶ Also SIDS

³⁷ Also LLDC

³⁸ Also LLDC

³⁹ Note: See Annex B for a description of the data highlighted in the country profiles.

Figure 44. Experiences shared by a woman from a LDC



Biography

"It was always my dream to see the ocean." As a child, she would see the ocean on television, and says her heart has always gone to the ocean. Her chance came to see it for herself through an opportunity to obtain her navigation officer's licence in a maritime country. Her country had established a partnership to support a national goal of preparing future generations of citizens to participate in maritime fields. This inter-country cooperation also allowed her to enrol in the ocean science masters program she is now pursuing. She says her research is on "the importance of participation of landlocked countries in the maritime field."

After giving birth to her child, she began thinking more about the effects of climate change, especially on her country, which faces desertification. She says, *"I began to worry about our Mother Earth. We have to give back to Mother Earth."* She has since set herself the goal to support the protection of national aquatic resources by working toward the establishment of an integrated science-based policy for her country's water sector.

Barriers: Education and skills training (Indicator #4) and capacity

A challenge for a landlocked country is to engage with the international ocean community. She says, the women in her country need more education to participate in maritime fields, and that *"women's voices are really important."* Under the Law of the Sea, the ocean is the common heritage of humankind, she notes, and that includes landlocked countries: *"We are living in one world. Landlocked countries should raise their voice."*

DEMOGRAPHIC DETAILS

OCCUPATION Student and Maritime Professional

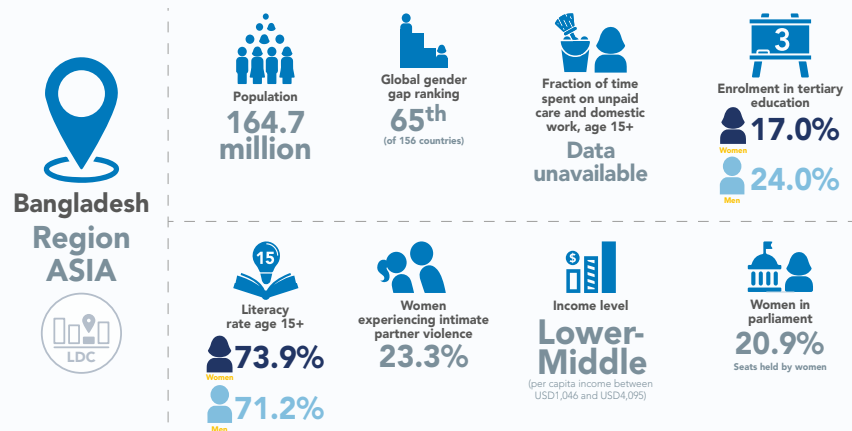
FIELD Ocean Science, Conservation

AGE 25 - 34

DEPENDENTS Yes

Under the Law of the Sea, the ocean is the common heritage of humankind:

"We are living in one world. Landlocked countries should raise their voice."



NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
More than 10	More than 10	6-10	More than 10	More than 10	NA

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	0-4	0-4	0-4
MEN	100+	5-9	5-9

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS



EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS	
WOMEN	38
MEN	119

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES			
Gender parity in grade promotion	40%	Childcare cost contributions	50%
Equal pay policies	100%	Childcare offered on site	30%
Anti-sexual harassment policy/code of conduct	80%	Access to parental leave	60%
Career mentoring	80%	Access to health plan	60%
Networking, diversity and affinity groups	60%	Support services (counselling services, etc.)	60%
Flexible working hours	70%	Provision for household support services	30%
Flexible meeting hours	70%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	20%
Part-time work	30%	Re-entry mechanisms	40%
Telework/remote work	60%		

Study indicator: Gender-related policies

Bangladesh

Constitution

The Constitution of the People's Republic of Bangladesh addresses equality in several sections: "The State shall not discriminate against any citizen on grounds only of religion, race, caste, sex or place of birth." and "Women shall have equal rights with men in all spheres of the State and of public life" (Constitution of the People's Republic of Bangladesh, 2018).

National gender policies

The Government established the National Women Development Policy, addressing a range of topics relevant to this report:

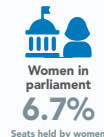
- Poverty: "Out of 40 per cent of the population of Bangladesh living under the poverty line, two-thirds of them are women and female-headed families are greater in number among them."
- Education and training: "To increase education of women, to eliminate discrimination in education rate and opportunities between men and woman..." and "To continue all out efforts to eliminate illiteracy of the women and specifically, to give utmost importance to educate and train the female children and women in technical, technological and scientific pursuits."
- Political empowerment of women: "To raise the number of women's seats in the Parliament to 33 per cent and to take initiative to direct election in the extended seats for women."
- Women and the environment: "In recognition of the contribution of women in the management of natural resources conservation and a safer environment to give them opportunity of equal participation in environment preservation policy and programs reflecting a women perspective" and "To encourage women in (...) fisheries (...) and give them equal opportunity." (Government of Bangladesh, 2011)

Education policies

The Perspective Plan of Bangladesh 2021-2041, aims to accelerate national development by eradicating poverty and achieving the country's SDGs. Gender equality is one of nine areas essential to reaching the country's overarching goals. The Perspective Plan defines a strategy for higher education, which education policies promotes equality through need-based public scholarships programs, and the elimination of the gender gap through the provision of scholarships and the establishment of public colleges for women (Government of Bangladesh, 2020).

Ocean/related sector

The foundation of the ocean economy in Bangladesh is its marine fishery - 52 per cent of animal-based protein consumed in the country comes from the Bay of Bengal (Green Fiscal Policy Network, 2021), and 30 million people are dependent on ocean activities for their livelihoods (Centre for Research and Information, 2017). The government has prioritized ocean resources as key sources of future growth (Patil et al., 2018). The Marine Fisheries Act 2020 provides the framework for the regulation of marine resources. However, the Act does not incorporate international principles supporting fisheries management (Arif and Karim, 2022). In a speech to the Marine Fisheries Academy, H.E. Sheikh Hasina, Prime Minister of the People's Republic of Bangladesh highlighted that progress towards SDG-14 could be achieved by using ocean resources to support sustainable development (United News of Bangladesh, 2022).



NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
1-2	1-2	1-2	0	0	1

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	5-9	0-4	5-9
MEN	5-9	0-4	5-9

Study Indicator: National Contribution

Kiribati

Constitution

The Constitution of the Republic of Kiribati grants fundamental rights and freedoms regardless of “race, place of origin, political opinions, colour, creed or sex, but subject to respect for the rights and freedoms of others or the public interest”. Fundamental rights granted regardless of gender include: “life, liberty, security of the person and the protection of the law” (Section 3, Constitution of Kiribati, 2016).

National gender policies

Kiribati’s National Policy on Gender Equity and Women’s Development addresses Section 3 of the Constitution by seeking to provide “equal opportunities, equal human rights, and equal access to services so that everyone can reach their potential in economic, political, cultural and social life.” Its five priorities are:

- To progressively implement a gender mainstreaming approach to achieve gender equality
- To improve the economic empowerment of women
- To support stronger, informed families
- To improve women’s political representation and leadership
- To eliminate sexual and gender-based violence (Government of Kiribati, 2019)

Kiribati’s 20-Year Vision 2016-2036 highlights the importance of considering “gender, youth, vulnerable groups, disability, equality and partnership as cross-cutting principles” with the goal to implement measures across all sectors to create equal opportunities for these groups. The Vision underscored the vulnerability of women in society and the lack of women in decision-making roles. The Vision committed the Government to implementing “measures through a gender development policy to increase the participation of women in all economic, social and political decision-making processes”. In addition, the Government will seek to “build a society that guarantees equality of opportunity in accessing public products, services and resources” (Government of Kiribati, 2016).

Education policies

A primary mechanism addressing barriers to higher education and the employment gender gap,⁴⁰ the Kiribati Government Manifesto, concentrates on education as a “foundation of development for the people of Kiribati” and proposes the abolition of primary school fees. The Manifesto also has several actions supporting the development and expansion of tertiary education and commits the government to investing in “entrepreneurship for youth and women through increasing opportunities [and]...loans for women and youth for business start-ups” (Government of Kiribati, 2020).

Ocean/related sector

The Kiribati National Fisheries Policy 2013-2025 aims to “promote sustainable fisheries in Kiribati with the aim of enhancement of food security, creation of employment opportunities and sustainable livelihoods, and economic growth for Kiribati’s current and future generations,” (Government of Kiribati, 2013). In 2017, Kiribati undertook a National Marine Ecosystem Valuation report, establishing the total value of national marine ecosystem services at approximately USD400M annually - a significant amount in a country with a per capita GDP less than USD2000. This was noted in the report’s recommendations, which urged the Government of Kiribati to “place a higher priority on ecosystems in Kiribati and to maintain existing ecosystems in a healthy and sustainable state” (Rouatu, 2015). The Kiribati Seabed Minerals Act 2017 established the regulatory system to license, monitor and manage exploration and exploitation of Kiribati’s seabed resources.

⁴⁰ Unemployment rate is 47 per cent for women, and 36 per cent for men. (Government of Kiribati, 2019)



Population
19.1 million

Global gender gap ranking
115th
(of 156 countries)

Fraction of time spent on unpaid care and domestic work, age 15+
8.7%

Enrolment in tertiary education
0.6%

8.7%
Women
1.3%
Men

0.6%
Women
1.0%
Men

Literacy rate age 15+
62.1%

Women experiencing intimate partner violence
16.6%

Income level
Lower
(per capita income between USD1,046 and USD4,095)

Women in parliament
22.9%
Seats held by women

55.2%
Women
55.2%
Men

NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
3-5	6-10	3-5	0	1-2	18

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	20-49	0-4	5-9
MEN	100+	20-49	100+

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS

2 INSTITUTIONS COMPLETED THE SURVEY

EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS	
WOMEN	NA
MEN	NA

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES			
Gender parity in grade promotion	0%	Childcare cost contributions	0%
Equal pay policies	100%	Childcare offered on site	0%
Anti-sexual harassment policy/code of conduct	0%	Access to parental leave	0%
Career mentoring	0%	Access to health plan	100%
Networking, diversity and affinity groups	50%	Support services (counselling services, etc.)	100%
Flexible working hours	100%	Provision for household support services	0%
Flexible meeting hours	100%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	0%
Part-time work	0%	Re-entry mechanisms	0%
Telework/remote work	100%		

Study indicator: Gender-related policies

Malawi

Constitution

The Constitution of the Republic of Malawi contains a range of gender protections, ensuring that all individuals have equal status and protection before the law (Section 4) and protection from discrimination “on grounds of race, colour, sex, language, religion, political or other opinion, national, ethnic or social origin, disability, property, birth or other status or condition” (Section 20). An important gender-specific protection is Section 24, guaranteeing women the same protections as men, such as: entering contracts; property rights; custody, guardianship and care of children; citizenship and nationality; and, dissolution of marriage, including disposition of assets and the care of children. Under this section, “Any law that discriminates against women on the basis of gender or marital status shall be invalid and legislation shall be passed to eliminate customs and practices that discriminate against women” (Constitution of the Republic of Malawi, 2017).

National gender policies

Malawi has a National Gender Policy, which provides a framework for “mainstreaming gender in various sectors of the economy with the overall goal of reducing gender inequalities and enhancing participation of women, men, girls and boys in socio economic and political development.” It identifies and seeks to address the problem of female participation and representation in decision-making.

Notable policy objectives are:

- advocate for access, retention and completion to quality education for girls and boys
- ensure women, men, boys’ and girls’ sexual and reproductive health rights
- reduce poverty among women and other vulnerable groups with economic empowerment
- promote women’s participation in decision making positions in both politics and public life
- reduce gender-based violence. (Government of Malawi, 2015)

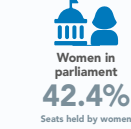
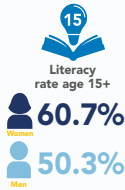
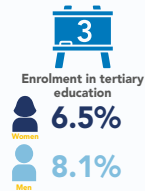
The Gender Equality Act promotes “gender equality, equal integration, influence, empowerment, dignity and opportunities for men and women in all functions of society.” It also ensures equal access to education and training (e.g., the “provision of sanitary facilities that take into account the specific needs of the sex of the students”), equal access to scholarships and other supports, and “active measures to ensure the enrolment at tertiary education institutions”. As well, the Act integrates gender considerations with regard to curriculum development (primary and secondary) (Government of Malawi, 2014).

Education policies

Building on the goals of the National Education Policy (2016) designed to promote a more inclusive education sector, Malawi’s National Strategy on Inclusive Education 2017-2021 lays out a plan of action to increase “access to equitable and relevant quality education for all learners in Malawi.” This includes several priorities to enable inclusive education, such as the requirement that all “new infrastructure development, should have child, disability and gender friendly designs” (Government of Malawi, 2016a, 2017). One area where there remains a large gender disparity is in education in STEM fields - in 2015, the Malawi University of Science and Technology enrolled 200 students of which 9 per cent were female (Twabi, 2021).

Ocean/related sector

The fisheries sector is vital to Malawi’s food and nutritional security, livelihoods of the rural population and economic growth of the country, providing 4 per cent of GDP. The National Fisheries and Aquaculture Policy regulates the fisheries sector as a means to contribute long-term economic growth through sustainable fisheries management and increased aquaculture production (Government of Malawi, 2016b). A major initiative under the National Fisheries and Aquaculture Policy is the Sustainable Fisheries, Aquaculture Development And Watershed Management Project, which seeks to reduce poverty by improving fisheries and aquaculture productivity, reduce post-harvest losses, and strengthen fisheries and watershed management. Beneficiaries of the program include 20,000 fishers, fish farmers, students, and value chain entrepreneurs, of which 50 per cent are women (African Development Bank Group, 2022).



NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
3-5	3-5	3-5	3-5	1-2	10

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	10-19	10-19	10-19
MEN	20-49	20-49	20-49

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS



EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS	
WOMEN	14
MEN	35

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES			
Gender parity in grade promotion	33%	Childcare cost contributions	0%
Equal pay policies	50%	Childcare offered on site	17%
Anti-sexual harassment policy/code of conduct	33%	Access to parental leave	67%
Career mentoring	17%	Access to health plan	50%
Networking, diversity and affinity groups	17%	Support services (counselling services, etc.)	17%
Flexible working hours	67%	Provision for household support services	17%
Flexible meeting hours	100%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	50%
Part-time work	33%	Re-entry mechanisms	17%
Telework/remote work	17%		

Study indicator: Gender-related policies

Mozambique

Constitution

The Constitution of the Republic of Mozambique ensures that “men and women shall be equal before the law in all spheres of political, economic, social and cultural life.” (Section 36). It has several articles with a direct focus on gender equality and fundamental rights before the law (Section 11), such as the right to equality “regardless of colour, race, sex, ethnic origin, place of birth, religion, level of education, social position, the marital status of their parents, their profession or their political preference.” (Section 35). Other important gender-related sections are:

- equal access to the right and duty of education for all citizens (Section 88)
- equal and equitable access, and opportunity for higher education, that is democratised and meets the scientific standards of the country (Article 114)
- support for the development of women, encouraging their participation in all spheres of political, economic, social and cultural life (Article 122)
- (Constitution of the Republic of Mozambique, 2018; Japan International Cooperation Agency, 2015)

National gender policies

Mozambique’s National Action Plan on Women, Peace and Security (2018-2022) provides a framework to view gender equality in the context of peace and security. It seeks to create a more favourable environment for women by integrating a gender lens into policy and legislative development, such as:

- integrating a gender perspective in all actions and strategies
- guaranteeing the participation of women in decision making
- promoting of mechanisms to increase recruitment, retention and promotion of women;
- fighting all forms of violence against women
- expanding the security, physical and mental health and dignity of women and girls
- securing the rights of women and girls (Government of Mozambique, 2018)

Education policies

The Gender Strategy for Higher Education (2018-2023) has initiatives to encourage participation of female students in STEM fields, like policy instruments and incentives that promote female participation and attract women to STEM-related research courses. Researchers found that “cultural issues regarding the role of women in society; the abandonment of school due to premature and forced marriages; the lack of [financial support], and the issue of class...exacerbate gender inequality.” In 2017, out of just over 200,000 students in tertiary education, 3.7 per cent (7,430) were women in STEM (down from 3.8 per cent in 2016). Women’s representation across STEM courses was 8.2 per cent (of 90,322 students) (Uamusse et al., 2020). The Ministry of Science, Technology, Higher and Professional Education has acknowledged that women are underrepresented in STEM fields, with “the number of male researchers at all levels is more than two times greater than female researchers” (Giva and Santos, 2019).

Ocean/related sector

The importance of involving local communities in the management of marine areas is recognized and legislated in Mozambique. However, significant gaps in capacity and resources hinder effective community-based approaches and therefore increase threats to areas of high biodiversity that are under protection (Tsotsane, 2021). The recently revised Regulamento da Pesca Maritima signals a policy shift towards regulating sustainable fisheries and community co-management rather than a focus on increasing total production volumes (Vyawahare, 2021).

5.2. In Focus – LLDCs



“LLDCs face challenges due to remoteness, lack of access to global markets and territorial marine and shipping access.” (UN, 2022c)

“The average distance to a seaport among LLDCs is 1370 km.”(UN, 2020)

LLDCs are defined by having a lack of territorial access to the sea. Globally, 32 countries are classified as LLDCs, with a population of 533 million people. Seventeen LLDCs are also classified as LDCs. Their central socio-economic constraints correlate with their isolation from world markets, cost of transit, and lack of territorial seas. Their sea trade is often challenged by requiring transit through countries also facing similar economic challenges. On average, LLDCs pay double the transport costs of their coastal transit partners, and take longer to send and receive merchandise overseas (UN, 2022a).

Individual Survey respondents from LLDCs, in listing their top five career challenges, directly addressed the lack of access to and connection with the ocean. For example:

- The difficulty in getting a deep knowledge of the marine industry
- The subject of deep-sea research not being one of interest nationally
- Lack of communication and cooperation with maritime countries
- Lack of national experience in conducting ocean science research
- Lack of appreciation of the importance of the Law of the Sea

LLDCs that participated in the study:⁴¹



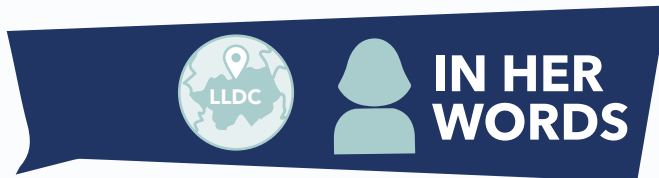
Botswana, Lesotho, Malawi, Mongolia, Nepal

In this section, an interview with a woman respondent to the Individual Survey showcases the experience of a woman working in deep-sea research from a LLDC (see Figure 45), and country profiles for four LLDCs (Botswana, Lesotho, Mongolia, and Nepal) present policy analyses and relevant high-level data from the national and institutional surveys and other sources.⁴²

⁴¹ Lesotho, Malawi, Nepal are also classified as LDCs.

⁴² Note: See Annex B for a description of the data highlighted in the country profiles..

Figure 45. Experience shared by a woman from a LLDC



Biography

During her bachelor's studies, she first learned of fisheries and aquaculture as a field when fisheries department staff visited the school. After that visit, she says, "I wanted to know more about fisheries. I was interested in the field." Now, she works with enterprises in aquaculture and capture fisheries to help them to value fish and fish processing, and she is a lecturer at the local university.

Barrier: Work-life balance (Indicator #11)

The key to success has been in ensuring her children are with trusted caretakers during the workday, especially by a family member: "As a parent you really need someone you can trust with your children and that will give you peace when you are out. You work with your full concentration knowing you've left your children in safe hands. It boosts your career, allows you to move forward."

Barrier: Social norms and attitudes (Indicator #14)

In her culture and country, she says, "women are considered to be 'second class,' maybe somehow weak." In her professional role, she supports the fisheries and has found she can support the women working in that field: "In fisheries there are few women, especially in my country. But when [women] see you going out there to help them, they get encouraged. They look to you as a mentor and a role model."

Barrier: Employment environment (Indicator #10)

In her workplace, there also aren't many other women, but female role models have helped her and her peers to feel encouraged and to succeed: "There are a few women ahead of me, and they've managed to survive and succeed, and

so I say that I can do it too. They keep us going." In terms of being accepted in her field, she says, "Somehow, yes. We [women] feel that we're taken on board."

She is ambitious about taking on new challenges about learning and progressing her career. Field work is part of her job; a challenge with rewards: "Working on the water itself is scary, but it's fun as well. You're working and you're having fun. It brings a certain kind of contentment. Wow! I have managed to achieve this."

DEMOGRAPHIC DETAILS

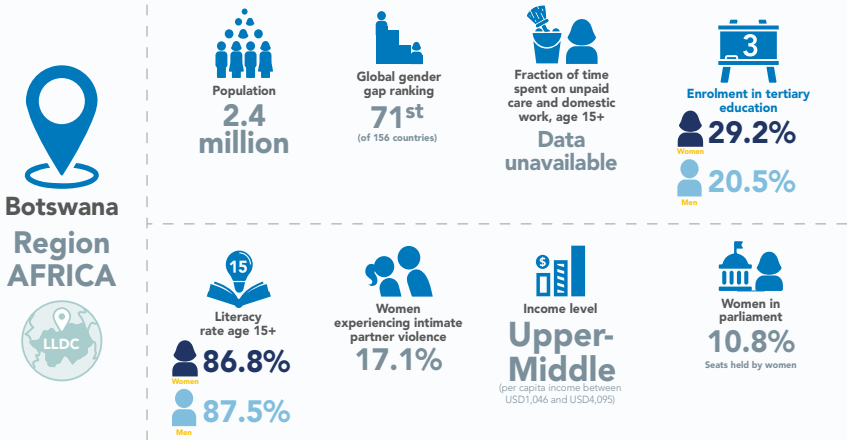
OCCUPATION Technical Professional

FIELD Fisheries and aquaculture

AGE 35 - 49

DEPENDENTS Yes

"There are a few women ahead of me, and they've managed to survive and succeed, and so I say that I can do it too."



Botswana

Constitution

The Constitution of the Republic of Botswana (1966, amended to 2016) contains a single reference to gender that provides fundamental rights and freedoms to every person regardless of “his or her race, place of origin, political opinions, colour, creed or sex, but subject to respect for the rights and freedoms of others and for the public interest.” The Constitution has been described as gender neutral, but without adequate protections for women (Scribner and Lambert, 2010).

National gender policies

The National Policy on Gender and Development (2015) seeks to reduce inequalities in the opportunities and outcomes of social, economic, political, cultural and legal development for both women and men, and guides the development of gender-sensitive and responsive initiatives by all sectors. It further adopts gender mainstreaming as a core strategy for sustainable development. The National Policy also establishes the National Gender Commission (2015), which oversees all issues of gender in the country. The Commission is tasked to monitor the implementation of the National Policy, and works with the Ministry of Nationality, Immigration and Gender Affairs to promote gender equality and gender justice, and develop programs and strategies to enhance gender equity (Government of Botswana, 2018). Botswana’s Vision 2036 (2016) seeks to create “broad prosperity” by addressing a range of systemic problems and ensuring that “by 2036 Botswana will be a moral, tolerant and inclusive society that provides opportunities for all”. It recognises gender equality as central to socio-economic, political and cultural development, and commits to aligning the education curriculum with the economy, including STEM (Institute of Development Management, 2017).

Education policies

Several policies help to guide education and gender development across STEM fields in Botswana. The Tertiary Education Policy (2008) highlights tertiary education as a driver for the country’s economic transition from a resource-driven economy to a diversified economy with a highly-skilled knowledge-intensive service sector (Human Science Research Council, 2021). Similarly, the National Policy on Research, Science, Technology and Innovation (2011) seeks to build a “knowledge-driven economy through effective and sustainable science- and technology-based research and innovation”. This includes supporting the equitable participation of women in STEM fields through the provision of “affirmative action to raise the participation of women in S&T fields from an early age” and “targeted schemes will provide equal opportunities for men and women to engage in careers in science and engineering” (UNESCO, 2013). Overall, enrolment rates in tertiary education indicates higher participation by female students when compared to male students, and Botswana is one of only three countries in sub-Saharan African to have achieved full parity in education (Human Science Research Council, 2021). Of note from the GGI report is the presence of women in senior positions across all assessed countries (156), with Jamaica and Botswana being among eight countries where more than 50 per cent of all managers are women (World Economic Forum, 2021).

Ocean/related sector

Diamond mining is the key economic driver of Botswana accounting for almost 90 per cent of export receipts (International Monetary Fund, 2018) is regulated under the Mines and Minerals Act 1999. Fisheries contribute to a small fraction of the GDP mainly in the Okavango Delta, located in north-western Botswana (Commonwealth Network; Kgathi et al., 2005). The country manages its fisheries under the country’s Fish Protection Regulations, which prohibit catching of fish without a licence and limits subsistence fishing practices to its citizens only (Fish Protection Regulations, 2016). Tourism development and education have been suggested as a means to reduce dependence on wetland resources for household livelihoods (Kgathi et al., 2005). Botswana has used tourism-based conservation to protect natural environments, for example, the Tourism Policy (1990) aims to promote “sustainable development through tourism by promoting the conservation of natural resources”, as well as the Community-Based Natural Resources Management program, supporting biodiversity conservation and rural development (Hambira et al., 2022; Mbaiwa, 2017).

NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
3-5	1-2	1-2	0	1-2	1

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	0-4	0-4	0-4
MEN	0-4	0-4	0-4

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS



EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS	
WOMEN	5
MEN	5

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES			
Gender parity in grade promotion	50%	Childcare cost contributions	25%
Equal pay policies	100%	Childcare offered on site	25%
Anti-sexual harassment policy/code of conduct	100%	Access to parental leave	100%
Career mentoring	25%	Access to health plan	100%
Networking, diversity and affinity groups	50%	Support services (counselling services, etc.)	75%
Flexible working hours	0%	Provision for household support services	0%
Flexible meeting hours	50%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	0%
Part-time work	0%	Re-entry mechanisms	0%
Telework/remote work	50%		

Study indicator: Gender-related policies

Lesotho Region AFRICA



Population
2.1 million

Global gender gap ranking
92nd
(of 156 countries)

Fraction of time spent on unpaid care and domestic work, age 15+
15.6%

Enrolment in tertiary education
12.4%

Women
6.2%

Men
8.0%

Literacy rate age 15+
76.6%

Women experiencing intimate partner violence
16.5%

Income level
Lower-Middle
(per capita income between USD1,046 and USD4,095)

Women in parliament
23.3%
Seats held by women

Women
84.9%

NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
6-10	3-5	3-5	1-2	1-2	NA

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	NA	NA	0-4
MEN	NA	NA	0-4

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS

1 INSTITUTION COMPLETED THE SURVEY

EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS	
WOMEN	1
MEN	0

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES			
Gender parity in grade promotion	0%	Childcare cost contributions	0%
Equal pay policies	0%	Childcare offered on site	0%
Anti-sexual harassment policy/code of conduct	100%	Access to parental leave	0%
Career mentoring	0%	Access to health plan	0%
Networking, diversity and affinity groups	0%	Support services (counselling services, etc.)	0%
Flexible working hours	0%	Provision for household support services	0%
Flexible meeting hours	0%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	100%
Part-time work	0%	Re-entry mechanisms	0%
Telework/remote work	0%		

Study indicator: Gender-related policies

Lesotho

Constitution

The Constitution of the Kingdom of Lesotho has several gender protections without explicitly referencing women. This includes granting basic human rights and a freedom from discrimination to “every person... whatever his race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status”. Section 19 grants “equality before the law and to the equal protection of the law”, and Section 26 ensures the state “shall adopt policies aimed at promoting a society based on equality and justice for all its citizens” and “take appropriate measures in order to promote equality of opportunity for the disadvantaged groups” (Constitution of Lesotho, 2020).

National gender policies

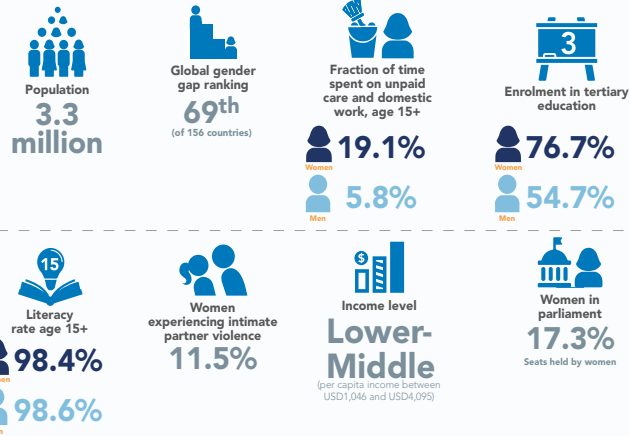
In Lesotho, policies have generally taken the approach that gender equality is a necessity for development and democracy, ensuring the legal protections necessary for the equitable participation of women in decision-making and resource allocation. This is outlined in the Gender and Development Policy 2018-2030, which is designed to “promote and provide national guidelines for institutionalizing gender equality as an integral component of social, economic and political development” (Government of Lesotho, 2018). Although the Government has also enacted a number of policies and laws that are designed to address gender inequalities, women’s participation in governance and decision-making remains limited by barriers created by culture, tradition and social norms that negatively affect opportunities for women. Lesotho’s Vision 2020 (2018) seeks to integrate more women into “areas of responsibility and decision making” in both the public and private sectors, but does not address the underlying barriers to that goal (Government of Lesotho, 2005b; Lesotho Council of Non-Governmental Organisations, 2015).

Education policies

In Lesotho, girls and boys are equally likely to attend primary school, while the ratio of female-to-male enrolment rates in secondary education is the highest in the world, with 1.6 females enrolled for every male (Doran, 2018; Government of Lesotho, 2019). Women also represent most students at the tertiary level, except at two institutions (Government of Lesotho, 2019). The primary reason for this gender imbalance is male migration and cultural practices; young boys often withdraw from school to seek employment opportunities in South Africa. Greater access to education and employment has not resulted in gender equality, as women in Lesotho are more likely to hold positions that have lower responsibilities and pay (Doran, 2018; UN-INSTRAW, 2006). The Education Act recognizes and seeks to address some of the societal and cultural barriers inhibiting female participation in education (e.g., lack of decentralised administration, high levels of poverty and vulnerability) (Government of Lesotho, 2010). The Education Sector Strategic Plan 2005-2015 affirms “basic education as a human right” and sought to expand “technical and vocational subjects in the curriculum”, like mathematics and sciences to improve the “technical orientation of primary and secondary school graduates,” (Government of Lesotho, 2005a).

Ocean/related sector

Farming and animal husbandry is the major economic activity in Lesotho with other sectors including manufacturing, particularly textiles, mining, construction, and services (Government of Lesotho; World Bank Group, 2022a). Lesotho’s mining sector is male-dominated at all levels (Southern African Research and Documentation Centre, 2019). The Minerals and Mining Policy 2015 recognizes the need to ensure gender equality in the sector, that women suffer disproportionately from the negative impacts of extractive industries, and the need to support women’s participation by “the removal of obstacles that impede involvement.” It also recommends the development of programmes to “ensure the retention of skilled women” (Government of Lesotho, 2015). The Lesotho Highlands Water Project (LHWP) provides Lesotho revenue and hydropower in exchange for the provision of freshwater to South Africa, one of the country’s largest exports (Government of the United States of America, 2021; Lesotho Highlands Development Authority, 2019). Sustainable cold-water aquaculture in the LHWP reservoir is viewed by the Lesotho National Development Corporation as an emerging industry for the country (Lesotho National Development Corporation, 2022).



NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
1-2	0	0	0	0	1

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	0-4	0-4	0-4
MEN	0-4	0-4	0-4

Study Indicator: National Contribution

Mongolia

Constitution

The Constitution of Mongolia addresses equality and discrimination in several articles. Of relevance to this report is Article 16, which contains several provisions: "The citizens of Mongolia shall be guaranteed to exercise the following rights and freedoms: ... (2) The right to a healthy and safe environment, and to be protected against environmental pollution and ecological imbalance ... (7) The right to learn and education. The State shall provide universal general education free of charge ... (11) Men and women shall enjoy equal rights in political, economic, social, cultural fields and in family relationships" (Constitution of Mongolia, 2019).

National gender policies

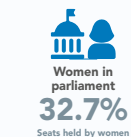
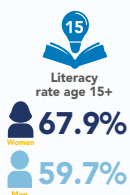
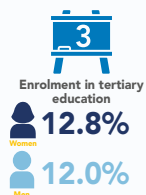
Mongolia has passed the Law on Promotion of Gender Equality (2011), which aims to expand "gender equality in political, legal, economic, social, cultural and family relations," (Law on Promotion of Gender Equality, 2011). It specifies the responsibilities of public agencies are to promote gender equality, such as gender-sensitive hiring practices and enforcement of gender-related human rights laws (MERIT, 2016). Mongolia's Sustainable Development Vision 2030 (2016) includes gender equality and inclusive growth as priorities for ensuring sustainable social development and achieving the UN SDGs. Priorities encompass promoting equal participation of working age populations in the labour market, creating "a pleasant environment for equal participation in social welfare", and reducing maternal and child mortality (Government of Mongolia, 2016).

Education policies

Secondary and tertiary education enrolment in Mongolia exhibits a 'reverse gender gap' in all areas except STEM fields. In 2012, 72 per cent of students enrolled in tertiary education were women (which has been attributed to policies that have encouraged women to work, like providing state-funded childcare). However, in science programs women made up 40 per cent of students (Bittner, 2018; UNESCO et al., 2015). Mongolia's Ministry of Education, Culture, Science and Sports published Towards Mongolia's Long-term Development Policy Vision 2050 (2020), which addresses gender gaps by establishing an "equitable and accessible educational environment". The Vision found that while women continue to make up a significant majority in tertiary education (65 per cent in 2019), their employment outcomes remain less favourable than men (The World Bank Group, 2020).

Ocean/related sector

In 2017, Mongolia's Permanent Representative to the United Nations delivered a statement to the UN Ocean Conference, communicating Mongolia's commitment to SDG 14 (Life Below Water), in particular noting that "no one should be left behind" in the sustainable use of the ocean, "which considers the specific needs for the landlocked developing countries," and Mongolia's cooperation with the International Maritime Organization in developing the ocean sector and Maritime Administration in Mongolia (Government of Mongolia, 2017). Mongolia's Maritime Administration has recently communicated its goal "to prepare national qualified personnel" and support for training of students at international maritime universities (Mongolia Maritime Administration, 2021).



NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
0	0	0	0	0	1

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	NA	NA	NA
MEN	NA	NA	NA

Study Indicator: National Contribution

Nepal

Constitution

The Constitution of Nepal (2015) is gender-oriented and contains several gender and equality provisions prohibiting discrimination among citizens “on grounds of origin, religion, race, caste, tribe, sex, economic condition, language or geographical region, ideology and such other matters.” Section 18 prevents the Government from barring “the making of special provisions by law for the protection, empowerment or advancement of the women lagging behind socially and culturally”. Section 38 forbids all forms of violence and oppressions, with specific consideration of the rights of women.

Section 84 ensures that “women should account for at least one third of total members elected” to parliament and Section 252 guarantees the formation of the National Women Commission to research, formulate, review, and monitor the Government’s policies and programs and make recommendations supporting the welfare of women (Constitution of Nepal, 2016).

National gender policies

Nepal has a National Gender Equality Policy designed to prioritise the “economic empowerment of women, ensuring their meaningful participation in all parts of society, and the elimination of gender-based violence and harmful practices.” This includes the requirement for all ministries and their departments have Gender Equality and Social Inclusion Focal Points. The Sexual Harassment at Workplace Prevention Act (2017) seeks to create a legal framework that ensures a safe working environment for all citizens (Government of Nepal, 2021; Himalayan News Service, 2021). Aligned with requirements under the constitution, the Local Government Operation Act (2017) makes the participation of women mandatory in the planning and implementation of programmes at the provincial and local level (UN Women, 2021b).

Education policies

The National Education Policy 2019 contains “technical education for all”, providing technical, vocational, and skill development opportunities for all citizens (The Himalayan Times, 2019). Similarly, the National Science, Technology and Innovation Policy 2019 seeks to create a “conducive environment to attract the scientific and the technical human resources towards scientific research, technology development and innovation” (Government of Nepal, 2019). In Nepal, the gender gap has narrowed towards parity, however the overall educational attainment of females is lower than that of males in STEM fields. Despite the fact that the overall ratio of women to men in tertiary education has increased from 0.28 in 2000 to 1.05 in 2015, the largest discrepancies occurred at the tertiary level with a much lower gender ratio in many STEM fields (e.g., 0.30 in science and technology, 0.12 in engineering, 0.84 in medicine)(UN Women, 2017). This trend toward greater parity at the tertiary level has continued with a higher proportion of girls enrolled in the education faculty (63.73 per cent), medicine (61.56 per cent), humanities (50.84 per cent), and management (55.98 per cent) (UGC 2019). However, across STEM fields girls continue to lag behind (UN Women, 2021b).

Ocean/related sector

Nepal is a mountainous country endowed with significant freshwater resources that offer opportunities for warm, cool, and cold-water aquaculture industries. The Nepal Agriculture Perspective Plan identifies fisheries and aquaculture in Nepal as a minor, but emerging sub-sector of agriculture with an 8-9 per cent annual growth rate (Agricultural Projects Service Centre & John Mellor Associates, Inc., 1995). Nepal is a member of the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), which seeks to foster international collaboration across priority sectors, like fisheries. Member nations have recognized the need to cooperate in support of the region’s ocean economy as a means to support sustainable development in the region. At the 4th BIMSTEC summit in 2018, member nations resolved to “establish an Intergovernmental Expert Group to develop an action plan on the blue economy, keeping in mind the special needs and circumstances of the landlocked Member States” (BIMSTEC, 2018).

5.3. In Focus – SIDS



“For SIDS, the exclusive economic zone (EEZ) – the ocean under their control – is, on average, 28 times the country’s land mass. Thus, for many SIDS the majority of the natural resources they have access to comes from the ocean.” (UN-OHRLLS)⁴²

SIDS are characterized by their remoteness to global markets and their environments’ vulnerability to climate change, and specifically to rising sea levels. The SIDS group comprises 38 UN Member States and 20 Non-UN Members/Associate Members of United Nations regional commissions, which account for a population of 65 million, less than 1 per cent of the global population. SIDS face unique social, economic and environmental vulnerabilities (UN, 2022b).

The analysis of ocean science-related patents in the Global Ocean Science Report 2020 showed that SIDS exceed the world average in terms of number of ocean science-related patents as a fraction of all patents awarded to SIDS. This means that SIDS have an above average specialization in ocean science-related patents, which “could suggest a focus of their national innovation systems towards the threats imposed by rising sea levels due to climate change.” Their specialization has grown in “ocean and climate” and “blue growth”, the latter being the subcategory of ocean science that includes deep-sea research (IOC-UNESCO, 2020).

Countries that participated in the study classified as SIDS:



Belize, Cook Islands, Fiji, Jamaica, Kiribati,⁴³ Maldives, Mauritius, Nauru, Seychelles, Singapore, St. Kitts and Nevis, Tonga, Trinidad and Tobago, Vanuatu

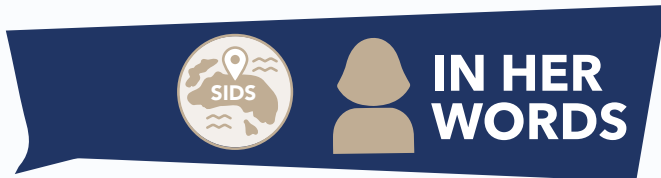
In this section, an interview with a woman respondent to the Individual Survey showcases the experience of a woman working in deep-sea research from an SIDS (see Figure 46) and country profiles for Fiji, Mauritius, Nauru, St. Kitts and Nevis, and Trinidad and Tobago present policy analyses and relevant high-level data from the national and institutional surveys and other sources.⁴⁴

⁴² <https://www.un.org/ohrls/content/about-small-island-developing-states>

⁴³ Also LLDC

⁴⁴ Note: See Annex B for a description of the data highlighted in the country profiles.

Figure 46. Experience shared by a woman from a SIDS



Biography

Having grown up in the city but possessing knowledge of her traditional village roots through her grandparents, she returned to work as a young woman supporting conservation efforts in the Indigenous coastal communities where gender roles, though slowly evolving, keep women from engaging as equals in the decision-making process. Her career goal is to bloom with her work in conservation and to have the opportunity to use her full capacity.

Barrier: Social norms and attitudes (Indicator #14)

In her work, she is responsible for integrating traditional and scientific knowledge to support the sustainable management of ocean resources at the community level. Her role includes *“working with your own people, trying to help them understand what you understand.”* When working in the traditional setting of these village communities, she says, *“I felt that my voice wasn’t heard because I was a woman. On top of that I was young and I was educated. I think it was intimidating for the older men. I had privileges more than they had. At times it was difficult sitting in a meeting and feeling you were talking to the wall or not given the floor.”* With time, the value she brought was recognized by communities striving to manage their natural resources, while maintaining a deep cultural connection with the natural world: *“They have totems connected to the natural world; they use traditional knowledge; and have values that indicate importance of natural resources.”*

Barrier: Employment environment (Indicator #10)

The challenge for her is in progressing her career. She says, *“The work system does not help you grow as a woman in science. It’s not supportive of your career.”* In particular, when seeking further training to gain a Masters degree or other professional training opportunities, she feels there is gender discrimination and that her workplace discourages women from seeking educational opportunities. She says, *“It’s the part where we’d want to further our studies, where the gender norms are holding us back. It’s a big hindrance.”*

DEMOGRAPHIC DETAILS

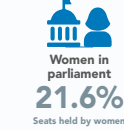
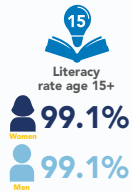
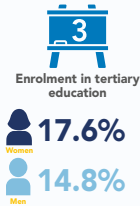
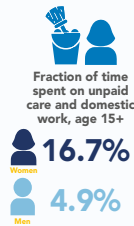
OCCUPATION Technical Professional

FIELD Fisheries and aquaculture

AGE 35 - 49

DEPENDENTS Yes

“I felt that my voice wasn’t heard because I was a woman. On top of that I was young and I was educated. I think it was intimidating for the older men.”



NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH

GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
3-5	1-2	3-5	3-5	3-5	5

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA

	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	50-99	0-4	100+
MEN	100+	5-9	100+

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS



EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS

WOMEN	30
MEN	40

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES

Gender parity in grade promotion	60%	Childcare cost contributions	40%
Equal pay policies	60%	Childcare offered on site	20%
Anti-sexual harassment policy/code of conduct	80%	Access to parental leave	100%
Career mentoring	60%	Access to health plan	60%
Networking, diversity and affinity groups	80%	Support services (counselling services, etc.)	40%
Flexible working hours	100%	Provision for household support services	20%
Flexible meeting hours	80%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	60%
Part-time work	60%	Re-entry mechanisms	60%
Telework/remote work	80%		

Study indicator: Gender-related policies

Fiji

Constitution

The Constitution of the Republic of Fiji guarantees equality for all Fijians and seeks to care for the less fortunate. Section 26 forbids discrimination based on "characteristics or circumstances, like race, culture, ethnic or social origin, colour, place of origin, sex, gender, sexual orientation, gender identity and expression, birth, primary language, economic or social or health status, disability, age, religion, conscience, marital status or pregnancy". Section 31 guarantees the right to "early childhood education; b. primary and secondary education; and c. further education" and commits to the "progressive realisation" of these rights (Constitution of Fiji, 2013).

National gender policies

The Fiji National Gender Policy integrates gender equality in all aspects of development by recognizing "that gender equality is a fundamental human right, and...an inherent component of economic growth and development". It has the aim to "integrate a gender perspective in all development planning and decision-making processes...so that development planning itself becomes fundamentally gendered" and provides "guidelines for...identifying and addressing gender concerns...to inform public policy, including guidelines on the evaluation of the social division of labour" (Government of Fiji, 2014a). The Policy mandates gender mainstreaming in all sectors of government, as well as the need for parliament to embed gender perspectives into their legislative and policy duties (Government of Fiji, 2017c). Fiji's Ministry for Social Welfare, Women & Poverty Alleviation has developed the Women's Plan of Action 2010-2019, which identifies the need to strengthen gender equality in access to formal and non-formal education and training. Working across government, the Plan of Action seeks to "incorporate gender into education curricula...and also promote the elimination of gender biases in educational materials" (Government of Fiji, 2009).

Education policies

Fiji's Minister of Education, Heritage and Arts and Local Government, highlighted the country's commitment to SDG 4.1 (By 2030, to ensure that all girls and boys complete free, equitable and quality primary and secondary education), and encouraging "girls to take up studies in areas that are traditionally male dominated. These include information and communication technology, engineering, and architecture. This Digital Generation is indeed your Generation" (Government of Fiji, 2021). The Ministry has also updated the country's Special and Inclusive Education Policy 2017-2020 and works to implement the Fiji National Gender Policy promoting "women's economic empowerment and gender equity... in the education system" (Government of Fiji, 2014a). This push is supported by the Ministry's commitment to implement a more progressive gender-sensitive curriculum in all schools at all levels (Fijivillage, 2020).

Ocean/related sector

Fisheries represented 2 per cent of Fiji's GDP and the country's second-largest export in 2016 (Natuva, 2021). Fiji's 5-Year & 20-Year National Development Plan and Green Growth Framework for Fiji both emphasise the need for an integrated approach to sustainable development and the preservation of the country's ocean environments (Government of Fiji, 2014b, 2017a). Importantly, the National Ocean Policy 2020-2030 commits to the vision that "a healthy ocean that sustains the livelihoods and aspirations of Fiji's current and future generations", while sharing the "benefits from natural resources, and conservation levels to ensure intergenerational equity" (Government of Fiji, 2020).

Mauritius
Region
AFRICA



Population
1.3 million

Global gender gap ranking
110th
(of 156 countries)

Fraction of time spent on unpaid care and domestic work, age 15+
19%
Women
4.8%
Men

Enrolment in tertiary education
47.5%
Women
33.9%
Men

Literacy rate age 15+
91.3%
Women
89.4%
Men

Women experiencing intimate partner violence
Data unavailable

Income level
Upper-Middle
(per capita income between USD1,046 and USD4,095)

Women in parliament
20.0%
Seats held by women

NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH

GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
3-5	3-5	1-2	3-5	0	1

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA

	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	20-49	10-19	20-49
MEN	50-99	10-19	20-49

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS

4 INSTITUTIONS COMPLETED THE SURVEY

EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS	
WOMEN	32
MEN	37

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES

Gender parity in grade promotion	25%	Childcare cost contributions	0%
Equal pay policies	75%	Childcare offered on site	0%
Anti-sexual harassment policy/code of conduct	50%	Access to parental leave	75%
Career mentoring	0%	Access to health plan	25%
Networking, diversity and affinity groups	0%	Support services (counselling services, etc.)	0%
Flexible working hours	25%	Provision for household support services	0%
Flexible meeting hours	50%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	0%
Part-time work	75%	Re-entry mechanisms	0%
Telework/remote work	50%		

Study indicator: Gender-related policies

Mauritius

Constitution

The Constitution of the Republic of Mauritius guarantees equality among citizens and ensures the same legal rights between women and men. Section 3 declares that respect for rights and freedoms shall exist "without discrimination by reason of race, place of origin, political opinions, colour, creed or sex, but subject to respect for the rights and freedoms of others and for the public interest" (Constitution of the Republic of Mauritius, 2021).

National gender policies

Mauritius has drafted a Gender Equality Bill that proposes to support several objectives, such as:

- (ii) eliminate gender-based discrimination, ensure that human rights...are guaranteed...in the existing and newly enacted legislation
- (iv) provide for equal opportunities for both men and women and create responsibilities of all entities...to eliminate barriers that lead to gender discrimination
- (vi) promote equality and gender balance between family roles...to improve the status of women, especially in working life outside the home
- (vii) prohibit discrimination on the grounds of gender and sexual orientation
- (viii) promote gender mainstreaming and integration in national development (UN Women, 2020b)

The country maintains a National Gender Policy Framework (2008), which is designed to create an enabling environment for all individuals "in which they are able to achieve their full potential... [and] are equal partners in taking decisions to shape economic, social and cultural development" (Burn, 2008). Mauritius is in the process of developing a National Gender Policy 2020-2030 that will establish the Government's commitment to integrate gender into all development planning, implementation, monitoring, and evaluation activities (UN Women, 2020b).

Education policies

As a nation with limited natural resources, but significant human capital, Mauritius is striving to become an innovation-based economy (UNESCO, 2021). The country's National Innovation Framework 2018-2030 is designed to build capacities in the national innovation system by linking innovation directly to the public education system. It contains recommendations to promote creativity at a young age and measures "to optimise the absorptive capacity of the job market for scientists, engineers and researchers" (Government of the Republic of Mauritius, 2018). The Framework is underpinned by the Education & Human Resources Strategy Plan 2008-2020, which aims to transform Mauritius' economy by developing a culture of innovation.

Ocean/related sector

Mauritius has established a Ministry of Blue Economy, Marine Resources, Fisheries and Shipping, and is working with multiple development partners to create the conditions for a sustainable blue economy. This contains The Ocean Economy in Mauritius: Making it happen, making it last (2018), a strategic roadmap for the country's ocean economy, with the goal to double the size of the sector as a proportion of GDP over the next 15-18 years (Cervigni and Scandizzo, 2017), "while realising social economic development and dynamic balance of resources and environment" (Government of the Republic of Mauritius, 2020a). The roadmap is linked with the Government's proposed legislative agenda, the Government Programme 2020-2024 (2020), which contains an Offshore Petroleum Bill, a Seabed Mineral Bill, a new Marine Biotechnology Hub, and support for the aquaculture and fishing industry to accelerate the country's blue economy (Government of the Republic of Mauritius, 2020b).



NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
1-2	3-5	1-2	1-2	1-2	4

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	0-4	0-4	0-4
MEN	0-4	0-4	0-4

Study Indicator: National Contribution

Nauru

Constitution

The Constitution of the Republic of Nauru (1968, amended to 2018) addresses gender rights in Article 3: "Whereas every person in Nauru is entitled to the fundamental rights and freedoms of the individual, that is to say, has the right, whatever his race, place of origin, political opinions, colour, creed or sex, but subject to respect for the rights and freedoms of others and for the public interest" (Constitution of Nauru, 1968).

National gender policies

Nauru has developed a range of interrelated gender policies over the past two decades. The Nauru National Women's Policy (2014-2019) (Pacific Women, 2017) addresses gender-related indicators contained in the National Sustainable Development Strategy (2005-2025) (Government of Nauru, 2019). The Policy calls for an integrated, cross-sectoral approach to address the country's gender goals.

The Policy also provides a framework to address issues identified in the National Plan of Action for Women (2004-2015), containing: health, violence against women, education and training, women in decision making, and participation in the economy (UN Women, 2016). The updated National Sustainable Development Strategy 2019-2030 highlights the need to enable a more "just society that recognizes and respects the rights of women and children, that promotes equal opportunities" (Government of Nauru, 2019).

Education policies

The Department of Education and Training, Republic of Nauru is currently implementing its five-year Footpath IV: Education and Training Strategic Plan (2017-2021), to be renewed in 2022. The current Strategic Plan was not publicly available, but builds on initiatives contained in Footpath II: Education and Training Strategic Plan (2008-2013), including two gender-related strategic goals: the elimination of gender disparities in primary and secondary education; and, the achievement of gender equality through the enhancement of full and equal access to quality basic education (Republic of Nauru, 2013). Progress towards these strategic goals was highlighted in the Asian Development Bank's Poverty, Social and Gender Assessment (Nauru Port Development Project) in 2017, which found no gender disparity in primary or secondary education. The Assessment found that 72.5 per cent of males and 69.1 per cent of females 15 years and older did not have any educational qualifications. As a result, there are limited opportunities for Nauruan women in technical, science, engineering, and management fields (Cardno Emerging Markets, 2017).

Ocean/related sector

Although Nauru has no specific policy on the Blue Economy, a study using 2014 data from the Bureau of Statistics, found that 9 per cent of the Nauruan labour force were involved in the country's fisheries (26 per cent of households) (Food and Agriculture Organization, 2017). In 1997, the Nauru Fisheries and Marine Resources Authority Act was established to regulate and develop activities relating to Nauru's fisheries and marine resources. The Nauru International Seabed Minerals Act 2015 provides the framework for Nauru's engagement in seabed mineral activities in the Area. Nauru is the Sponsoring State to Nauru Ocean Resources Inc. (NORI) holding an exploration contract with the ISA for polymetallic nodules in the Clarion Clipperton Zone of the Pacific. The President of Nauru has informed the President of the Council of ISA at its 26th session in 2021 of the intention of its sponsored entity, NORI, to apply for approval of a plan of work for exploitation in the international seabed area (the Area) in two years, highlighting the risk of climate change to SIDS and the importance of responsible development of minerals from deep seabed in light of urgent need for transition to a carbon neutral future.



NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
3-5	1-2	1-2	3-5	0	5

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	20-49	5-9	50-99
MEN	20-49	5-9	50-99

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS



EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS	
WOMEN	N/A
MEN	N/A

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES			
Gender parity in grade promotion	0%	Childcare cost contributions	0%
Equal pay policies	33%	Childcare offered on site	0%
Anti-sexual harassment policy/code of conduct	33%	Access to parental leave	33%
Career mentoring	100%	Access to health plan	67%
Networking, diversity and affinity groups	67%	Support services (counselling services, etc.)	33%
Flexible working hours	67%	Provision for household support services	0%
Flexible meeting hours	67%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	0%
Part-time work	33%	Re-entry mechanisms	0%
Telework/remote work	0%		

Study indicator: Gender-related policies

St. Kitts and Nevis

Constitution

The Constitution of St. Kitts and Nevis integrates gender equality into the country's legal framework. Specifically, Section 3, provides fundamental rights and freedoms, including "equality before the law" regardless of "his or her race, place of origin, birth, political opinions, colour, creed or sex" (Constitution of St. Kitts and Nevis, 1983).

National gender policies

The country is currently in the process of developing a National Gender Policy, "to provide an institutional framework that will assist the Government of St. Kitts and Nevis in facilitating gender equality and empowerment in keeping with Sustainable Development Goals and other international instruments" (St. Kitts and Nevis Information Service, 2021). This Policy, to be accompanied by an Action Plan 2022-2027, has been approved by Cabinet and is set to be presented in parliament in 2022 (St. Kitts and Nevis Information Service, 2022).

Education policies

The Education Act and Education (Amendment) Act ensure that the goals and objectives of the education system are met, including:

- an understanding of the role of science and technology in society together with scientific and technological skills
- self-worth through positive educational development
- opportunities to reach maximum potential
- an understanding of the principle of gender equality and other forms of equality as defined in the Constitution
- awareness and appreciation of the natural environment (UNESCO, 2016)

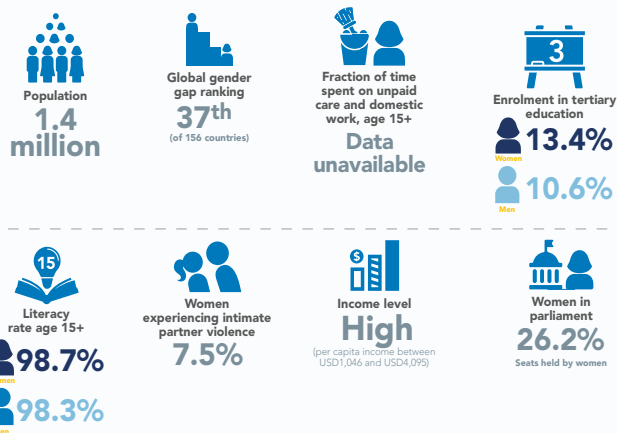
To address barriers in accessing education, the 2017-2021 Education Sector Plan lays out several policy goals, such as:

- reducing gender disparities in participation at the secondary level and beyond
- increasing participation in higher education

It also identified the need to "overhaul the national curriculum and learning assessment system to ensure that it: (i) is learner-centred and inclusive" (Government of St. Kitts and Nevis, 2017).

Ocean/related sector

St. Kitts and Nevis is working with regional partners to develop the Eastern Caribbean Regional Ocean Policy (ECROP) (2013) that establishes a framework to ensure a "healthy and richly biodiverse oceans, sustainably managed in an integrated way to promote economic development and the livelihoods and aspirations of current and future generations" (OECS Secretariat, 2013). It has also developed a complimentary National Maritime Policy and Action Plan (2015), which outlines a range of policies supporting cross-sectoral ocean management and integration of "environmental management directly with economic development, fiscal policy and social goals" (Government of St. Kitts and Nevis, 2015).



Trinidad and Tobago

Constitution

The Constitution of the Republic of Trinidad and Tobago addresses gender equality in Section 4: “there have existed and shall continue to exist, without discrimination by reason of race, origin, colour, religion or sex, the following fundamental human rights and freedoms, namely...(b) the right of the individual to equality before the law and the protection of the law; ...(d) the right of the individual to equality of treatment from any public authority in the exercise of any functions” (Constitution of the Republic of Trinidad and Tobago, 2007).

National gender policies

Trinidad and Tobago has published the National Policy on Gender and Development, which provides a framework for the inclusion of gender perspectives in all government and civil society activities. It lays out an implementation strategy, containing a Gender Action Plan (as yet unpublished), addressing monitoring and evaluation of the policy, like gender equality targets. The National Policy concludes, “Persistent patterns of discrimination against women and girls result in women’s vulnerability to gender-based violence and poverty, their disproportionate burden of care and unequal integration into the labour market, and their unequal representation in decision making” (Government of the Republic of Trinidad and Tobago, 2018).

Education policies

The country’s Education Policy Paper (2017-2022) contains goals linked to STEM education, specifically to “Create and sustain awareness and interest in the subject areas pertaining to science, technology, and research and development (R&D) through curricula content and delivery” (Government of the Republic of Trinidad and Tobago, 2017). Despite higher rates of education among women, including tertiary education, it is notable that women receive lower remuneration than men in all sectors and occupations (Government of the Republic of Trinidad and Tobago, 2018).

Ocean/related sector

Trinidad and Tobago has not defined a specific policy approach to the ocean economy, but has made strides in recognizing the ocean sector’s importance to the country’s prosperity, in that a 2015 estimate found that the country’s ocean economy was worth US\$22.5 billion or 81 per cent of the country’s total GDP. Oil and gas production, with the petroleum and petrochemical industries are a major economic sector and accounted up to account for about 37 per cent of GDP (World Bank Group, 2022b) and is the largest oil and natural gas producer in the Caribbean (Government of the Republic of Trinidad and Tobago, 2017). The country has also become a major financial centre in the Caribbean. In 2021, IOC-UNESCO, in collaboration with the Institute of Marine Affairs of Trinidad and Tobago, published the report A Sustainable Blue Economy for Trinidad and Tobago. The report calls for the development of a national vision for the ocean economy containing a roadmap to be developed by all stakeholders such as government, civil society, private sector, and researchers. Trinidad and Tobago has also developed a range of policies to increase awareness of the barriers to women’s participation in education and the economy (e.g., work-life balance). Next steps for empowering women in broader society and deep-sea research are to further implementation and tracking of these policies, as well as working to achieve goals identified under Trinidad and Tobago’s Vision 2030 (e.g., “Goal 7: Trinidad and Tobago will have a modern, relevant education and training system”) (Government of the Republic of Trinidad and Tobago, 2017).

NATIONAL SURVEY RESULTS

INSTITUTIONS ENGAGED IN DEEP-SEA RESEARCH					
GOVERNMENT	PUBLIC	ACADEMIC	NOT FOR PROFIT	INDUSTRY	WOMEN AS INSTITUTIONAL HEAD
3-5	0	1-2	1-2	0	6

Study Indicator: National Contribution

EMPLOYMENT IN DEEP-SEA RESEARCH, CATEGORIZED BY AREA			
	OCEAN SCIENCE	DEEP-SEA RESEARCH	DISCIPLINES AND ACTIVITIES RELATED TO DEEP-SEA RESEARCH
WOMEN	50-99	0-4	100+
MEN	50-99	0-4	100+

Study Indicator: National Contribution

INSTITUTIONAL SURVEY RESULTS

6 INSTITUTIONS COMPLETED THE SURVEY

EMPLOYMENT IN DEEP-SEA RESEARCH, SUMMED ACROSS INSTITUTIONS	
WOMEN	N/A
MEN	N/A

Study Indicator: National Contribution

FRACTION OF INSTITUTIONS HAVING GENDER POLICIES			
Gender parity in grade promotion	17%	Childcare cost contributions	0%
Equal pay policies	50%	Childcare offered on site	17%
Anti-sexual harassment policy/code of conduct	83%	Access to parental leave	66%
Career mentoring	50%	Access to health plan	66%
Networking, diversity and affinity groups	17%	Support services (counselling services, etc.)	66%
Flexible working hours	83%	Provision for household support services	0%
Flexible meeting hours	83%	Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.)	33%
Part-time work	83%	Re-entry mechanisms	0%
Telework/remote work	83%		











Study indicator: Gender-related policies

6. Summary and discussions

6.1. Gender mapping of the deep-sea research field in LDCs, LLDCs and SIDS

The key findings from the gender mapping of the deep-sea research field through national and institutional surveys in 23 LDCs, LLDCs and SIDS and 52 institutions are as follows:

- ▶ Among the participating countries, 73 per cent of countries see deep-sea research as very important for their countries and 95 per cent see putting in place dedicated measures to support gender equality in deep-sea research as very important. Ninety-two per cent of SIDS highlighted that investment in deep-sea research was very important to their countries, followed by 60 per cent of the LDCs and 40 per cent of the LLDCs, showing the greater importance of ocean resources related scientific, technical and financial capacity for SIDS.
- ▶ Overall, there is a lack of data availability on national budgetary contributions on education and occupation related to ocean science and consequently on deep-sea research and related activities addressed in this study. While most of the countries have at least one or two government departments or public institutions with engagement in deep-sea research, LLDCs reported fewer than LDCs and SIDS. (*Indicator #1 - State contributions to deep-sea related research and activities*).
- ▶ Women are underrepresented in employment in deep-sea research at both national and institutional levels with the exception of Jamaica, one of the SIDS, which reported more women employed than men in ocean science at national level. Women make up 35 per cent of staff in deep-sea research in the respondent institutions. Among those employed, more women hold contractual positions (which are more precarious and uncertain) than do men. Women are also underrepresented compared to men at all career stages by level of professional experience (early career to senior). The difference is higher in older age groups (30 to 40+ years) compared to younger age groups, indicating that more women drop out of their careers than men. This finding is consistent with the problem of the “leaky pipeline” issue in STEM, where women disproportionately drop out of their studies and careers prior to reaching leadership positions (*Indicator #2 - Employment demographics*).
- ▶ While over 50 per cent of institutions have in place different siloed policies related to flexible meeting and work hours, parental leave, equal pay, anti-harassment, health plans, and telework that may support women, less than 10 per cent of the institutions has a holistic gender-specific policy addressing all aspects related to gender equality. Notably, institutional policies linked to childcare support (on site at work/financial contributions) and work-life balance were found to be the least common among the institutions, with less than 25 per cent of institutions reporting any. This indicates a lack of adequate institutional support for employed women in the child-care phase of their lives, which may be one of the reasons why fewer women were seen in the older age groups in deep-sea research (*Indicator #3 - Gender-related policies, infrastructure, and employment supports*).
- ▶ Women are equally or slightly underrepresented in bachelor’s programs, and equally represented in master’s and doctoral programs. This indicates that more women continue to higher education until they find employment opportunities. While the age distribution of enrolled students was not covered in this study, future work may provide more insights to identify trends in age distribution in specific sub-fields or disciplines and links to potential employment opportunities (*Indicator #4 - Education and skills training*).

-  According to the World Economic Forum’s Global Gender Gap Index, education attainment is lower than the global average in most of the participating LDCs. Educational attainment directly impacts on women’s ability to participate in deep-sea research, which for the most part requires higher levels of education.
-  More than half of the participating countries have in place international or national scholarships or other initiatives to support women’s education, however there are more international scholarships compared to national ones, with SIDS having overall more scholarship provisions compared to LDCs and LLDCs. In relation to funding and research grants, women are awarded fewer research grants than men across all institutions (*Indicator #5 - Funding for education and research*).
-  Women are underrepresented in hiring for deep-sea research positions at respondent institutions (*Indicator #6 - Hiring practices*).
-  Women are underrepresented in opportunities to progress their careers as well as in the leadership space (*Indicator #7 - Career progression and leadership – National and institutional perspective*).
 -  Fewer women than men have published as lead or co-authors and have attended or presented in conferences.
 -  Fewer women than men have received a promotion in the last five years.
 -  Few institutions (only 29 per cent of the respondent institutions) have provided any leadership training specifically for women.
 -  Women are underrepresented as heads of institutions. Only 35 per cent of the respondent institutions are led by a woman as the head of institution.
 -  More men than women hold different leadership positions.⁴⁵
 -  Women are also underrepresented in the institutional boards of directors. Only six per cent of institutions have half or more women directors.

6.2. Analysis of Critical Barriers

The key findings from the analysis of critical barriers that women scientists from LDCs, LLDCs, and SIDS face in participating and accessing leadership roles in deep-sea research are the results of the individual surveys and targeted interviews. A total of 128 individuals⁴⁶ working in deep-sea research in 23 LDCs, LLDCs and SIDS participated in these surveys and interviews. The key findings are listed below:




1. The top fields in which respondents work are fisheries and aquaculture (27 per cent), conservation (23 per cent) and marine biology (24 per cent). More women held temporary positions (which are more precarious and uncertain positions) than men (*Indicator #8 - Personal demographics*).
2. The vast majority of both men and women chose to study and/or work in deep-sea research because they found the subject matter interesting and important. Parents (mainly mothers) played the most important role in influencing career choices and the transition to employment, reinforcing the importance of societal attitudes in promoting STEM and deep-sea related education and careers for women. Parents were followed by teachers as the second most important influencer, which may indicate an opportunity for increased ocean/deep-sea literacy programming among educators to support students to explore possibilities in deep-sea research.

⁴⁵ Uses a broad definition of leadership positions; see Annex C for the list of leadership positions used for the study.

⁴⁶ 105 women and 23 men

3. While response rates were too low to identify any trends in employment satisfaction and institutional supports, women most commonly reported to have left jobs or look for new jobs that better use their professional training and skills, and have a better work environment. This may indicate that some women employed in deep-sea research may feel that their professional skills and training are under-utilized at work and may not correspond to the level of experience that they bring (*Indicator #10 - Employment environment*).
4. More than half (59 per cent) of employed women have in the past declined opportunities to work or study abroad which can be vital to success in deep-sea research related careers. Financial (61 per cent) and gender related factors (care for children, care for other dependents, care for parents, gender norms, cultural expectations, safety, pregnancy - 67 per cent) were the most reported reasons for women to have turned down such opportunities. None of the men reported gender and cultural norms as a reason or barrier. Critically, 15 per cent of women reported turning down opportunities due to safety reasons.







Women most commonly received between 8 to 16 weeks of parental leave. Provisions to distribute parental care between women and men are not equal. While the maximum parental leave available to women is 16 weeks, their partners were allowed between 1 to 4 weeks. Lack of alternative childcare or additional support by their partners in the early phases of child care, especially in deep-sea research which can call for significant travel or field work, could lead to women having no other choice but to drop out of their careers or reduce their chances of being employed in such jobs, as can be seen in other indicators of this study (*Indicator #11 - Work-life balance*).

5. Women scientists from LDCs, LLDCs and SIDS have less access to career advancement opportunities and are underrepresented in leadership and decision-making roles as indicated below (*Indicator #12 - Career progression and leadership - individual perspective*).
 -  Over half of the women (59 per cent) for whom fieldwork or time at sea is relevant to their career have not been given adequate field opportunities to progress their careers, compared to 26 per cent of men. While nearly all men have been adequately supported to take on leadership roles, only 52 per cent of women have been provided such support.
 -  More than half of the women reported to have not been provided with any support in relation to access to career information, leadership training, mentorship, networking groups, and professional development opportunities. In particular, only one quarter of women had access to leadership trainings.
 -  Fewer women than men have been invited to participate in committees by the ministry responsible for ocean science, deep-sea research or mining in their countries (33 per cent vs 56 per cent). Fewer women than men have participated in governing councils at their institutions (16 per cent vs 30 per cent). Fewer women than men occupy managerial positions (30 per cent vs 48 per cent).
6. Results suggest that more grants are being awarded to women and men by international granting agencies than national ones. This indicates the importance of international agencies and partnerships to support deep-sea research capacity in LDCs, LLDCs and SIDS as well highlighting the need to increase national investments and provisions to support them.

Data related to remuneration shows that the vast majority of men and women make less than USD30,000 in their current jobs. As a field, deep-sea research is not yet captured in international standardized occupational classifications (ILO, 2016) which can present challenges for assessing gender pay gaps (*Indicator #13 - Research funding and remuneration*).

7. Women and men respondents overwhelmingly agree that women scientists qualified in deep-sea research from LDCs, LLDCs and SIDS can be as successful in deep-sea research as men. However, the only respondents who expressed uncertainty on whether women could be as successful as men in deep-sea research were women themselves, which may be reflective of their experience as shown through other indicators in this study (*Indicator #14 - Social norms and attitudes*).
8. Almost half of the women (46 per cent) have felt discriminated against at work, compared to 22 per cent of men. Women most commonly reported the nature of the discrimination being related to the evaluation or rewarding of their achievements, followed by being isolated or ignored at work and being a recipient of offensive remarks. Most women accounted the basis of such discrimination to reasons related to “gender”, followed by “age”, “race or ethnicity”, and “personal or family situation”. Women who have experienced discrimination reported that it has impacted their ability to succeed in their work, as well as their motivation or sense of wellbeing.

Over 15 per cent of women have been harassed in their work environment and during the early stages of their studies and career (at job placements, internships and apprenticeships, and during their studies), with “sexual” being the most commonly reported form of harassment. One-third of the women (29 per cent) have been the recipient of unwanted leers, sexual comments, noises or gestures at their workplace (*Indicator #15 - Discrimination and harassment*).

9. Engagement by students in the individual survey was low, at 10 per cent of responses. The main challenges listed by students in succeeding in deep-sea research are:
 -  Lack of career guidance
 -  Lack of finances to do field work
 -  Lack of available internship opportunities in the country
 -  Lack of proper education system in relation to deep-sea research fields
 -  Lack of job opportunities and proper pay scale
 -  Engineering streams at universities being pre-dominantly male-dominated
10. On being asked to list the top challenges they have faced or still face in working in deep-sea research, women scientists from LDCs, LLDCs and SIDS listed constraints related to financial, human and institutional or infrastructure capacity.

6.3. Country profile and policy review of LDCs, LLDCs and SIDS.



LDCs

High-level policy review and profiling of 4 LDCs (Bangladesh, Kiribati, Malawi and Mozambique) showed the following high-level trends:

- Gender related issues are well addressed at the highest level in the constitutions of all the profiled LDCs, covering a range of women’s rights and discrimination. For example, Malawi and Mozambique have specific provisions for gender protections in their constitutions. All of the profiled LDCs have also put in place national-level gender policies, which seek to address gender inequalities, and have the commonality of focusing on achieving gender parity in political engagement and ending gender-based violence. Malawi has a holistic national education policy, Mozambique has a higher education policy, and Bangladesh and Kiribati have policies that among other areas, cover education – all of these taking gender into account. All profiled

LDCs have sectoral national policies related to their fisheries and none of these address women or gender equality. Bangladesh and Malawi have policies relating to women's roles in key decision-making around sustainable environmental management.

- However, LDCs continue to face challenges that have particular implications for women. For example, women were experiencing intimate partner violence in 2018 at rates ranging from 16 to 25 per cent in the profiled LDCs (UN Women, 2020a). Where data is available, it shows that women are spending up to 3 times more of their time on unpaid care and domestic work. These data highlight serious societal barriers that can also apply to women's empowerment in deep-sea research. In tertiary education, women are underrepresented in three out of four profiled LDCs (no data was available for Kiribati), in contrast to the global average of women being overrepresented in tertiary education (World Economic Forum, 2021).
- A female interviewee from a LDC in this study indicated that women in her country are considered to be "second-class" citizens and weak when compared to male counterparts. She also communicated the importance of female mentors - how they have supported her and given her confidence in her work, and how she has done the same for women coming up in her footsteps. She also reinforced the importance of childcare options for women's participation in their careers.



LLDCs

Profiling and high-level policy review of 4 LLDCs (Botswana, Lesotho, Mongolia, and Nepal) showed the following high-level trends:

- LLDCs lack direct access to the ocean, which imposes challenges to their economies, in particular in engaging with global markets, and also to their participation in the ocean economy and deep-sea research. More than half of all LLDCs globally (17 of 32) are also classified as LDCs, including two out of four of those profiled LLDCs in this study.
- Gender related issues are well addressed at the highest level in the constitutions of all the profiled LLDCs, with a varying range of provisions. Botswana's Constitution has been assessed as relatively having less protections for women. Lesotho's Constitution uses 'he' and language pertaining to men, despite also mentioning equality. Nepal's Constitution contains several gender and equality provisions prohibiting discrimination. All LLDCs profiled have in place national gender policies, two linking gender and development (Botswana and Lesotho), and one resulting in a commission to implement and monitor its gender policies (Botswana). One profiled LLDC (Botswana) has a STEM-specific gender policy in place. While the major economic sector in the profiled LLDCs is not related to ocean resources and comprises of mainly land-based mining or agriculture, most have a range of national policies that relate to the ocean and water resources addressing the smaller fisheries, aquaculture and water sectors, and most of these policies do not address women or gender equality. The exception is Lesotho's Minerals and Mining policy which supports gender equality. Mongolia has reinstated its commitment to SDG 14 (Life under Water), in particular noting that no one should be left behind in the sustainable use of the ocean, particularly considering the specific needs LLDCs and its Maritime Administration aims to train qualified personnel in the maritime sector.
- Women were seen to be experiencing broader societal challenges, such as intimate partner violence at rates ranging from 11 to 17 per cent, and women are spending up to 3 times more of their time than men on unpaid care and domestic work⁴⁷ in the profiled LLDCs. However,

women's political empowerment is also seen to be increasing in LLDCs. In 2020, 27.3 per cent of seats in national parliaments in LLDCs were held by women, up from 26.5 per cent in 2019 and exceeding the global average of 24.9 per cent. Access to the Internet, often a requirement for more technical positions and related education such as in deep-sea research, was 26.6 per cent in 2017 (up from 17.4 per cent in 2014), but below the world average of 49 per cent (UN, 2020). In tertiary education enrolments, women are more represented than men in all the profiled LLDCs however, the overall enrolment rates remain mostly low (29 per cent for women in Botswana, 12 per cent for Lesotho, 77 per cent for Mongolia and 13 per cent for Nepal).

- Interview and Individual Survey data identified the top challenges to participating in deep-sea research in LLDCs as being a lack of engagement with the international ocean community, and a lack of educational opportunities and institutional expertise in the field.



SIDS

Profiling and high-level policy review of 5 SIDS (Fiji, Mauritius, Nauru, St. Kitts and Nevis, and Trinidad and Tobago) showed the following high-level trends:

- SIDS are remote from global markets and vulnerable to climate change, especially sea level rise (UN, 2022b). The majority of the natural resources that SIDS have access to are in the ocean (UN, 2022b), and they have expertise on their local ocean (IOC-UNESCO, 2020).
- All profiled SIDS address gender in their constitutions, establishing equal rights, independent of sex. Four of five profiled SIDS also have in place national gender policies, covering different aspects such as highlighting the necessity of gender equality for development (Fiji), skills development (Mauritius), women's participation in leadership and education, and decreasing gender-based violence (Nauru), women's participation in decision-making, direct gender-aware support for career planning and coaching (Trinidad and Tobago). Most of the profiled SIDS have in place educational policies that concentrate on STEM education and gender equality with a wide breadth of mechanisms and outcomes. The ocean economy is central to the SIDS economy and all profiled SIDS have national ocean economy policies. However, none of these policies addresses gender equality. Respondent institutions in the profiled SIDS have put in place some, but not all, of the gender policies examined in this study.
- Women in SIDS face broader societal challenges, but these are somewhat unquantified due to a lack of data. Women in the profiled countries experience intimate partner violence at rates from 7.5 to 23 per cent and spend up to four times more of their time on unpaid care and domestic work than men in the profiled countries⁴⁷. In tertiary education enrolments, women are more represented than men in three out of five profiled SIDS (data was unavailable for Nauru and St. Kitts and Nevis) however, the overall enrolment rates for women remain mostly low (18 per cent for Fiji, 47 per cent for Mauritius and 13 per cent for Trinidad and Tobago).
- An interview with a woman working in deep-sea research from a SIDS indicated that there are long-standing societal expectations about the roles of women not taking on leadership roles that are a challenge to overcome. This challenge is seen also in career supports being available predominantly to men.

⁴⁷ Data in this area was only available for two of the four countries

7. Conclusion and recommendations

The majority of LDCs, LLDCs and SIDS (73 per cent) that participated in this study recognize the importance of engaging and investing in deep-sea research for their countries. This was particularly notable for SIDS, where 92 per cent of the participating SIDS echoed the importance of investing in deep-sea research, followed by 60 per cent of LDCs and 40 per cent of LLDCs.

Almost all of the participating LDCs, LLDCs and SIDS (95 per cent) also recognize the critical importance of putting in place measures to facilitate and support gender equality in deep-sea research.

While most of the countries address gender in their constitutions and have high-level policies addressing aspects of gender equality in varying degrees, sectoral policies related to ocean, fisheries and mining were found to be lacking specific address to women and gender aspects. Educational policies among the countries varied, with few addressing gender in STEM fields but none related to sector specific disciplines such as ocean science. While institutional policies of the participating institutions had provisions for different elements that may be applied to gender such as health plans, parental leave, flexible working hours, anti-harassment and equal pay, less than ten per cent of the institutions reported a holistic gender specific policy addressing all gender equality related aspects. Notably, institutional policies on child care support were found to be the most lacking among the majority of institutions, although it was identified as a key barrier and key need by the women working in deep-sea research who participated in this study.

Despite high-level provisions for gender equality in majority of the countries, this study's data show women are underrepresented in all areas of employment, career progression and leadership in deep-sea research in LDCs, LLDCs and SIDS. Furthermore, employment conditions and opportunities related to career progression are less favorable and accessible to women compared to men.

The data show that in the participating LDCs, LLDCs and SIDS, women in deep-sea research, compared to men:

- are hired in fewer numbers.
- hold more temporary or contractual positions (more uncertain positions) than permanent positions (safer positions).
- are underrepresented in older age groups indicating fewer chances for women to retain their jobs and progress in their careers.
- have fewer opportunities for field/at-sea work.
- are underrepresented in being awarded institutional research grants.
- have fewer publications.
- have fewer attendances and make fewer presentations at conferences.
- have fewer opportunities and access to leadership trainings.
- are underrepresented as heads of institutions.
- are underrepresented in other leadership or managerial positions.
- are underrepresented in institutional board of directors.
- are underrepresented in institutional governing councils.
- have fewer invitations to participate in ministerial committees.

Analysis of barriers for women to participate and succeed in deep-sea research highlighted that some key systemic issues (listed below) such as child-care and work-life balance, discrimination and harassment and cultural norms related to gender, continue to be inhibiting factors. While many of these may also apply to gender inequality in other sectors, recognizing the specific nature of deep-sea research and related activities such as higher capacity needs in terms of education and skills, higher need for field and at-sea work, international travel and cooperation, provisions to address these issues at policy and programmatic levels need to be considered accordingly. Furthermore, issues related to lack of capacity and leadership opportunities were also highlighted.

Based on the responses from 128 individuals (105 women and 32 men) engaged in deep-sea research in LDCs, LLDCs and SIDS, the data in this study show:

- More than half of these women have declined opportunities to work or study abroad either due to financial or gender related reasons (care for children, care for parents and other dependents, gender norms, cultural expectations, safety, pregnancy).
- 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 work around in jobs that require lot of travel and field work.
- Almost half of the women have reported being discriminated against at work and felt the basis for such discrimination was mainly due to 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.
- Although few (women) students in deep-sea research participated in this study, the key challenges they face are related to lack of career guidance and internship opportunities, lack of financial capacity to support field work and lack of related job opportunities in the country and, relevant engineering disciplines at universities being pre-dominantly male-dominated.
- Lack of financial, institutional (including infrastructure such as access to laboratories, ships) and human capacity were reported as the top challenges for women affecting participation and success in deep-sea research, followed by challenges related to lack of opportunities and support in career choices and career progression.
- Lack of access to engage with the international ocean science is a barrier, particularly for women from LLDCs.

Overall, data availability is limited, particularly, in relation to national and institutional budgetary contributions in deep sea research as well as gender-disaggregated information in relation to education and skills training. Notably, most of the scholarships and research grants in deep-sea research received by women in LDCs, LLDCs and SIDS were awarded by international agencies, highlighting the importance of international and regional organizations in promoting capacity in deep-sea research for women in LDCs, LLDCs and SIDS.

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 women 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.



Photo: TWC

List of figures

<i>Figure 1. Map of LDCs, LLDCs and SIDS highlighting countries participating in the study.</i>	21
<i>Figure 2. Reach of surveys.</i>	22
<i>Figure 3. Overview of methodology.</i>	24
<i>Figure 4. Importance of deep-sea research for participating countries.</i>	29
<i>Figure 5. Importance of gender equality in deep-sea research.</i>	30
<i>Figure 6. National data on employment in deep-sea research, by country type (LDC, LLDC, SIDS) and gender (women, men).</i>	32
<i>Figure 7. Contract versus permanent employment in deep-sea research.</i>	33
<i>Figure 8. National employment in deep-sea research by professional experience (0-5 years, 5-10 years, 10+ years).</i>	33
<i>Figure 9. National employment in deep-sea research by age (18-29 years, 30-39 years, 40+ years).</i>	34
<i>Figure 10. Institutional policies in place.</i>	35
<i>Figure 11. Educational training in deep-sea research.</i>	36
<i>Figure 12. Scholarships to support women's education in deep-sea research by country.</i>	37
<i>Figure 13. Grants obtained by researchers.</i>	37
<i>Figure 14. Employees in deep-sea research hired in the last year, as reported by institutions.</i>	38
<i>Figure 15. Publications as co-author or lead author in the last five years.</i>	39
<i>Figure 16. Attending and presenting at conferences.</i>	40
<i>Figure 17. Internal promotions.</i>	40
<i>Figure 18. Gender of head of institution.</i>	41
<i>Figure 19. Employees in leadership positions.</i>	41
<i>Figure 20. Percentage of women on boards of directors.</i>	42
<i>Figure 21. How participating countries compare worldwide against the Gender Gap Index.</i>	43
<i>Figure 22. Educational attainment metric of the Gender Gap Index.</i>	43
<i>Figure 23. Individual survey respondents.</i>	45
<i>Figure 24. Reasons for pursuing education and career in deep-sea research.</i>	46
<i>Figure 25. Who most influenced your choice of career?</i>	47
<i>Figure 26. Individual survey responses by assessment of job prospects and gender.</i>	47
<i>Figure 27. Did you ever have to turn down the opportunity to travel abroad to study, teach, work or conduct research (including sabbatical year)? If so, for what reasons?</i>	49
<i>Figure 28. Weeks of parental leave allowed (top) and taken (bottom) by women.</i>	49
<i>Figure 29. Access to field or at-sea work.</i>	50

Figure 30. Receiving leadership support.	51
Figure 31. Receiving career support.	51
Figure 32. Invited to participate in committees by the ministry responsible for ocean science, deep-sea research or mining in their country.	52
Figure 33. Participated in governing councils at their institution.	52
Figure 34. Managers, based on the ILO ISCO definition (CEOs, presidents, vice chancellors, etc.).	53
Figure 35. Can women be as successful as men?	54
Figure 36. Feeling discriminated against at work.	55
Figure 37. Nature of discrimination (left) and basis of discrimination (right) experienced at work.	56
Figure 38. Individual survey responses on "How has discrimination affected you?"	57
Figure 39. Experiences of harassment.	58
Figure 40. Have you ever been the recipient of unwanted leers, sexual comments, noises or gestures at your workplace?	59
Figure 41. Individual survey responses by students.	59
Figure 42. Top challenges to women succeeding in deep-sea research.	60
Figure 43. Individual survey responses on "Top career challenges faced by women"	61
Figure 44. Experiences shared by a woman from a LDC.	63
Figure 45. Experience shared by a woman from a LLDC.	69
Figure 46. Experience shared by a woman from a SIDS.	75

List of tables

Table 1. List of deep-sea research related disciplines and activities.	23
Table 2. Countries covered under policy analysis.	26
Table 3. Number of institutions engaged in deep-sea research from participating countries.	31

References

- African Development Bank Group. 2022. *Malawi–Sustainable Fisheries, Aquaculture Development And Watershed Management Project*. <https://projectsportal.afdb.org/dataportal/VProject/show/P-MW-AAF-003?lang=en>
- Agricultural Projects Service Centre and John Mellor Associates, Inc. 1995. *Nepal Agriculture Prospective Plan*. National Planning Commission His Majesty's Government of Nepal and Asian Development Bank.
- Arif, A. A. and Karim, M. S. 2022. *Marine Fisheries Act 2020 of Bangladesh : A Missed Opportunity for Sustainability and Collaborative Governance*. The International Journal of Marine and Coastal Law, 1(aop), 1-13. <https://doi.org/10.1163/15718085-bja10075>
- Bauer, G. and Burnet, J. E. 2013. *Gender quotas, democracy, and women's representation in Africa : Some insights from democratic Botswana and autocratic Rwanda*. Women's Studies International Forum, 41, 103-112. <https://doi.org/10.1016/j.wsif.2013.05.012>
- BIMSTEC. 2018. *The Fourth BIMSTEC Summit*. WFTR. <https://bimstec.org/?event=the-fourth-bimstec-summit>
- Bittner, P. 2018. *Mongolia's 'Reverse Gender Gap' Does Not Apply to the Tech Industry*. Women's Advancement. <https://deeply.thenewhumanitarian.org/womensadvancement/articles/2018/05/01/mongolias-reverse-gender-gap-does-not-apply-to-the-tech-industry>
- Burn, N. 2008. *Draft National Gender Policy Framework for Mauritius*. Ministry of Women's Rights, Child Development, Family Welfare and Consumer Protection.
- Cardno Emerging Markets. 2017. *Poverty, Social and Gender Assessment*. Nauru Port Authority.
- Caribbean Development Bank. 2014. *Country Gender Assessment–St. Kitts and Nevis*. <https://www.caribank.org/publications-and-resources/resource-library/gender-assessments/country-gender-assessment-st-kitts-and-nevis-2014-volumes-1-and-2>
- Centre for Research and Information. 2017. *Homepage of the Centre for Research and Information*. https://www.blue-growth.org/Blue_Growth_Media_A_To_Z/CRI_Bangladesh_Blue_Growth_Economy_Centre_Research_Information.htm
- Cervigni, R. and Scandizzo, P. L. 2017. *The Ocean Economy in Mauritius*. World Bank, Washington, DC. <https://doi.org/10.1596/28562>
- Chasukwa, M. 2016. *The Gender Machinery Women in Malawi's Central Government Administration*. CMI Brief, 11. <https://www.cmi.no/publications/5880-the-gender-machinery-women-in-malawis-central>
- Constitution of the Peoples' Republic of Bangladesh. 2018. <https://constitutions.unwomen.org/en/countries/asia/bangladesh>
- Constitution of Fiji. 2013. <https://constitutions.unwomen.org/en/countries/oceania/fiji>
- Constitution of Kiribati. 2016. <https://constitutions.unwomen.org/en/countries/oceania/kiribati?provisioncategory=b21e8a4f9df246429cf4e8746437e5ac>
- Constitution of Lesotho. 2020. <https://constitutions.unwomen.org/en/countries/africa/lesotho?provisioncategory=b21e8a4f9df246429cf4e8746437e5ac>
- Constitution of Mongolia. 2019. <https://constitutions.unwomen.org/en/countries/asia/mongolia>
- Constitution of Nauru. 1968. <http://naurugov.nr/parliament-of-nauru/constitution-of-nauru.aspx>
- Constitution of Nepal. 2016. https://www.constituteproject.org/constitution/Nepal_2016.pdf?lang=en
- Constitution of the Republic of Malawi. 2017. <https://constitutions.unwomen.org/en/countries/africa/malawi?provisioncategory=b21e8a4f9df246429cf4e8746437e5ac>

- Constitution of the Republic of Mauritius. 2021. <https://constitutions.unwomen.org/en/countries/africa/mauritius?provisioncategory=b21e8a4f9df246429cf4e8746437e5ac>
- Constitution of the Republic of Mozambique. 2018. <https://constitutions.unwomen.org/en/countries/africa/mozambique>
- Constitution of the Republic of Trinidad and Tobago. 2007. https://www.constituteproject.org/constitution/Trinidad_and_Tobago_2007.pdf?lang=en
- Constitution of St. Kitts and Nevis. 1983. <https://constitutions.unwomen.org/en/countries/americas/saint-kitts-and-nevis?provisioncategory=b21e8a4f9df246429cf4e8746437e5ac>
- Deep Ocean Stewardship Initiative. 2021. *Science for deep-ocean sustainability – UN OceanAction15238*. <https://oceanconference.un.org/commitments/?id=15238>
- Doran, G. 2018. *Female Education in Lesotho Highest in the World*. The Borgen Project. <https://borgenproject.org/female-education-in-lesotho/>
- ECOLEX. 2016. *National Women’s Council Act 2016 (No. 5 of 2016) – Mauritius*. <https://www.ecolex.org/details/legislation/national-womens-council-act-2016-no-5-of-2016-lex-faoc160991/>
- Ferrant, G., Pesando, L. M. and Nowacka, K. 2014. *Unpaid Care Work: The missing link in the analysis of gender gaps in labour outcomes*. OECD Development Centre.
- Fijivillage. 2020. *Curriculum designed to dispel traditional gender norms, not entrench them*—Education Ministry – Fiji. <https://www.fijivillage.com/news/Curriculum-designed-to-dispel-traditional-gender-norms-not-entrench-them---Education-Ministry-s5r29k/>
- Food and Agriculture Organization. 2017. *Nauru—Fishery and Aquaculture Country Profiles*.
- Giva, N. and Santos, L. 2019. *Gender-based assessment of STI ecosystem in Mozambique*. Universidade Eduardo Mondlane. https://www.ruforum.org/sites/default/files/Final_per_cent20Report_Gender_per_cent20STI_per_cent20_Mozambique_19Dec19.pdf
- Government of Botswana. 2018. *Botswana Southern African Development Community Gender Protocol Summit Proceedings and Report*. <https://webcache.googleusercontent.com/search?q=cache:Xvtm1G--n5IJ:genderlinks.org.za/wp-content/uploads/2018/07/BOTSWANA-SADC-GENDER-PROTOCOL-SUMMIT-2017.docx+&cd=1&hl=en&ct=clnk&gl=ca&client=firefox-b-d>
- Government of Canada. 2011. *Concordance : International Standard Classification of Occupations (ISCO) 2008 to National Occupational Classification (NOC) 2011*. <https://www.statcan.gc.ca/en/subjects/standard/noc/2011/isco2008-noc2011>
- Government of Fiji. 2009. *Womens Plan of Action (2010-2019)*. <https://www.mwcpa.gov.fj/index.php/women1/womens-plan-of-action-2010-2019.html>
- Government of Fiji. 2014a. *Fiji National Gender Policy*. Ministry for Social Welfare, Women and Poverty Alleviation
- Government of Fiji. 2014b. *A Green Growth Framework for Fiji*. Ministry of Strategic Planning, National Development and Statistics
- Government of Fiji. 2017a. *5-Year & 20-Year National Development Plan: Transforming Fiji*. Ministry of Economy.
- Government of Fiji. 2017b. *Hon. PM Bainimarama at the Opening of the Pacific Blue Economy Conference*. The Fijian Government. <https://www.fiji.gov.fj/Media-Centre/Speeches/English/HON-PM-BAINIMARAMA-AT-THE-OPENING-OF-THE-PACIFIC-B>
- Government of Fiji. 2017c. *Scrutinising Legislation From A Gender Perspective: A Practical Toolkit*. United Nations Development Programme
- Government of Fiji. 2020. *Republic of Fiji National Ocean Policy 2020–2030*. Ministry of Economy

- Government of Fiji. 2021. *International Day of the Girl Child*. <http://www.education.gov.fj/2021/10/11/international-day-of-the-girl-child-october-11-2021/>
- Government of Kiribati. 2013. *Kiribati National Fisheries Policy 2013-2025*. Ministry of Fisheries and Marine Resources Development
- Government of Kiribati. 2016. *Kiribati 20-Year Vision 2016-2036*. https://policy.asiapacificenergy.org/sites/default/files/Kiribati_per_cent2020-Year_per_cent20Vision_per_cent202016.pdf
- Government of Kiribati. 2019. *National Policy on Gender Equality and Women's Development 2019-2022*. Ministry of Women, Youth, Sports and Social Affairs
- Government of Kiribati. 2020. *Kiribati Government Manifesto - Policy Statement*. https://www.mfa.gov.ki/wp-content/uploads/2020/08/HE-Policy-Statement-Eng-ver_Final_as-delivered-1.pdf
- Government of Lesotho. 2005a. *Education Sector Strategic Plan 2005-2015*. <https://planipolis.iiep.unesco.org/en/2005/education-sector-strategic-plan-2005-2015-3677>
- Government of Lesotho. 2005b. *Lesotho Vision 2020*. https://www.gov.ls/wp-content/uploads/2018/04/National_Vision_Document_Final.pdf
- Government of Lesotho. 2010. *Education Act*. https://lesotholii.org/ls/legislation/act/2010/3/education_act_2010.pdf
- Government of Lesotho. 2015. *Minerals and Mining Policy*. Ministry of Mining. http://www.mining.gov.ls/legislation/Minerals_per_cent20and_per_cent20Mining_per_cent20Policy.pdf
- Government of Lesotho. 2018. *Gender And Development Policy 2018-2030*. Ministry of Gender and Youth, Sport and Recreation. <https://genderlinks.org.za/wp-content/uploads/2020/03/Gender-and-Development-Policy-2018-2030.pdf>
- Government of Lesotho. 2019. *Lesotho Government Beijing +25 Review Report*. <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/CSW/64/National-reviews/Lesotho.pdf>
- Government of Lesotho. 2018. *Lesotho Economy*. <https://www.gov.ls/lesotho-economy/>
- Government of Mongolia. 2011. *Law of Mongolia on Enforcement of the Law on Promotion of Gender Equality*. https://www.legislationline.org/download/id/4518/file/Mongolia_law_gender_equality_2011_en.pdf
- Government of Mongolia. 2016. *Mongolia Sustainable Development Vision 2030*. https://policy.asiapacificenergy.org/sites/default/files/Mongolia_per_cent20Sustainable_per_cent20Development_per_cent20Vision_per_cent202030_per_cent20_per_cent28EN_per_cent29.pdf
- Government of Mongolia. 2017. *Statement by the Ambassador Extraordinary and Plenipotentiary, Permanent Representative of Mongolia to the United Nations*. https://sustainabledevelopment.un.org/content/documents/24580Mongolia_E.pdf
- Government of Nepal. 2019. *National Science, Technology and Innovation Policy 2019*. Ministry of Education, Science and Technology. https://moe.gov.np/assets/uploads/files/NSTI_Policy_2019.pdf
- Government of Nepal. 2021. *National Gender Equality Policy*. https://drive.google.com/file/d/1kMG-aUacPr-1bRK1udSlieToYEHdCJ_un/view?usp=sharing&usp=embed_facebook
- Government of Nauru. 2019. *Nauru's National Sustainable Development Strategy 2019-2030*. Department of Finance and Sustainable Development. https://policy.asiapacificenergy.org/sites/default/files/National_per_cent20Sustainable_per_cent20Development_per_cent20Strategy_per_cent20_per_cent28NSDS_per_cent29_per_cent202019-2030_per_cent20_per_cent28Revised_per_cent202019_per_cent29_0.pdf
- Government of the Peoples' Republic of Bangladesh. 2011. *National Women's Development Policy*. Ministry of Women and Children Affairs.

- Government of the Peoples' Republic of Bangladesh. 2020. Perspective Plan of Bangladesh 2021-2041. *Bangladesh Planning Commission: Ministry of Planning*.
- Government of the Republic of Malawi. 2014. *Gender Equality Act*. https://malawilii.org/akn/mw/act/2013/3/eng_per_cent402014-12-3
- Government of the Republic of Malawi. 2015. *National Gender Policy*. Ministry of Gender, Children and Social Welfare. https://cepa.rmportal.net/Library/government-publications/National_per_cent20Gender_per_cent20Policy_per_cent202015.pdf
- Government of the Republic of Malawi. 2016a. *National Education Policy*. Ministry of Education, Science and Technology. https://planipolis.iiep.unesco.org/sites/default/files/ressources/national_education_policy.pdf
- Government of the Republic of Malawi. 2016b. *National Fisheries and Aquaculture Policy*.
- Government of the Republic of Malawi. 2017. *Inclusive Education Strategy*. Ministry of Education, Science and Technology https://rodra.co.za/images/countries/malawi/policies/Inclusive_per_cent20Education_per_cent20Strategy-2017-2021.pdf
- Government of the Republic of Mauritius. 2009. *Education and Human Resources Strategy Plan 2008-2020*. Ministry of Education, Culture and Human Resources.
- Government of the Republic of Mauritius. 2018. *Mauritius National Innovation Framework 2018-2030*. Ministry of Technology, Communication and Innovation.
- Government of the Republic of Mauritius. 2020a. *Blue Economy*. Ministry of Blue Economy, Marine Resources, Fisheries and Shipping. <https://blueeconomy.govmu.org/Pages/Blue-Economy.aspx>
- Government of the Republic of Mauritius. 2020b. *Mauritius Government Programme 2020-2024*.: Towards an Inclusive, High Income and Green Mauritius, Forging Ahead Together. https://gis.govmu.org/Documents/Govt_per_cent20Programme_per_cent202020-2024.pdf
- Government of the Republic of Mozambique. 2018. *Mozambique National Action Plan on Women, Peace and Security 2018-2022*. Ministry of Gender, Child and Social Action.
- Government of the Republic of Trinidad and Tobago. 2017. *Vision 2030*. Ministry of Planning and Development. https://www.planning.gov.tt/sites/default/files/Vision_per_cent202030- per_cent20The_per_cent20National_per_cent20Development_per_cent20Strategy_per_cent20of_per_cent20Trinidad_per_cent20and_per_cent20Tobago_per_cent202016-2030.pdf
- Government of the Republic of Trinidad and Tobago. 2018. *National Policy on Gender and Development*. Office of the Prime Minister. http://www.opm-gca.gov.tt/portals/0/Documents/National_per_cent20Gender_per_cent20Policy/NATIONAL_per_cent20POLICY_per_cent20ON_per_cent20GENDER_per_cent20AND_per_cent20DEVELOPMENT.pdf?ver=2018-03-08-134857-323
- Government of St. Kitts and Nevis. 2015. *National Maritime Policy and Action Plan*. Ministry of Tourism and International Transport. https://chm.cbd.int/api/v2013/documents/C0A7116F-F642-2089-08C4-81605C16F1BC/attachments/208581/SKN_per_cent20MARITIME_per_cent20POLICY_per_cent202015.pdf
- Government of St. Kitts and Nevis. 2017. *2017-2021 Education Sector Plan: Education for All: Embracing Change, Securing the Future*. Ministry of Education. https://planipolis.iiep.unesco.org/sites/default/files/ressources/st_kitts_education_sector_plan_2017-2021_0.pdf
- Government of the United States of America. 2021. *Lesotho–Country Commercial Guide*. <https://www.trade.gov/country-commercial-guides/lesotho-market-overview>
- Green Fiscal Policy Network. 2021. *Potentials of Blue Economy in Bangladesh*. Green Fiscal Policy Network. <https://greenfiscalspolicy.org/potentials-of-blue-economy-in-bangladesh/>

- Hambira, W. L., Stone, L. S. and Pagiwa, V. 2022. *Botswana nature-based tourism and COVID-19 : Transformational implications for the future*. *Development Southern Africa*, 39(1), 51-67. <https://doi.org/10.1080/0376835X.2021.1955661>
- Himalayan News Service. 2021. *New gender equality policy to end discrimination*. The Himalayan Times. <https://thehimalayantimes.com/nepal/new-gender-equality-policy-to-end-discrimination>
- Human Science Research Council. 2021. *Strengthening gender and inclusivity in the national system of science, technology, and innovation (sti) engaging 100 per cent of Botswana's human development potential for sustainable socio-economic development*. <https://idl-bnc-idrc.dspacedirect.org/bitstream/handle/10625/60712/b24dca9c-f30b-4811-b3e6-9295d7a3ceee.pdf>
- ILO. 2012. *ISCO-08 Volume I: International Standard Classification of Occupations: Structure, group definitions and correspondence tables*. International Labour Office. https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_172572.pdf
- ILO. 2014. *International Standard Classification of Education (ISCED)*. ILOSTAT. <https://ilostat.ilo.org/resources/concepts-and-definitions/classification-education/>
- ILO. 2016. *ISCO - International Standard Classification of Occupations*. <https://www.ilo.org/public/english/bureau/stat/isco/isco08/>
- International Disability Alliance. 2018. *Commitments of the Malawi Ministry of Gender, Children, Disability and Social Welfare*. International Disability Alliance. <https://www.internationaldisabilityalliance.org/stakeholder/government-malawi-ministry-gender-children-disability-and-social-welfare>
- International Monetary Fund. 2018. *Botswana IMF Country Report No. 18/268: 2018 Article IV Consultation – Press Release; Staff Report; and Statement by the Executive Director for Botswana*. <https://www.imf.org/-/media/Files/Publications/CR/2018/cr18268.ashx>
- IOC-UNESCO. 2017. *Global Ocean Science Report–The current status of ocean science around the world*. L. Valdés et al. (Eds), Paris, UNESCO Publishing.
- IOC-UNESCO. 2020. *Global Ocean Science Report 2020-Charting Capacity for Ocean Sustainability*. K. Isensee (ed.), Paris, UNESCO Publishing. <https://www.un-ilibrary.org/content/books/9789216040048>
- ISA. 2017. *Abyssal Initiative For Blue Growth | International Seabed Authority*. <https://www.isa.org.jm/vc/abysal-initiative-blue-growth>
- ISA. 2019. *Implementation of the strategic plan of the International Seabed Authority for the period 2019–2023*. International Seabed Authority.
- ISA. 2021a. *Landlocked Developing Countries and the Law of the Sea: An Ocean of Opportunity*. International Seabed Authority.
- ISA. 2021b. *P-SIDS Regional Training and Capacity-Building Workshop: Deep seabed environmental management and monitoring*. <https://www.isa.org.jm/event/p-sids-regional-training-and-capacity-building-workshop-2021>
- ISA. 2022. *About the WIDSR Project*. <https://www.isa.org.jm/vc/enhancing-role-women-msr/WIDSR-project>
- Japan International Cooperation Agency. 2015. *Country Gender Profile: Mozambique*. https://www.jica.go.jp/activities/issues/gender/reports/ku57pq00002hdvy2-att/moz_2015_en.pdf
- Kgathi, D., Mmopelwa, G. and Mosepele, K. 2005. *Natural resources assessment in the Okavango Delta, Botswana : Case studies of some key resources*. *Natural Resources Forum*, 29, 70-81. <https://doi.org/10.1111/j.1477-8947.2005.00113.x>
- Lesotho Council of Non-Governmental Organisations. 2015. *The Status of Women in Lesotho*. http://www.lcn.org.ls/Resource/The_per_cent20Status_per_cent20of_per_cent20Women_per_cent20in_per_cent20Lesotho.pdf

- Lesotho Highlands Development Authority. 2019. *Annual Report*. <http://www.lhda.org.ls/lhdaweb/documents/documents>
- Lesotho National Development Corporation. 2022. *Aquaculture*. <https://www.lndc.org.ls/content/aquaculture>
- Mbaiwa, J. E. 2017. *Community-Based Natural Resource Management in Botswana*. Botswana Documents. https://library.wur.nl/ojs/index.php/Botswana_documents/article/view/16057
- Mongolia Maritime Administration. 2021. *Preparing Human Resource*. https://monmarad.gov.mn/en/activity_6
- Natuva, C. T. 2021. *Fiji's 'Blue Economy' and the importance of maritime security*. Commonwealth of Australia. https://www.navy.gov.au/sites/default/files/documents/fijis_blue_economy_and_importance_maritime_security.pdf
- OECD. 2015a. *Annexes to the Frascati Manual for collecting and reporting data on research and experimental development*. <https://www.oecd.org/sti/inno/frascatiannexes.htm>
- OECD. 2015b. *Frascati Manual for collecting and reporting data on research and experimental development*. oecd-ilibrary.org. https://read.oecd-ilibrary.org/science-and-technology/frascati-manual-2015_9789264239012-en
- Organisation of Eastern Caribbean States Secretariat. 2013. *Eastern Caribbean Regional Ocean Policy*. http://www.caribbeanelections.com/eDocs/strategy/oecs_strategy/OECS_Eastern_Caribbean_Ocean_Policy_2013.pdf
- Pacific Women. 2017. *Nauru Country Page*. https://pacificwomen.org/wp-content/uploads/2017/07/Nauru-Country-Page_15Oct17.pdf
- Patil, P. G., Viridin, J., Colgan, C. S., Hussain, M. G., Failler, P. and Vegh, T. 2018. *Toward a Blue Economy : A Pathway for Bangladesh's Sustainable Growth*. World Bank. <https://doi.org/10.1596/30014>
- Rana, B. and Koirala, S. 2021. *Nepal's Gender Policies : Achievements and Challenges*. Nepal Public Policy Review, 1, 191-200. <https://doi.org/10.3126/nppr.v1i1.43442>
- Republic of Nauru. 2013. *Education and Training Strategic Plan 2008-2013*. Department of Education and Training. <http://www.unesco.org/education/edurights/media/docs/07712bcf3c71c7853a4d-4628be2356b6843d5357.pdf>
- Rouatu, I. 2015. *National Marine Ecosystem Service Valuation Kiribati*. Marine and Coastal Biodiversity Management in Pacific Island Countries. <http://macbio-pacific.info/wp-content/uploads/2017/08/Kiribati-MESV-Digital-LowRes.pdf>
- Scribner, D. and Lambert, P. A. 2010. *Constitutionalizing Difference : A Case Study Analysis of Gender Provisions in Botswana and South Africa*. *Politics & Gender*, 6 (1), 37-61. <https://doi.org/10.1017/S1743923X0999050X>
- Southern African Research and Documentation Centre. 2018. *Lesotho Factsheet*. Gender and Development Monitor. https://www.sardc.net/books/BI/factsheets/SGDM_Factsheet_Lesotho.pdf
- Secretariat of the Pacific Regional Environment Programme. 2018. *Republic of Nauru: Review of natural resource and environment related legislation*. <https://www.sprep.org/attachments/Publications/EMG/sprep-legislative-review-nauru.pdf>
- St. Kitts and Nevis Information Service. 2021. *St. Kitts and Nevis developing a national gender policy*. <https://www.sknis.gov.kn/2021/01/14/st-kitts-and-nevis-developing-a-national-gender-policy/>
- St. Kitts and Nevis Information Service. 2022. *St. Kitts and Nevis gender equality policy to be tabled in the federal parliament | SKNIS*. <https://www.sknis.gov.kn/2022/03/16/st-kitts-and-nevis-gender-equality-policy-to-be-tabled-in-the-federal-parliament/>
- The Himalayan Times. 2019. *Govt unveils National Education Policy*. The Himalayan Times. <https://thehimalayan-times.com/kathmandu/govt-unveils-national-education-policy>

- The Metals Company. 2020. *Response to Greenpeace report*. The Metals Company. <https://metals.co/response-to-greenpeace-report/>
- The World Bank. 2020. *GDP per capita, PPP*. https://data.worldbank.org/indicator/NY.GDP.PCAP.PP.CD?year_high_desc=trueIMF
- The World Bank Group. 2020. *Towards Mongolia's Long-term Development Policy Vision 2050: Advancing education equity, efficiency and outcomes*. <https://www.globalpartnership.org/sites/default/files/document/file/2020-12-17-towards-mongolia-long-term-development-policy-vision-2050-advancing-education-equity-efficiency-outcomes.pdf>
- Tsotsane, T. 2021. *Women as ocean ambassadors in coastal districts of Mozambique*. IUCN World Conservation Congress 2020. <https://www.iucncongress2020.org/newsroom/all-news/women-ocean-ambassadors-coastal-districts-mozambique>
- Twabi, H. 2021. *Women in STEM: A science mentorship program to inspire young women and girls in Malawi*. <https://mesh.tghn.org/articles/project-report-women-science-mentorship-program-inspire-young-people-malawi/>
- Uamusse, A. A., Cossa, E. F. R. and Kouleshova, T. 2020. *A mulher em cursos de ciências, tecnologia, engenharia e matemática no ensino superior moçambicano*. Revista Estudos Feministas, 28. <https://doi.org/10.1590/1806-9584-2020v28n168325>
- UN-OHRLLS. 2020. *Landlocked developing countries factsheet*. https://www.un.org/ohrlls/sites/www.un.org/ohrlls/files/landlocked_developing_countries_factsheet.pdf
- UN. 2021. *State of the Least Developed Countries 2021. Building back better in response to COVID-19*. <https://www.un.org/ohrlls/content/state-least-developed-countries-2021-building-back-better-response-covid-19>
- UN. 2022a. *About Landlocked Developing Countries*. <https://www.un.org/ohrlls/content/about-landlocked-developing-countries>
- UN. 2022b. *About Small Island Developing States*. <https://www.un.org/ohrlls/content/about-small-island-developing-states>
- UN. 2022c. *Homepage of the UN-OHRLLS*. <https://www.un.org/ohrlls/>
- UN Women. 1995. *Beijing Platform for Action. Chapter IV. K. Women and the environment—A/CONF.177/20 Annex II, Chapter IV, K - UN Documents : Gathering a body of global agreements*. <http://www.un-documents.net/bpa-4-k.htm>
- UN Women. 2016. *National Action Plan for Women*. <https://evaw-global-database.unwomen.org/en/countries/oceania/nauru/2004/national-action-plan-for-women>
- UN Women. 2017. *Nepal Gender Equality and Social Inclusion Profile*. https://asiapacific.unwomen.org/sites/default/files/Field_per_cent20Office_per_cent20ESEAsia/Docs/Publications/2017/09/Nepal-GESI-Profile.pdf
- UN Women. 2020a. *Country Data | UN Women Data Hub*. <https://data.unwomen.org/countries>
- UN Women. 2020b. *Responses on "Women's Empowerment and the link to sustainable development" - Mauritius*. https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/CSW/65/MS_per_cent20Inputs_per_cent20Review_per_cent20Theme/Mauritius.pdf
- UN Women. 2021a. *Progress on the Sustainable Development Goals - The Gender Snapshot 2021*. <https://www.unwomen.org/sites/default/files/Headquarters/Attachments/Sections/Library/Publications/2021/Progress-on-the-Sustainable-Development-Goals-The-gender-snapshot-2021-en.pdf>
- UN Women. 2021b. *State of Gender Equality and Climate Change in Nepal*. UN Women - Asia-Pacific. <https://asiapacific.unwomen.org/en/digital-library/publications/2021/12/state-of-gender-equality-and-climate-change-in-nepal>

- UN Women. 2022. *Fiji Fact Sheet*. <https://data.unwomen.org/country/fiji>
- UNESCO. 2013. *Mapping research and innovation in the Republic of Botswana*—UNESCO Bibliothèque Numérique. <https://unesdoc.unesco.org/ark:/48223/pf0000224725>
- UNESCO. 2016. *St. Kitts and Nevis education policy review, final report*. <https://unesdoc.unesco.org/ark:/48223/pf0000245170>
- UNESCO. 2018. *Measuring gender equality in science and engineering*. <https://unesdoc.unesco.org/ark:/48223/pf0000266146.locale=en>
- UNESCO. 2021. *Report reveals relatively high researcher density in Mauritius*. UNESCO. <https://en.unesco.org/news/report-reveals-relatively-high-researcher-density-mauritius>
- UNESCO. 2022a. *Empowering Women for the United Nations Decade of Ocean Science for Sustainable Development*. Ocean Decade. <https://www.oceandecade.org/actions/empowering-women-for-the-united-nations-decade-of-ocean-science-for-sustainable-development/>
- UNESCO. 2022b. *The Ocean Decade—The Science we need for the Ocean we want*. Ocean Decade. <https://www.oceandecade.org/>
- UNESCO Asia and Pacific Regional Bureau for Education, and Han'guk Yosong Kaebawon. 2015. *A complex formula: Girls and women in science, technology, engineering and mathematics in Asia*. <https://unesdoc.unesco.org/ark:/48223/pf0000231519>
- UNESCO-UNEVOC. 2022. *STEM Skills Definition*. https://unevoc.unesco.org/home/TVETipedia_per_cent2BGlossary/lang_per_cent3Den/filt_per_cent3Dall/id_per_cent3D694
- UNFCCC. 2019. *Gender and Climate Change - Enhanced Lima Work Programme on Gender and its Gender Action Plan*. https://unfccc.int/sites/default/files/resource/cp2019_L03E.pdf
- UN-INSTRAW. 2006. *Migration from Lesotho to South Africa*. <https://trainingcentre.unwomen.org/instraw-library/2006-I-MIG-LSO-MIG-EN.pdf>
- UN-OHRLS. 2022. *LDC Category*. <https://www.un.org/ohrls/content/lcd-category>
- United News of Bangladesh. 2022. *Marine cadets will help Bangladesh to achieve SDG-14: PM*. New Age | The Most Popular Outspoken English Daily in Bangladesh. <https://www.newagebd.net/article/164581/marine-cadets-will-help-bangladesh-to-achieve-sdg-14-pm>
- UNOPS. 2020. *Infrastructure for Gender Equality and the Empowerment of Women*. <https://content.unops.org/publications/UNOPS-Infrastructure-for-Gender-Equality-and-the-Empowerment-of-women.pdf?mtime=20200701120805>
- Vyawahare, M. 2021. *Mozambique's new fisheries law expands protections but old problems persist*. Mongabay Environmental News. <https://news.mongabay.com/2021/01/mozambiques-new-fisheries-law-expands-protections-but-old-problems-persist/>
- World Bank Group. 2019. *Nepal Gender Brief*. <https://documents1.worldbank.org/curated/en/484811556130253064/pdf/Nepal-Gender-Brief.pdf>
- World Bank Group. 2022a. *Lesotho Country Overview*. <https://www.worldbank.org/en/country/lesotho/overview>
- World Bank Group. 2022b. *The World Bank in Trinidad and Tobago*. <https://www.worldbank.org/en/country/trinidadandtobago/overview>
- World Economic Forum. 2021. *Global Gender Gap Report 2021: Insight Report*. https://www3.weforum.org/docs/WEF_GGGR_2021.pdf

Annex A - Study Indicators

Table 4. Gender mapping indicators, sub-indicators and associated questions

Indicator	Sub-Indicators	Career Stage	Resource Type	Survey Questions
1. National contribution to ocean science, deep-sea research and related disciplines and activities	<p>State contribution to deep sea related activities:</p> <ul style="list-style-type: none"> > Number of registered companies, organizations, ministries, department offices active in deep-sea research > National budget for STEM, ocean science, deep-sea research, and disciplines and activities related to deep-sea research > Employment statistics; number of employees by gender 	N/A	Infrastructure and institutional	<ul style="list-style-type: none"> • National: <ul style="list-style-type: none"> > Please identify the number of government departments, public institutions, universities, not for profits, and registered companies that support ocean science, deep-sea research and related disciplines and activities. > In your country, please estimate the number of women and men employed in: Ocean Science; Deep-Sea Research; Research disciplines and activities related to deep-sea research. > Please estimate your national budget (USD) in STEM, ocean science, deep-sea research, and disciplines and activities related to deep-sea research. • Institutional: <ul style="list-style-type: none"> > Is your institution's work (or that of a department, faculty, unit, research and development branch, group, lab, etc.) significantly dedicated to one of the following sectors? (Ocean Science; Deep-Sea Research; Research Disciplines and activities related to Deep-Sea Research) > What type of institution would you consider yourself? (Academic, Industry, Government or Public Institution, not for profit) > How many women and men are employed in ocean science, deep-sea research and related disciplines and activities by your institution?
2. Employment demographics	<p>Number of women and fraction by gender of staff in deep-sea research by:</p> <ul style="list-style-type: none"> > age > income > qualifications > seniority > permanent vs. contract staff 	Participation, progression and leadership	Human Resources	<ul style="list-style-type: none"> • National: <ul style="list-style-type: none"> > In your country, what is the number of women and men employed in ocean science, deep-sea research and related disciplines and activities (by age, annual income, qualification (education level), seniority (years of experience), job type (permanent vs. contract staff))? • Institutional: <ul style="list-style-type: none"> > At your institution, what is the number of women and men working in ocean science, deep-sea research and related disciplines and activities? (by annual income, qualification (education level), seniority (years of experience), job type (permanent vs. contract staff))?

Indicator	Sub-Indicators	Career Stage	Resource Type	Survey Questions
3. Gender-related policies, infrastructure, and employment supports	<ul style="list-style-type: none"> • Gender equity policies and infrastructure • Fraction and number of registered companies/organizations/ministries/department offices active in deep-sea related disciplines that have gender-sensitive infrastructure: <ul style="list-style-type: none"> > physical infrastructure (e.g., bathrooms on ships, support for breastfeeding, equipment fitted to women's bodies, sight lines on ships for shorter bodies, levers and equipment weights made for bodies of varying strength) > policies and/or guidelines (e.g., supports for staff with care responsibilities: childcare/paid or unpaid parental leave/flexible hours) > gender parity in remuneration > gender-sensitive hiring policies 	All career stages	Infrastructure and institutional	<ul style="list-style-type: none"> • National: <ul style="list-style-type: none"> > Does your country have a national gender equality/equity policy, or do government departments that support ocean science, deep-sea research and related disciplines and activities have gender equality/equity policies? Please provide details. • Institutional: <ul style="list-style-type: none"> > Does your institution have a gender equality/equity policy? If so, please upload any relevant policy file(s). > Does your institution have the following career policies and practices in place? (Gender parity in grade promotion; Equal pay policies; Anti-sexual harassment policy or code of conduct; Career mentoring; Networking, diversity and affinity groups; Flexible working hours; Flexible meeting hours; Part-time work; Telework/remote work with policies and guidelines; Telework/remote work without policies and guidelines; Family-care assistance; Childcare cost contributions; Childcare offered on site; Permanent childcare solutions; Occasional childcare solutions; Access to parental leave; Access to health plan; Support services (expert support, counselling services, etc.); Provision of household support services; Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.); Re-entry mechanisms; Other)
4. Education and skills training	<ul style="list-style-type: none"> • Number of women and fraction by gender pursuing ocean science disciplines in training and re-training (e.g., professional development, continuing education) programs: <ul style="list-style-type: none"> > apprenticeships > internships > diploma > bachelors > masters or higher 	Education	Human Resources	<ul style="list-style-type: none"> • National: <ul style="list-style-type: none"> > In your country, how many persons are pursuing training in ocean science or deep-sea related disciplines in the following programs: apprenticeships, diploma, bachelor's degree, master's degree or higher? • Institutional: <ul style="list-style-type: none"> > At your institution, how many women and men are pursuing apprenticeships or internships, a diploma or bachelor's degree, master's degrees (or higher) in ocean science, deep-sea research and related disciplines and activities?

Indicator	Sub-Indicators	Career Stage	Resource Type	Survey Questions
5. Funding for education and research	<p>Number of scholarships or other initiatives supporting women's education and professional development</p> <p>Number of women and men who have funding for education</p> <p>Number of women and fraction by gender of researchers having secured 1) national or, 2) international research grants</p>	Education, participation	Policy and Financial	<p>National:</p> <p>Does your country have scholarships or other initiatives to support women's education in ocean science, deep-sea research and related disciplines and activities? (national scholarships, international scholarships)</p> <p>Institutional:</p> <p>Does your institution have scholarships, bursaries, fellowships, financial assistance for studies or professional development, or other initiatives to support women's education?</p> <p>At your institution, how many women and men received education scholarships in the past five years in ocean science, deep-sea research and related disciplines and activities?</p> <p>How many researchers in ocean science, deep-sea research and related disciplines and activities at your institution have secured their own research grants? (women/men)</p>
6. Hiring practices	Applicant and selection ratio for women and men (over the last year of hiring)	Education, participation	Human Resources	<p>Institutional:</p> <p>Over the last year of hiring, how many women and men have been selected or hired?</p>
7. Career progression and leadership - National and institutional perspective	<p>Career progression:</p> <p>Number of women and fraction by gender of authors of peer-reviewed research publications</p> <p>Number of women and fraction by gender having presented at or participated in national and international conferences</p> <p>Leadership:</p> <p>Number of women and fraction by gender in senior management and leadership positions</p> <p>Fraction of all Board members who are women</p>	Participation, progression and leadership	Policy and Financial	<p>National:</p> <p>Of the institutions identified, please indicate the approximate total number across all five categories that have women as their head. (Academic, Industry, Government or Public, not for profit)</p> <p>Please identify the number of government ministries, departments and agencies related to ocean science, deep-sea research and related disciplines and activities that have women as ministers, heads of departments, etc.</p> <p>How many government staff of your country are part of delegations or advisors to delegations to international or regional conventions and negotiations on matters related to STEM, or ocean science, deep-sea research and related disciplines and activities? (by gender)</p>

Indicator	Sub-Indicators	Career Stage	Survey Questions
	<p>Fraction of women (and men) who are promoted from within the organization to leadership and fraction recruited externally</p> <p>Number of women and fraction by gender chairs of sessions/panels in international conferences</p> <p>Support for leadership training</p> <p>Promotions: by gender, age, education level and length of service</p> <p>International presence; advisors or delegations to international conventions and negotiations</p>		<p>Institutional:</p> <p>How many peer-reviewed research publications were authored (lead author/co-author) by women and men in ocean science, deep-sea research and related disciplines and activities from your institution over the last five years?</p> <p>At your institution, how many women and men in ocean science, deep-sea research and related disciplines and activities have presented at national and international conferences in the last five years? How many have participated?</p> <p>What is the gender of the head of your institution?</p> <p>Referring to the list above (definition under Classifications section of this document), at your institution, how many women and men in ocean science, deep-sea and related disciplines and activities hold leadership positions?</p> <p>At your institution, what number of women and men were promoted internally to leadership roles in ocean science, deep-sea research and related disciplines and activities in the last five years?</p> <p>At your institution, what number of women and men were recruited externally to leadership roles in ocean science, deep-sea research and related disciplines and activities in the last five years?</p> <p>Does your institution provide leadership training to women, specifically?</p> <p>What per cent (0 to 100) of your institution's board of directors are women?</p>
8. Personal demographics	<p>Personal demographics</p> <p>Employment details</p> <p>Overall challenges faced in career</p> <p>Field of study and level attained</p>	All career stages	<p>Individual:</p> <p>What is your gender?</p> <p>What is your age?</p> <p>Which option best describes your current situation? (Working in ocean science, deep-sea research or related activities; Unemployed with an ocean science education, or with ocean science training or experience; Currently enrolled in a program of study in ocean science, deep-sea research and related disciplines and activities)</p> <p>Please select the field that most closely describes your field of study or work. (List of indicative research disciplines and related activities provided, found under Definitions section)</p> <p>How many years have you been with your current employer?</p> <p>Please list the top five challenges you've faced to succeed in your field. (Open-ended/write-in)</p> <p>Do you currently hold any academic appointments in this country or abroad? If yes, a. What is your level of seniority in this position? (for academics)</p>

Indicator	Sub-Indicators	Career Stage	Survey Questions
			<p>What is the title of your current position? (Open-ended/write-in)</p> <p>Your current contract is? (Permanent, Temporary)</p> <p>What is your highest level of education? (Diploma; Bachelor's; Master's; Ph.D.; Other (open-ended/write-in))</p> <p>Using the Fields of study (ISCED-F) list, choose the code which best corresponds to the field(s) of the programme in which you graduated.</p>
<p>9. Career choices and transition to employment</p>	<p>Factors that led to a choice of career</p> <p>Role of mentors, advisors, etc. in choosing and attaining a career in ocean science, deep-sea research and related disciplines and activities</p> <p>Path from education to employment in deep-sea research, including time to find employment in deep-sea research</p>	<p>Transition to employment</p>	<p>Individual:</p> <p>What made you decide to study and/or work in the field of ocean science, deep-sea research and related disciplines and activities? Mark all that apply. (I always expected to work in this field; It is a field in which I excelled during my studies; I found the subject matter important and interesting; It was recommended to me; Influence of faculty member, advisors or mentors; Relative(s) or friend(s) in the field; Career fair or counsellor; Prospects for employment; Prospects for personal development; Work conditions, salary and benefits; Seeking a challenging job; Social aspects; Other (open-ended/write-in))</p> <p>People play an important role in shaping one's career. These individuals may have supported, trained, provided advice or endorsed you in your career development. Who most influenced your choice of career? Mark all that apply. (Father; Mother; Other relatives; Teacher(s); Career counsellor(s) (school or private); Mentor; Meetings and encounters; Friend(s), peer(s); Nobody; Other (open-ended/write-in))</p> <p>Were you ever helped by peers, colleagues, mentors or counsellors in (If yes, please check the appropriate box by the gender of these people)? (Female, Male, No one, N/A) (Obtaining a research grant or stipend; Conducting research abroad; Writing academic papers or books; Obtaining a position as a teaching or research assistant; Being accepted into an advanced degree programme; Obtaining an apprenticeship or internship; Obtaining employment in deep-sea research or related activities; Being accepted into a program of study; Support in applying for an education degree/program)</p> <p>What did you do after receiving your highest level of training? (Started another educational programme in STEM; Started another educational programme not in STEM; Continued working at a job requiring my professional training and which I had during my studies; Searched for employment (including a postdoctoral position); Started a postdoctoral position; Started employment in a position requiring my professional training; Started working at a job not requiring my qualifications; Took leave for personal reasons; Other)</p> <p>Approximately how many months did it take until you found work that corresponded to your professional training? (Open-ended/Write-in)</p> <p>Please provide a qualitative assessment of the job prospects for people trained in ocean science, deep-sea research and related disciplines and activities in your country. (Very good, Good, Satisfactory; Unsatisfactory, Poor)</p>

Indicator	Sub-Indicators	Career Stage
10. Employment environment	Employment environment Years of experience Access to gender-responsive infrastructure Career intentions	Retention / participation

Survey Questions

Individual:

Are you currently seeking a new work position? If yes,

What's the reason you are seeking a different work position? (Looking for a better salary, Want to be closer to the family, Seeking a better work environment, Looking for work that better uses my professional training and experience, Other)

Have you ever left a job in your field? If yes,

What was/were the reason(s) for leaving this position? (You found a new job offering better work conditions; You were offered a better salary; You were harassed or knew of sexual and/or any other form of harassment within your work environment; You were discriminated against or know of discrimination within your work environment; Other)

If relevant, what makes you consider you do not have enough opportunities? (Open-ended/write-in)

Please rate your satisfaction regarding the following items in your current employment situation (Salary and Benefits; Job Security; Job Location/Working Conditions; Work-life balance; Opportunities for professional development and promotion; International mobility opportunities; Intellectual and personal challenges; Level of responsibility/independence; Contribution to society; Equitable treatment of people; Relationship with colleagues; Gender sensitive infrastructure, e.g. breastfeeding rooms, private and sex-segregated bathrooms, well-lit public spaces)

Are any of these policies implemented at the organisation where you are employed? (gender equity/equality, code of conduct, office for investigation of complaints)

Does the organization you work for have the following career policies and practices in place? Please indicate which ones you have ever used. (Gender parity in grade promotion; Equal pay policies; Anti-sexual harassment policy or code of conduct; Career mentoring; Networking, diversity and affinity groups; Flexible working hours; Flexible meeting hours; Part-time work; Telework/remote work with policies and guidelines; Telework/remote work without policies and guidelines; Family-care assistance; Childcare cost contributions; Childcare offered on site; Permanent childcare solutions; Occasional childcare solutions; Access to parental leave; Access to health plan; Support services (expert support, counselling services, etc.); Provision of household support services; Work-life balance incentives at work (nursing breaks, gym time, nap time in pods, etc.); Re-entry mechanisms)

When did you begin working in your current position? (Open-ended/Write-in)

Indicator	Sub-Indicators	Career Stage	Survey Questions
11. Work-life balance	Care and household responsibilities Sharing of responsibilities Supports for leave due to care responsibilities	Participation	<p>Individual:</p> <p>Have you ever taken a career break (including parental leave) of six months or longer? If yes,</p> <p style="padding-left: 40px;">What was the main reason? (Parental leave, Care for family member (other than children), Other: open-ended/write in)</p> <p style="padding-left: 40px;">Upon return, did you experience a change in what was expected from you or did you feel like you missed out on promotions?</p> <p>What is your current domestic arrangement? (Live alone, Live with partner, Live with other adults)</p> <p>Do you have dependents (children or other persons under your responsibility) in your care? (Yes; No)</p> <p>Do you have children? If yes,</p> <p style="padding-left: 40px;">How many weeks were you and your partner combined allowed to take as parental leave after your first child was born or adopted? (Number of weeks you were allowed to take, Number of weeks you actually took; Number of weeks your partner was allowed to take; Number of weeks your partner actually took)</p> <p style="padding-left: 40px;">When your child(ren) was/were under school age, how were they primarily cared for? (Primarily by myself, Primarily by my partner, Equal share between me and my partner, Primarily a combination of family members, Primarily in privately financed care (e.g., babysitter), Primarily in publicly financed care, N/A)</p> <p style="padding-left: 40px;">If you had a partner at the time, was your partner working for remuneration? (No; Yes, my partner was working part-time; Yes, my partner was working full-time)</p> <p>Please estimate the number of hours per week that you spend doing unpaid household work. (Shopping/errands; Food preparation; Laundry; Household maintenance; Gardening)</p> <p>Did you ever have to turn down the opportunity to travel abroad to study, teach, work or conduct research (including sabbatical year)? If so, for what reasons? (Care of children; Care for other dependents; Financial; Gender norms; Cultural expectations; Safety; Other (open-ended/write in))</p> <p>(Conditional for students) Have you ever had a period of time during your professional training where it was difficult for you to fulfil your work responsibilities because of your personal responsibilities? If yes,</p> <p style="padding-left: 40px;">What were the main reasons? Mark all that apply. (Care for children; Care for family member (other than children); Illness/accident; Burn out; Depression; Change in marital situation (for example divorce); Death in family or of closely related person; Other (open-ended/write-in))</p>

Indicator	Sub-Indicators	Career Stage	Survey Questions
12. Career progression and leadership – Individual perspective	<p>Career progression supports</p> <ul style="list-style-type: none"> field work and at-sea opportunities and experiences mentorship women's networks professional development leadership training career information <p>Collaborations (number of co-authored papers)</p> <p>Publications in peer-reviewed journals, including as first author</p> <p>Conferences (invited speakers, panellists)</p> <p>Leadership</p>	Participation, Progression and Leadership	<p>Individual:</p> <p>Have you been given access to support for progressing your career? (Mentorship, Networking groups, Professional development, Leadership training, Access to career information)</p> <p>Have you been given adequate field (e.g., at-sea) opportunities to progress your career? (Yes; No)</p> <p>Do you feel you have been adequately supported to take on leadership positions in your workplace? (Yes; No)</p> <p>Have you ever been promoted? (Yes; No)</p> <p>Do you consider that you have opportunities to participate in conferences/workshops outside your workplace, either nationally and internationally?</p> <p>Please use the following definition of Managers (ISCO-08) (Described in the Classifications section of this document): Are you currently a manager?</p> <p>Mark all positions you have ever held. (List of leadership position from Classification section of this document)</p> <p>In the last five years, how many times have you been a panellist or an invited speaker at a conference? (Open-ended/write-in)</p> <p>Have you ever been invited to participate in committees by the ministry responsible for ocean science, deep-sea research or mining in your country? (Yes; No)</p> <p>Have you ever participated in governing councils at your institution (elected, appointed)? (Yes; No)</p> <p>How many publications or other outputs have you had in the last five years? (Articles in refereed journals; Books and monographs; Book chapters; Patent applications; Patents granted)</p>
13. Research funding and remuneration	<p>Remuneration</p> <p>Access to research funding (stipends, grants, etc.)</p>	Education	<p>Individual:</p> <p>What are your gross annual earnings at your current job, in USD? (Open-ended/write-in)</p> <p>Have you ever applied for funding or grants over the past five years? If yes,</p> <ul style="list-style-type: none"> How many times have you applied for grants or stipends from national and international institutions as a principal investigator over the past five years? (National funding institution, International funding institutions) How many times have you applied for grants or stipends from national and international institutions as part of a team over the past five years? (National funding institution, International funding institutions) From the applications as a principal investigator, how many grants or stipends have you been awarded? (National funding institution, International funding institutions) From the applications as part of a team, how many grants or stipends have you been awarded? (National funding institution, International funding institutions)

Indicator	Sub-Indicators	Career Stage	Survey Questions
			<p>In the last five years, how many times have you received grants or stipends from national or international institutions allowing you to stay three months or longer at a foreign university to teach or do research? (National institutions, International institutions)</p> <p>In the last five years, how many times have you received grants or stipends from national or international institutions allowing you to attend national or international training or conferences? (National institutions, International institutions)</p>
14. Social norms and attitudes	Expectations of women and men	All career stages	<p>Individual:</p> <p>Do you think women can be as successful as men in ocean sciences or deep-sea research? (Yes; No)</p>
15. Discrimination and harassment	Experiences of discrimination and harassment, including for field and shipboard work	All career stages	<p>Individual:</p> <p>Have you ever felt discriminated against at work? If yes,</p> <p>What was the nature of the discrimination? Mark all that apply. (Evaluation of awarding of your achievements; Not offered a job or promotion; Isolated or ignored at work; Not paid fairly compared to others; Wrongful dismissal; Offensive remarks)</p> <p>What was the basis of the discrimination? Mark all that apply. (Gender, Age, Race or ethnicity, Religion or belief, Personal or family situation, Disability, Sexual orientation, Marital status)</p> <p>How do you think this has affected your career? (open-ended)</p> <p>Have you ever been the recipient of unwanted leers, sexual comments, noises or gestures at your workplace?</p> <p>Do you believe that female and male employees performing the same job are treated equally where you work? (No – consistent inequities in treatment of men and women; Depends – sometimes equitable, sometimes not; Yes – always equitable)</p> <p>Do you believe that employees performing the same job are treated equally where you work, regardless of ethnicity, nationality, race, or religion?</p> <p>Are you personally aware of instances where women or members of minority groups have been overlooked with regard to career opportunities? (No – equitable treatment; Yes – inequitable treatment)</p> <p>Do you know any cases of harassment within your environment at work, or in your studies, on the following grounds: Gender, Nationality or ethnicity, Age, Religion or belief, Sexual Orientation, Marital Status or Other? Please provide details. (open-ended)</p> <p>Looking back during your studies and up to now, have you yourself ever been harassed? (During your studies; At a job placement, internship apprenticeship; When you were applying for a high position; In your work environment; I don't know)</p>

Annex B - Country Profiles: data notes and sources

Data sources for the country-level gender-related data presented in the Country Profiles (see In Focus – LDCs, In Focus – LLDCs, and In Focus – SIDS):

- Population: <https://unctadstat.unctad.org/CountryProfile/GeneralProfile/en-GB/780/index.html> (2020)
- Income level: The World Bank classifies economies for analytical purposes into four income groups: low, lower-middle, upper-middle, and high income. World Bank – gross national income (GNI) per capita data in U.S. dollars (2021-2022) <https://datatopics.worldbank.org/world-development-indicators/the-world-by-income-and-region.html>
- Global Gender Gap Ranking: (World Economic Forum, 2021)
- Literacy rate, age 15+: <https://data.unwomen.org/countries> (data available as of December 2020)
- Enrolment in tertiary education: Total enrolment in tertiary education (gross rate), regardless of age, expressed as a percentage of the most recent five-year age cohort that has left secondary school. (World Economic Forum, 2021)
- Women in parliament: <https://data.unwomen.org/countries> (February, 2021)
- Women aged 15-49 experiencing gender-based violence in the home: <https://data.unwomen.org/countries> (2018)
- Fraction of time spent on unpaid care and domestic work, age 15+: <https://data.unwomen.org/countries> (data available as of December 2020)

Annex C - Country Profiles: data notes and sources

The following international definitions and classifications have been used in this study.

C.1 STEM Classifications

The UNESCO glossary definition of STEM skills was used: “skills expected to be held by people with a tertiary-education level degree in the subjects of science, technology, engineering and maths.” (UNESCO-UNEVOC, 2022, 2022)

C.2 Classifications of research and development, education, and occupations

The Frascati Manual (OECD, 2015a) for collecting and reporting data on research and experimental development, contains three international classifications that have been incorporated into the self-reporting in the Individual Survey for this study:

- The International Standard Classification of Education (ILO, 2014) is used for respondents to self-report their education level and field.
- The Fields of Research and Development (OECD, 2015b, 2015b) was used where possible to identify the categories of research fields.
- For respondents who self-identify as not working in academic research, respondents were asked to use the 2008 International Classification of Occupations (Government of Canada, 2011; ILO, 2016) to self-identify their occupation.

C.3 Classification of salary ranges

Data to benchmark survey ranges across countries comes from the World Bank's reporting on per capita gross domestic product of global countries, in United States dollars. (The World Bank, 2020)

C.4 Assessing the role of women in leadership positions

To assess the participation of women in leadership roles, the ISCO-08 definition of Managers was used: "Managers plan, direct, coordinate and evaluate the overall activities of enterprises, governments and other organizations, or organizational units within them, and formulate and review their policies, laws, rules and regulations." (ILO, 2012) A reference list of relevant Manager occupations was provided in the Individual Survey: Legislators and Senior Officials, Managing Directors and Chief Executives; Business Services and Administration Managers; Research and Development Managers; Aquaculture and Fisheries Production Managers; Mining, Construction and Distribution Managers.

For the Individual Survey, a broad and an indicative list of leadership positions/roles was developed to capture manager and non-manager leaders and is as follows:

- President or CEO
- Rector or VP
- Dean or Vice-dean
- Executive
- Director
- Vice-director or Head of institution



International Seabed Authority

14 - 20 Port Royal Street, Kingston, Jamaica

Phone: +1 (876) 922-9105

Fax: +1 (876) 922-0195

www.isa.org.jm