

The United Nations Decade of Ocean Science for Sustainable Development (2021–2030)

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## 1 This Report

The Canadian Launch Event for the Ocean Decade was hosted by Fisheries and Oceans Canada (DFO) and held virtually on March 3, 2021 with nearly 400 participants in attendance.

This report summarizes input received from participants present at the Launch Event. Due to the number of participants and structure of the session, it does not necessarily capture every comment raised nor does it necessarily

reflect the perspectives of DFO nor those members of the Canadian ocean community who were unable to attend the event.

Content was captured through a pre-event questionnaire, several polls taken during the event, and facilitated breakout sessions, as well as comments and questions posted in the virtual chat box. This Launch Event was a first introduction to the Ocean Decade for many participants and serves as a starting point for future discussions, as such any gaps in the content should serve as inspiration for future work.



## 2 Executive Summary

The 72<sup>nd</sup> Session of United Nations (UN) General Assembly proclaimed that 2021–2030 would be the **UN Decade of Ocean Science for Sustainable Development 2021–2030** (referred to as 'the Ocean Decade').

The Ocean Decade is a global effort that aims to transform ocean science in order to reverse the decline in ocean health and ensure a sustainable ocean for future generations. In preparation for the Ocean Decade, the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific, and Cultural Organisation (UNESCO), in cooperation with Member States and the global ocean community, prepared an Implementation Plan for the Ocean Decade.

In the context of the Ocean Decade, 'ocean science' includes not only the natural sciences but also social sciences, Indigenous knowledge, technology development, local and experiential knowledge, the humanities, and policy.

On March 3, 2021, Fisheries and Oceans Canada (DFO) hosted a Launch Event to celebrate the start of the Ocean Decade, recognizing that significant efforts have also been made by various members of the Canadian ocean community to support the Ocean Decade Preparatory Phase (2018–2020). The Launch Event provided an opportunity to share information about the Ocean Decade, the potential for new and enhanced partnerships, and the importance of inclusivity and transdisciplinary collaborations going forward. The Launch Event underscored the focus on co-designing a Canadian approach to advancing the Ocean Decade and sought input from participants in order to begin to frame these efforts.

Approximately 400 participants (58% self-identified as women) were in attendance at the Launch Event. There was strong representation from the Canadian federal government and academic institutions, with industry, non-governmental organizations (NGOs), Indigenous organizations, and youth also present. Although participation covered many sectors of the Canadian ocean community, it was noted that there were some who were not present and whose contributions would be valuable to the discussion.

The Launch Event generated over 3000 written comments, in addition to the verbal discussions held during breakout groups, that expressed the views of participants regarding the different roles and responsibilities of different members of the ocean community, including DFO. In addition, participants provided their ideas about how Canada, building on its strengths and experiences, could contribute leadership in advancing the work of the Ocean Decade (e.g. in collaborative projects related to the Arctic, the consideration of Indigenous knowledge in ocean science and its inclusion in decision-making, and understanding the impacts of climate change).

In terms of governance and process, there was a strong interest in ensuring that an inclusive approach was taken, in particular the meaningful inclusion of youth and Indigenous communities.

A follow-up workshop is being planned for May 12–13, 2021 that will build upon the initial discussions of the Launch Event to further engage the Canadian ocean community in the co-design of Canadian priorities and actions to advance the Ocean Decade.

## 3 Introduction

### 3.1 THE OCEAN DECADE

In recognition that the world's oceans are under threat and of their importance to survival, the 72<sup>nd</sup> Session of United Nations (UN) General Assembly proclaimed that 2021–2030 would be the UN Decade of Ocean Science for Sustainable Development 2021–2030 (referred to as 'the Ocean Decade'). This initiative is designed to contribute to the Sustainable Development Goals of the 2030 Agenda. In the context of the Ocean Decade, 'ocean science' includes not only the natural sciences but also social sciences, Indigenous knowledge, technology development, local and experiential knowledge, the humanities, and policy.

In preparation for the Ocean Decade, the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organized prepared, in cooperation with Member States and the global ocean community, an <a href="Implementation">Implementation</a> Plan for the Ocean Decade an overview of the framework for the Ocean Decade is provided in Figure 1. The vision and mission of the Ocean Decade are shown in Figure 2.

The Ocean Decade aims to provide a platform to stimulate ocean science that will increase our understanding of the ocean and inform policy and decision-making. In order to achieve this, the Ocean Decade will try to mobilize resources and technological innovation to build capacity, develop scientific knowledge, build and share infrastructure, and foster partnerships for a sustainable and healthy ocean. In doing so, the Ocean Decade intends to facilitate a transition to the 'ocean we need for the future we want'—one that supports a sustainable, equitable and healthy future for all.

## "OCEAN SCIENCE IS..."

(in the context of the Ocean Decade)



natural sciences



social sciences



Indigenous knowledge



technology development



local and experiential knowledge



humanities



policy

The scope of the work envisaged during the Ocean Decade is beyond the capacity of any single nation, any single stakeholder group, any single generation, or any single scientific discipline. The Ocean Decade is an opportunity to work together for the common good in a true spirit of multilateralism and transdisciplinarity. Co-design, engagement, and partnerships are key to the success of the Ocean Decade. The Ocean Decade provides a unique opportunity to convene a wide range of partners to collectively align their research, investments, and initiatives around a set of common challenges, and thus ensure that the result of the collective effort will be exponentially greater than the sum of the parts.

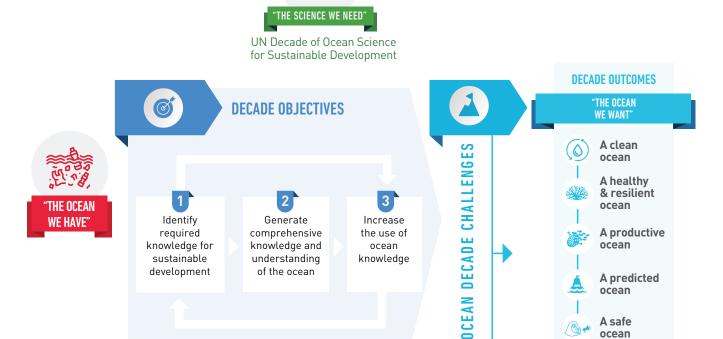


Figure 1. Moving from "the ocean we have, to the ocean we want" as outlined in the Ocean Decade Implementation Plan (Version 2.0). ©UNESCO

**DECADE ACTIONS** 

• Programmes Projects

Contributions

Activities

## **VISION**

The science we need for the ocean we want.

## MISSION

Transformative ocean science solutions for sustainable development, connecting people and our ocean.

ocean

ocean

ocean

An accessible

An inspiring

& engaging

Figure 2. The vision and mission of the Ocean Decade.



## 3.2 THE CANADIAN LAUNCH EVENT

The Canadian Launch Event for the Ocean Decade was hosted by Fisheries and Oceans Canada (DFO) and held virtually on March 3, 2021 with nearly 400 participants in attendance. The event included a welcome by Indigenous Passamaquoddy Elder Maggie Paul, remarks from Ken Paul of the Wolastoqey Nation of New Brunswick, remarks from the Minister of Fisheries, Oceans and the Canadian Coast Guard the Honourable Bernadette Jordan, and a scene-setting presentation co-hosted by Paul Snelgrove (DFO's Departmental Science Advisor and Research Professor at Memorial University of Newfoundland) and Allison Webb (Lead, Ocean Decade Office, DFO). Breakout sessions provided a venue for participants to discuss and provide input on topics related to Canadian Ocean Decade engagement.

The purpose of the Canadian Launch Event was to:

 Inform key partners and the broader Canadian public about the Ocean Decade with the intent of generating interest and excitement amongst partners for collaborating in advancing the work of the Ocean Decade.

- Solicit advice from participants in the following areas:
  - Potential Canadian niches/contributions to helping focus future priorities and actions;
  - Who is not participating and needs to be, including thoughts on the role of DFO in the context of the Ocean Decade:
  - How to change the way the Canadian ocean community is working together and what the challenges and opportunities are to transform the way we do ocean science.
- Confirm DFO's Ocean Decade Office as a focal point for coordination on the Ocean Decade and provide contact and website information.

The Launch Event was not designed to develop a roadmap for Canada to advance work of the Ocean Decade as this will be addressed in a future workshop planned for Spring 2021.

## What We Heard

## 4.1 AWARENESS / UNDERSTANDING

During the event, participants were asked to rate their level of knowledge of the Ocean Decade and the results demonstrate one of the first challenges to address is ensuring awareness of this initiative and its Implementation Plan that sets the direction for this work (Figure 3).

Our oceans are highly complex environments, alive with life, providing value to human beings from the practical to the metaphysical. Creating "the ocean we need", as the Ocean Decade encourages us to do, will be an ongoing challenge. The event confirmed that "the ocean we need" means vastly different, and sometimes completely opposite, things to different groups of people who have different goals for the ocean.

Compounding the challenge, participants spoke of many overlapping layers of distrust within the current ocean community and between different sectors/members. Some considerations that were mentioned as contributing to the distrust include the footprints of colonialism and racism throughout traditional ocean research, an absence of visible minorities from key research positions, the sense that Indigenous views and approaches are absent or overlooked, and that non-English-language publications seemingly remain largely unknown by researchers and policymakers.

It was also mentioned that there is a growing prevalence of "alternate facts" and "fake news" permeating the conversations of the early 21st century, resulting in a segment of the population that does not trust science, scientists, or the government.

It was recognized that we will need to understand and explain the importance and value of the ocean to society and communicate the Ocean Decade through multiple knowledge systems. Further, we will need more "open science" that is inclusive and co-designed.

1. What is your current level of knowledge about the UN Decade of Ocean Science for Sustainable Development? Quel est votre niveau connaissances actuel sur la Décennie des Nations Unies pour les sciences océaniques au service du développement durabl (Single

Just heard of it I J'en ai juste entendu parler	(38) 15%	
I know a bit about the idea I Je connais un peu l'idée	(82) 32%	
I am familiar with the overall goals I Je connais les objectifs généraux	(93) 36%	
I am familiar with the implementation plan I Je connais le (8) 3% plan de mise en œuvre		
I am very knowledgeable and have been involved already I Je suis très bien informé et j'ai déjà été	(34) 13%	

**Figure 3.** Level of awareness of the Ocean Decade—Poll result from Launch Event.

### 1. Which Decade Outcome inspires you the most? Quel résultat de la décennie vous inspire le plus? (Multiple Choice)

A clean ocean / Un océan propre	(57/236) 24%
A healthy and resilient ocean / Un océan sain	(172/236) 73%
A productive ocean / Un océan productif	(44/236) 19%
A predicted ocean / Un océan prédit	(38/236) 16%
A safe ocean / Un océan sûr	(28/236) 12%
An accessible ocean / Un ocean accessible	(39/236) 17%
An inspiring and engaging ocean / Un océan inspirant et engageant	(64/236) 27%

**Figure 4.** Which Decade outcome inspires you the most? Poll result from Launch Event.

## 4.2 OUTCOMES: OCEAN AND ENVIRONMENT

The Ocean Decade Outcomes and Challenges were described to participants as they provided a foundation to guide our work. A poll was launched to understand which of the Outcomes inspired participants the most, with 'A healthy and resilient ocean' resonating with an overwhelming majority of event participants (Figure 4).

In addition to the poll, there were other comments offered including that, from an Indigenous perspective, it is important to consider the Seventh Generation

Principle which states that we should make decisions about how we live today based on how our decisions will impact the future seven generations. It was discussed that many of the Western scientific concepts—biodiversity, sustainability, food security, stewardship, and many more—fall under this Indigenous view of the natural world.

Within the diversity of participant feedback were many suggestions for certain specific thematic areas of focus for the Ocean Decade (i.e. global bathymetry, ocean superclusters, and sustainably managed marine protected areas). In addition, suggestions were made on the need for a governance to develop and explain project and funding priorities for ocean science activities in Canada in support of the Ocean Decade.

It was recognized that for the Ocean Decade to truly succeed, a key objective will need to be that civil society sees the ocean differently—and not indifferently. There will need to be a societal culture change in how we interact with our oceans, and a similar transformation in how we currently conduct ocean science.

### 4.3 INCLUSION/ ENGAGEMENT

Participants at the Ocean Decade Launch event were clear in their commentary that the Ocean Decade must be inclusive of a diversity of viewpoints. Many comments called for changes to ocean science, providing equal voices across genders, racialized minorities, Indigenous peoples, and to those who study and publish in languages other than English. The need to make the Ocean Decade accessible to all members of society, in particular the importance of meaningfully engaging youth was highlighted.

The cautionary tone in the comments offered by participants was to avoid tokenism and ensure that engagement is genuine so that voices from all groups are seen as meaningfully evolving our understanding and our practices.

### 4.4 GENDER

Comments and concerns about gender equity in ocean science were sprinkled throughout the overall participant commentary. The overall sentiment was perfectly encapsulated in a single comment from a participant: "Gender balance is important, but this is the most basic aspect of diversity. I hope that in 10 years we will be focusing on other aspects of Equity, Diversity and Inclusion in ocean science."

Figure 5 describes which gender participants identified with and indicates the majority of participants were people who self-identified as female.

### 4.5 INDIGENOUS

It was recognized by participants that the history of Canada impacts Indigenous nations, both as a geopolitical construct and through its colonial systems. There was a strongly stated need of non-token engagement and inclusion of Indigenous knowledge, Indigenous voices, and Indigenous peoples throughout all projects undertaken during the Ocean Decade.

Brokering trust, understanding, and meaningful ways of working, specifically between Western science and Indigenous knowledge systems, was identified as an early step. As mentioned in Section 3.1, for the purposes of the Ocean Decade, the definition of ocean science is highly inclusive, and broader than only natural science. It was noted that art, social sciences, and

1. Gender parity is an important principal of the decade. Please share with us (anonymously) how you identify: | La parité entre les sexes est un principe important de la décennie. Veuillez partager (de manière anonyme) comment vous vous identifiez:

Female - Femme	(148) 58%
Male - Homme	(101) 40%
Other - Autre	(1) 0%
Prefer not to say - Je préfère ne pas le dire	(3) 1%

**Figure 5.** Gender identification among participants—Poll result from Launch Event.

Indigenous knowledge also contribute to our understanding of the oceans. As a result, work to advance the Ocean Decade will need to come to terms with how different knowledge systems should be considered and integrated. Some participants raised that the primary change desired is not technology-based, but is rather socio-cultural in nature, and as such, insight and solutions will need to be drawn from all areas of knowledge in order to realize the transformation required to achieve the Decade Outcomes.

Some noted that Canada has the opportunity to play a leadership role, globally, in the integration of multiple ways of knowing as inputs into strategies for addressing ocean sustainability challenges. Some early progress has been made, as reported by several participant comments, but other comments, both in their form and their substance, made it clear that more effort is needed.

### 4.6 YOUTH

From the diversity of commentary received at the event, it would appear that youth engagement and inclusion in the Ocean Decade was likely achievable and with more pathways to success already in place, than with any other identified community. Multiple comments spoke to the value of a Youth Advisory Council, possibly structured at national/regional/local levels to provide opportunities to enable and ensure the engagement of youth across Canada, including those who are living outside coastal communities.

Many other opportunities for engagement of youth were suggested, including youthled conservation projects that promote ocean-positive impacts, educational packages for schools that are available nationally to contextualize the importance of ocean health and the Ocean Decade itself to youth, etc. It was also raised that it will also be important to develop strategies for youth to foster an ocean culture, for example, through targeted ocean literacy campaigns (e.g. a project in France provided students the opportunity to adopt an Argo float and to follow it on its travels).

As a counterpoint to the above, there were relatively few youths visibly in attendance at the Launch Event. Youth participants reminded us that they are the future of our society. One participant mentioned that it could at times be difficult to hear the voices of youth amidst the voices of so many senior scientists.

### 4.7 CANADIAN PUBLIC

Participants were clear that broad participation would require a multiplicity of strategies, approaches and programs, offered in a decentralized manner. Similar to strategies for youth, there was also a desire to have community-level Ocean Decade programming available that is accessible to all Canadians, that meaningfully engages them in projects that will, in aggregate, lead to the sustainable and healthy oceans that the Decade seeks to deliver.

Many ideas for local-level programming were suggested at the event, including:

- Co-designing ocean science with local communities and fostering citizen science opportunities.
- Engaging citizens beyond the coast—getting central Canadians to consider themselves part of a 'maritime' nation.
- Involving ocean literacy organizations to engage community groups and recruit non-traditional groups to be a part of events and activities.
- Enabling conversations about the role of communities and culture in ocean health.



# 5 Canada's Unique Role in the Ocean Decade

Participants were asked about where Canada could leverage its talents/expertise or what niche could Canada inhabit to support the Ocean Decade effort, and through those discussions it was noted that Canada is one of few countries that borders on multiple oceans and hence we have a broad range of ocean experience and perspectives to offer.

An extensive list of ocean science projects was identified as examples, and some participants indicated that Canadian investments in world-leading studies and approaches should continue, particularly to ensure FAIR<sup>1</sup> and TRUST<sup>2</sup> principles are incorporated into data management and ocean policy development. Although Canada is active in many areas of ocean science, participants highlighted a number of particular areas where they would expect Canada to play a leadership role during the Ocean Decade:

Arctic. It was noted that Canada is, and needs
to continue to be, a leader in Arctic studies. In
addition, it was communicated that Canada
has a role to play in understanding and
conserving the Arctic Ocean through ocean
science and sustainability-based policies and
management decisions, particularly with the
impacts of climate change and the bounty of
natural resources found in the North.

- Indigenous knowledge. Considering that Canada is one of few countries globally that still has a rich existing tapestry of Indigenous Peoples, there is an opportunity to include Indigenous learnings and wisdom in our approaches and to communicate those approaches to other nations that lack internal access to this layer of knowledge.
- Collaboration. Canadians are generally seen as good collaborators on the international stage, and as such, Canada could continue to play a leadership role in certain areas to advance progress under the Ocean Decade.
- Climate Change. As a northern nation our climate is changing rapidly, particularly in the Arctic, so impacts are being seen earlier and more dramatically than in other parts of the globe. Given these considerations, it was noted that Canada is thus an ideal location for climate change studies.

## 5.1 ROLES AND RESPONSIBILITIES

Participants were asked a variety of questions in the breakout sessions that were designed to gather input that could help shape the role of DFO in the Ocean Decade and to define a role for others in an effort to capitalize on the strengths of all ocean community members.

Some participants provided comments on the different sectors involved in ocean science but it was noted that if the Ocean Decade is to succeed, trust levels between and amongst the many partners is needed.

Exploring roles and responsibilities for the many facets and functions involved in making meaningful progress under the Ocean Decade should continue to take place with the understanding

FAIR – Findable, Accessible, Interoperable and Reusable

<sup>2</sup> TRUST – Transparency, Responsibility, User focus, Sustainability and Technology

that it will be iterative and open to change based on experience. As one participant stated, "Setting priorities is very hard for us—how do we do this, nationally, and in an equitable fashion?".

### 5.1.1 Leadership / Governance

As noted above, it was expressed by participants that 'someone' needs to lead, provide overall guidance, direction, consistency of application, funding, and communications. It was also clear that most participants were wary of leadership/governance being left to only governments and academics and a collective governance model where many stakeholders from varied and diverse sectors have equal voices was suggested.

Participants suggested that Canada should inform its governance practices based on what other countries are designing and using for their own Ocean Decades programs, particularly countries who have significant and respected Indigenous involvement in governance and decision making.

### 5.1.2 Coordination / Connection

"Coordination and connection" was the theme most commonly expressed by participants. A variety of barriers were mentioned—geographical, linguistic, departmental, generational, inside the scientific community vs outside, intellectual property concerns (both in academia and the private sector), etc.

It was clear from the discussions among participants at the session that coordination, collaboration, and co-design should be at the heart of a successful Ocean Decade. Participants repeatedly expressed the desire to move to a more interdisciplinary approach, with intersectoral projects that involve, meaningfully and

from the outset, participants that have never been a part of ocean science research projects in the past. It was expressed that Canada will require a coordination body that is sufficiently resourced to make connections dynamically across the Ocean Decade.

One participant recommended to "Ensure that those who will eventually use the information are engaged in all stages of a project, from conception, through execution and reporting. A fault in typical grant competitions is that there is no funding for engagement at the beginning of the proposal process, before the goals of the project are set."

#### 5.1.3 International

Participants expressed a number of ideas about international activities. The potential value of "international ocean science diplomacy" and the "need for support for international collaboration and coordination, so we leverage other initiatives without reinventing the wheel." They also voiced the desire to "encourage and support international engagement by many different parties—not just governmental—to create equity in participation." Participants had questions about who plays that international relations role and how well they reflect all stakeholders in Canada. Additionally, a question regarding how international activities would be funded was raised.

Many participants spoke of their expectation that Canada would stand up to the challenge of acting as a global leader on this initiative, with "Canada assuming a leadership role internationally for ocean literacy and ocean science."

### 5.1.4 Communications

Participants identified the need to make the Ocean Decade meaningful and its work and messages consumable to the public. In particular, several highlighted the need to "understand the power of storytelling" and reminded us that "Canada has a strong arts community that can communicate the importance of oceans." It was noted that plain language science can serve multiple purposes: it can help with public awareness and help members of the public "connect the dots" about ocean science; it may also inspire future scientists to choose a career in STEM, focused on the oceans; and it can also help reinforce consumer and corporate decisions about why one choice matters more than another, particularly considered over a longer timeframe.

Language barriers were brought up by many participants, including the suggestion that the principle of "not everything in all languages, but some things in more languages" warrants consideration.

### 5.1.5 Education

Many participants commented on the need for greater ocean literacy and for school curricula across the country to reflect a more common and concerned curriculum about the state and importance of our oceans. There were many

creative suggestions for engaging citizens so that people will want to learn more about the ocean and ocean science

Many organizations were named who offer educational possibilities and it was noted that coordination of efforts nationally, regionally, and locally will help in aligning language. Some suggested that the extent to which the Ocean Decade can instruct without causing confusion will inform its overall success.

## 5.1.6 Legislative and Regulatory Coordination

Several participants spoke of the need to assess the rules by which systems work, particularly the laws in effect provincially, nationally and internationally.

Within Canada, participants pointed at a lack of coordination between federal and provincial/ territorial legislation and suggested that there are laws at all levels from municipal through to federal that should be reviewed in the best interests of sustainable oceans management, ideally through a lens that considers the Indigenous concept of the seven generations. It was suggested that this review take place in the context of the Ocean Decade. It was also noted that Canada's privacy legislation stands in the way of our best understanding of ocean science.



It was expressed that although it is challenging to create global legislation that protects the oceans outside the boundaries of any individual country, Canada, with its extensive ocean frontage, is ideally placed to become a global leader in redefining international legislation to protect portions of the ocean that lie outside of current national boundaries.

## 5.1.7 Expectations around the Role of DFO

It was acknowledged that DFO is not the only partner that can or will take leadership when it comes to the Ocean Decade given the focus on collaboration and the wide scope of the work. Considering this, one of the key questions that was asked of Launch Event participants was "what would be the most value-added role of DFO in the Ocean Decade?"

Many expectations were expressed around the role of DFO in enabling or convening the Ocean Decade, including some concerns around its ability to be nimble and resilient to changing priorities. However, there was an expectation expressed by some that Ocean Decade funding, communication, and coordination—both nationally and internationally—related to the Ocean Decade would flow from DFO.

Several participants also commented on the value of creating a new construct that would lead on the Ocean Decade and include broad representation from key Canadian stakeholder groups. Expectations in this area among participants were high, and it was acknowledged that further discussion is required to determine how DFO can effectively support the outcomes of the Ocean Decade, while at the same time be consistent to their mandate and consider the valuable roles of partners towards this effort. It was also noted that Canada is expected, as per the Ocean Decade Implementation Plan, to

establish a National Decade Committee that will play a role in addressing the tasks outlined above.

## 5.2 THE OCEAN SCIENCE OF THE OCEAN DECADE

It was expressed that natural sciences and social sciences should collaborate more on projects. In particular, some participants voiced the importance of including Indigenous knowledge in ocean science projects, and that projects, funding mechanisms, teams and even the datasets of the future need to be different than those from of the past. Some participants were concerned that if most ocean science going forward is simply a continuation of ocean science already underway, without a systemic transformation, there is a risk of continuing the status quo, rather than making possible necessary changes to the prioritization of research and funding (and focus) to successfully meet the needs and expectations of the Ocean Decade.

### 5.2.1 Projects

Participants mentioned or noted a number of projects that are currently underway or under consideration that support the Ocean Decade. Participants also raised the engagement with youth, communities, and Indigenous groups in some projects and there were suggestions that this sort of broader engagement is something that should be prioritized for Ocean Decade research. Several participants suggested that now is a good moment to take stock and to ensure that we are setting up multi-year, transdisciplinary ocean science projects that will produce useful and aligned results in later years of the Ocean Decade.

A number of participants underlined the importance of investments in understanding

the Arctic, particularly given the dynamic nature of that environment due to ongoing climate change, and the inevitable global rush for resources that is forthcoming. Participants raised the desire for clarity around Arctic ocean coordination, policy, science and stewardship, and many spoke of the need of engaging meaningfully and from the outset with Canada's Inuit peoples to do this work.

### 5.2.2 Funding/Economics

Funding was raised as an area of interest in the discussion. Ideas for funding initiatives included models that support both new research and ongoing work, as well as those that provide support for community-based research, citizen science, data management, and ongoing initiatives that are already contributing to outcomes of the Ocean Decade, for example. Funding to ensure Indigenous governments and communities are able to partner was also flagged as an important consideration. Some participants suggested that "all grants require multidisciplinary and cross-sectoral solutions" and others suggested that private sector investments in the ocean (e.g. offshore wind, offshore oil and gas, aquaculture) could be leveraged more effectively than they are at present. Greater investments in the Canadian ocean technology sector and a national-level funding envelope that supports and sustains local programs across the Ocean Decade may be required, as well as a governing body that acts as an aggregator of resources and best practices.

### 5.2.3 Infrastructure/Tools

Participants shared some information about a range of existing and desired technology and tools that might help us realize the vision set out in the Ocean Decade, from dedicated offshore science research vessels to at-sea data streaming capabilities, to tools for monitoring

ocean activity and health, to platforms like eOceans, "a platform (software) for participatory ocean science that provides collaborative real-time and transparent ocean monitoring and actionable results."

Many spoke of the desire for infrastructure that enabled more effective data sharing. There was also a great interest in innovation—particularly in developing an environment in which Canadian initiatives might create innovative technologies and solutions to current challenges.

### 5.2.4 Data

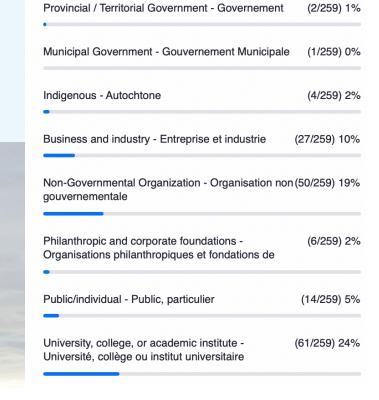
Many participants indicated that a key element of the Ocean Decade will be data—in particular timely, open access to accurate data for researchers to draw inferences and learn how our oceans are changing around us, as well as data that is appropriately interpreted to inform policy and decision-makers regarding all aspects of whole ocean health and the changing ocean environment.

It was acknowledged that Canada can play a lead role in many areas of the Ocean Decade (e.g. ocean characterization, marine special data, and the development and creation of open access to long-term, high-resolution data sets to inform climate change research, for example). However, it was noted that the critical element will be the extent to which data can be openly and easily accessed; these were area that were discussed as key gaps.

It was also expressed that collaboration and co-creation will also be critical elements of data collection with one scientist participant asking "what kinds of data products do decision-makers need?" Closing the gap between those who create data and those who use that data to make critical policy decisions will be a key function—further underlining the need mentioned earlier for solutions that are multidisciplinary and cross-sectoral.

## **6 Absent Voices**

Not all members of the Canadian ocean community participated, or at least were not identified, at the Launch Event. A poll at the event (Figure 6) indicated that 87% of the participants (who chose to participate in the poll) were from the federal government (42%), followed by academics (24%) and non-governmental organizations (19%), indicating that there more engagement is required to ensure other ocean community members, sectors, and stakeholders are included in the Ocean Decade discussion.



1. Which sector do you represent? Quel secteur

(108/259) 42%

représentez-vous?(Multiple Choice)

Federal Government - Gouvernement Fédérale

## 7 Conclusion and Next Steps

The workshop was a useful first step to bring together some members of the Canadian ocean community and DFO noted with gratitude the active participation of those in attendance. It was indicated by DFO that the information gathered during the event and captured in this report would be used to inform a workshop to be held May 12–13, 2021 that will focus on creating a Canadian roadmap to support the Ocean Decade; in addition a post-event survey was shared with participants that was intended to collect additional ideas about Canadian engagement.

Information on DFO's newly launched Ocean Decade website and an email address for their dedicated Ocean Decade office was provided to facilitate information sharing (Figure 7).

Contact DFO's Ocean Decade Office:



DFO.OceanDecade-DecennieOcean.
MPO@dfo-mpo.gc.ca



https://dfo-mpo.gc.ca/ ocean-decade-decennie-ocean/



Fisheries and Oceans

Pêches et Océans Canada

**Figure 7.** DFO Ocean Decade Office contact information and website that will be used to share information about the Ocean Decade.



