# Delivering the best science and technology to save corals





CORDAP: delivering the best	science
and technology to save cord	ls

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Corals and reefs are the rainforests of the oceans.

They are one of the most valuable ecosystems on our planet, providing shelter and support for at least 25% of all marine species. They also provide vital environmental services for human well-being, providing coastal protection, acting as a source of food security, supporting livelihoods, and offering economic opportunities, all to the benefit of at least one billion people across the world.

And yet they are at risk of functional extinction in the next decade, if we don't act.

For the first time, an entire ecosystem that supports millions of species and people may be lost at the hands of humanity, threatened by a combination of climate change, ocean acidification and our over-exploitation of marine resources.

Ambitious international action is needed to protect and restore the world's reefs. That is why the G20 launched the Coral Research & Development Accelerator Platform (CORDAP), to redefine the boundaries of what's possible for coral conservation and restoration, through science and research and development. Because accelerating innovation is our best chance to save corals.

Since its inception in 2020, CORDAP has been bringing together experts from across the world, crossing disciplinary boundaries with one common goal – to halt and reverse the decline of our corals and reefs. This report outlines our progress so far and our vision for the future.

With the continued support of member countries, partners, and donors, CORDAP will continue to drive innovation and deliver the best science and technology available.

Together we can save the world's corals.



# Dr. Osama Faqeeha,

G20 CORDAP Initiative Governing Committee Chair, Global Coral R&D Accelerator Platform Foundation Chair, and Deputy Minister of Environment, Ministry of Environment, Water and Agriculture, Saudi Arabia.

# Our mission to save the world's corals

# Pushing the boundaries of coral conservation and restoration



«According to the IPCC, 70-90% of the remaining coral reefs could disappear in the next 10-15 years. An ocean depleted of healthy coral reefs across multiple human generations is not one we shall accept. We must accelerate the next generation of best science and echnology to conserve and restore coral reefs

Prof. Carlos

Launched in 2020, the Coral Research & Development Accelerator Platform - CORDAP - is a G20 initiative. We are the only international organization fully dedicated to funding global research and development for tropical and cold-water coral restoration and conservation.

CORDAP is redefining the boundaries of what's possible for coral conservation and restoration by supporting projects that will unlock the innovation needed to save corals and reefs worldwide. We are:



# Focused on research & development (R&D)

We are the only international organization fully dedicated to funding coral conservation and restoration R&D.



# **Building transdisciplinary collaborations** We will integrate the abilities of the world's best scientific minds

in collaborative projects to develop effective solutions for coral conservation practitioners.



# **Committed to scalability**

CORDAP-funded projects will deliver innovative coral restoration solutions suitable for large-scale intervention.

# Accessible to everyone



Our open-source platform will allow any organization to advance and use its freely-available technologies. CORDAP is also open to the participation of non-G20 nations and organizations committed to coral conservation and restoration.



# Promoting the participation of low and middle-income countries

We invest in capacity building and develop inclusive programs that involve scientists from low and middle-income countries (LMIC), those most impacted by coral loss, across all of our programs.



Photo: Morgan Bennett-Smith

# The world needs corals

For the first time, an entire ecosystem

of our remaining coral reefs may disappear in the next

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For the first time, an entire ecosystem that supports millions of species and people may be lost at the hands of humans.

But

# billion people

**rely on coral reefs** for food, income, and coastal protection<sup>2</sup>.

\$6.8billion

Corals generate USD \$6.8 billion in annual net profits **from global fisheries**<sup>3</sup>.

per year<sup>4</sup>

Reef-related tourism produces

Corals reduce expected storm damages by more than

\$USD annually<sup>5</sup>.

Corals cover 0.2% of the ocean floor

9



# **Our work matters**

We are committed to advancing scientific knowledge and technological innovation to secure a future for corals worldwide.

We only fund solutions that can be mainstreamed and are accessible to all.

# Our research funding awards are creating a better future for coral

Through a dedicated foundation, all international donations and contributions go directly to coral restoration R&D activities. In 2022 our Coral Accelerator Program awarded USD \$18 million to multinational collaborative teams.

# CORDAP supports the global goals

Our work aligns with and contributes to existing global agreements and targets, including the goals of the ambitious UN Sustainable Development Goals and the Kunming-Montreal Biodiversity Framework goals to halt biodiversity losses by 2050 and restore 30% of degraded habitats by 2030.

This means our partners and members are supporting internationally recognized action to protect and restore marine biodiversity, as well as mitigating climate change impacts and global poverty while contributing social responsibility corporate targets.



<sup>,</sup> Photo: Adiprayogo Liemena



# **CORDAP** supports the global goals



# UN Sustainable Development Goals (SDGs)

CORDAP is contributing to the achievement of several of the UN Sustainable Development Goals:



#### 1 NO POVERTY



# No Poverty: Ending poverty in all forms, everywhere

The total economic goods and services value of corals is an estimated approx. USD \$2.7 trillion per year<sup>3</sup>.

### CORDAP can contribute by:

- Providing key opportunities for middle- and low-income countries to take a decisive role in coral research, conservation and restoration projects.
- Supporting and scaling up projects that contribute to protect coral reefs, ultimately safeguarding the income they provide to coastal communities.

2 ZERO HUNGER

# Zero Hunger: End hunger, achieve food security and improved nutrition

One billion people rely on coral reefs for food, income, and coastal protection<sup>2</sup>.

• By conserving and restoring corals globally, CORDAP indirectly contributes to achieving this goal.

**13** CLIMATE ACTION



# Climate Action: Take urgent action to combat climate change and its impacts

Across more than 70,000 km of coral reef coastlines, living reefs reduce the expected damages from storms by more than USD \$4 billion every year and lower the number of people affected by flooding each year by 45%<sup>5</sup>.

• Our projects will contribute to filling in knowledge gaps on coral conservation and restoration and mitigating impacts of ocean acidification on these ecosystems.

17 PARTNERSHIPS FOR THE GOALS

# Partnerships for the Goals

- CORDAP enhances cooperation among the G20 members and non-member countries, while also mobilizing and partnering with the private R&D sector.
- We promote international transdisciplinary cooperation to accelerate the research, knowledge exchange, and innovation development required to secure a future for corals.

# Kunming-Montreal Global Biodiversity Framework

Goal A: The integrity, connectivity and resilience of all ecosystems are maintained, enhanced, or restored.

Goal D: Financial, technical, capacity-building and scientific resources are secured and accessible to all parties, especially the least developed countries and states.

Target 2 30% of degraded areas are under effective restoration by 2030. Target 4 Threatened species are recovering, genetic diversity is being maintained and human-wildlife conflict is being managed.

CORDAP can contribute by:

- Filling in knowledge gaps on coral conservation and identifying priority areas in coral conservation and restoration (CCR) research & development (R&D).
- Advancing cost-effective technologies for coral restoration, providing access to these technologies free of license fees and making all products derived from CORDAP-funded activities (technologies, publications and underlying data) freely available to anyone.
- Generating capacity to deploy R&D tools for CCR.
- Funding projects to develop new R&D to conserve coral ecosystems.

Target 10 Areas under agriculture, aquaculture, fisheries and forestry are managed sustainably. Target 11 Nature's contributions to people are restored, maintained and enhanced.

# CORDAP can contribute by:

- Partnering with local stakeholders to deploy research & development (R&D) tools for coral conservation and restoration (CCR) and include end-users in the research, design, and development of CCR solutions.
- Identifying priority areas for CCR R&D and delivering technologies, methods, and processes that can be applied in CCR worldwide.
- Providing free-license and making technologies freely available to anyone.
- Developing and sharing scientific tools for assessing the social and ecological costs and benefits of scalable applications.
- Financing, developing, and kicking off ongoing and new innovative solutions for coral restoration and adaptation interventions.

# Target 8 Minimize impacts of climate change and ocean acidification.

CORDAP can contribute by: Funding R&D projects that focus on enhancing coral restoration, reducing coral mortality, and increasing coral longevity but also on reef monitoring and R&D capacity building.

#### Target 21

Ensure that the best available data, information and knowledge are accessible to decision makers, practitioners and the public.

CORDAP can contribute by:

- Promoting international transdisciplinary cooperation to accelerate research, knowledge exchange, and innovation development required to secure a future for corals.
- Promoting workshops to identify priority coral conservation and restoration (CCR) R&D areas.

### Target 20

Capacity-building and development, technology transfer, and technical and scientific cooperation for implementation is strengthened.

#### CORDAP can contribute by:

- Promoting international transdisciplinary cooperation to accelerate research, knowledge exchange, and innovation development required to secure a future for corals.
- Enhancing and kicking off R&D solutions for CCR while considering the full socioeconomic spectrum of low and middle-income countries.
- Connecting national and international R&D programs and learning from diverse approaches.
- Promoting workshops to identify priority coral conservation and restoration R&D areas.
- Enhancing cooperation among the G20 members and non-member countries while mobilizing and partnering with the private R&D sector.
- Providing free licenses and making technologies, publications and underlying data generated by CORDAP-funded activities freely available to anyone.
- Providing advanced R&D training and access to cuttingedge research facilities and infrastructure in a genderbalanced, internationally inclusive way to scientists from developing and least developed countries.



# How CORDAP operates

# **CORDAP's governance structure**



# Initiative Governing Committee (IGC)

This is an international committee consisting of G20 nations, non-G20 nations, and international organizations that oversee CORDAP, approves its strategic plans and operating procedures and approves funding allocations to research projects recommended by the Scientific and Advisory Committee.

# The CORDAP IGC is



Chaired by Dr. Osama Faqeeha, Deputy Minister of Environment, Ministry of Environment, Water and



Environment, Water and Agriculture, Saudi Arabia. Vice-chaired by **Ms. Jennifer Koss**,

Director, NOAA Coral Reef Conservation Program, United States.



Prof. **Carlos M. Duarte** CORDAP Executive Director and CORDAP Foundation CEO.

# Advisory Members to the IGC

Coral Restoration Consortium (CRC) Dr. R. Scott Winters

**Global Fund for Coral Reefs (GFCR)** Mr. Yabanex Batista

**Great Barrier Reef** Foundation (GBRF) Dr. Theresa Fyffe Ms. Margot Andersen

International Coral Reef Initiative (ICRI) Mr. Francis Staub

International Coral Reef Society (ICRS) Prof. Christian Voolstra Observer Japanese Coral Reef Society (JCRS) Dr. Atsushi Watanabe

# The Commonwealth Secretariat

Dr. Nicholas Hardman-Mountford

# UN Environment Programme (UNEP)

Mr. Hally Blanchard Ms. Sinikinesh Jimma Dr. Leticia Carvalho Mr. Gabriel Grimsditch

# **XPRIZE**

Mr. Peter Houlihan



# Scientific and Advisory Committee (SAC)

The Scientific and Advisory Committee (SAC) comprises renowned international coral scientists, managers, and engineers. It assists the Initiative Governing Committee by providing guidance and recommendations on CORDAP's overall strategy, funding program priorities, resource allocation and deliverables. The SAC monitors project performance, reviews the results of the overall Platform program and delivers its evaluation and recommendations to the IGC.

# Platform Central Node (PCN)

A Central Node administers the overall Platform, supporting the IGC and SAC.

# The SAC is



# Chaired by **Mr David Mead**, Executive Director of Strategic

Development at the Australian Institute of Marine Science.



# Vice-Chaired by Anastazia Banaszak,

Research Professor at the Institute of Ocean Sciences & Limnology, National Autonomous University, Mexico.

CORDAP's Central Node is based at King Abdullah University of Science and Technology (KAUST) and is fully supported by KAUST as an in-kind contribution from Saudi Arabia.



# Our work in action



# We launched our first

# Coral Accelerator Program (CAP) in 2022

with awards worth a total of **USD \$18 million** committed to multinational collaborative teams.

# **89 PROPOSALS received in total**



We received an initial **USD \$112 million** in funding requests from projects.



# 489 applicants

**51%** led applicants were female



# 14 proposals awarded

Following a panel review, twenty-eight concept notes were invited to submit a Full Proposal. Each full proposal underwent international expert peer review by two to three proposal topic experts, followed by a panel review.

# 20 Countries 60% are LMIC Total funding awarded: USD \$17,986,429

# The recipients of funding awards break down as follows:



# For the following type of projects:



# These are the recipients of our CAP 2022 funding awards:

Lead Pl	Lead Organization	Lead Country	LMIC Country	Proposal Title	Budget Awarded
Mary Hagedorn	Smithsonian Institution	USA	Mexico	Establishing the Global Coral Cryopreservation Network	\$1,459,900
Emma Camp	University of Technology Sydney	Australia	Malaysia, Indonesia	Super Supplement - Boosting Coral Resilience Through Nutritional Subsidies	\$1,426,400
Affendi Yang Amri	Malaysian Society of Marine Sciences (MSMS)	Malaysia	Malaysia	A Smart-Decision Framework for Coral Restoration (ASSIST) – Harnessing Resilience for Restoration.	\$507,400
Valeria Pizarro	Perry Institute for Marine Science	USA	Colombia	Giving Caribbean Corals a Future: SCTLD and the Use of Probiotics in Coral Restoration Projects	\$1,459,390
Amelia Wenger	University of Queensland	Australia	Fiji, Solomon Islands	CLEAN REEFS: A Dynamic Pollution Mapping and Risk Assessment Tool for Global Coral Reefs	\$1,122,550
Andrea Severati	Australian Institute of Marine Science	Australia	Maldives	ReefSeed – A Portable Aquaculture System for Rapid and Up-Scaled Production and Deployment of Corals for Reef Restoration	\$1,460,000
Peter Harrison	Southern Cross University	Australia	Maldives	Empowering Community-led Coral Reef Restoration and Prioritization in the Maldives	\$1,460,000
Kenneth Hoadley	University of Alabama	USA	Fiji	Novel bio-optical tools for Scaling up Coral Restoration Practices in Cooperatively Managed Reef Systems in the Pacific.	\$1,459,000
Rita Sellares	Fundación Dominicana de Estudios Marinos	Dominican Republic	Dominican Republic	Upscaling and Optimizing Coral Sexual Propagation Technologies for Coral Restoration in the Caribbean	\$1,388,900
James Guest	Newcastle University	UK	Philippines	Quantifying and Operationalizing Genetic Adaptation for Successful Coral Restoration (CORALADAPT)	\$1,459,300
Rebecca Albright	California Academy of Sciences	USA	Honduras	Interventions to Improve the Health, Growth, and Survival of Larvae and Settlers for Sexual Restoration of the Meso-American Reef (MAR)	\$1,459,400
Rita Rachmawati	National Research and Innovation Agency, Republic of Indonesia	Indonesia	Indonesia	Accelerating Coral Reef Conservation, Restoration, and Sustainable Business Development in Developing Nations through the use of Ex Situ Coral Spawning	\$895,775
Nicole Fogarty	University of North Carolina Wilmington	USA	Philippines	Developing Transgenic Corals as Novel Technology for Reef Restoration	\$1,458,000
Patricia Kramer	Ocean Research and Education Foundation	USA	Honduras, Dominica, Mexico	Restoration Road Maps: Improving coral restoration and Capacity of Managers in the Caribbean MPAConnect Network	\$970,200



Scoping Studies: Exploring the Frontier of Coral Aquaculture Workshop. KAUST

We launched a series of **Scoping Studies** that have brought together **more than 70 coral specialists from around the world to assess priority R&D investment goals in key areas to help save the world's corals.** The CORDAP Technology Roadmaps and outputs from the studies will be published in the coming months.

Three Scoping Studies have been run to date:

# Natural Adaptation and Assisted Evolution of Corals co-organized with the

Australian Institute of Marine Science (AIMS).

# Exploring the Frontier of Coral Aquaculture co-organized with KAUST Reefscape Restoration Initiative.

Cold-water Corals Restoration and Conservation co-organized with REV Ocean.



We launched our social media channels in June 2022 and since then...



Total	l Follo	wers

Twitter **7,000** 

Instagram **1,500** 

LinkedIn **1,000** 

# Impressions

Twitter **2.5 M** 

Instagram 1.3 M

LinkedIn **70 K** 

# Engagement

Twitter **1.6%** Engagement rate **1-5%** considered good

Instagram **9.3%** Engagement rate >6% considered very high

LinkedIn **7.6%** Engagement rate 1-3.5% considered good

# Top keywords in 2023



# Looking back



### NOV 2020

G20 Leaders Declaration Announces the Establishment of CORDAP

# NOV 2020

The G20 President, Saudi Arabia, Commits USD \$98M in funding



#### APRIL 2021

G20 Nations Develop the Charter and Governance Structure of CORDAP



#### JUNE 2021

Initiative Governing Committee (IGC) Inaugurated and Members Established



## MAY 2022

#### CORDAP Unveils its Strategic Plan

A 3-year strategic plan was created to boost research that aims at helping secure a future for corals in the face of climate change and other environmental pressures. The strategic plan identified how CORDAP will deliver the program, described the types of projects it will fund, and outlined the proposal submissions, review processes, and priority investment areas.



# NOV 2021

Scientific and Advisory Committee (SAC) and Platform Central Node (PCN) established



# JUNE **2022**

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#### Partnership Agreement with UN GFCR and UNOC Side Event

During the UN Ocean Conference, we coorganized a side event in collaboration with UN Global Fund for Coral Reefs (GFCR), UN Environment Programme (UNEP), and International Coral Reef Initiative (ICRI). At the event, we announced a partnership with UN GFCR, the first and only global blended finance initiative devoted to coral reefs.



# AUGUST 2022

#### G20 Side Event No Coral Left Behind

As part of the Indonesian Presidency G20 program in Bali, CORDAP cohosted a workshop with UN Global Fund for Coral Reefs (GFCR) and Indonesia Coral Reef Garden (ICRG). The event brought together scientific experts, practitioners, and policymakers, to discuss current activities and next steps and to deliver concrete, actionable policy recommendations on coral conservation cooperation.



# NOV 2022

#### CORDAP at COP UNFCC 27

CORDAP made a significant impact at COP 27, participating in the Blue Zone, organizing events in the Ocean and Saudi Pavilions and hosting a booth at the Virtual Ocean Pavilion.



## NOV 2022

Open Letter Calling for Urgent Coral Reef Action In November, CORDAP published an Open Letter with ICRI and UN GFCR calling for urgent coral reef action addressed to leaders and policymakers at COP27, Ocean20, and COP15.



# SEPT 2022

#### CORDAP's Coral Accelerator Program (CAP) 2022 Opens

CAP committed to fund international collaborative teams with impactful ideas in coral conservation and restoration. Successful applicants would be awarded funding up to **USD\$ 1.5 million per project**, which can last from one to three years.

# DEC 2022

**CORDAP at COP CBD 15** CORDAP was present at

COP 15 and, in partnership with GFCR, ICRI, and The Nature Conservancy (TNC), hosted a panel discussion at The Nature Conservancy Pavilion.

We stood united #ForCoral with ICRI and the coral reef community at their high-level event, 'United for a Decade of Conservation Action #ForCoral'.



# JANUARY **2023**

# Kick-start of CORDAP's Scoping Studies

January saw the launch of a series of Scoping Studies workshops that have brought together more than 70 coral specialists from around the world to assess priority R&D investment goals in key areas to help save the world's corals.



# MARCH 2023

#### CORDAP's Foundation Established

A Saudi Royal order approved the creation of the Global Coral R&D Accelerator Platform Foundation (CORDAP Foundation), a nonprofit organization that will serve as the financial arm of CORDAP.



# JUNE 2023

#### CAP 2022: Scientific Projects Awarded

In June, CORDAP's IGC approved the projects selected by the SAC that will receive funding from the Coral Accelerator Platform (CAP) 2022.



# MAY 2023

Cold-water Corals Restoration and Conservation Workshop

Co-organized with REV Ocean. Hosted at Engineerium, Norway. Platform (CAP) 2022.

# Looking forward



# CAP 2023: New Call for Submissions

We are looking for innovators to join us in our mission.

In Autumn, we will announce a new open call to fund over \$18M for innovative ideas that lead to significant discoveries and improvements in coral conservation and restoration. 2024



#### **COP UNFCC 28**

We're working on building our #TeamCoral at the 28th Conference of Parties through pavilion partnerships and events and panel discussions coorganized with partners and other organizations.



#### Artist Residency Connecting art and

Jana Winderen has been named CORDAP's first artist in residence.

Jana is based in Norway and her activities include site-specific and spatial audio installations and concerts, which have been exhibited and performed internationally in major institutions and public spaces. Her work will help bring more attention to the status of corals and the need to invest in coral R&D.



#### **Gathering Expert Input**

Building upon the knowledge gained during our recent workshops, we will publish roadmaps for funding and investment solutions, starting with one focusing on the potential benefits of assisted evolution.

We will also organize more of these events, including priority areas identified by its Scoping Studies to **create a roadmap for funding and investment in solutions** that

contribute to advancing coral conservation and restoration.

Additionally, CORDAP will organize **more Scoping Studies workshops**, including one on R&D Capacity Building Leadership in Developing Countries and another on Managing Ecological Risks of Coral Reef Interventions. The latter workshop will be co-organized with AIMS and will be held in Australia.



#### CORDAP Study Fellowships

We initiated the CORDAP Study Fellowships to help address one of our core objectives of building R&D capacity in low- and middleincome countries (LMIC). CORDAP will continue sponsoring places in each scoping study workshop for participants from LMICs as CORDAP Study Fellowships. These positions are an additional educational and knowledge transfer component of the workshops.



Jana Winderen Artist Residency Connecting art and science #ForCoral Photo: Finnbogi Pétursson



# Join our mission to save corals

![](_page_35_Picture_1.jpeg)

The ingenuity, talent, and drive to develop new approaches to saving corals and reefs for humanity is out there – we just need the resources required to make it happen.

By investing in urgently needed novel solutions to restore and secure corals and reefs for future generations, those funding our work would also support Target 19 of the Kunming-Montreal Global Biodiversity Framework of substantially and progressively increasing the level of financial resources from all sources -including domestic, international, public and private resources- to implement national biodiversity strategies and action plans.

# We need to treble our funding to enable the work that needs to be done

The Kingdom of Saudi Arabia has contributed USD \$98M for the next 10 years, and King Abdullah University of Science and Technology (KAUST) funds and supports all aspects of CORDAP's administration costs.

In 2022, our Coral Accelerator Program (CAP) awarded USD \$18 million to multinational collaborative teams.

But it is not enough.

We received an initial USD \$112 million in funding requests from projects, and the total funding requested by Full Proposals was USD \$ 39 million - doubling our available funding.

# Donor opportunities

Our donors contribute to achieving CORDAP's mission through one-time or ongoing financial support. This support is essential to the continued success of the organization and allows CORDAP to carry out its work in communities around the world. We are grateful for the generosity of our donors and the impact they have on the lives of those we serve.

# Partner with us

We believe that we can achieve more by working together than we could alone. That's why CORDAP is partnering with other organizations. Long-term in-kind contributions include exchanging knowledge and expertise, collaborating on projects, events, fundraising for CORDAP, expanding networks, creating nedia and communications collaborations and campaigns, and beyond. Our partners have the unique opportunity to join CORDAP's Advisory Initiative Governing Committee and collaborate with us in an ongoing effort to save the world's corals.

Let's talk about how you can help: ml@cordap.org

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Join **#TeamCoral** 

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cordap.org Contact us at **info@cordap.org** 

![](_page_39_Picture_3.jpeg)