

Report on the 32nd Edition of the IAF Workshop with the support of the United Nations: “Resilient Coasts, Resilient Earth: Innovative Space Solutions for Coastal Resilience and Emergency Management”

(Sydney, Australia, 26 – 28 September 2025)



I. Introduction

For more than thirty years, the International Astronautical Federation (IAF) and the United Nations have co-organized a technical workshop on Space Technology for Socio-Economic Benefits in conjunction with each International Astronautical Congress (IAC).

The 32nd edition of the IAF Workshop with the support of the United Nations was held in Sydney, Australia, from 26 to 28 September 2025, immediately prior to the 76th International Astronautical Congress (IAC 2025), and focused on Space for Oceans and disaster-risk management reflecting the IAC 2025 theme: “Sustainable Space : Resilient Earth.”

The International Astronautical Federation (IAF) and the United Nations Office for Outer Space Affairs (UNOOSA), through the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) programme and the Maldives Space Research Organisation (MSRO), had jointly selected the theme “Resilient Coasts, Resilient Earth: Innovative Space Solutions for Coastal Resilience and Emergency Management”.

Coastal resilience is a pressing issue for the global community: the UN Regional Information Centre notes that around 40 % of the world’s population lives near coastal areas and that the oceans support the livelihoods of more than 3 billion people [1]. National Geographic’s encyclopaedic entry on the ocean emphasises that Earth’s ocean covers about 71 % of the planet’s surface. Small Island Developing States (SIDS) control large exclusive economic zones; the UN Office of the High Representative for SIDS reports that SIDS control about 30 % of all oceans and seas. These facts underline the importance of integrating space technologies with coastal and ocean management.

The three-day event convened government officials, space-agency and marine-science experts, civil-protection authorities, academia, NGOs and industry to accelerate capacity-building in developing and frontline nations on the use of satellite applications for both ocean stewardship and disaster-risk reduction; and to forge partnerships, particularly for Small Island Developing States .

II. Workshop objectives

In 2025, the Workshop was devoted to innovative space solutions for coastal resilience and emergency management and had the following objectives:

- (a) Highlight synergies by showcasing the complementary role of Space for Oceans and disaster/emergency applications, demonstrating how space-derived data can simultaneously strengthen coastal hazard early warning systems, enable marine pollution tracking, and facilitate rapid post-disaster response.
- (b) Increase understanding of the UN-SPIDER programme and share global lessons learned and best practices in space-based ocean and disaster management with decision-makers, especially from Asia-Pacific, Pacific Island countries, and other SIDS/Least Developed Countries (LDCs).
- (c) Present real-world applications of Earth Observation (EO), GeoAI, digital twins, Internet of Things (IoT), and cloud platforms for building resilient coastal cities, ensuring sustainable fisheries, and supporting emergency logistics.
- (d) Foster new partnerships that integrate satellite solutions into national disaster risk reduction frameworks and ocean policy instruments, directly contributing to the advancement of SDGs 13 (Climate Action) and 14 (Life Below Water).

III. Attendance

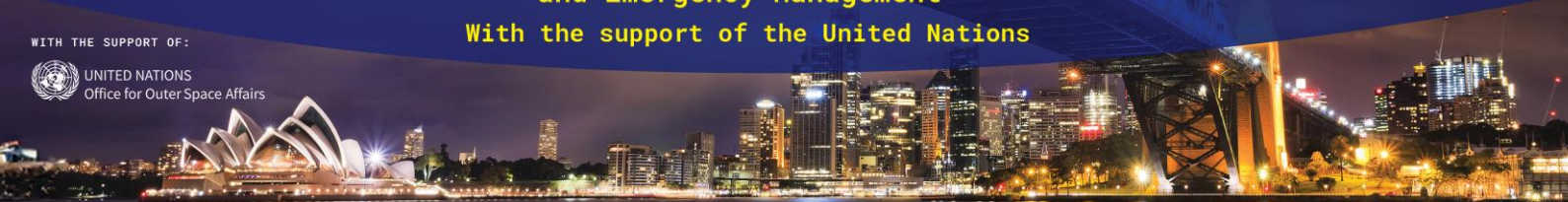
The Workshop was extremely well received by the global community – a total of **302** applications were received from **79** countries - including Maldives, Laos, Mexico, Kenya, Jamaica, Nicaragua, South Africa, El Salvador, Egypt, Seychelles, India, Indonesia, Spain, France, Australia, Samoa, Norway, Türkiye, China, Japan, the United States, Colombia, Cameroon, and many others. Gender distribution of applications included a quite balanced 59% Male and 41% Female and most participants were aged between 26 and 45.

Through valued efforts of the Workshop organizers, 20 speakers were fully funded to attend and present at the Workshop in persons. In total, the workshop convened 92 participants from 50 countries, including 44 coastal countries and 6 Pacific nations. Participants ranged from senior executives of space agencies and private companies to local disaster managers, academics and young professionals, among them - 15 of the IAF global Emerging Space Leaders (ESL) awardees.

IV. Programme

The Workshop included various sessions, including presentations, fireside chats and dynamic round table discussions. A networking activity was organized at the end of each day, in which speakers and attendees could meet those working on the same topic to discuss their respective needs and the activities that they could undertake jointly.

Programme overview:



Day 1 – Opening and Scaling Solutions (26 Sept 2025)

In the welcome remarks **IAF President Clay Mowry** welcomed participants and celebrated the workshop’s 32-year history, while **UNOOSA Director Aarti Holla-Maini** underlined the importance of inclusivity, innovation and integration via a recorded message.

IAF Executive Director Christian Feichtinger highlighted that this workshop has exemplified a unique partnership between the IAF and the United Nations, offering a platform where space technology is discussed not in isolation, but in service of humanity and socio-economic development.

Additional remarks from **IAF CLIODN Chair Pieter van Beekhuizen** and **IAF ACCESS Vice-Chair Matías Campos Abad** highlighted the need to design with consequences in mind and the role of emerging space nations. **Hamid Mehmood (UNOOSA)** and **Madin Maseeh (MSRO)** framed the workshop at the intersection of space for oceans and disaster management: oceans cover 71 % of Earth’s surface [2], that coasts host roughly 40 % of the world’s population and that SIDS face increasing threats from sea-level rise, storms and flooding. Mehmood also emphasised that space systems used to monitor illegal fishing and marine pollution can also power early warning systems for cyclones and tsunamis.

Presentation Session 1 - From Atolls to Continents: Speakers from South Africa (CSIR), India (ISRO) and Seychelles described satellite-based early warning systems, the need for frequent satellite revisit times and challenges facing SIDS such as high data costs and limited capacity.

Panel Discussion 1 - Re-Rooting Disaster Management: Experts from Kenya, Germany and Australia explored how Earth-observation and machine learning can monitor mangroves and coastal erosion, democratise satellite access and provide free Earth-observation data.

Panel Discussion 2 - SIDS, Satellites and Sovereignty: Speakers examined how space technologies empower SIDS to monitor vast exclusive economic zones and manage resources sustainably. External sources underscore that SIDS control about 30 % of all oceans and seas, making sovereignty and equitable resource stewardship critical issues.

Academic Pitches 1 & networking: Early-career researchers from Mexico, Laos, Sierra Leone, Sudan and India presented research on disaster cycles from orbit, with networking opportunities to foster new collaborations.



Day 2 - Communities, Innovation Pipelines and Digital Oceans (27 Sept 2025)

Technology presentation: Synspective Inc. showcased innovations in satellite data analysis.

Panel 3 - A Spectrum of Resilience: This session highlighted how community engagement across the disaster management cycle translates satellite data into actionable local knowledge. Speakers from Nicaragua, Japan, France and Angola shared experiences.

Panel 4 - Pilot to Planet: Representatives from the Egyptian Space Agency, MSRO, the Chinese Academy of Sciences and the IAF ACCESS Committee discussed scaling pilot missions into operational services and nurturing innovation pipelines.

Panel 5 - Digital Oceans, Resilient Cities: Panellists explored digital twins, GeoAI and Earth-observation platforms that model coastal dynamics, predict risks and support urban resilience planning. Examples included the Pacific Community’s Digital Earth Pacific and Tunisia’s UDENE project.

Presentation Session 2 - Better Data for Timely Action: Experts from the Paraguayan Space Agency, Airbus, the Institute of Space Studies of Catalonia and Ridge-i examined global datasets and national applications that underpin satellite-enabled early warning systems.

Networking reception: The reception organized and funded by the IAF provided further opportunities for cross-sector collaboration.

Day 3 – Legal Frameworks, Fireside Chat and Closing (28 Sept 2025)

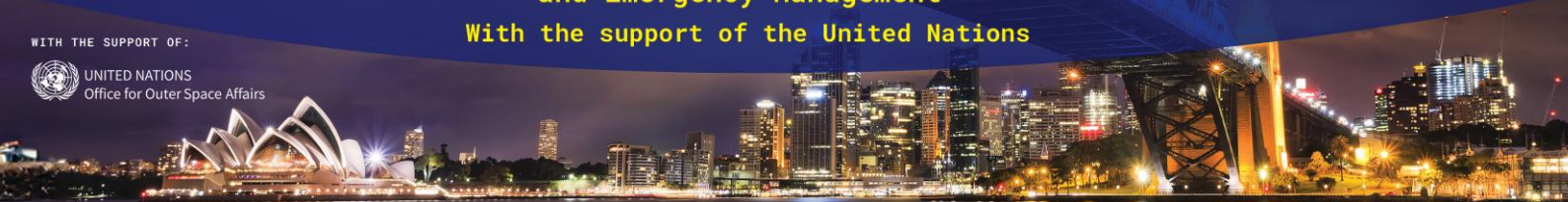
Space Law Networking Session: Rosanna Margarita Hoffmann, Legal Officer, UNOOSA led a session on legal frameworks that support disaster resilience.

Keynote: Izumi Mikami of Oceans Solutions Technology delivered a keynote on innovation in ocean monitoring.

Fireside Chat - From Surviving to Thriving: Disaster management officials from the Maldives, Cook Islands, China, Samoa and Tonga discussed cross-border coordination and capacity building. Participants highlighted the importance of translating technical data into policy and making Earth-observation products accessible to local communities.

V. Conclusions and Lessons Learnt

The Workshop concluded with closing remarks from UNOOSA Director **Aarti Holla-Maini**, IAF Vice-President for Relations with International Organizations **Anil Kumar**, and **Ayhan Incirci**, Director General of the External Relations and Legal Affairs Department at the Asia-Pacific Space Cooperation Organization (APSCO).



UNOOSA Director Aarti Holla-Maini summarised key messages, emphasising the need to convert prototypes into sustained services and recognising that resilient coasts depend on cooperation and the inherent resilience of coastal communities. IAF VP Kumar underlined the essential role of international partnerships in addressing shared space-related challenges. Representing the Host of the 77th International Astronautical Congress (IAC 2026), Ayhan Incirci warmly invited participants to join the 33rd edition of the UN/IAF Workshop in **Antalya, Türkiye**, to be held in conjunction with the **IAC 2026**.

The workshop demonstrated that satellite data, digital twins, geospatial AI and community engagement can bridge global technology and local decision-making [3]. Strengthening these links is essential for achieving the UN Sustainable Development Goals 13 (climate action) and 14 (life below water).

References:

1. Blue Economy: oceans as the next great economic frontier
<https://unric.org/en/blue-economy-oceans-as-the-next-great-economic-frontier/>
2. Ocean
<https://education.nationalgeographic.org/resource/ocean/>
3. Private Sector Partnerships Key to Ocean Economy of Small Island Nations | Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States
<https://www.un.org/ohrlls/news/private-sector-partnerships-key-ocean-economy-small-island-nations>