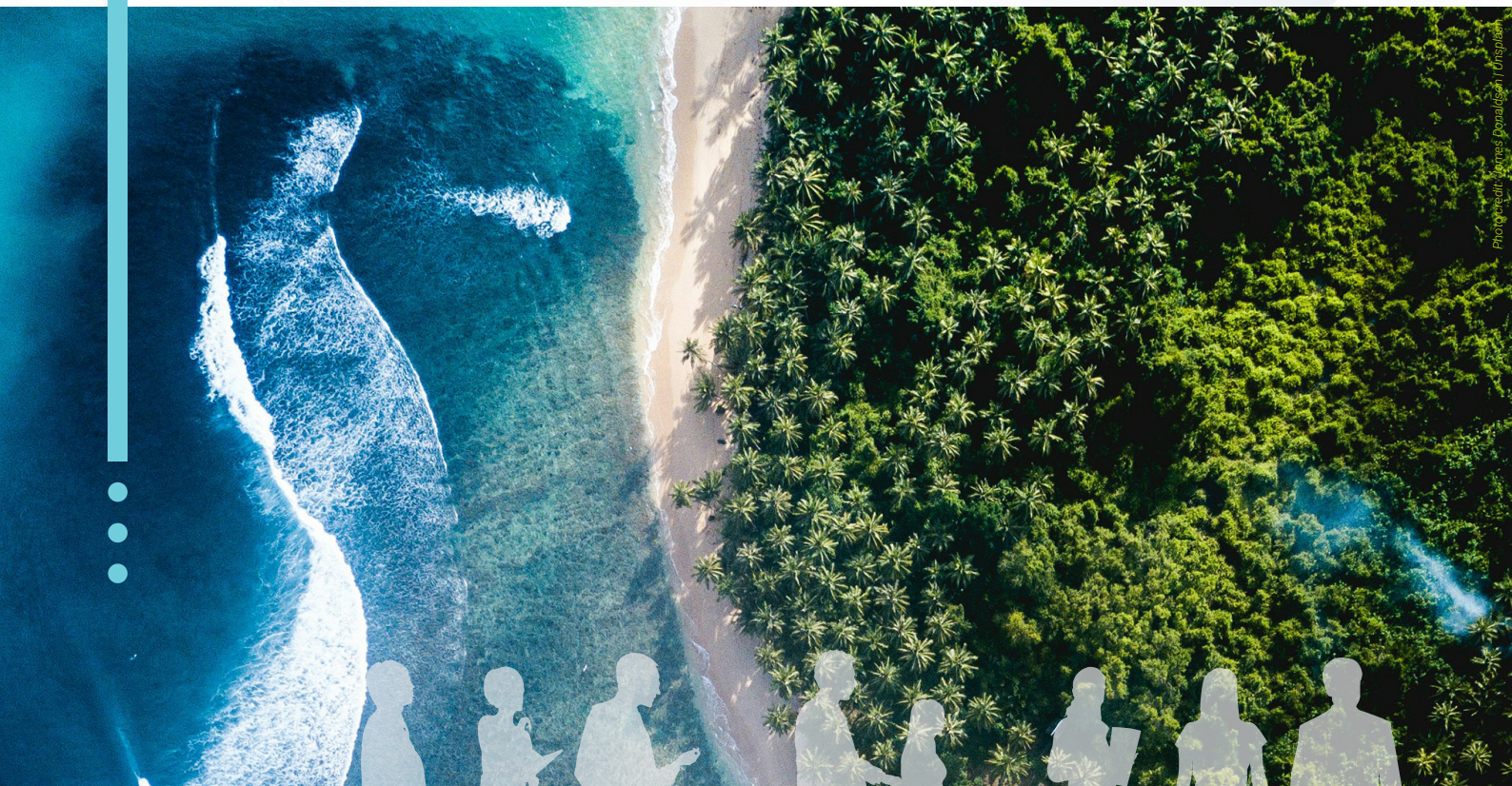


# Global Environment Monitoring Systems and Early Warning for the Environment



**UN**  
environment  
programme



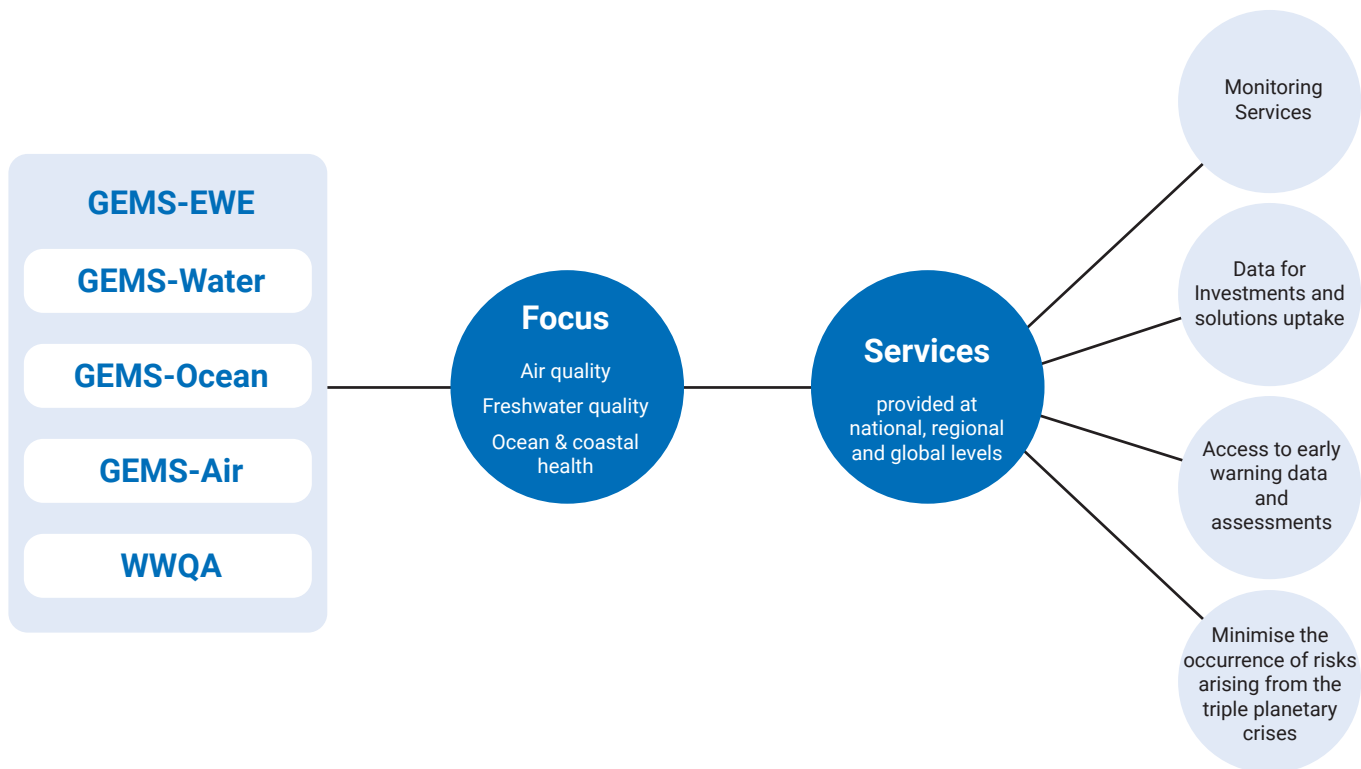
E A R L Y   W A R N I N G   A N D   D A T A   A N A L Y T I C S

*Transforming the lives of People, Places and Planet*

## Introduction

The Global Environment Monitoring Systems and Early Warning for the Environment Unit (GEMS-EWE) provide innovative monitoring services on the state of nature & biodiversity loss, pollution, and climate change, and their cascading risks, covering risk sources at the upstream to midstream state of the environment, and end-of-pipe monitoring of solutions and investment enablers needed to drive solutions uptake. This is to help the world community at the national, regional, and global levels access early warning data and assessments required to inform science and data-based policy decisions and investments to forestall and minimise the occurrence of rapid and slow onset risks arising from the triple planetary crises and ensure the translation of early warning into early action.

The primary focus is on three environmental domains - air quality, freshwater quality, and ocean & coastal health, operationalised by GEMS air, GEMS water & WWQA, and the GEMS Oceans teams. In its execution, the unit leverages partnerships – both internally across the UNEP house and UN-wide, as well as with external expert partners, to deliver data, scenarios, solutions, capacity building, and strengthened monitoring efforts that can be scaled to drive transformational change at national, regional, and global levels.





## Functions of the Unit

- Streamline work of GEMS water/WWQA, GEMS Oceans, and GEMS Air towards application of monitoring for early warning for the environment covering upstream risk sources, to midstream state of the environment, and end-of-pipe monitoring of solutions and their investment enablers to drive solutions uptake for restorative and protective actions.
- Targeted UNEP-wide, UN-wide, and external stakeholder partnerships towards ensuring GEMS-EWE complement the delivery of key flagship areas, including food systems, One-Health, and Global Biodiversity Framework, among key UN flagships.
- Horizon scanning on the state of global environmental monitoring and solutions to generate knowledge and thought solutions that position and raise the profile of the GEMS-EWE unit as a global thought leader on environmental monitoring and solutions in the focus domains of air, water, oceans among key areas,
- Strengthening the key operational area of citizens science and community engagement as strategic towards closing monitoring and solutions uptake gaps across all environmental domains,
- Catalyse cross-learning across teams and units towards the application of innovative, cutting-edge monitoring techniques – e.g., digital twinning, across all environmental domains,

## UNEP and UN System Engagements

- UNEP-wide engagement across divisions to ensure GEMS-EWE complements achievement of key flagship areas – including One-Health, Food Systems, chemicals/waste/pollution, freshwater, CCAC (LOW-Methane), IMEO (MARS), among key areas
- UN-wide engagements towards the complimenting realisation of multilateral environmental agreements related to biodiversity and pollution – specifically the Global Biodiversity Framework and Towards a Pollution-free Planet, respectively, among key ones, including UNEA decisions
- Enhanced engagements with UN Country Teams (UNCTs) towards ensuring uptake of monitoring solutions to inform the development and implementation of Common Country Analysis (CCAs) and the UN Sustainable Development Cooperation Frameworks (UNSDCFs), respectively

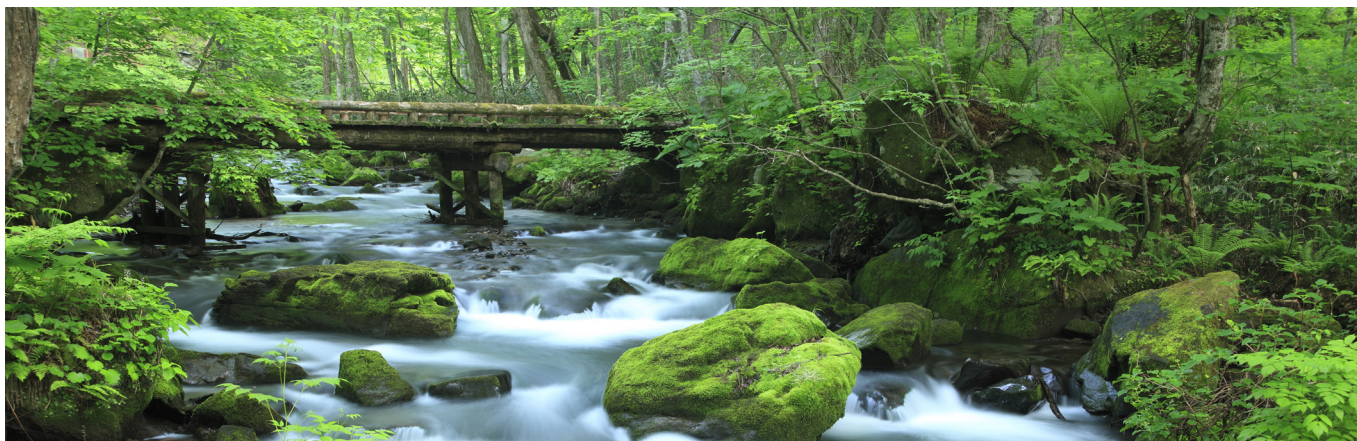


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## Partnerships

- Mobilise member states, experts, civil society, and other multilateral partners in high-level multilateral events – specifically the UNEA, towards supporting decisions that enhance uptake of the GEMS-EWE approach at national, regional, and global scales,
- Foster collaborations with expert partners to deliver data, scenarios, solutions, capacity building, and strengthened monitoring efforts that can be scaled to drive transformational change at national, regional, and global levels,
- Foster capacity enhancement of non-experts – i.e., citizen scientists, youth/informal sector to close monitoring gaps towards the GEMS-EWE approach in air, water, ocean/coastal health domains,
- UNEP-wide and UN-wide partnerships to complement the operationalisation of flagships towards addressing the triple planetary crises and foster national-level uptake through UNCTs, CCAs and UNSDCF.



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