Lagoons for LIFE

Understanding the effect of environmental and climate change on coastal lagoon management: The potential of Earth Observation

Vision Booklet

Why lagoons?

Coastal lagoons are resource-rich and hosts to a multitude of co-located human activities

In 2017, nearly 40% of the world's population lived within 100 km from the coast

As coastal populations are continuously rising, so are their impacts on coastal ecosystems

Coastal lagoons are particularly vulnerable to the effects of climate change due to their setting

Why Lagoons for LIFE?

- Lack of centralised inventory on data and research activities on coastal lagoons

- Lack of global coordination in coastal lagoon management

- Knowledge and data gaps

- Potential of EO in (contributing to) the design of holistic coastal lagoon management strategies

- Coastal lagoons are concentrations of coastal change and coastal peoples, and so are important places for SDG implementation

SUSTAINABLE DEVELOPMENT GOALS

Lagoons for LIFE

Established September 2017 in Ireland

Lagoons Workshop with participants from:

- (Inter)national research programmes & institutes
- Universities & public bodies
- Small-to-Medium Enterprises (SMEs)
- Lagoon networks

Funded by esa futurearth
research for global sustainability

"A world where healthy coastal lagoon ecosystems are recognised as both a core value for societies and a requirement for achieving a global green economy, blue growth and societal well-being"

"Coordinate action towards the co-design and co-development of holistic, innovative, multidisciplinary approaches to coastal lagoon management in order to support sustainable development of flourishing societies that become better adapted to a fast-changing world"

Coordination Collaboration

Holistic

Innovation

Multidisciplinarity

Sustainability

Flourishing societies

Adaptation to change
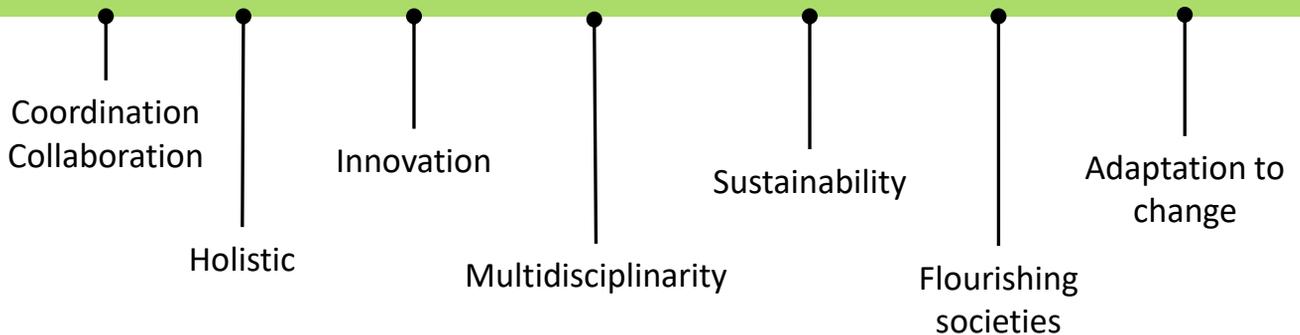
Key questions to answer

What features render lagoons vulnerable to physical, ecological and human disturbance from global change?

Can EO help derive new (or improve existing) indicators used to evaluate & monitor lagoon systems?

Can EO support international conventions & agreements towards improving sustainable development in lagoons?

Propose a current and future regime prediction scheme suitable for the sustainable use and management of lagoon resources

- o Link social and physical sciences
- o Conduct multidisciplinary research
- o Knowledge Transfer and Exchange
- o Improve modelling
- o Improve data collection (e.g. optimal sampling, standardise protocols, etc.)
- o Explore new methods and tools (e.g. EO)
- o Understand tipping points

- o Making EO data more accessible to non-EO scientists
- o Use questionnaires with EO and non-EO scientists
- o Coordinate relevant research activities
- o Source validation data

- o Coordination and international collaborations
- o Inclusive, participatory research

Objectives towards realising our vision

Identify, and coordinate **collaboration** between, experts and practitioners across all relevant disciplines

Create a comprehensive, global **inventory** of multidisciplinary datasets and information, and relevant research activities and networks, on coastal lagoons

Identify, and contribute towards addressing, knowledge and data **gaps** in coastal lagoon management practices

Identify new **technologies** for observation, data management, processing and analysis, and data sharing, and evaluate their potential for advancing coastal lagoon management approaches; this includes Earth Observation systems and techniques, open source software, cloud storage and processing platforms

Develop and deliver **capacity**, and facilitate knowledge transfer and exchange (KTE) aiming to inform citizens, enable policy-makers, and better-equip researchers and practitioners

Support **research** activities with direct or indirect relevance to the L4L vision and mission

Foster **linkages** between stakeholders, policy-makers and local communities to explore common issues and shared solutions

Contribute towards the development of **best practices** in coastal lagoon management in alignment with the main L4L vision and mission

Benefits from realising our objectives and mission:

For the Lagoons Forum*

- Become part of a wide, international, multidisciplinary network
- Advancement of science through collaborations across disciplines
- Knowledge Transfer and Exchange (KTE)
- Benefit from using a centralised global coastal lagoon inventory to:
    - Know who your peers are
    - Find new research partners
    - Use existing datasets
    - Share your datasets
    - Participate in research funding proposals
    - Easily identify data and knowledge gaps for future research agenda development

Processes we aim our knowledge-base to contribute to:

For local communities, economies, and the environment

- Informed and empowered societies
- Information and data for decision-making processes
- Conservation of healthy ecosystem services
- Access to clean water and a clean environment
- Sustainable growth with a long-term vision
- Support towards realising a green economy, blue economy and blue growth
- Conservation, protection and sustainable resource use
- Protection of natural biodiversity and unique ecosystems

*Membership of the **LagoonsforLife** Forum is open to anyone with an interest in contributing to the sustainability of the world's coastal lagoon systems. To join, please contact us.

We invite you to join us and share our vision!

Image credit: Venice Lagoon by Ikonos-2 satellite on 22 June 2008 (Source: ESA Space in Images)

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