Space for the Blue Economy
ESA and WB teaming up on the use of EO for marine & coastal resources management

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GEO Week 2017 – Blue Planet side event | Washington DC, 24 October 2017
EO in support of SDG implementation and Monitoring in SIS

The ocean in a development context

Coastal areas within 100 km of the ocean account for an estimated 61% of the world’s total Gross National Product (GNP)

Fisheries and aquaculture assure the livelihoods of 10-12% of the world’s population

Caribbean Sea:
- Fisheries sector generates US$ 1.2b annually in export earnings
- Tourism: ~ US$ 47b
- Sea-based oil and gas: ~ US$ 40b

Our Global Ocean’s Wealth is assessed at US$ 1.5 Trillion, according to OECD

The WB and the Blue Economy

WB Practices and Global Themes
Sustainable Development

Human Development
Global Themes

Ocean Economy

Minerals, Sand, Gravel
Transport and Trade

Seafood
Tourism and recreation

Energy
Coastal protection

Biodiversity
Waste disposal

Marine biotechnology
Carbon sequestration

Equitable Growth, Finance and Institutions
Human Development

Climate Change
Public Private Partnerships
Inclusive Growth & Finance

Agriculture
Energy & Extractives
Services

Transport & ICT
Water
**The WB and the Blue Economy**

**Global Themes**
- Sustainable Development
- Human Development
- Equity & Social Inclusion
- Agriculture
- Environment & Natural Resources
- Energy & Extractives
- Social, Urban, Rural & Resilience
- Transport & ICT
- Water

**US$ 6.4b**
- $1b financing for sustainable fisheries and aquaculture, and for efforts to conserve and enhance coastal and ocean habitats
- $5.4b for coastal infrastructure such as waste treatment, watershed management and other activities that help reduce coastal pollution

**Pacific Islands Oceanscape Program**

- Fisheries Management
- Climate Resilience
- Protection of critical fisheries habitats
- Regional monitoring & assessment

**Caribbean Blue Economy Development**

"Investing in ocean health is synonymous with generating ocean wealth" (World Bank & Nature Conservancy, 2017)

**Two parallel trends in the global ocean**

- Growth in Ocean Economy
- Declining Health of Ocean Environment

**Blue Economy**: A Sustainable Ocean Economy where economic activity is in balance with ocean health
**The ESA Earth Observation Programme**

- Sentinel 1 – SAR imaging
- Sentinel 2 – Multi-spectral imaging
- Sentinel 3 – Ocean and global land monitoring
- Sentinel 4 & 5 – GEO Atmospheric Chemistry
- Sentinel 6 – Altimetry Mission

**The European Copernicus Initiative**

- Securing satellite data access on the long term
- **Sentinel 1** – SAR imaging
- **Sentinel 2** – Multi-spectral imaging
- **Sentinel 3** – Ocean and global land monitoring
- **Sentinel 4** & **5** – GEO Atmospheric Chemistry
- **Sentinel 6** – Altimetry Mission

**Open access makes a difference**

- Landau Images Downloaded from USGS EROS Center (Cumulative)
- **Open Data Policy:**
  - **Before:** 53 scenes/day
  - **After:** 5,700 scenes/day
- **Open Data ≠ Free Info**
- “Making free data cheaper” Jed Sundwall

**Towards efficient data exploitation**

- “Bringing the people to the data”
- Simplify the extraction of information from EO data
- Enable large-scale exploitation of EO data
- Stimulate innovation with EO data
- Maximize impact of European EO assets

**Promoting geo-data literacy and use in international development**

- 65 small-scale demonstrations of EO services in support of IFI projects since 2008

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**New Commercial Constellations**

- Complementing European Observing Capabilities

**Open access is not the ultimate goal:**

- Open Data ≠ Free Info
- “Making free data cheaper” Jed Sundwall
India Coastal Zone Management

Project objective: Implement measures to protect Eastern Indian coastal areas and implement sustainable coastal management practices
EO contribution: Unique capability to map status of natural coastal protection resources and characterize changing coastal erosion/coastal flooding risk

Mexican Coastal Watersheds

Project objective: Preserve the ecosystems in priority coastal areas of global importance in terms of biodiversity, and to protect them from the effects of climate change
EO contribution: Unique capability to provide homogeneous integrated monitoring and assessment from drainage network to coastal zone

Analyzing coral degradation in Tuvalu

Project objective: Support Tuvalu in assessing pressures and drivers on coral reef degradation
EO contribution: Unique capability to combine oceanographic and land cover data to understand coral degradation dynamics

Western Indian Ocean Marine Highway

Project objective: Improve safety of navigation for commercial shipping south of Madagascar and minimize associated environmental risks
EO contribution: Unique and effective demonstration of oil slick detection and polluter identification capability, cost effective monitoring of coral reef degradation status

West Africa Regional Fisheries Program

Project objective: Improve management of West African EEZs and reduce levels of IUU fishing
EO contribution: Cost effective surveillance tool to detect vessels engaged in fishing and integrate with transponder and license data; additional capability to detect pollution

West African coastal erosion

Project objective: Conduct systematic assessment of status and rate of change of coastal erosion in West Africa to support climate resilience planning
EO contribution: Unique opportunity to combine oceanographic trends with land use change and coastline change information to understand pressures and coastal erosion dynamics
Earth Observation: A Necessity

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**Promoting geo-data literacy and use in international development**

- **Phase 1 (3 years):**
  Consolidate Requirements, engage stakeholders (IFIs & Client States) via regional demonstrations of EO

- **Phase 2 (5 years):**
  Mainstream & transfer EO into operational working processes & financing of ODA as ‘best-practice’ source of geo-information

- **Thematic priority areas:**
  Urban, Agriculture, Water Resources, Disaster Risk Reduction, Fragile States, Climate Resilience, Marine/Coastal, Forest, Ecosystem Services, Energy

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Promoting geo-data literacy and use in international development

- **Earth Observation for Sustainable Development**

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Promoting geo-data literacy and use in international development

- **Earth Observation for Development**

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Promoting geo-data literacy and use in international development

- **Earth Observation for Development**