

# *EO in support of Sustainable Development Agenda (SD & SDGs)*

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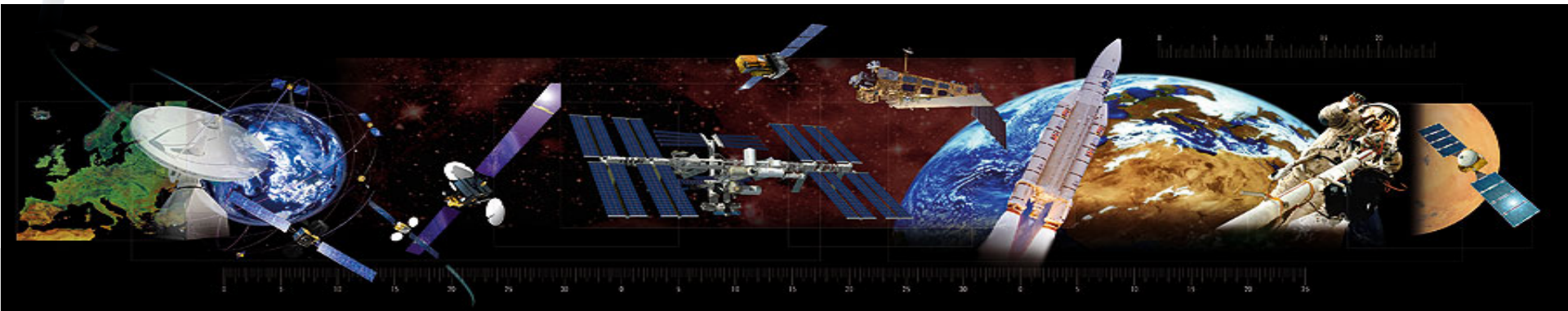
ESA/ESRIN October 2017.

# European Space Agency (ESA)



ESA is one of the few space agencies in the world to combine responsibility in nearly all areas of space activity:

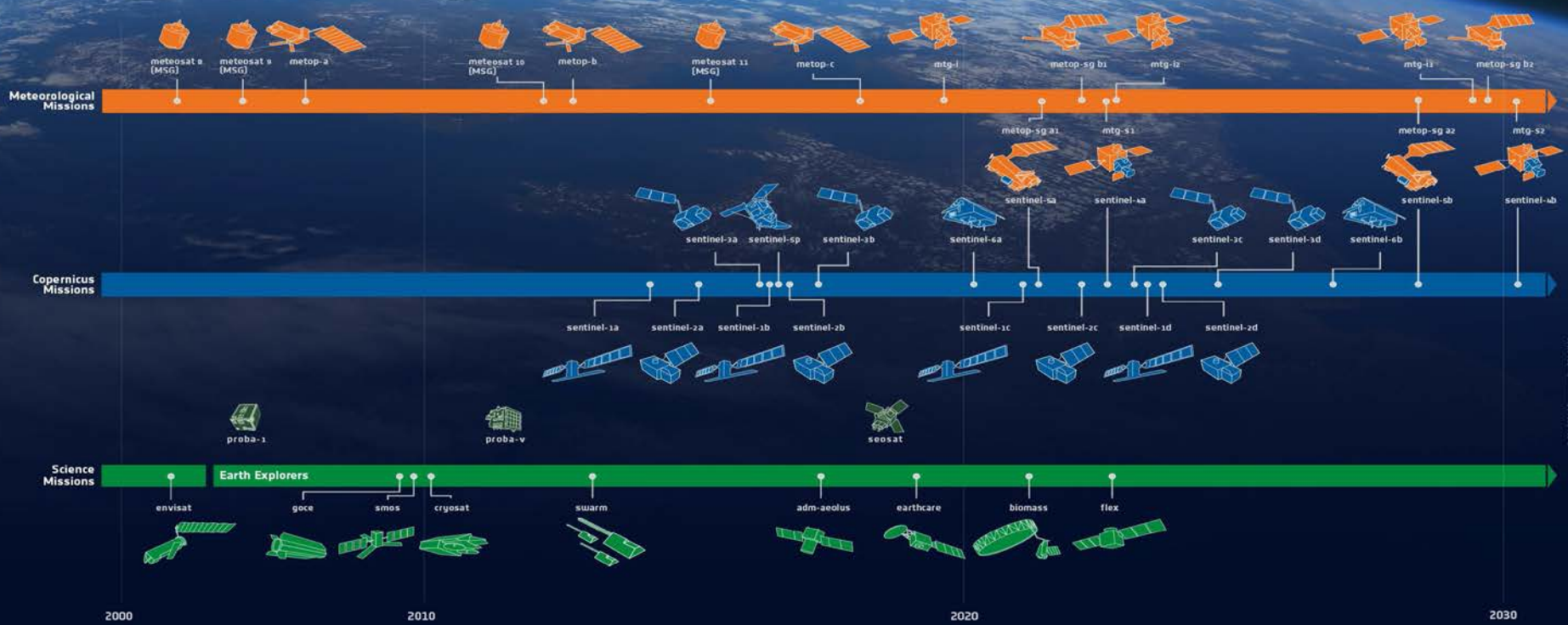
- Space Science
- Human Spaceflight
- Exploration
- Earth Observation
- Launchers
- Navigation
- Telecommunications
- Technology
- Operations





# Earth Observation at ESA

# → ESA DEVELOPED EARTH OBSERVATION MISSIONS



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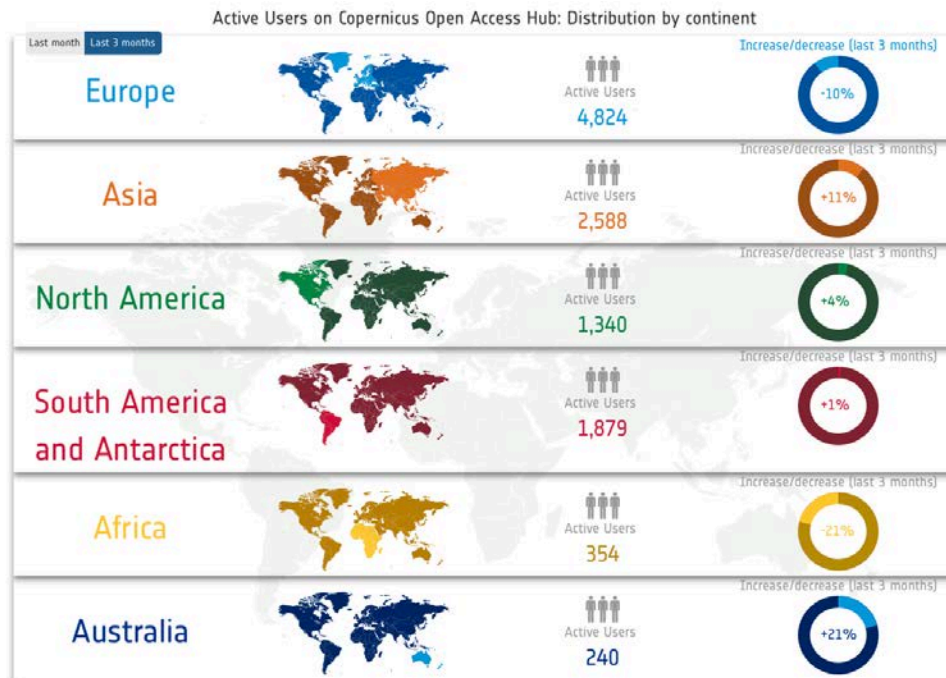
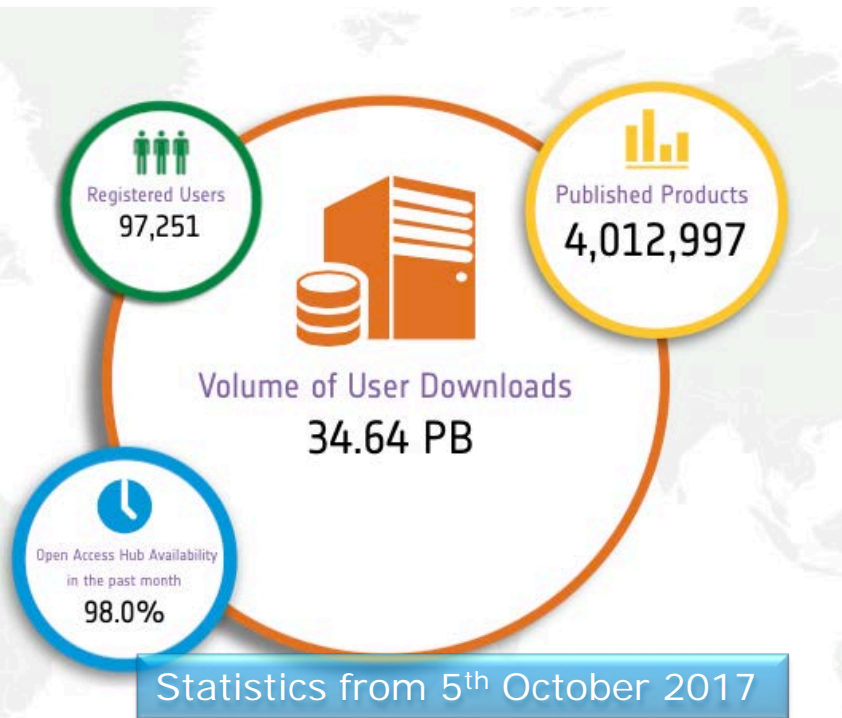
# Launch - 3 April 2014

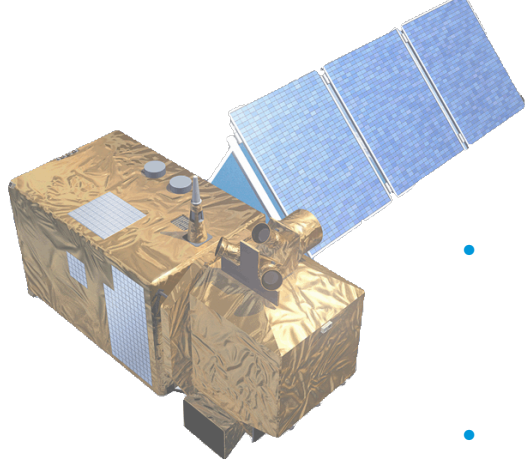


# Sentinels Dashboard



- The **Sentinel Dashboard** represents a novel concept to communicate with stakeholders the operations status of the Sentinel missions **in real time**
- It includes provision of system availability, data access performance and user statistics. Easily accessible online and via mobile devices

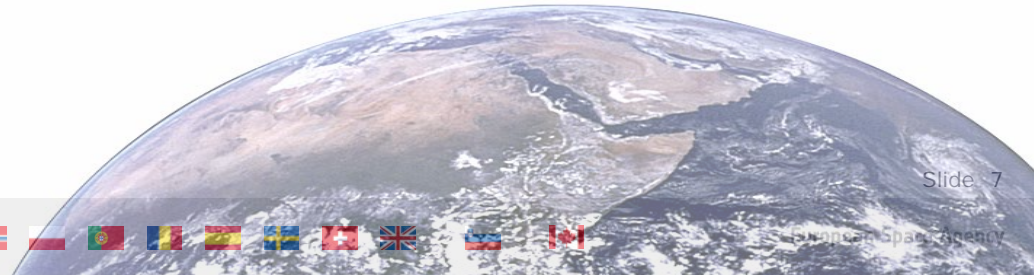




# EO for SD



- Promote increased use of EO-based environmental information in Official Development Assistance (ODA) working processes and practices,
- Promote the (world-leading) EO capabilities of Europe; both EO missions (ESA/EC Copernicus, EUMETSAT, National) and the (highly-skilled) EO downstream information services sector.
- Focus on IFIs -> driving global/regional ODA agenda, investing in tools & analysis, significant sphere of economic activity (*US\$ 142.6 B in 2016*).



# International Financing Institutions (IFI):

*How could they use EO ?*



## Information Drivers

- **Green Growth**
  - Environmental impact / sustainability of economic development investments
- **Climate Resilience / Proofing**
  - Long-term durability of development investments
- **Natural Capital Valuation**
  - Economic valuation of Ecosystems for National and Global accounting (GDP)
- **Open Development**
  - Increasing drive towards transparency in knowledge resources

## Information Uses

- **In support directly to Programs / Projects**
  - concept definition, planning, implementation
  - close-out and remission
  - as part of capacity-building in developing countries
- **In support of Monitoring & Evaluation (M&E) methodologies**
  - as *best-practice* to harmonize M&E tools: Feasibility, Environmental Safeguards Systems (ESS), Audits
- **In support of policy & planning**
  - sectorial analyses
  - country development planning
  - recent financial approaches to valuation of natural capital

Slide 8



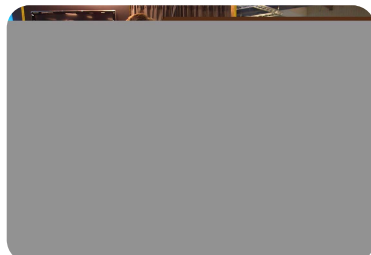


# Support International Financing Institutions (IFIs)



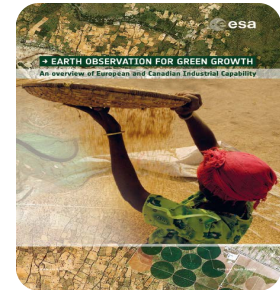
## Programmes & Projects

- **65+ small-scale demonstrations** of EO-based environmental information in the implementation of Official Development Assistance (ODA) projects during 2010-15.

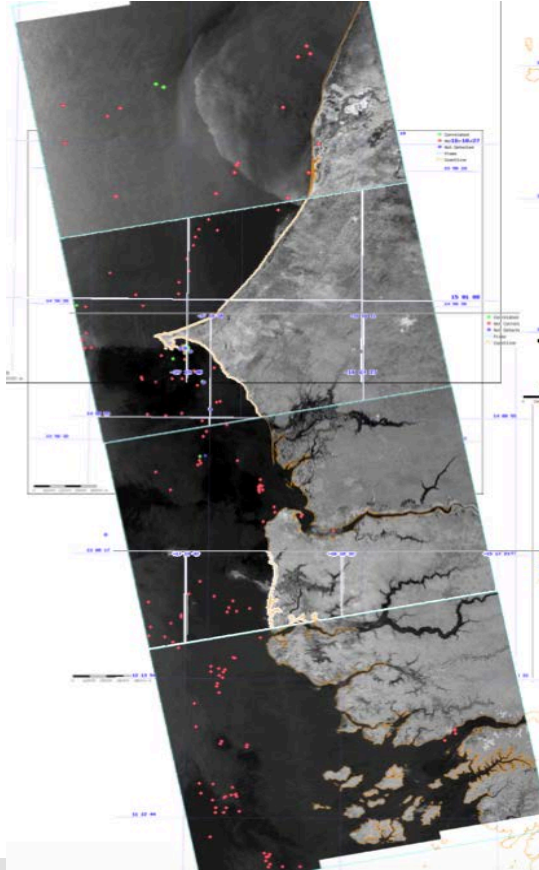


*World Bank, Dec 2015*

*Asian Development Bank, Nov 2016*



# Example : *Illegal Fishing*



First use of Sentinel 1 data for fisheries protection in developing countries (West Africa).



**THE WORLD BANK**  
IBRD • IDA  
(<http://www.worldbank.org/>)  
FEATURE STORY

**European Commission Gets Tough with Illegal Unreported and Unregulated Fishing, With A Little Help from Liberia**

December 28, 2015



Sachiko Kondo / World Bank

# The European EO Service Industry:



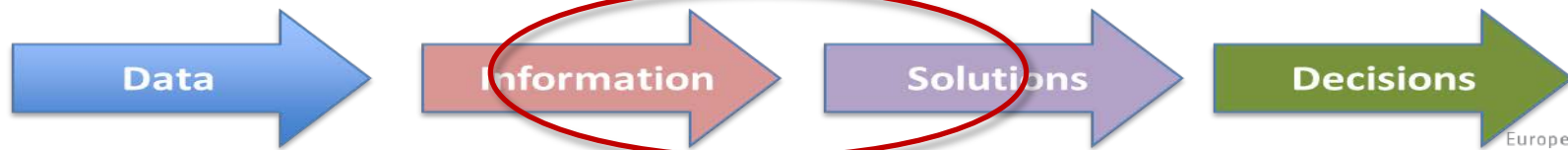
**eo PAGES**

- 218 COMPANIES
- 25 COUNTRIES
- 346 SERVICES
- 161 BUSINESS QUERYS

**EARSOC**  
European Association  
of Remote Sensing  
Companies

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- **450 +** suppliers (small companies), **6800+** employees,
- **350 + specialised** EO information products & services,
- **910 M€** annual turnover in Europe (2014, services + data)



# Earth Observation for Sustainable Development

*Longer-Term Vision (next ~ 8 years)*

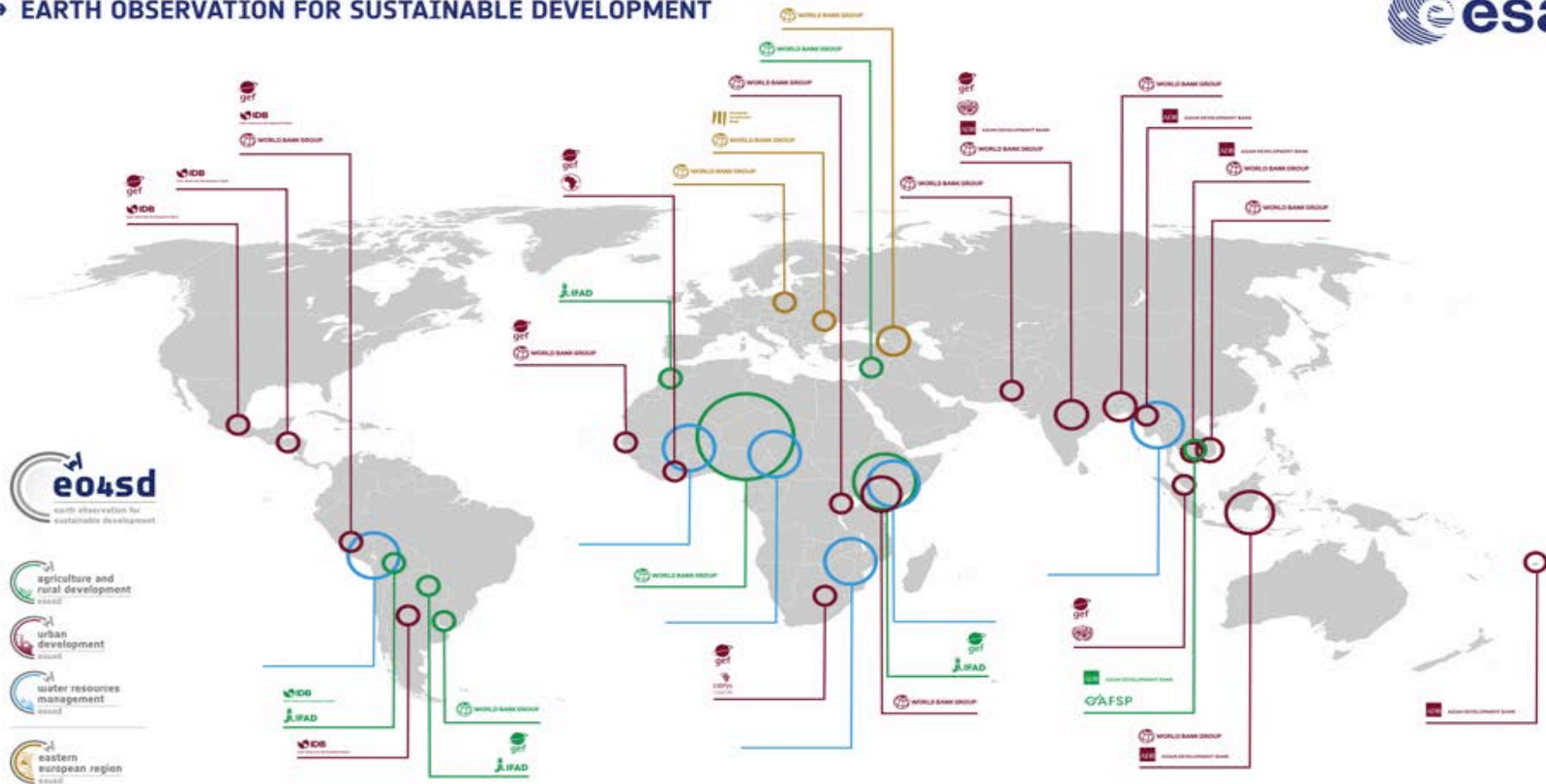


- **Phase 1** (3 years, 25 M€, 2016-2020):  
**Consolidate Requirements**, engage stakeholders (IFIs & Client States) via Large-scale regional demonstrations of EO.
- **Phase 2** (5 years, ~ TBD M€, 2020-2024):  
**Mainstream & Transfer EO** into operational working processes & financing of ODA as 'best-practice' source of environmental information in Environmental Safeguards Systems (ESS) and Monitoring & Evaluation (M&E) methodologies, SDGs drivers.
- **Priority thematic areas :**  
10 Thematic Areas, 5-year Strategic Agreements (MoI) with WB and ADB, others asking.

*2016: Agriculture, Urban Development, Water Resources*

*2017: Marine & Coastal, Disaster Risk Reduction, Fragile & Conflict States, Climate Resilience & Proofing*

# → EARTH OBSERVATION FOR SUSTAINABLE DEVELOPMENT



# EO for SDGs

Earth Observations potential contribution to the SDG Targets and Indicators



SDGs with most opportunities for Copernicus data and services

*Analysis performed by the GEO EO4SDGs initiative*

Target		Goal	Indicator					
<i>Contribute to progress on the Target yet not the Indicator per se</i>			<i>Direct measure or indirect support</i>					
	1.5	1						
2.3	2.4	2.c	4		2.4.1			
3.3	3.4	3.9	3.d		3.9.1			
			4					
			5		5.9.1			
6.3	6.4	6.5	6.6	6.a	6.b	6.3.2 6.4.2 6.5.1 6.6.1		
	7.2	7.3	7.a	7.b		7.1.1		
			8.4					
	9.1	9.4	9.5	9.a		9.1.1		
11.3	11.4	11.5	11.6	11.7	11.b	11.c	11.3.1 11.6.2 11.7.1	
	12.2	12.a	12.b					
	13.1	13.3	13.b			13.1.1		
14.1	14.2	14.3	14.4	14.6	14.7	14.a	14.3.1	
15.1	15.2	15.3	15.4	15.5	15.7	15.8	15.9	15.1.1 15.2.1 15.3.1 15.4.1 15.4.2
	17.6	17.7	17.9	17.16	17.17			



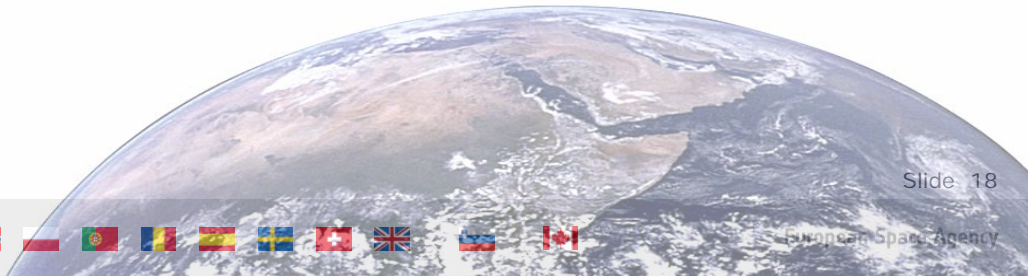
Support ESA/EC, its Member States and the European EO community to play a leading role in the full realisation of Earth Observations in the 2030 agenda for SD

- Analyse in depth the **Metadata Repository** of all SDG indicators (169 targets, 230 indicators) and assess the **current and potential contribution of EO/Copernicus** to the SDG Global Indicator Framework.
- Review the **Tier 2 and 3 monitoring/reporting guidelines** produced by the custodian agencies for a number of key SDG indicators and propose areas of EO improvements.
- Perform a **country demonstration**, by partnering with the NSO and the relevant national governmental authorities (for the indicators selected) to support implementation of a number of SDG indicators (**at least two**)
- Study how the **EC/ESA/MS developed platforms (DIAS) and big data initiatives (DataCube)** can serve the EO data and information needs of the large community of SDG stakeholders (UN-GGIM, Custodian Agencies, National Statistical Offices, etc.).

400 KEUR, 18 months, Starting 2018 Q1

# Take-Home Messages.....

- Official Development Assistance (ODA) is a sector of huge (and long-term) economic activity with increasing attention on **environmental sustainability (green growth) and climate change (resilience, proofing)** of the (mainly large infrastructure) projects undertaken in developing countries,
- Earth Observation can deliver **key environmental information that supports** the definition, planning, implementation, monitoring and assessment of major projects happening in developing countries.
- Europe has **world-leading capabilities in Earth Observation** (both ESA and national EO missions) and a highly skilled and experienced EO information services industry.







**Earth Observation for a Transforming Asia Pacific**

A portfolio of twelve EO projects supporting Asian Development Bank activities 2014–2016  
<http://esamultimedia.esa.int/multimedia/publications/EOTAP/>



**Earth Observation for Sustainable Development –  
 ESA-World Bank Partnership Report September 2016**

Report describing ESA's newest batch of EO support projects in partnership with the World Bank 2013–2015.

[http://esamultimedia.esa.int/multimedia/publications/ESA\\_WB\\_Partnership\\_Report\\_2016/](http://esamultimedia.esa.int/multimedia/publications/ESA_WB_Partnership_Report_2016/)



**Earth Observation Support for the International Fund For Agricultural Development –  
 Final Report August 2014**

Report describing an EO support projects in partnership with UN-IFAD.

<http://esamultimedia.esa.int/multimedia/publications/IFAD/>



**Earth Observation for Sustainable Development –  
 ESA-World Bank Partnership Report June 2013**

Summary report of the first batch of projects in cooperation with the World Bank.

[http://esamultimedia.esa.int/multimedia/publications/ESA\\_WB\\_Partnership\\_Report\\_2013\\_complete/](http://esamultimedia.esa.int/multimedia/publications/ESA_WB_Partnership_Report_2013_complete/)



**Earth Observation Information Services for European Investment Bank Projects –  
 Progress Report September 2012**

Summary report of projects in cooperation with the European Investment Bank.

[http://www.vae.esa.int/files/EOeuropa\\_progressReport.pdf](http://www.vae.esa.int/files/EOeuropa_progressReport.pdf)



*Thank You !*

*and ....*

*For further information.*