

Trends in Earth Observation Adoption for Development Assistance: an Analysis of International Financial Institutions' Demand

C. Fafet¹, C. Aubrecht¹, A. ChUNET^{1,2}, B. Koetz¹, P. Manunta^{1,3}, R. Roach⁴, D. Taverner⁵

¹ESA - European Space Agency, ²World Bank, ³Asian Development Bank, ⁴ABD international, ⁵Caribou Space



EUROPEAN SPACE AGENCY'S SUPPORT TO INTERNATIONAL DEVELOPMENT

2008-2015

RAISING AWARENESS:

SMALL-SCALE DEMONSTRATIONS OF EO SERVICES

2016-2023

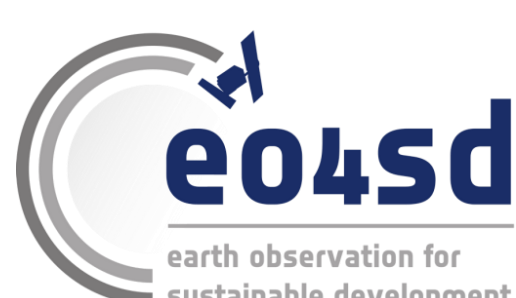
CONSOLIDATING REQUIREMENTS

STRATEGIC ENGAGEMENT OF STAKEHOLDERS

Since 2020

MAINSTREAMING EO INTO DEVELOPMENT

OPERATIONS & SKILLS TRANSFER



ASIAN DEVELOPMENT BANK



WORLD BANK GROUP

DEDICATED PROGRAMMES TO GEOSPATIAL TECHNOLOGIES

2021 EO for Development and Digital Transformation Initiative

Launched by the Digital Technology for Development Unit

❖ Supports coordination under the ESA partnership, complementing GDA

EO IN ADB STRATEGY 2030

EO is mentioned in 3 out of 7 operational priorities of ADB Strategy 2030



Operational Priority 3

Climate Change, Disaster Resilience, Environmental Sustainability



Operational Priority 4

Making Cities More Livable



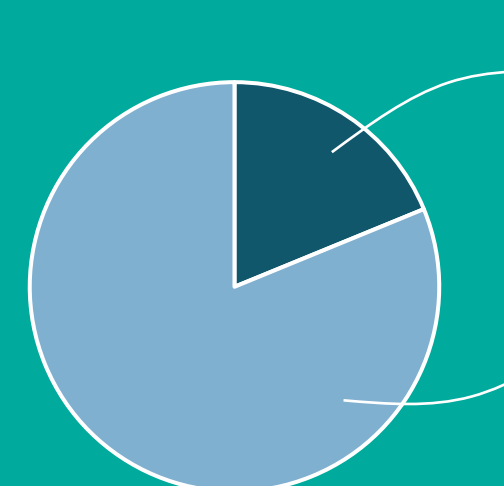
Operational Priority 5

Promoting Rural Development and Food Security

Source: ADB Strategy 2030 Operational Plans

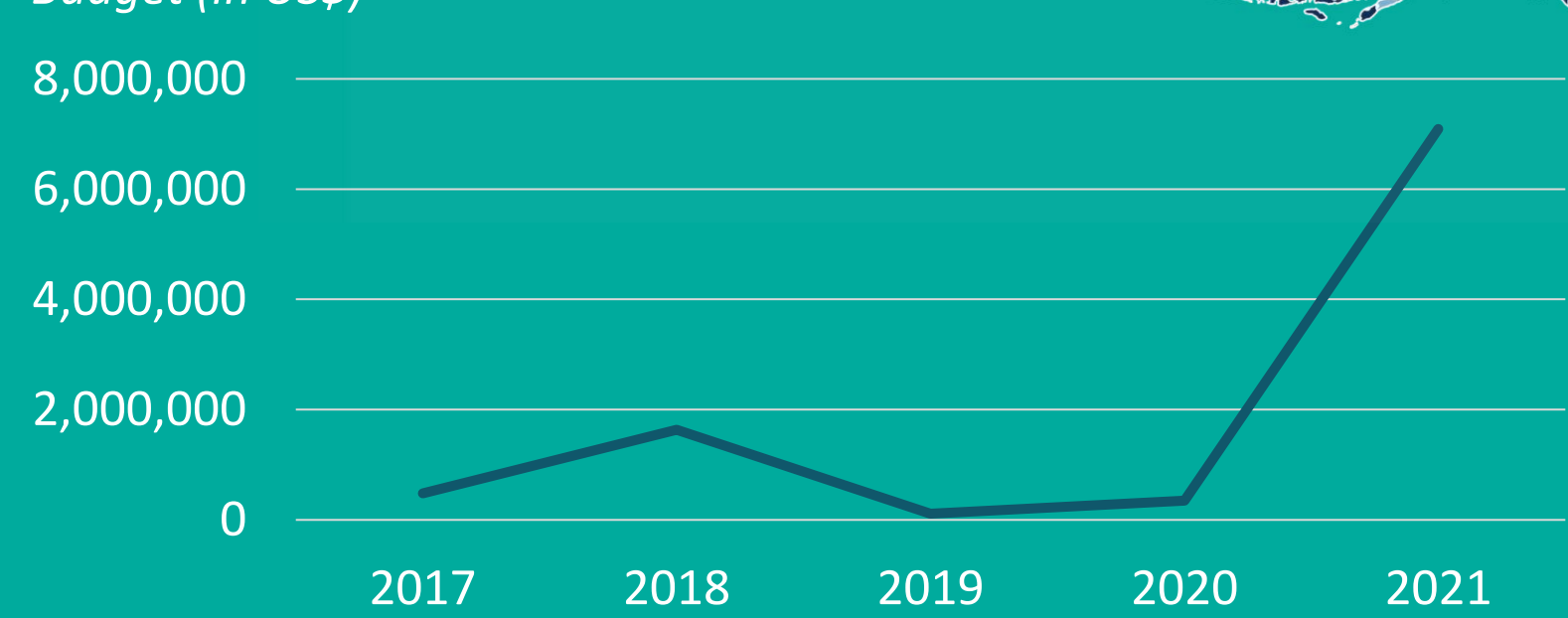
HISTORIC ANALYSIS OF EO USE

❖ 117 projects identified from 2016 to 2021 with explicit EO components²



Specific EO budget is not only higher but also more and more explicitly mentioned

Budget (in US\$)



Source: ADB Operational Procurement Database

EVIDENCE OF UPTAKE IN CURRENT PROGRAMMES

Empowering Developing Member Country's to Use Multispectral Satellite Images

- ✓ Current and Future actions in Cambodia, Timor-Leste and Indonesia
- ✓ Funding of 1.05 Million US\$ with possibility of more

Supporting the Establishment of the Armenian Spatial Data Infrastructure

- ✓ Using EO to support the Cadastre Committee
- ✓ Future possibility to create an interoperability tool for urban planning

THE WAY FORWARD

- ❖ Promising cases for 2022, in Indonesia and possibly in Cambodia
- ❖ Coastal & Marine subjects as new emerging thematic areas for EO applications

DEDICATED PROGRAMMES TO GEOSPATIAL TECHNOLOGIES

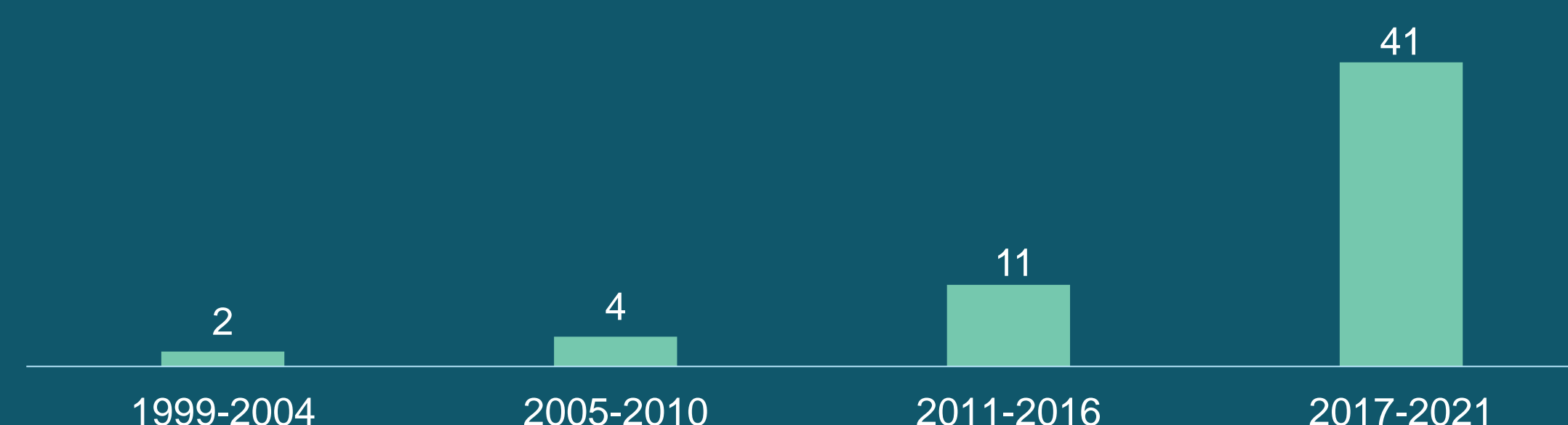


Aims at 'harnessing the new generation of EO services'

❖ Supports coordination under the ESA partnership, complementing GDA

INCREASING NUMBER OF EO-RELATED PUBLICATIONS

Number of publications in the Open Knowledge Repository referring to EO, RS, geospatial technology, or satellite imagery



Source: WB Open Knowledge Repository

NEW THEMATIC AREAS COVERED

EO is used in new topics like Finance

- ❖ Disaster Risk Financing and Insurance Program with increasing reference to EO
- ❖ 2020 Report on Spatial Finance: Challenges and Opportunities in a Changing World

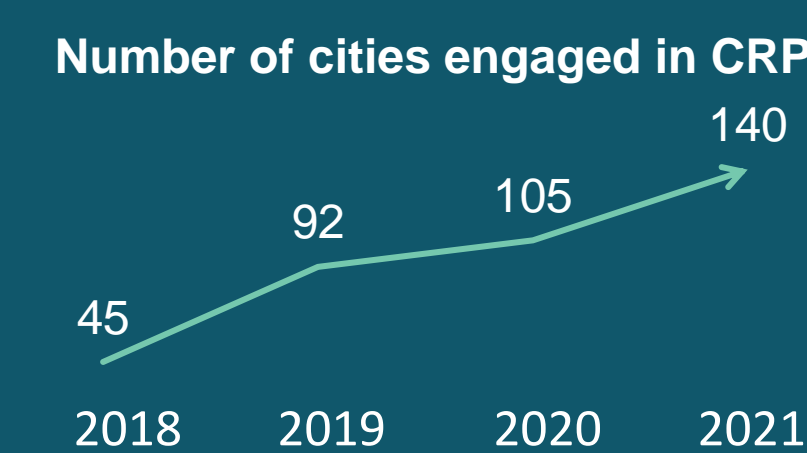
EVIDENCE OF UPTAKE IN CURRENT PROGRAMMES

Geo-Enabling initiative for Monitoring and Supervision (GEMS)

- ✓ Aims at overcoming the lack of physical field access due to Covid-19 and/or countries affected by Fragility, conflict, and violence (FCV)
- ❖ Listed by the UN Innovation Network among the Best Innovations in 2020
- ❖ 2021 Geospatial World Awards in the category "excellence in project monitoring"

The City Resilience Program (CRP)

- ✓ Recognition of usefulness of integrating geospatial solutions
- ❖ Dedicated programmatic area to geospatial solutions
- ❖ Involvement of WB Geospatial Solutions Working Group
- ❖ City resilience scan use extensively spatial analytics
- ✓ Continuous increase and improvement of EO-related products



- ❖ Using Synthetic Aperture Radar for flood mapping
- ❖ Incorporating more and more night-time light intensity in analyses
- ❖ Localising urban heat island through remotely-sensed Land Surface Temperature
- ❖ Analysing land subsidence risk through remote-sensing technologies

Source: CRP Annual Reports (2018, 2019, 2020 and 2021)

"All of us have always been fascinated by the potential that this technology gives us in the development space. Now it has gone beyond the fascination. Now we are entering a stage where we can actually turn the beautiful images into real management decisions."

Juergen Voegelé, VP Sustainable Development, World Bank

¹ Mobilisation from space and development finance

² According to a manual screening analysis

