Way Forward on CEOS Agency Coordination in engaging with the International Financing Institutions (IFIs)

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**Introduction**

This paper explains the background and current opportunity for the expanded use of EO-based environmental information within the activities of a global and significant new user community operating in the field of international development; in particular the International Financing Institutions (IFIs) administering development aid and finance.

The paper proposes a framework in which the CEOS agencies could collaborate to jointly develop a coherent & consistent set of material for promoting the practical benefits that EO (in its entirety) can deliver to the process of Official Development Assistance (ODA), to ensure that it is carried out in a socially responsible and environmentally sustainable manner.

**Background & Context**

***Development Aid***

Development aid and finance is a complex and rapidly changing international system covering a range of assistance from the developed to developing countries.

This finance system consists of many diverse institutes and organisations, including the International Financing Institutes (eg. the World Bank, Asian Development Bank, etc), the National Aid/Development Ministries and Agencies, the European Commission (DG-DEVCO) and the private sector (eg. the Rockefeller and the Gates Foundations, etc).

The OECD Development Assistance Committee (DAC) was established in 1961 to set global standards, monitor development assistance finance (whose core is Official Development Assistance - ODA) and advise its member countries on appropriate development policies. See <http://www.oecd.org/dac/financing-sustainable-development/>.

Most ODA comes from the 28 members of the DAC, and reached a new peak $142.6 billion in 2016 (an increase in 8.9% from 2015). Over the last 50 years, the level of ODA financing has grown by a factor of three, and the trend continues with the commonly agreed target of ODA to reach 0.7% of donors’ national income (GNI).

However, there is increasing institutional and public interest and pressure on accountability, transparency and environmental sustainability within the development aid community. One concrete manifestation of this is the definition of the Sustainable Development Goals (SDGs) in 2015, which will drive the eco-system of development over the next few decades.

In support of the 2030 Agenda for Sustainable Development, the OECD advances key issues on development finance through data collection and reporting, establishing statistical measurement-frameworks, and analysis on a variety of development finance topics (see : <http://www.oecd.org/dac/financing-sustainable-development>).

In addition, significantly more attention is being paid to the consequences of climate change as a threat to global development, with the Least Developed Countries (LDCs) being amongst the most vulnerable hardest hit. All IFIs have comprehensive programmes and financing in place to help developing countries become more resilient to the possible effects of climate change and the impact of associated extreme natural disasters. A recent example is the Green Climate Fund (GCF), set up in 2010 within the framework of the UNFCCC) and with pledged resources in excess of US$ 10 Bn (see : <http://www.greenclimate.fund/home>).

In summary, all of these factors (sustainable development, climate change, accounatbilty) are driving the IFIs to improve their knowledge of the current state and future evolution of the Earth’s environment through new, innovative information sources and technologies. This is the role and contribution that Earth Observation can make.

***Earth Observation***

Many significant developments and changes are taking place in Earth Observation that are bringing this technology from a largely scientific use, to a level where it can be used as an operational source of environmental information in a wide range of (non-specialist) domains.

Major drivers of change include:

* The progressive deployment and global operations of the Copernicus fleet of satellites providing unprecedented volumes of free and open EO data, and the complimentary capabilities offered by the increasing number of VHR Optical and Radar National missions,
* The advent of ‘NewSpace’ with the entry of the private sector through the development commercial (mostly VHR) SmallSat constellations and the projected large growth in these types of missions over the next decade,
* The rapidly evolving ICT conditions (cloud, massive computing, data analytics) and the entry of ICT giants (e.g. Google, Amazon, Microsoft, SAP) providing easier access to EO through the platforms that they already operate.

These factors are revolutionising the applications of EO-based information and are opening opportunity to expand the use of EO beyond the traditional largely public-sector (government) user communities, with an increase in Business-to-Business markets (e.g. Agriculture, Oil & Gas, Retail) and the prospect of Business-to Citizen markets through social media.

In addition, political, public and scientific interest is growing to make better environmental decision-making through the use of EO to address the grand societal challenges that the world is increasingly facing, as manifest through initiatives such as the Group on Earth Observations (GEO).

***Initial Activities & Experiences with EO & Development Aid***

Over the last decade, a number of space agencies have started initiatives to demonstrate the capabilities and use of EO in the field of development aid with varied stakeholders. These include the IFIs, national aid ministries/departments, aid agencies/organisations and a range of local government organisations in the developing countries as aid recipients.

A few examples include:

* CEOS Global Forest Observations Initiative (GFOI) with GEO and national governments in support of REDD+ national forest monitoring systems for Measurement, Reporting & Verification (MRV) compliant with IPCC guidelines,
* NASA SERVIR joint venture with USAID to provide state-of-the-art, satellite-based Earth monitoring, imaging and mapping data, geospatial information, predictive models and science applications in more than 30 countries,
* ESA collaboration with World Bank, IFAD and ADB, to provide tailored geo-information solutions for a range (60+) of specific projects under implementation,
* JAXA collaborations on space applications with World Bank on disaster risk management in Central America, and with ADB in a range of projects on Agriculture, rural statistics and sustainable development,
* DG DEVCO and JRC initiative on GMES & Africa in the context of the Africa-EU partnership,
* UKSA International Partnership Programme (IPP) using space knowledge, expertise and capability to provide a sustainable, economic or societal benefit to undeveloped nations and developing economies,
* Netherlands Space Office Geo-Data for Agriculture and Water (G4AW) programme to improve food security in developing countries by using satellite data, commissioned by the Dutch Ministry of Foreign Affairs.

These initial experiences have raised interest in the IFIs to explore further EO in a longer-term and in a more strategic approach (see [www.worldbank.org/earthobservation](http://www.worldbank.org/earthobservation)). They have also led to an initial level of procurement of EO-based information by the WB and the Global Environment Facility (GEF) using their own financial resources. In addition, a number of new geo-information service providers are entering into the domain (e.g. Radiant Earth).

However, these experiences have also led to a better understanding of the some key issues involved in growing the use of EO in the development aid sector, which are summarized as:

* ***Awareness*** : better understanding what EO can deliver needs to be improved through a range of material that is specifically designed and adapted to the needs and language of the development aid community,
* ***Acceptance***: the value-proposition of EO needs to be credible and punchier, and the relevance to ODA working methodologies (e.g. Monitoring & Evaluation) more apparent,
* ***Use*** : a comprehensive training programme is required to ensure that it is understood by practitioners how to use EO information easily in their operational activities. For the IFIs this includes not only bank staff, but (more importantly) also the government departments in the recipient states.

**Opportunity & Benefits**

***Opportunity***

The Development Aid domain (in particular the IFIs) represents a credible and realistic prospect for sustainable transfer of EO into operational use (global operations, long-term horizon, significant economic size, pressured for accountability, transparency, sustainability, facing increasing environmental issues, in need of innovative geo-information solutions, interested in putting EO to work).

This prospect and the changes taking place in the EO and ICT domains, present an opportunity to ‘mainstream’ the use of EO-based information into international development aid projects and activities.

Here, ‘mainstreaming’ is to be understood as EO-based information planned-in technically and financially as a systematic ‘best-practice’ source of environmental information for all phases of international development projects; ie : *Identification, Preparation, Appraisal, Negotiation*, and (most importantly) *Implementation*.

The IFIs represent a valuable entry into the international aid domain as they are driving development at global and regional level, and they are investing in the tools and analysis required to support the strategic policy and planning that they define.

***Benefits***

The benefits of large-scale use of EO for IFI operations and planning are identified for *Governments/Space Agencies, the IFIs, the Client States, and Information providers.*

**For Governments/Space Agencies:** Uptake of EO by the IFIswould provide visible evidence for the imperative goal of Governments to maximize the economic and societal benefits of investments in their EO observing systems. This takes EO into a new global user community who operate globally addressing the today’s grand societal challenges. It will utilise ALL space assets & data due to the global extent and very wide range of user information requirements.

**For IFIs:** EO is a globally coherent and consistent source of baseline environmental information (both spatially around the planet and historically back in time). EO is a non-intrusive technology, and sometimes the only feasible method of collecting information, especially for very remote or difficult to access regions (eg. conflict areas). EO will *increase efficiencies* in the use of resources (economic, manpower, time) for existing operations through a globally consistent approach for IFIs to plan, monitor, implement, and close development projects. EO will *extend capabilities and improve methodologies* by supporting policy formulation and development planning to allow environmental analysis in a way that is not possible by other means (eg. Climate-Change). Finally, EO will promote *better transparency, responsibility and accountability* through the use of open data.

**For the Client States:** EO provides Client States with up-to-date information on the state of the national environment and natural resources. It provides a reliable and consistent baseline for country-level planning of future developments.

**For Information Providers (both public and private sector**): Providesopportunities to develop tools, services and information products that rely (entirely or partly) on EO satellite data, taking advantage in particular of some sustained and long-term provision of free and open EO satellite data. Provides an entry point into developing countries, many of which have the fastest growing economies in the world. As such they represent a longer-term opportunity to develop business relationships, which are otherwise difficult to achieve for small companies due to lack of resources.

**Proposal**

Recognising the opportunity presented by the Development Aid community, it is proposed that CEOS should formalise efforts to coordinate and promote the use of Space technology and information (as a whole) in a coherent, consistent and non-partisan manner, starting with the key IFIs. This coordination should collectively build the case for the systematic inclusion of satellite EO in all IFI projects and activities requiring environmental information.

The role of CEOS should be aimed at the level of overall message & strategy on the use of EO, sharing of information and experiences. More targeted, specific initiatives and activities should continue to be carried out individual space agencies.

CEOS should also develop a coherent approach and interface with GEO regarding Development Aid.

More specific lines of action to be considered are:

* Establish the monitoring & evaluation (M&E) techniques that would ensure the benefits being delivered through EO are recorded (both quantitative & qualitative),
* Document convincing demonstrations of the value-proposition of EO with respect to Development Aid lending operations, and the Environmental Safeguards policies and Climate resilience strategies now being developed by the IFIs,
* Co-develop (with IFIs and Client States) accepted methodologies & best-practice guidelines for the use of EO in ODA (here the experiences and achievements of GFOI are highly relevant),
* Leverage the IFIs to implement extensive capacity-building programmes on the capability & use of EO-based environmental information for both IFI staff & Client States government agencies.

**Next Steps**

*For discussion: 2017 Plenary-level decision and SIT-33 (April 2018) actions?*