

## *Satellite Environmental Information in support of Development Aid Activities in European Aid Agencies*

*First Meeting of Interested Parties: ESA/ESRIN, Frascati, 16<sup>th</sup> January 2018*

### *Summary Report*

#### **1 BACKGROUND & CONTEXT**

The 2030 Agenda for Sustainable Development is an action plan to take the bold and transformative steps that are urgently needed to shift the world onto a sustainable and resilient path. It is supported at the highest political level and will drive a number of key issues in development financing including data collection and reporting, establishing statistical measurement frameworks, and analysis on a variety of development finance topics (<http://www.oecd.org/dac/financing-sustainable-development/>).

Many significant developments and changes are taking place in Satellite Earth Observation (EO) that are bringing this technology from 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. 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 (<https://www.earthobservations.org/index.php>).

Over the last decade, a number of initiatives have taken place in Europe to demonstrate the capabilities and use of EO in the field of Development Aid with varied stakeholders. These include the International Financing Institutions/Multi-lateral Development Banks (IFIs/MDBs), national aid ministries/departments, aid agencies/organisations and a range of local government organisations in the developing countries as aid recipients.

Some recent examples include the International Partnership Program (IPP) of the UK Space Agency (<https://www.gov.uk/government/collections/international-partnership-programme>), the Geodata for Agriculture & Water (G4AW) program of the Netherlands Space Office (<https://g4aw.spaceoffice.nl/en/>), and the Earth Observation for Sustainable Development (EO4SD) Program of ESA (<http://eo4sd.esa.int/>).

These activities have made increasing use of the EU Copernicus programme, which marks the beginning of a new era in Earth Observation, with the Sentinel satellites now being launched brining the prospect of long-term continuity to 2030 and beyond ([www.copernicus.eu](http://www.copernicus.eu)).

Through this initial work, the benefits that EO can bring to development aid domain are beginning to emerge (eg. increased efficiencies in existing operations, improved

policy definition & planning of future activities, better transparency, responsibility and accountability through the use of open data). These first experiences have raised awareness and interest in the development aid sector to explore further EO in a longer-term and in a more strategic approach.

To date, the activities of ESA in the development aid area have been focused entirely on projects being implemented through the International Financing Institutions (eg. World Bank, IFAD, Asian Development Bank). However, several European national aid agencies are also actively investigating the use of EO-based information within their activities, and have approached ESA to learn more about these experiences (eg. GIZ and AFD).

Recognising this background and previous achievements and growing interest in the development aid community, now is an appropriate time to widen the discussion on EO and ODA with those interested national aid agencies from across Europe, together with representatives from the national space agencies/government departments, the OECD and DG-DEVCO.

## 2 MEETING SCOPE & PURPOSE

Given the above background, a first exploratory meeting with those interested European national aid agencies was organised and hosted at ESA's centre for Earth Observation, ESRIN located in Frascati, Rome, (Italy) on 16th January 2018. More than 20 participants from various organisations attended (i.e. National and EU Development aid Agencies and Ministries, National space agencies, Embassies), with representation from United Kingdom, Germany, France, Italy, Netherlands, Sweden, Norway, Switzerland and Luxembourg.

The purpose of this meeting was to open dialogue at European level, to take stock of the current opportunities, share information and experiences, and collectively identify the key issues and actions needed to grow the use of EO in the development aid sector, in the longer-term.

The meeting started with an overview of current experiences in the use of satellite information in development aid activities, both through ESA activities with the International Financing Institutions, and from European organisations through national activities in Germany, France, UK, Netherlands and Italy. This was followed by a short update on the latest news and developments in the use of geospatial information from the ESA staff seconded to World Bank (Washington DC) and Asian Development Bank (Manila).

Two open discussion sessions took place; the first addressing challenges and opportunities on expanding the use of EO in development aid activities, based on current experiences, and the second exploring ideas for common objectives/goals, prospects for longer-term collaboration. The meeting concluded with identifying what could be the next steps in the short term.

The meeting agenda, all presentations and complete list of participants are at:  
<http://eo4sd.esa.int/2018/01/23/esa-opening-a-dialogue-with-european-national-aid-agencies/>

This report summarises the major points noted in each of the two discussion sessions, and concludes with the main findings and next steps proposed.

### 3 CURRENT EXPERIENCES: CHALLENGES, AND OPPORTUNITIES

- The critical importance of Capacity-building with Development Aid stakeholders is stressed. This is because (very often) they are not at all familiar in the using the information that satellites can deliver. Capacity building meaning, in first place, educating/training the aid beneficiaries (i.e. Government organisations/departments in the Developing Countries) for an effective and knowledgeable exploitation of EO information in their operational work, but also raising awareness of the potential of EO within the Aid Agency internal personnel.
- There are a number of basic principles that help build engagement and ownership of end-users in the use of satellite information. These include: fully involve the end-user from the very start i.e. co-design in the definition and planning of activities; have the user commit to invest something into the activity (e.g. in-situ data, manpower and effort, co-financing); build activities that are compatible and 'fit-in' to existing processes within the country (e.g. Land-use planning processes, National Adaptation Programmes of Action: NAPAs, Nationally Appropriate Mitigation Actions: NAMAs).
- There is a growing consensus within the Aid community that EO applications are moving from an R&D-oriented nature to becoming more and more operational (in both Germany and France agreements are in place between the national Development Aid and the Space Agencies). Nonetheless, there is concern that the inclusion of EO will complicate the level of information and will actually slow down decision-making processes from the user side in the Aid community. Therefore, there is a need for simplification (easy to use) and standardisation of EO information to build take-up and trust in this technology.
- Governments are putting significant emphasis and efforts on better reporting in connection with their international engagements. Techniques and guidelines to make better/further use of data (including EO) produced for reporting purposes within the Development Aid implementing measures should be considered.
- Within beneficiary countries, several national agencies often operate on the same area/issues and exchange of information between different organisations within the beneficiary country is frequently difficult/non-

existent. The development of National spatial data infrastructures may help in the exchange of information.

- Official Development Assistance (ODA) comes with a complete set of Monitoring & Evaluation (M&E) requirements and methodologies to ensure that measurable and sustainable economic or societal benefits are being delivered (e.g OECD DAC's 'Criteria for Evaluating Development Assistance' based on relevance, efficiency, effectiveness, impact & sustainability). M&E is a fundamental component of development aid projects within their whole lifecycle, and need to go beyond the end of the project in order to assess projects' impact in terms of development results.
- Sustainability of the development aid actions implemented through the projects is a key and challenging (and also difficult) issue. Here sustainability is defined as whether the benefits of an activity will continue after the development financing has stopped. There are many business models that can be considered when addressing the long-term sustainability (e.g. Freemium, Loyalty, Inclusive, Service models) and they can involve many other intermediaries before the end-user.
- For activities involving the use of EO information, the cost of input data cost is an important component in sustainability. More space agencies are following an open/free data policy. Also, commercial EO data providers are in some cases offering free of charge cooperation. It would help if ALL Copernicus data (including commercial Contributing missions data) could be made available to developing countries free of charge. It was noted also that the Sentinels planning and acquisition strategies are not well understood. In contrast however, other comments underlined that a significant cost factor is associated to field campaigns for in-situ information, rather than EO data.
- The Sustainable Development Goals (SDGs) will be an important element in the 2030 Sustainable Development Agenda. However, the monitoring of the SDGs should not be an aim in itself, but it should be in order to support planning and implementation of development aid in order to reach the goals and targets.
- Within the International Financing Institutions, the ADB is now taking action with respect to fragmentation of the use of geo-information within the bank by implementation of an infrastructure called the SAF (Spatial Application Facility) for internal use. Similarly, the WB is setting up an internal unit (GOST: the Geo-spatial Operations Support Team) to better coordinate and manage the use of geospatial information within the Bank.
- From a technology viewpoint, cloud-based solutions are of great interest to many Developing Countries where computing infrastructure can be scarce. However, Internet connectivity continues to be a significant difficulty in many of these countries.

- ESA have been concentrating on the use of EO, which is acknowledged to have a key contribution in the field of environmental information, however other space assets (Telecoms and Navigation) do have a role to play and should be brought into the development aid discussion.

#### 4 LONGER-TERM PROSPECTS FOR COLLABORATION

- All of the points above arise from the substantial previous experiences of the participants, but not all of the participants have encountered all of these issues first-hand. There is therefore a significant benefit to be gained from increased Knowledge Sharing on the use of satellite information within the Aid community.
- It is recognised that ESA have built-up unique and valuable collaborations with the International Financing Institutions: IFIs (especially WB, IFAD and ADB), and that these institutions are also an important element in mainstreaming the use of satellite information within Development Aid.

Suggestions of areas of activity for further consideration where ESA might play a role include:

- Coordinate at European-level to help sharing existing knowledge of data, information and results to maximise effectiveness and avoid unnecessary overlaps (in both geographical and thematic domains) within the Development Aid community,
- Leverage existing measurement-based results from European national Aid activities to strengthen the case for EO through the ESA collaboration with the IFIs,
- Act as an independent Technical Expert in EO to support and implement the required (external and internal stakeholder) Capacity Building, and as point of reference for standards and quality of EO-based environmental information,
- Carry out the higher-risk development activities, including pilot projects, to implement projects that are of high (and common) interest to national Development Aid Agencies, but may be considered too difficult or ambitious (perhaps in terms of geographical or thematic scope) to be addressed by an individual Aid Agency acting alone. This work should be with a view the developments are to be transferred into operations of national Aid agencies in the future.
- Consider widening the scope of demonstrating the benefits of that satellite can deliver beyond Development Aid to include the broader field of Sustainable Development, including those countries where clear opportunities for expanded use of this information exist, but they are not listed as ODA recipients (e.g. emerging space economies).

Comments that help guide and constrain any future action that ESA may take include:

- The user-demand approach must be maintained as opposed to technology push,
- Duplication of existing activity should be avoided, but not only. Any future activity must be more than yet another case-study/demonstration. The focus has to be on the role space can play in delivering measurable economic or societal benefits to a developing country with the long-term sustainability addressed at the start,
- Regarding the use of Copernicus, any future activity must be fully coordinated with the EC DG-GROW, DG-DEVCO, DG-JRC.

## 5 MAIN OUTCOMES AND NEXT STEPS

- It is confirmed through the material presented that there is significant potential for the wide-scale use of satellite capabilities in the field of Development Aid. Many organisations in Europe have been actively investigating the benefits that EO (in particular) can deliver, and a wealth of knowledge, information and results exist that could be better leveraged and shared.
- The dialogue initiated within this meeting will continue throughout 2018 with a view to organising a wider, structured consultation on the use of satellites in Development Aid at a European-level workshop involving more Member States and actors to be held at ESRIN in the timeframe of September - October 2018.
- In the shorter-term, ESA are now initiating a new action to develop an environment where the Development Aid actors from across the community (i.e. IFIs/MDBs, National Aid agencies, International NGOs, ODA-approved Countries, Industry) can access introductory EO information guides, data sets, analysis & visualisation tools, and perhaps hosted processing. The content will be customised to the language and practices of the Development Aid domain. ESA are finalising the requirements in early 2018 and would welcome input from Aid agencies to shape those developments that should begin after the summer of 2018.
- In the longer-term, ESA will continue to develop proposals for future activities, taking into account the suggestions and comments, both in this initial meeting and in future dialogue with the Development Aid community. In this respect, the national Development Aid agencies/organisations from Germany, France and Netherlands present at the meeting are willing to support ESA in investigating the OECD ODA accreditation process for potential future activities. The actual support (if needed) will be further clarified by ESA via bilateral interactions and direct discussions with OECD.