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International cooperation in using space for sustainable development: Towards a ‘Space2030’ agenda (1)

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BRINGING SPACE SERVICES TO EARTH AS A CRUCIAL SUSTAINABLE ENABLER OF
GROWTH IN THE DEVELOPING WORLD – A PRIORITY CHART OF COUNTRIES AND
INTERNATIONAL COOPERATION PROGRAMMES

Abstract

The UN COPUOS sustainable “Space 2030” Agenda, while generally supporting the global diffusion of space technologies and applications, as a crucial sustainable enabler of growth in the Developing Countries, underscores the importance of a virtuous and progressive international cooperation cycle, to this aim. Otherwise the extreme technical and organizational challenges posed by Space risk to polarise and isolate rather than expand and integrate, the formation of new competencies across the Country contexts. This pitfall is all the more clear in the domains where demand from the Developing Countries is most urgent, that is in the services for terrestrial uses such as in TLC - NAV, Earth Observation (EO) for the reduction of digital divide, in general, and specifically for education, healthcare, social safety, emergency management, land and sea monitoring, agriculture and natural exploitation activities, etc. The reference to satellite systems is obvious here and even more to their new disruptive small satellite technologies which allow a considerable reduction of costs.

Moving from these assumptions, we firstly drew a theoretical listing of Countries’ eligibility for such cooperative initiatives, limiting our observation to the African continent (where underdevelopment has its World’s highest), and for brevity. This listing derives from the combined application of the Beneficiary ranking of ODA for similar space related projects from the World Bank Group, and other documented indexes in Literature (educational and industrial contexts, etc.), which vouch for the existence of a qualitative and progressive international cooperation attitude, through the building of local reliable space structures and assets, at least to reach an independent management of the “core” downstream user segment from all points of view, e.g. education, skills, industrial maintenance, political and administrative commitment, social audience outreach and usage promotion.

We finally offer a few selected examples of some of those virtuous international cooperation chains and some outlooks for their future extension, in their respective Countries and service fields (e.g. Nigeria, Ghana). This is based on the new wave of small satellite competitive space offer to come soon on the market from big players such as Planet or SpaceLink, respectively in EO and TLC, but also on an ad hoc ideal technical and economical (with a tentative end user pricing) benchmark elaborated for a fully privately funded small multitask (TLC-NAV, EO) micro satellite scheme, implying operational financial (equity) participation by some local stakeholders, that is maritime users and land service providers over the Atlantic Ocean and relative opposite Coastal proximity areas. Which latter pattern of international cooperation could prove more appealing in terms of long lasting space contexts integration, effective technology transfer, environmental sustainability, to be sought after in – see space debris risk - and out of space – see the mandatory application of a planet stewardship protocol to the users.