TOWARDS BEST PRACTICE IN EARTH OBSERVATION RESEARCH IN DEVELOPING COUNTRIES

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Following a decade of rapid expansion in Earth observation satellites and the increasing ubiquity and utility of their collected data, there is now increasing awareness for the need of developing indigenous capacity across all nations in the application of satellite remote sensing. The Third Assessment Report of the IPCC highlighted developing countries as being highly vulnerable to climate change. Yet many of these countries lack the necessary scientific and technical capacity to fully assess the possible future impacts, or to conduct the multi-disciplinary studies needed to fill gaps in our understanding for climate change impacts at regional and local levels.

Although GEO/SS has stimulated recent activity in this area, it is following in a well-established historical context whereby membership of many intergovernmental or interagency groups has required consideration of "capacity building". The GEO and GEOSS initiatives state (in the G8 Action Plan) that member states will "support efforts to help developing countries and regions obtain full benefit from GEOSS, including from the Global Climate Observing System (GCOS) such as placement of observational systems to fill data gaps, developing of incountry and regional capacity for analysing and interpreting observational data, and development of decision-support systems and tools relevant to local needs".

It is within this context of policy-driven emphasis on capacity building that we present suggested guidelines for good practice for researchers conducting Earth observation research in developing countries. The purpose of this paper is two-fold.

Firstly, we provide evidence of the general lack of collaborative remote sensing research within the developing world. We do this through analysis of publications in peer-reviewed journals using Web of Knowledge (WoK), the major UK academic citation database. We will present results showing that countries designated low income or lower middle income countries by the World Bank, tend to have significantly fewer publications (as might be expected) but also those papers that are describing work conducted in one of these countries have far fewer local authors on papers (compared to high and upper middle income countries). Our paper will attempt to explain these, and other trends.

Secondly, we will identify ways in which EO researchers can support the sustainable development of indigenous capacity, through improved collaboration, increased access to publications, and better networking. This will include examples of new initiative being developed in Southern Africa to attempt to build greater capacity for Earth observation research and operationalisation.

To this end, this paper is presented for consideration by two audiences. The first are those individual researchers who may now or in the future conduct research in a developing country, even if that research does not actually require them to set foot in the country of interest. These same people are also in a position to influence ethical procedures within their own institutions. The second are those individuals within funding agencies who are in a position to promote appropriate protocols to emphasise the need, and indeed moral obligation, to include local partners at all stages in a project, especially at publication. Finally, both of these groups will be involved in the peer review process for grant applications and article

submission, and we urge them to consider the application of the principles presented here when making an assessment of the quality and effectiveness of the research.