Concept Note

Advancing the Implementation of the 2030 Agenda Using Geographic Information, Earth Observation and GeoDesign

Introduction

We are already at the mid-point to the 2030 timeline for the successful implementation of the 17 Sustainable Development Goals (SDGs) with their 17 targets and 231 indicators. Big Data with its capacity and main characteristics of: Volume, Velocity, Variety, Value, Veracity, Variability, and Visualization provide the fusion techniques that allow for vast amounts of heterogeneous data from multiple sources to be fused together to produce a more comprehensive, integrated, and holistic view of data and its underlying relationships. This becomes a significant driver for the accomplishment of the Agenda with Geospatial Information Systems (GIS) being the integrated technology most capable of handling the vast amount of data the 2030 Agenda implementation generates. GeoDesign, a GIS method which consists of four elements: Geographic Information Science; Information Technology, Design Technology and The People of the Place provides the ideal tool to not only gather, store, process and analyze data but to use this data to also plan/design the future of each community to produce the social, economic, and environmental outcomes mandated.

The Institute for Conscious Global Change (ICGC) is a 501c3 NGO in Special Consultative Status with ECOSOC whose primary activity is the Millennium Earth Project (MEP) which uses Geographic Information Systems, GeoDesign and other related technologies. ICGC was founded on the idea that poverty in all its forms can be mitigated by gathering extensive data to design each city, town, and village to reflect the real-time issues. By activating SDG#17: 'Means of Implementation' and looking at all 17 SDGs together holistically as the agenda was designed, Government, stakeholders and citizens working together in partnership can create the future they want. The goal is to address these issues by designing a world in which everyone has access to sufficient food, adequate shelter, safety, good governance, and proper education and good health.

Background

A research pilot was conducted as partial fulfillment of a Doctor of Philosophy degree titled: *The Role of Geospatial Information and Effective Partnerships in the Implementation of the International Agenda for Sustainable Development* (https://aura.antioch.edu/etds/578/) as part of the scholar-practitioner focus of the Antioch University Graduate School of Leadership and Change program to show how this can be achieved.

ICGC fully endorse and support the United Nations Agenda: *Transforming Our World: The 2030 Agenda for Sustainable Development* which is reflected in the areas of the Institute's work supporting capacity building for the 2030 Agenda and the strengthening of multilateralism, among other tasks. In keeping with its objectives, ICGC aims to activate (SDG) #17: Means of Implementation, which seeks to strengthen global partnerships to support and achieve the ambitious targets of the 2030 Agenda while bringing together national governments, the international community, civil society, the private sector, academia, and multi-stakeholder actors. Despite advances in certain areas, more needs are to be met to accelerate progress in these areas. All stakeholders will have to refocus and intensify their efforts on areas where progress has been slow, especially given the setbacks COVID-19 has caused.

On November 18, 2016, the Permanent Representative of Jamaica transmitted a letter to the Secretary-General of the United Nations that contained a document A\C.2\74\4 entitled "The Millennium Earth Project (MEP). MEP is the primary activity of ICGC and provides the framework for the scholar-practitioner pilot research. Some highlights and key elements of the Millennium Earth Project in the framework of the 2030 Agenda for Sustainable Development are:

- ***Technology****: Uses geographic information systems, GeoDesign and related technologies to integrate the 17 Sustainable Development Goals, their related 169 targets and 231 indicators based on different data of all kinds and from all sources.*
- ***Representation****: Visualizing development plans which gives power to the voices of the marginalized or underrepresented,*
- ***Capacity-building****: Geospatial education and training as well as formal programmes (workshops) for a wide range of target audiences allows communities to begin collecting and analyzing their own data for planning and development purposes.*
- ***Innovation****: Opportunity for persons to learn how new innovations and the implementation of technology can help communities develop solutions to best meet their needs*
- ***Advocating****: Tracking development targets at the local level allows the raising of awareness of societal issues and challenges and advocacy for change on a range of sustainable development, environmental, agricultural, ecosystems and social issues.*
- ***Social Monitoring****: Creating 3-D spatial models of development plans which allows the Millennium Earth Project to be used as a tool to increase transparency and accountability. These catalogued plans show development plans as promised to the community and can be compared to what is built.*

It should be noted, the A\C.2\74\4 was circulated to all Member States of the United Nations in all six official languages as a document of the Second Committee of the General Assembly and can be found here: http://www.un.org/ga/search/view_doc.asp?symbol=A/C.2/71/4

Overview/Synopsis of Research Pilot

The research highlights the important role that academia can and should play in the 2030 Agenda implementation. The pilot was conducted in the informal settlement of Manyatta A and B in Kisumu, Kenya and was aimed at activating ***SDG#17: Means of Implementation.*** As mandated by the 2030 Agenda, the implementation of the 17 SDGs, their related 169 targets and 231 indicators should be above all, country led. Additionally, there should be citizen/community engagement, capacity building, knowledge and technology transfer and data availability and accessibility should be at the heart of the implementation. All these were achieved by the pilot.

The project brought together the partnership elements which consisted of academia, in this case Antioch University Graduate School of Leadership and Change, the Regional Center for Mapping Resources and Development (RCMRD) in Nairobi, Kenya established in 1975 jointly by the United Nations Economic Commission for Africa (UNECA), the Planning Ministry of the County of Kisumu, the City Planner, Multi-Stakeholder groups consisting of Women, Farmers, Religious Leaders, the Youth, Persons With Disabilities, the Business Community, Community Based Organizations (CBOs), the Ward Administrators who are the county representatives to the settlement, and the Chiefs who are the representatives of the National Government.

Geospatial information technology which includes Geographic Information Systems (GIS), GeoDesign, Global Navigation Satellite Systems (GNSS) such as Global Positioning Systems (GPS) were essential tools used in the research pilot. A survey of five hundred (500) Households (HH) was conducted using hand-held devices equipped with GPS receivers. The survey was evenly conducted in all 15 units of the settlement to include both Manyatta A and B. This allowed us to acquire the location-based data needed to better ensure no one was left behind. Key Informant Interviews (KII) of 11 decision makers that included the Chiefs and Ward Administrators were interviewed. In addition, a Focus Discussion Group (FGD) of 13 members with the same configuration as KII but different members, consisting also of key decision makers was conducted. A Problem Tree Analysis to determine the core problems and a Stakeholder Analysis to determine who among them had the influence, interest, and power to see that the issues identified would be addressed, was also conducted. Moreover, a Participatory Action Research/Situational Analysis/GeoDesign Discussion Group consisting of representatives from the previous groups made up the group that decided the GeoDesign of the informal settlement. Of note: The Situational Analysis accounted for all the human and non-human elements that existed in the "situation" which is the informal settlement, and which included all geographic and infrastructure elements. An additional benefit of the GIS technology, is that it offers an acceleration of the 2030 Agenda, especially given the fact that we have lost valuable time due to the (COVID-19) pandemic. Additionally, by using location-based data we made sure that 'no one is left behind' and the implementation of the Agenda was integrated and comprehensive.

For more details see chapter 4 of dissertation (https://aura.antioch.edu/etds/578/). The GeoDesign and the link to the full research pilot of Manyatta A and B displayed in Story Maps in ArcGIS Online can be found here: https://storymaps.arcgis.com/stories/e500ffa099b347c18eaf7f85d64443cf

Findings/Outcome

As mandated under SDG#17, the research pilot achieved:

1. Country-led (Ministry of Planning and City Planner)
2. Significant multi-stakeholder participation
3. Knowledge transfer
4. Technology transfer
5. Data driven insights/decision making.
6. Capacity building/development
7. Scalability

Recommendations

This model can be replicated at the local/county, city, country, and global levels through the United Nations Development Program (UNDP). A great example of government leadership was the leadership displayed by both the County and City Departments of planning for Kisumu, who created the space and participated in the research and enabled the research to be conducted with participation of the community. This contributed to the scientific and social understanding of the challenges and opportunities of the research by being immersed in the process with the potential of personal transformative experiences (UN DESA, 2019).

We would like to stress that a comprehensive approach to the implementation the SDGs is essential and Geospatial Information Systems (GIS) is an essential tool for accomplishing this. A participatory approach in which citizens and governments are invested and together work, using an enabling geospatial information technology, to realize their shared vision. Indeed, we would like to recommend that countries use geospatial information technology as it supports data integration, analysis and visualizations through compelling graphs and maps, helping users in evaluating impacts, monitoring the progress to achieve the SDGs, and thus improving accountability and the relevance of the evidence on which decisions will be made. If all countries could accomplish this GeoDesign approach in the next 3-5 years, they would make great headways toward their development and significant next steps realizing in the successful implementation of the 2030 Agenda.

References

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"Putting Equality on the Map"