The Millennium Earth Project (MEP) Proposal

by
The Institute for Conscious Global Change (ICGC)

'Putting Equality on the Map!'

INSTITUTE FOR
CONSCIOUS
GLOBAL CHANGE

the
Millennium
Earth
Project

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Executive Summary

The Institute for Conscious Global Change (ICGC) has built a diverse experience record and maintains a staff that includes planners, architectural designers, systems programmers, Geographic Information Systems (GIS) specialists, as well as technical writers and administrative support. The multidisciplinary team strategy employed by ICGC utilizes the latest 3D analysis and visualization practices with GIS and design applications, resulting in a product that is unique in the international development community.

ICGC will deliver the most technologically advanced, spatially enabled visualizations and data infrastructures appropriate to the needs of each country in the achievement of the 2030 Agenda for Sustainable Development. Our understanding of GIS and Information Technology (IT) allows us direct access to the latest in software upgrades and customer support. This knowledge ensures responsiveness to technical GIS and IT questions and flexibility during implementation for the creation of unique web mapping applications for data visualization and analysis that best assist in any country's projects and planning. The Institute for Conscious Global Change (ICGC) delivers technical excellence.

ICGC would like to introduce The Millennium Earth Project (MEP), a "how to" solution to the "what" of the 2030 Agenda and to assist governments and citizens to look at a more comprehensive and holistic approach to the planning for development that can transform each country to eradicate extreme poverty and leave no one behind. MEP uses Geographic Information Systems (GIS) technology, GeoDesign and related technologies to show how this can be achieved.

To accomplish this transformative agenda we believe that it is essential to first integrate the 17 goals, 169 targets and 230 indicators. The agenda should be one that fosters a bottom-up approach, build capacity and transfer the technical knowledge needed for the country to become sustainable.

With this project, we propose to work with governments through their Ministry of Planning to bring all the Ministries, citizen representatives and other Stakeholders to the decision-making table to envision the future of the community in which they live. The goal is to have the citizens together with the government become invested in the social, economic and environmental sustainability of each community and by extension, their country.

Through MEP we will assist countries with:

1. **Developing methods and means of collecting data related to the challenges laid out in the SDGs, using geographic information systems (GIS)**
2. **Building the capacity of governments so they can manage and maintain a data collection system moving forward**
3. **Facilitating cooperation and involvement from interested parties at all levels from government, to citizens and all in between**
4. **Constructing a framework for moving towards reaching the high bar set by the 2030 Agenda**

This GIS will allow the international community to visually explore localized SDG data for use in planning sustainable solutions and policies with the technical knowledge and a cost-effective method to collect, maintain and quickly disseminate updated SDG indicator to a global audience.

This ambitious agenda presents both challenges and opportunities. ICGC acknowledges that each country is at a different stage of its development and so also is the knowledge of this innovative

technology, Geographic information Systems and its related technologies. Therefore, one of the first steps will be to make an evaluation of the current situation. The support to be provided will be based on these findings and the agreements made will be based on the needs of the country and on the economic, social and political reality of the country and their national and sustainable development goals.

MEP offers the best opportunity for planning and envisioning a different future. Upon successfully completing a pilot project, we will demonstrate that GIS and Geodesign should be utilized as a means of implementation of the Sustainable Development Goals and their related targets.

Phase I - Pilot

The project will be launched with an initial pilot phase of 12 months. Upon acceptance of this proposal ICGC will provide additional documents containing a detailed scope of work tailored to the project area and project implementation strategy.

Phase II - Data Collection

This phase will be tailored to the study area in which we are working. We will begin by compiling existing sets of data to use in creating base city maps and models in order to prepare for the geodesign process. During this phase we will reach out to all interested parties for input and assistance; local governments, NGOs, educational institutions, citizens, etc.

Phase III - Data Collection

The focus of this phase will be collecting data relating to the 2030 Agenda, and streamlining collection methods to allow cost effective maintenance of data. Focus is on developing data collection criteria and methods. We will continue to streamline workflows using webmaps to increase the efficiency of participatory data collection and field data collection using mobile devices.

Phase IV - Sustainable Solutions

During this phase, we will work with our partners to identify and develop sustainable proposals that will help move these communities toward meeting the Sustainable Development Goals and Targets. By working with local governments, NGOs, design and planning professionals, and others, with citizen input and oversight, we will begin to design for sustainable growth.

At a Glance

Project Title: The Millennium Earth Project (MEP)

Lead Organization: The Institute for Conscious Global Change (ICGC)

Potential Partners: Governments: National, Regional and Local; The African Union; CARICOM; ASEAN; EU; Local and International NGOs; Universities; Businesses; Philanthropic Orgs; Citizens

Primary Objective: To Introduce Geographic Information Systems (GIS) and GeoDesign as Means of Implementation for achieving the United Nations 2030 Agenda for Sustainable Development. To create virtual--- development plans displayed on the electronic GIS platform showing tangible solutions to the development needs of each community.

Beneficiaries: Citizens of each country and by extension the world

Budget Estimate: To be determined after selecting a project location

Estimated Duration: 2-4 years (dependent on study area parameters)

1.0 Objectives

1.1 Main Objectives

The main objectives of MEP are to provide a visual and intuitive map to engage all stakeholders to envision the future they want in a concrete way. To encourage national, regional and local governments to use modern innovative technology, information/data to streamline processes to make transparent, balanced development decisions that will facilitate economic growth and resiliency. Member States can greatly benefit from the use of geographic information data to strengthen and empower government entities and its citizens to discover, share collaborate, integrate data. See appendices for more information on GIS and geodesign.

1.2 Phase Specific Objectives

Phase I

Objectives:
- Prepare geodesign and implementation plans and refine the scope of work, budget and timeline for additional phases
- Work with and strengthen the technical capacity of National Planning Agencies, National Mapping Agencies, local governments, Statistical Offices and other parties

Phase II

Objectives:
- Collect and compile data to create initial maps showing the current landscape, assets, and resources and statistical data to get a better sense of site-specific challenges and issues

- Visualize the study area landscape using maps and models showing pre-existing data
- Engage citizens and other involved parties with data compilation

Phase III

Objectives:
- Determine site-specific parameters and methods for collection of SDG related data
- Develop and implement an on-the-ground canvassing strategy to collect data relevant to specific issues relating to the SDGs
- Develop cost efficient workflows allowing government agencies to report high priority SDG data quickly; and familiarize government agencies with the geodesign process

Phase IV

Objectives:
- Provide a plan to collect and report remaining and on-going SDG data
- Visualize and propose sustainable development plans/proposals with partners
- Work with all parties to create a robust and transparent roadmap for future growth and development

2.0 Background and Justification

In the most inclusive process of the 70 year history of the United Nations, 193 Member States, Civil Society, Businesses, Academia and Philanthropic organizations came together as mandated by the Rio+20 Outcome Document. Under the supervision of the General Assembly they produced "Transforming Our World: the 2030 Agenda for Sustainable Development" an Outcome Document in August of 2015 and later signed by Member States on September 25th 2015 giving to the world the most transformative agenda for eradicating extreme poverty for everyone everywhere by the year 2030.

The Institute for Conscious Global Change (ICGC) aligns itself with the goal of the United Nations and is committed to help fundamentally change the way humanity lives in and creates its environment. To accomplish these objectives, ICGC will work with each member state of the United Nations and its citizens to show how with the integration of the goals, their related targets and indicators we can collect the relevant data to each goal, analyze, plan and design the future we want that leaves no one behind.

3.0 Project Description

3.1 Phase Descriptions & Deliverables

Phase I: Begins with a kickoff meeting with government employees to demonstrate geographic information systems (GIS) and its applications as related to the Sustainable Development Goals (SDG) and typical government operations. During this phase we will conduct a needs assessment to determine needs for GIS data, staff, software, and hardware and use this to create as the base for a GIS Strategic Plan. The project will identify those goals and targets applicable for the country's needs. Once

they are selected, an assessment of the factors that can influence on the different issues indicators will be necessary, e.g., if poverty is to be addressed, factors such as the level of education, unemployment rates, or the access to job epicenters should be considered in the study. Therefore, this plan will include methods for collecting and organizing data, as well as how it will be made readily available through online web mapping services. Additionally the Strategic Plan will allow us to refine the scope, budget, and timeline for additional phases. Technical workshops will be conducted periodically during this phase to allow government employees to start using GIS and global positioning systems (GPS) hardware and software while giving them a better understanding of how each works.

Deliverables:
1. Needs Assessment
2. GIS Strategic Plan
3. GIS/GPS technical training materials.

Phase II: Focuses on collecting raw GIS data at the local level, organizing it and making it quick and easy to access. Our data will be hosted online so very shortly after, if not as soon as it's collected, it will be online and available to the public. We will start by collecting comprehensive sets of infrastructure and utility data to use in creating city models and prepare for the geodesign process. This data will provide spatially accurate maps and 3D models to visualize the pilot city's current landscape. During this phase public workshops will be held to allow citizens to participate in collecting certain data.

Deliverables:
1. Assistance procuring and installing GIS and GPS software
2. Data from United Nations, International, Federal, State/Province, and City/County agencies
3. Infrastructure and utility data for pilot city collected in the field
4. Infrastructure and utility project files
5. Access to infrastructure and utility GIS services hosted on the web
6. Access to city models hosted on the web
7. Configured webmaps for field data collection using mobile devices
8. Digital and hard copy, preconfigured maps

Phase III: Focuses on collecting high priority SDG data at a local level. This can be taken from either existing datasets or streamlining collection methods to allow cost effective maintenance of data. During this phase we will encourage our partner organizations to begin developing sustainable solutions that will help move these communities toward meeting the SDG. Advanced workshops in geodesign and analysis will be conducted using collected project data allowing citizens and government employees to begin thinking about how to make their community more sustainable.

Deliverables:
1. SDG specific GIS data for pilot city created from various sources
2. Access to SDG GIS services hosted on the web
3. Digital and hard copy, preconfigured maps
4. Analysis maps that will aid all parties in identifying the needs of an area
5. Training and educational materials for GIS, geodesign and analysis

Phase IV: Focuses on developing collection methods for remaining SDG data not addressed in Phase III. We will continue to streamline workflows using webmaps to increase the efficiency of participatory data collection and field data collection using mobile devices.

Deliverables:
1. Access to GIS services hosted on the web

2. Access to sustainable development models hosted on the web
3. Configured webmaps for field data collection using mobile devices

3.2 Methodology

Multi-sectoral involvement: All activities in each country will be done under the supervision and direction of the Ministry of Planning, or the closest associated agency, in the government. Everyone can play a role in creating a sustainable future so our project seeks to engage citizens, businesses, schools, and government agencies within the project area. This will be done through public training workshops, academic internships, and allowing anyone to collect and submit data using mobile devices.

Capacity building: From the beginning we will work alongside employees of government agencies to allow their participation in all stages of the project. Hands on technical training will ensure the GIS system will continue to develop even after our project is delivered.

Participatory GIS: Participatory GIS (PGIS) is an innovative approach increasingly being used by governments to support its data collection and management operations and will be introduced for consideration, evaluation and adoption. Given that some governments lack the resources to collect the data required to support operations, some data sets do exist in the private sector and with citizens and with all parties working together to the mutual benefit of the sustainable development of the country. PPGIS reduces the workload of governments while empowering citizens and communities. This technique promotes interactive participation of stakeholders integrating and managing spatial information and uses information about specific landscapes to facilitate broadly-based decision making processes that support communication and community advocacy.

Participatory Geodesign: By involving all parties with a stake in the sustainable development and growth of an area we can insure that everyone's voices are heard and all have a hand in the design and construction of the future. The combination of expertise and voices involved in Geodesign ensure a holistic process. The four essential categories of Geodesign are Information Technologies (GIS, 3d and 2d design programs, etc.), Geographic Sciences (geology, hydrology, etc) Design Professionals (architects, urban planners & designers, etc) and the People of the Place (local citizens and governments).

Open source/standards: Open Source promotes universal access and redistribution via low or no-cost licensing for software to accomplish routine, distributed tasks within the workflow. This avoids massive costs associated with licensing advanced commercial software to every workstation where GIS tasks are carried out. Open standards promote portability of data and context from one organization to another by way of pre-established structures; both within the country and with other nations. Open standards can be used as a springboard for the development of national data standards. We will work with governments to integrate open source software into their workflows wherever appropriate and follow open data standards when creating and publishing resources to ensure our work is universally accessible.

GeodesIgn is a method that brings geographic analysis into a collaborative process allowing citizens, designers, planners, geographers and civil engineers to find and design resilient solutions to 21st Century challenges. Some of these challenges include population growth, decreasing resources, disaster mitigation, climate change and many more. See Appendix B for more information on geodesign.

"Geodesign's mission is to imagine a different future for a place - based on thoughtful, creative change"

3.3 Organizational Principles

The Institute for Conscious Global Change (ICGC) is an international not-for-profit, non-governmental organization incorporated under the laws of New York State in the United States of America. ICGC has been in Special Consultative Status with the Economic and Social Council (ECOSOC) of the United Nations since July 2012. The purpose of the Institute is to build a visual framework to meet the United Nations' Agenda 2030 for Sustainable Development.

Our mission is to visualize, analyze, explain, and disseminate data to make sustainable development plans universally accessible. Using Geographic Information Systems (GIS), GeoDesign and related technologies through the lens of the 17 Sustainable Development Goals, their related 169 targets and 230 indicators, we will provide visual but tangible solutions to eradicate extreme poverty on our planet through development. By so doing we believe we can "fundamentally change the way humanity lives in and creates its environment."

We believe that the world is one and its sufferings are one. We further believe that humanity is one, created equal, with equal rights to all resources and opportunities, which must be made available to everyone. We further believe that when organizations operate as a team with shared vision, shared goals and shared sacrifice, success is assured. Respect and courtesy for each other internally must be a reflection of the work we are attempting to do externally.

Geographic Information Systems (GIS):

A collection of interacting and interdependent geographic components used to describe the earth. It integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. See Appendix A for more information on the benefits of GIS.

"GIS reveals patterns, trends, and new relationships not otherwise known"

4.0 Expected Accomplishments and Indicators of Achievement

1. **Expected Accomplishment:**
    ▪ Enable timely reporting of localized SDG indicators

    Indicators of Achievement
    • The extent to which SDG indicator data can be appropriately localized to a study area
    • Speed with which SDG indicators can be consistently reported on an ongoing basis
    • How often and efficiently indicator data can be updated

2. **Expected Accomplishment:**
    ▪ Engage citizens in sustainable planning

    Indicators of Achievement
    • How often citizens engage with published plans for their community on MEP maps, models and message boards

- Number of sustainable development plans submitted and reviewed by governments, organizations, the private sector and citizens
- Attendance at SDG related gatherings, meetings and workshops
- How many users are accessing web applications per month
- The ease of use of relevant technologies and how effectively they can be understood and disseminated

3. **Expected Accomplishment:**
   - Visualizing the current landscape

   Indicators of Achievement
   - The extent of existing conditions data that can be found and compiled
   - Comprehensiveness of city models and web scenes
   - Ratio of users that do/do not feel maps and city models reveal local conditions

4. **Expected Accomplishment:**
   - Visualize current landscape Identifying and visualizing defined challenges related to SDGs

   Indicators of Achievement
   - The extent to which SDG "challenge" data can be appropriately tailored to a study area
   - The efficiency of collecting SDG related "challenge" data
   - The relevance and usefulness of collected SDG "challenge" data

5. **Expected Accomplishment:**
   - Visualizing development plans

   Indicators of Achievement
   - Ratio of users that do/do not understand how development plans will change their current landscape
   - How complete Completeness of development models and web scenes
   - Measure of impact of sustainable development projects

6. **Expected Accomplishment:**
   - Integrate geospatial technology into schools curricula

   Indicators of Accomplishment
   - Participation rate in GIS courses and workshops
   - Number of primary and secondary schools, and universities offering GIS and/or development based courses

7. **Expected Accomplishment:**
   - Developing government agencies' capacity to maintain their GIS databases

   Indicators of Accomplishment
   - Number of government agencies using GIS
   - Prevalence of GIS use in government agencies to make informed development decisions
   - Number of GIS jobs created each year
   - The overall ease with which governments can collect, visualize and report SDG data

8. **Expected Accomplishment:**
   - Improve citizens' attitudes about future development plans

   Indicators of Accomplishment
   - Ratio of citizens who are/are not hopeful for the future growth of their community
   - Ratio of citizens who agree/disagree with, and feel involved in, proposed development plans for their community

5.0 Actions Needed by Phase

Phase I
Action Objectives:
- Assess needs for GIS data, staff, software, hardware;
- Familiarize government agencies with the uses of GIS and its benefits;
- Provide hands on technical training;
- Collect pilot GIS data;
- Create GIS Strategic Plan for building and implementing a centralized Geographic Information System (GIS) with data from local to national scale;
- Refine scope, budget, and timeline for additional phases;

Phase II
Action Objectives
- Collect infrastructure/utility data;
- Facilitate crowd-sourced participatory GIS data collection and surveys;
- Assist with data acquisition from vendors and government agencies;
- Create file and folder structures to organize data;
- Provide centralized data storage on ICGC servers;
- Create web mapping services (WMS) for infrastructure/utility data;
- Configure infrastructure/utility project maps and web maps;
- Create 3D City Model and web scenes;
- Develop strategy for collecting SDGs data;
- Facilitate the establishment of national and regional GIS coordinating councils;

Phase III
Action Objectives
- Collect high priority, localized SDG data;
- Conduct workshops for geodesign and analysis;
- Create WMS for SDG data;
- Configure SDG project maps and web maps;
- Create detailed models of culturally significant buildings/infrastructure and landmarks;
- Provide recommendations for policies to help achieve UN SDG;

Phase IV
Action Objectives
- Create maps and models of proposed sustainable development plans;
- Continue advanced workshops for geodesign and analysis;
- Plan for the collection of remaining SDGs related statistics;

*Note: ICGC will not be involved with implementing projects

6.o Conclusion

ICGC brings together staff members with many years of experience working with governments, universities, and businesses across the globe and offers solutions specifically tailored to put countries on track to achieve UN Sustainable Development Goals. By building the capacity of national, provincial, and local governments to collect, maintain, and analyze SDG indicator data, communities within these countries will be able to make informed decisions regarding sustainable development.

Why you should leverage GIS:
- o Identify new insights through spatial analysis that would otherwise remain unknown
- o Use visualization as a key to understanding data
- o Improve your communications with stakeholders
- o Facilitate a more open, transparent and collaborative government
- o Improve management of resources and organization
- o Help communities plan and respond to crises.

Building Sustainable Communities

Visualizing the Change

Visualizing development plans gives power to the voice of the marginalized or under-represented, including poor communities, resource users and women who are otherwise excluded from decision-making processes. Our visual approach eliminates educational and language barriers and allows everyone a chance to join the conversation.

Creating 3D spatial models of development plans allows Millennium Earth Project (MEP) to be used as a tool to increase transparency and accountability. These cataloged plans will show development projects as promised to the community and can be compared to what was actually built.

Appendices

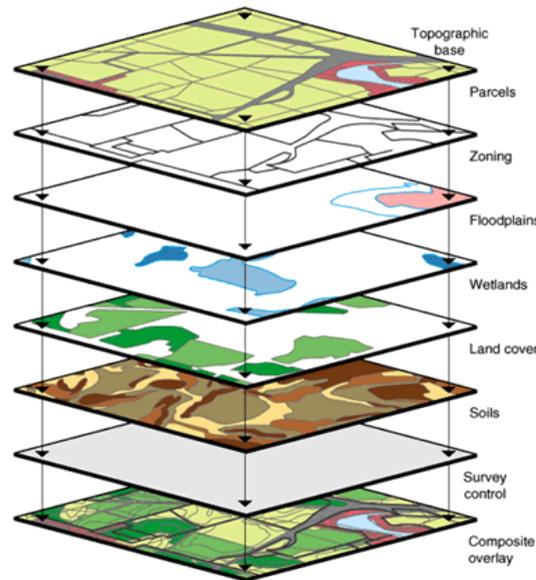## Appendix A: Geographic Information Systems (GIS)

Definition: A collection of interacting and interdependent geographic components used to describe the earth. It integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information.

Main purpose:
1. Planning and Analysis
2. Asset/Data Management
3. Operational Awareness
4. Field Workforce

Benefits:
- **Reveal patterns, trends, and new relationships otherwise not known:**
  o Through spatial analysis, government leaders can take a holistic view of a policy, program, or process to understand how to improve their decisions based on a multitude of factors. To make a proper decision, agencies must look at a variety of regulations, existing programs, and policies in order to make a decision. In many cases, this information is difficult to understand in isolation, and the data needs to be looked at through a variety of factors. GIS can simplify complex data, integrate a variety of sources of information, and summarize complex information when viewed spatially.

- **Improved communications during a crisis**
  o GIS can help communities plan and respond to a crisis. With GIS, communities can define emergency routes, know location and status of critical buildings during a crisis, and allocate the proper resources for response. With GIS, organizations can prepare, respond and recover from crisis more efficiently than ever before.

- **Improved allocation of resources and planning**
  o By viewing data spatially, government agencies can easily track and view underserved communities and use this information to allocate resources more efficiently, reform policies, or spot distressing trends about communities and offer remediation strategies.

- **Instantaneous collaboration through the cloud:**
  o Through the cloud, organizations can share maps, data and pertinent information to improve collaboration efforts. In today's world, collaboration and capitalizing on resources is essential to improving how the public sector delivers services.

- **Improved transparency for citizen engagement:**
  o GIS provides increased transparency and accountability for citizens. With the combination of the cloud, sharing of data, maps, and pertinent information, GIS is allowing increased engagement with citizens and more succinctly showing trends in the community visually, which enables a more constructive conversation for government employees.

Appendix B: Geodesign

Definition: A method that brings geographic analysis into a collaborative process allowing designers, planners, geographers and civil engineers to find resilient solutions to 21st century urban conditions such as population growth, decreasing resources, disaster mitigation and climate change.

Geodesign is design in a geographic space. The essential aspect of geodesign is the process of designing, creating or modifying some portion or aspect of the environment, be it natural or man-made - occurs within the context of geographic space.

Main purpose:
As a design and planning method, geodesign tightly couples the creation of design proposals with impact simulations informed by geographic contexts. The purpose of geodesign is to facilitate life in geographic space.

Benefits
The referential link between the entity being designed and its geographic context provides the tangible basis for doing both science-based and value-based design. Additionally, it has the ability to provide operational linkages to a wide variety of domain-specific information and, in so doing, provides the multidisciplinary platform for doing integral design (i.e. holistic design).

Visualization tools:
- Screen displays, map viewers, video viewers, and tools for displaying reports are one of the most important components of the geodesign system. These tools provide greater depth of understanding and improve communication.
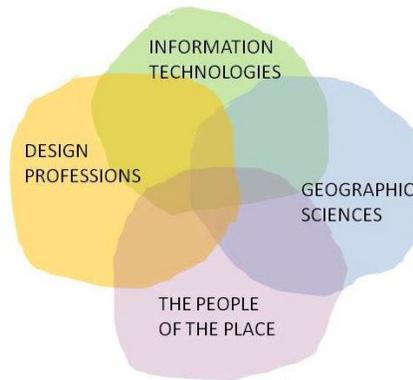
Scenario management tools:
- A scenario management tool is beneficial to land-use planning and design projects because you can look at different scenarios and analyze how the plans or designs will influence those projects. e.g., a planner may decide to change the zoning of an area to increase business

development; utilizing scenario management tools, he can see how this rezoning might influence traffic in the area.

Improved collaboration:

- Geodesign is looking to pick the brain of the individual stakeholders and bring to the surface the less tangible assets they have. This usually involves round table style discussions and brainstorming sessions between the different stakeholders, i.e., practitioners of geographic sciences, IT, design, and citizenry (those that live in and know all the nuances of the space/location). This open discussion allows the team to apply these less tangible assets to assess the current conditions of the space/location, as well as how those conditions affect the creation of something new.

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