engaging communities in geodesign

The Institute for Conscious Global Change (ICGC)

(Prepared by Scott F. Allen, GISP)

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presentation summary…

A look at the technology, workflows, and processes used to increase community participation in sustainable planning and development in the context of the United Nations' Transforming Our World: The 2030 Agenda for Sustainable Development.

outline

I: project context

II: geodesign

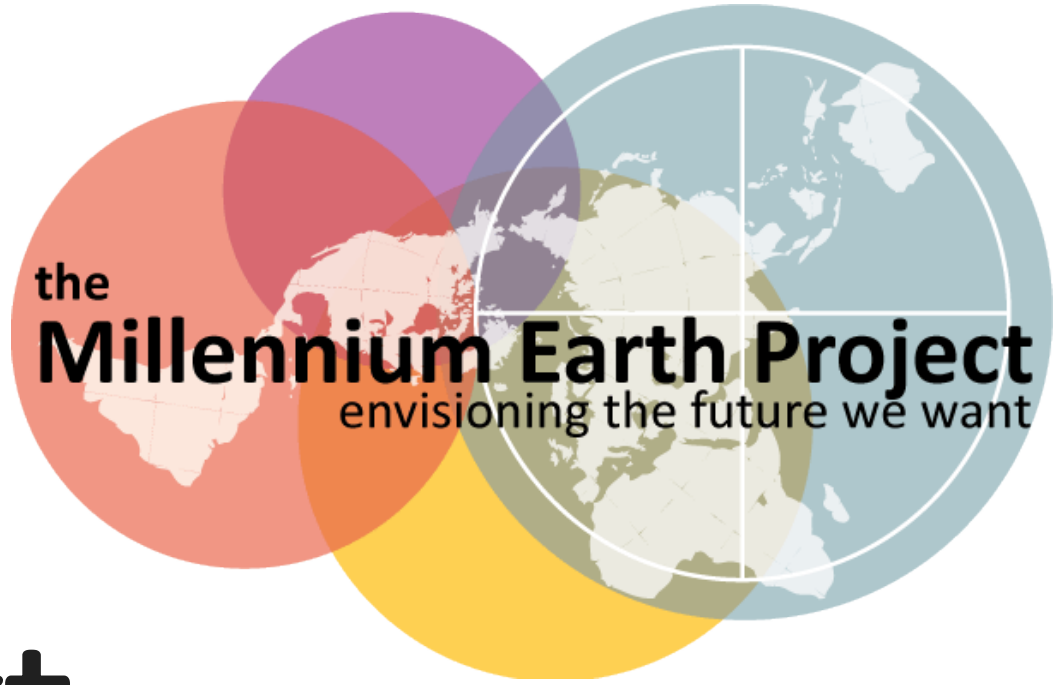
III: technology and workflow

IV: prototypes

V: pilots

part I:
project context

FROM MDG TO SDG…



united nations development agenda

After three years, the United Nations delivered on the challenge proposed at the United Nations Sustainable Development Rio+20 Conference in June of 2012 where member states were asked to launch a process to develop a set of sustainable development goals (SDGs) for "The Future We Want".

Rio+20 did not elaborate specific goals but stated that the SDGs should be limited in number, were to be aspirational, easy to communicate , universal in nature and local in application.

Under the direction of the Gereral Assembly, an Open Working Group (OWG) was formed and would decide on its method of work,including modalities to ensure the full involvement of relevant stakeholders.
This group would involve expertise from civil society, the scientific community, academia, businesses and the United Nations system in its work, in order to provide a diversity of perspectives and experience.

united nations development agenda (continued)

The OWG comprised of 193 Member States, and Major Groups and Other Stakeholders came up with a set of 17 goals and 169 targets in July of 2014.

The subsequent intergovernmental Negotiations concluded on August 2nd with the adoption of: "Transforming Our World: The 2030 Agenda for Sustainable Development" outcome document to be formally adopted and signed by all member states in September of 2015.

The United Nations is aligning global development stakeholders with the Sustainable Development Goals (SDGs) and will provide metrics for tracking success but still uncertain how to implement methods which will achieve the goals.

millennium earth project (mep) background and objectives

Primary initiative of The Institute for Conscious Global Change (ICGC)

- A 501(c)(3) non-profit NGO in Special Consultative Status with The United Nations Economic and Social Council (ECOSOC)
- Advocate for the integration of geospatial technology as a means of implementing the development agenda

Aimed at helping the United Nations meet its development goals

- Initially 8 Millennium Development Goals
- Now 17 Sustainable Development Goals

The Millennium Earth Project challengesstakeholders across the sectors to develop localized projects that address any of these goals that could be scaled up or replicated in other areas while fitting into a state/national comprehensive development plan

INSTITUTE FOR CONSCIOUS GLOBAL CHANGE

the Millennium Earth Project
envisioning the future we want

mep objectives (continued)

Project is centered around three main areas:

- Communication
- Education
- Outreach

Methods:

- Multi-sectoral involvement
- Capacity building
- Participatory geospatial data collection
- Geodesign
- Disaggregated, open datasets
- Youth Involvement

INSTITUTE FOR CONSCIOUS GLOBAL CHANGE

GOAL 1
END POVERTY IN ALL ITS FORMS EVERYWHERE
SUSTAINABLE DEVELOPMENT GOALS
More at sustainabledevelopment.un.org/sdgsproposal

GOAL 1

1.1 by 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day

1.2 by 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions

1.3 implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable

1.4 by 2030 ensure that all men and women, particularly the poor and the vulnerable, have equal rights to economic resources,as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services including microfinance

END POVERTY IN ALL ITS FORMS EVERYWHERE

1.5 by 2030 build the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerabilityto climate-related extreme events and other economic, social and environmental shocks and disasters

1.a. ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation to provide adequate and predictable means for developing countries, in particular LDCs, to implement programmes and policies to end poverty in all its dimensions

1.b create sound policy frameworks, at national, regional and international levels, based on pro-poor and gender-sensitive development strategies to support accelerated investments in poverty eradication actions

GOAL 2
END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE
SUSTAINABLE DEVELOPMENT GOALS
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2.1 by 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round

2.2 by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under five years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons

2.3 by 2030 double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets, and opportunities for value addition and non-farm employment

2.4 by 2030 ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality

2.5 by 2020 maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge as internationally agreed

2.a increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries

2.b. correct and prevent trade restrictions and distortions in world agricultural markets including by the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round

2.c. adopt measures to ensure the proper functioning of food commodity markets and their derivatives, and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility

GOAL 2
END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 3

ENSURE HEALTHY LIVES AND
PROMOTE WELL-BEING FOR ALL AT ALL AGES

SUSTAINABLE DEVELOPMENT GOALS

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3.1 by 2030 reduce the global maternal mortality ratio to less than 70 per 100,000 live births

3.2 by 2030 end preventable deaths of newborns and under-five children

3.3 by 2030 end the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases

3.4 by 2030 reduce by one-third pre-mature mortality from non-communicable diseases (NCDs) through prevention and treatment, and promote mental health and wellbeing

3.5 strengthen prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol

3.6 by 2020 halve global deaths and injuries from road traffic accidents

3.7 by 2030 ensure universal access to sexual and reproductive health care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programmes

3.8 achieve universal health coverage (UHC), including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all

3.9 by 2030 substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination

3.a strengthen implementation of the Framework Convention on Tobacco Control in all countries as appropriate

3.b support research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration which affirms the right of developing countries to use to the full the provisions in the TRIPS agreement regarding flexibilities to protect public health and, in particular, provide access to medicines for all

3.c increase substantially health financing and the recruitment, development and training and retention of the health workforce in developing countries, especially in LDCs and SIDS

3.d strengthen the capacity of all countries, particularly developing countries, for early warning, risk reduction, and management of national and global health risks

GOAL 3
ENSURE HEALTHY LIVES AND
PROMOTE WELL-BEING FOR ALL AT ALL AGES
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 4

ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

SUSTAINABLE DEVELOPMENT GOALS

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4.1 by 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes

4.2 by 2030 ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education

4.3 by 2030 ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university

4.4 by 2030, increase by x% the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship

4.5 by 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations

4.6 by 2030 ensure that all youth and at least x% of adults, both men and women, achieve literacy and numeracy

4.7 by 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development

4.a build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all

4.b by 2020 expand by x% globally the number of scholarships for developing countries in particular LDCs, SIDS and African countries to enrol in higher education, including vocational training, ICT, technical, engineering and scientific programmes in developed countries and other developing countries

4.c by 2030 increase by x% the supply of qualified teachers, including through international cooperation for teacher trainingin developing countries, especially LDCs and SIDS

GOAL 4
ENSURE INCLUSIVE AND EQUITABLE QUALITY
EDUCATION AND PROMOTE LIFELONG LEARNING
OPPORTUNITIES FOR ALL
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 5
ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 5

5.1 end all forms of discrimination against all women and girls everywhere

5.2 eliminate all forms of violence against all women and girls in public and private spheres, including trafficking and sexual and other types of exploitation

5.3 eliminate all harmful practices, such as child, early and forced marriage and female genital mutilations

5.4 recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies, and the promotion of shared responsibility within the household and the family as nationally appropriate

5.5 ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public life

5.6 ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the ICPD and the Beijing Platform for Action and the outcome documents of their review conferences

5.a undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance, and natural resources in accordance with national laws

5.b enhance the use of enabling technologies, in particular ICT, to promote women's empowerment

5.c adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels

ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 6

ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

SUSTAINABLE DEVELOPMENT GOALS

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GOAL 6

6.1 by 2030, achieve universal and equitable access to safe and affordable drinking water for all

6.2 by 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations

6.3 by 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and increasing recycling and safe reuse by x% globally

6.4 by 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from water scarcity

6.5 by 2030 implement integrated water resources management at all levels, including throughtransboundary cooperation as appropriate

ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

6.6 by 2020 protect and restore water -related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes

6.a by 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation related activities and programmes, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies

6.b support and strengthen the participation of local communities for improving water and sanitationmanagement

GOAL 7
ENSURE ACCESS TO AFFORDABLE, RELIABLE,
SUSTAINABLE AND MODERN ENERGY FOR ALL
SUSTAINABLE DEVELOPMENT GOALS
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7.1 by 2030 ensure universal access to affordable, reliable, and modern energy services

7.2 increase substantially the share of renewable energy in the global energy mix by 2030

7.3 double the global rate of improvement in energy efficiency by 2030

7.a by 2030 enhance international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies, and promote investment in energy infrastructure and clean energy technologies

7.b by 2030 expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, particularly LDCs and SIDS

GOAL 8
PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL
SUSTAINABLE DEVELOPMENT GOALS
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8.1 sustain per capita economic growth in accordance with national circumstances, and in particular at least 7% per annum GDP growth in the least-developed countries

8.2 achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value added and labour-intensive sectors

8.3 promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage formalization and growth of micro-, small- and medium-sized enterprises including through access to financial services

8.4 improve progressively through 2030 global resource efficiency in consumption and production, andendeavour to decouple economic growth from environmental degradation in accordance with the 10-year framework of programmes on sustainable consumption and production with developed countries taking the lead

8.5 by 2030 achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

8.6 by 2020 substantially reduce the proportion of youth not in employment, education or training

8.7 take immediate and effective measures to secure the prohibition and elimination of the worst forms of childlabour, eradicate forced labour, and by 2025 end child labour in all its forms including recruitment and use of child soldiers

8.8 protect labour rights and promote safe and secure working environments of all workers, including migrant workers, particularly women migrants, and those in precarious employment

8.9 by 2030 devise and implement policies to promote sustainable tourism which creates jobs, promotes local culture and products

8.10 strengthen the capacity of domestic financial institutions to encourage and to expand access to banking, insurance and financial services for all

8.a increase Aid for Trade support for developing countries, particularly LDCs, including through the Enhanced Integrated Framework for LDCs

8.b by 2020 develop and operationalize a global strategy for youth employment and implement the ILO Global Jobs Pact

GOAL 8
PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE
ECONOMIC GROWTH, FULL AND PRODUCTIVE
EMPLOYMENT AND DECENT WORK FOR ALL
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 9

BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

SUSTAINABLE DEVELOPMENT GOALS

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9.1 develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

9.2 promote inclusive and sustainable industrialization, and by 2030 raise significantly industry's share of employment and GDP in line with national circumstances, and double its share in LDCs

9.3 increase the access of small-scale industrial and other enterprises, particularly in developing countries, to financial services including affordable credit and their integration into value chains and markets

9.4 by 2030 upgrade infrastructure and retrofit industries to make them sustainable, with increased resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, all countries taking action in accordance with their respective capabilities

9.5 enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, particularlydeveloping countries, including by 2030 encouraging innovation and increasing the number of R&D workers per one million people by x% and public and private R&D spending

9.a facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, LDCs, LLDCs and SIDS

9.b support domestic technology development, research and innovation in developing countries including by ensuring a conducive policy environment for inter alia industrial diversification and value addition to commodities

9.c significantly increase access to ICT and strive to provide universal and affordable access to internet in LDCs by 2020

GOAL 10
REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES
SUSTAINABLE DEVELOPMENT GOALS
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10.1 by 2030 progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average

10.2 by 2030 empower and promote the social, economic and political inclusion of all irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status

10.3 ensure equal opportunity and reduce inequalities of outcome, including through eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and actions in this regard

10.4 adopt policies especially fiscal, wage, and social protection policies and progressively achieve greater equality

10.5 improve regulation and monitoring of global financial markets and institutions and strengthen implementation of such regulations

10.6 ensure enhanced representation and voice of developing countries in decision making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions

10.7 facilitate orderly, safe, regular and responsible migration and mobility of people, including through implementation of planned and well-managed migration policies

10.a implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with WTO agreements

10.b encourage ODA and financial flows, including foreign direct investment, to states where the need is greatest, in particular LDCs, African countries, SIDS, and LLDCs, in accordance with their national plans and programmes

10.c by 2030, reduce to less than 3% the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5%

GOAL 10
REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES
SUSTAINABLE DEVELOPMENT GOALS
More at sustainabledevelopment.un.org/sdgsproposal

GOAL 11

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

SUSTAINABLE DEVELOPMENT GOALS

More at sustainabledevelopment.un.org/sdgsproposal

11.1 by 2030, ensure access for all to adequate, safe and affordable housing and basic services, and upgrade slums

11.2 by 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons

11.3 by 2030 enhance inclusive and sustainable urbanization and capacities for participatory, integrated and sustainable human settlement planning and management in all countries

11.4 strengthen efforts to protect and safeguard the world's cultural and natural heritage

11.5 by 2030 significantly reduce the number of deaths and the number of affected people and decrease by y% the economic losses relative to GDP caused by disasters, including water-related disasters, with the focus on protecting the poor and people in vulnerable situations

11.6 by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality, municipal and other waste management

11.7 by 2030, provide universal access to safe, inclusive and accessible, green and public spaces, particularly for women and children, older persons and persons with disabilities

11.a support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning

11.b by 2020, increase by x% the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, develop and implement in line with the forthcoming Hyogo Framework holistic disaster risk management at all levels

11.c support least developed countries, including through financial and technical assistance, for sustainable and resilient buildings utilizing local materials

GOAL 11
MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 12
ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS
SUSTAINABLE DEVELOPMENT GOALS
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12.1 implement the 10-Year Framework of Programmes on sustainable consumption and production (10YFP), all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries

12.2 by 2030 achieve sustainable management and efficient use of natural resources

12.3 by 2030 halve per capita global food waste at the retail and consumer level, and reduce food losses along production andsupply chains including post-harvest losses

12.4 by 2020 achieve environmentally sound management of chemicals and all wastes throughout their life cycle in accordance with agreed international frameworks and significantly reduce their release to air, water and soil to minimize their adverse impacts on human health and the environment

12.5 by 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse

12.6 encourage companies, especially large and trans-national companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

12.7 promote public procurement practices that are sustainable in accordance with national policies and priorities

12.8 by 2030 ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

12.a support developing countries to strengthen their scientific and technological capacities to move towards more sustainable patterns of consumption and production

12.b develop and implement tools to monitor sustainable development impacts for sustainable tourism which creates jobs, promotes local culture and products

12.c rationalize inefficient fossil fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities

GOAL 12
ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 13
TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS*
Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 13

*Acknowledging that the UNFCCC is the primary international, intergovernmental forum for negotiating the global response to climate change.

13.1 strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries

13.2 integrate climate change measures into national policies, strategies, and planning

13.3 improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning

13.a implement the commitment undertaken by developed country Parties to the UNFCCC to a goal of mobilizing jointly USD100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible

13.b Promote mechanisms for raising capacities for effective climate change related planning and management, in LDCs, including focusing on women, youth, local and marginalized communities

TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS*

Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change

SUSTAINABLE DEVELOPMENT GOALS

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GOAL 14
CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT
SUSTAINABLE DEVELOPMENT GOALS
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14.1 by 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution

14.2 by 2020, sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience, and take action for their restoration, to achieve healthy and productive oceans

14.3 minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels

14.4 by 2020, effectively regulate harvesting, and end overfishing, illegal, unreported and unregulated (IUU) fishing and destructive fishing practices and implement science-based management plans, to restore fish stocks in the shortest time feasible at least to levels that can produce maximum sustainable yield as determined by their biological characteristics

14.5 by 2020, conserve at least 10 per cent of coastal and marine areas, consistent with national and international law and based on best available scientific information

14.6 by 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, and eliminate subsidies that contribute to IUU fishing, and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the WTO fisheries subsidies negotiation *

14.7 by 2030 increase the economic benefits to SIDS and LDCs from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism

14.a increase scientific knowledge, develop research capacities and transfer marine technology taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular SIDS and LDCs

14.b provide access of small-scale artisanal fishers to marine resources and markets

14.c ensure the full implementation of international law, as reflected in UNCLOS for states parties to it, including, where applicable, existing regional and international regimes for the conservation and sustainable use of oceans and their resources by their parties

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GOAL 15

PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS

SUSTAINABLE DEVELOPMENT GOALS

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15.1 by 2020 ensure conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.2 by 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and increase afforestation and reforestation by x% globally

15.3 by 2020, combat desertification, and restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land-degradation neutral world

15.4 by 2030 ensure the conservation of mountain ecosystems, including their biodiversity, to enhance their capacity to provide benefits which are essential for sustainable development

15.5 take urgent and significant action to reduce degradation of natural habitat, halt the loss of biodiversity, and by 2020 protect and prevent the extinction of threatened species

15.6 ensure fair and equitable sharing of the benefits arising from the utilization of genetic resources, and promote appropriate access to genetic resources

15.7 take urgent action to end poaching and trafficking of protected species of flora and fauna, and address both demand and supply of illegal wildlife products

15.8 by 2020 introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems, and control or eradicate the priority species

15.9 by 2020, integrate ecosystems and biodiversity values into national and local planning, development processes and poverty reduction strategies, and accounts

15.a mobilize and significantly increase from all sources financial resources to conserve and sustainably use biodiversity and ecosystems

15.b mobilize significantly resources from all sources and at all levels to finance sustainable forest management, and provide adequate incentives to developing countries to advance sustainable forest management, including for conservation and reforestation

15.c enhance global support to efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities

GOAL 15
PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS
SUSTAINABLE DEVELOPMENT GOALS
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GOAL 16
PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS
SUSTAINABLE DEVELOPMENT GOALS
More at sustainabledevelopment.un.org/sdgsproposal

16.1 significantly reduce all forms of violence and related death rates everywhere

16.2 end abuse, exploitation, trafficking and all forms of violence and torture against children

16.3 promote the rule of law at the national and international levels, and ensure equal access to justice for all

16.4 by 2030 significantly reduce illicit financial and arms flows, strengthen recovery and return of stolen assets, and combat all forms of organized crime

16.5 substantially reduce corruption and bribery in all its forms

16.6 develop effective, accountable and transparent institutions at all levels

16.7 ensure responsive, inclusive, participatory and representative decision-making at all levels

16.8 broaden and strengthen the participation of developing countries in the institutions of global governance

16.9 by 2030 provide legal identity for all including birth registration

16.10 ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements

16.a strengthen relevant national institutions, including through international cooperation, for building capacities at all levels, in particular in developing countries, for preventing violence and combating terrorism and crime

16.b promote and enforce non-discriminatory laws and policies for sustainable development

GOAL 16
PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS
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More at sustainabledevelopment.un.org/sdgsproposal

GOAL 17
STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT
SUSTAINABLE DEVELOPMENT GOALS
More at sustainabledevelopment.un.org/sdgsproposal

Finance

17.1 strengthen domestic resource mobilization, including through international support to developing countries to improve domestic capacity for tax and other revenue collection

17.2 developed countries to implement fully their ODA commitments, including to provide 0.7% of GNI in ODA to developing countries of which 0.15-0.20% to least-developed countries

17.3 mobilize additional financial resources for developing countries from multiple sources

17.4 assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries (HIPC) to reduce debt distress

17.5 adopt and implement investment promotion regimes for LDCs

Technology

17.6 enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation, and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, particularly at UN level, and through a global technology facilitation mechanism when agreed

17.7 promote development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favourable terms, including on concessional and preferential terms, as mutually agreed

17.8 fully operationalize the Technology Bank and STI (Science, Technology and Innovation) capacity building mechanism for LDCs by 2017, and enhance the use of enabling technologies in particular ICT

Capacity building

17.9 enhance international support for implementing effective and targeted capacity building in developing countries to support national plans to implement all sustainable development goals, including through North-South, South-South, and triangular cooperation

Trade

17.10 promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the WTO including through the conclusion of negotiations within its Doha Development Agenda

17.11 increase significantly the exports of developing countries, in particular with a view to doubling the LDC share of global exports by 2020

17.12 realize timely implementation of duty-free, quota-free market access on a lasting basis for all least developed countries consistent with WTO decisions, including through ensuring that preferential rules of origin applicable to imports from LDCs are transparent and simple, and contribute to facilitating market access

Policy and institutional coherence

17.13 enhance global macroeconomic stability including through policy coordination and policy coherence

17.14 enhance policy coherence for sustainable development

17.15 respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development

GOAL 17
STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

Multi-stakeholder partnerships

17.16 enhance the global partnership for sustainable development complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technologies and financial resources to support the achievement of sustainable development goals in all countries, particularly developing countries

17.17 encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships

Data, monitoring and accountability

17.18 by 2020, enhance capacity building support to developing countries, including for LDCs and SIDS, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts

17.19 by 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement GDP, and support statistical capacity building in developing countries

SUSTAINABLE DEVELOPMENT GOALS
More at sustainabledevelopment.un.org/sdgsproposal

part II:
geodesign /jēˈō-dəˈzīn/

GEODESIGN IS ABOUT MOVING BEYOND JUST EXPLOITING OR CONSERVING OUR GEOGRAPHY AND TOWARD ACTUALLY DESIGNING IT; IT'S ABOUT THE ACT OF CONSCIOUSLY DESIGNING A BETTER FUTURE.

-JACK DANGERMOND

Photo credit: http://www.featurepics.com/

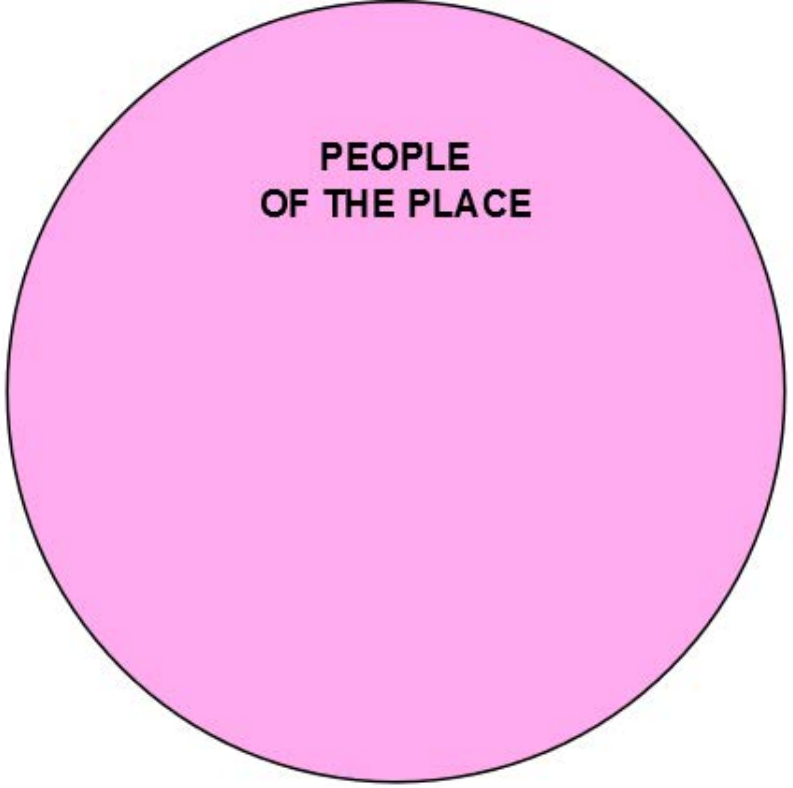
what is it?

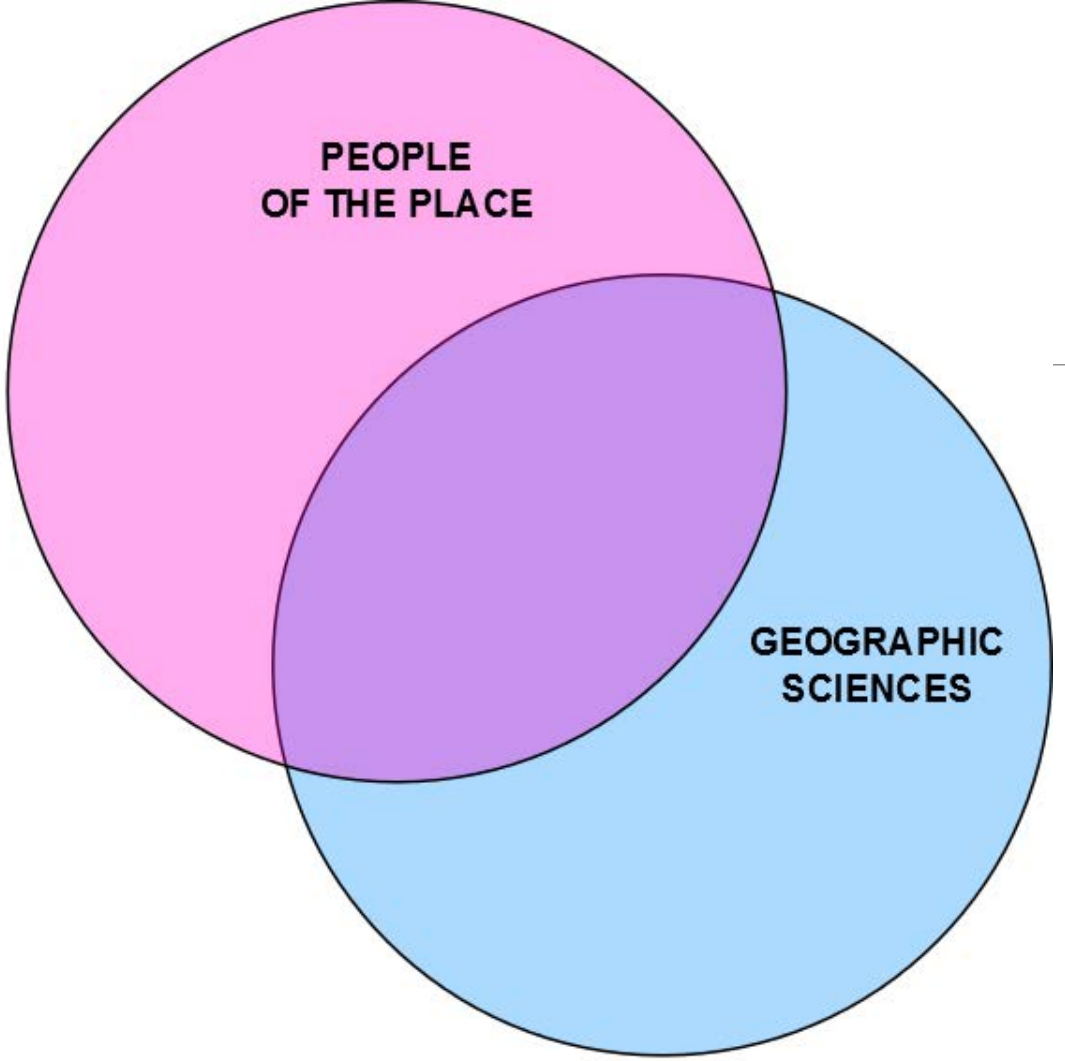
Geodesign is an invented word to describe an activity that is not the territory of any single design profession, geographic science or information technology

Both a verb and a noun, related to the more general word “design”

- Verb: “to mark, to conceive and plan out; to have a purpose; to devise for a function” (Merriam-Webster’s Collegiate Dictionary, tenth edition)
- Noun: “a deliberate, purposeful plan; the arrangements of elements that go into human production; the underlying scheme”

Geodesign looks to the future and is the process of changing geography by design.


PEOPLE
OF THE PLACE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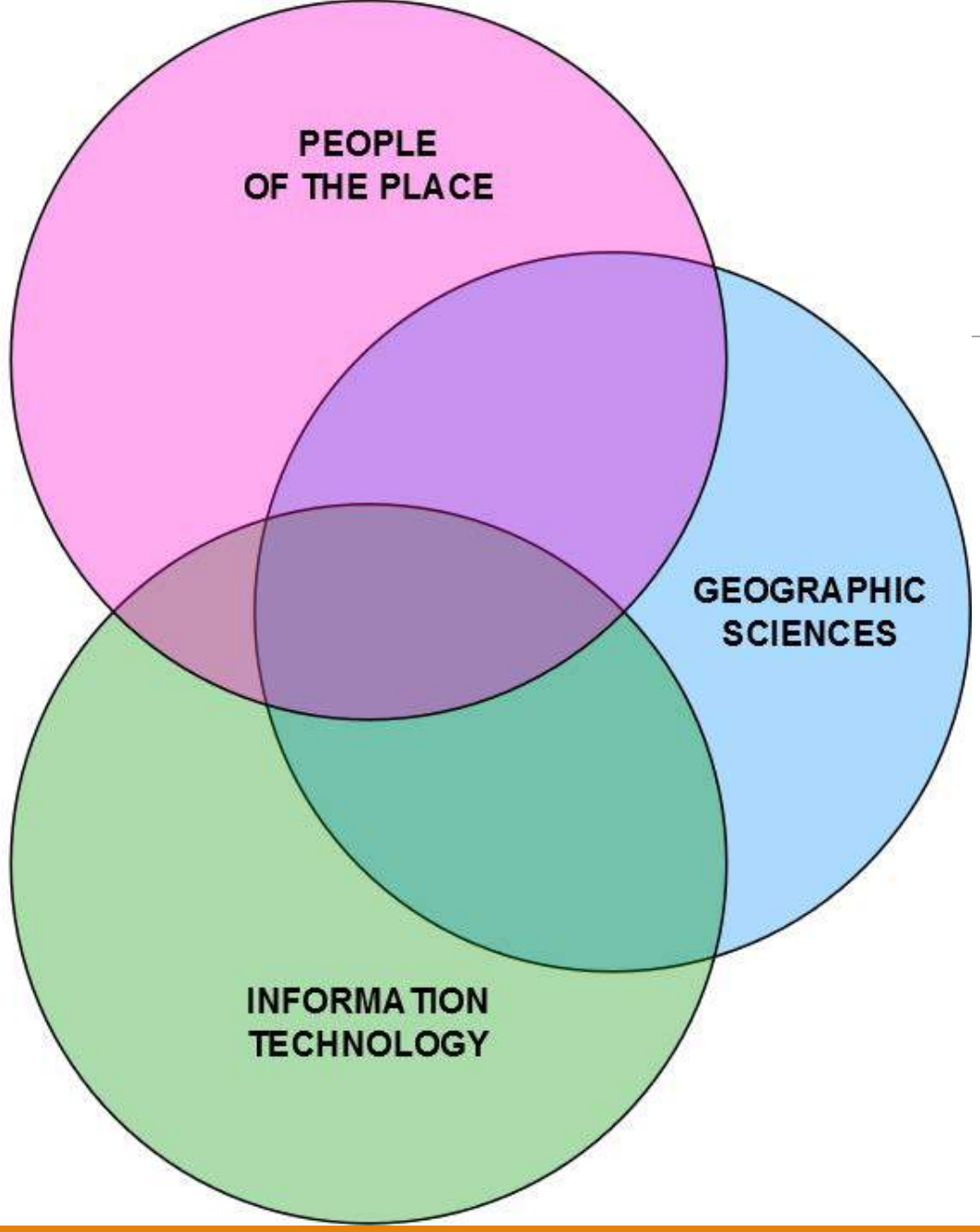
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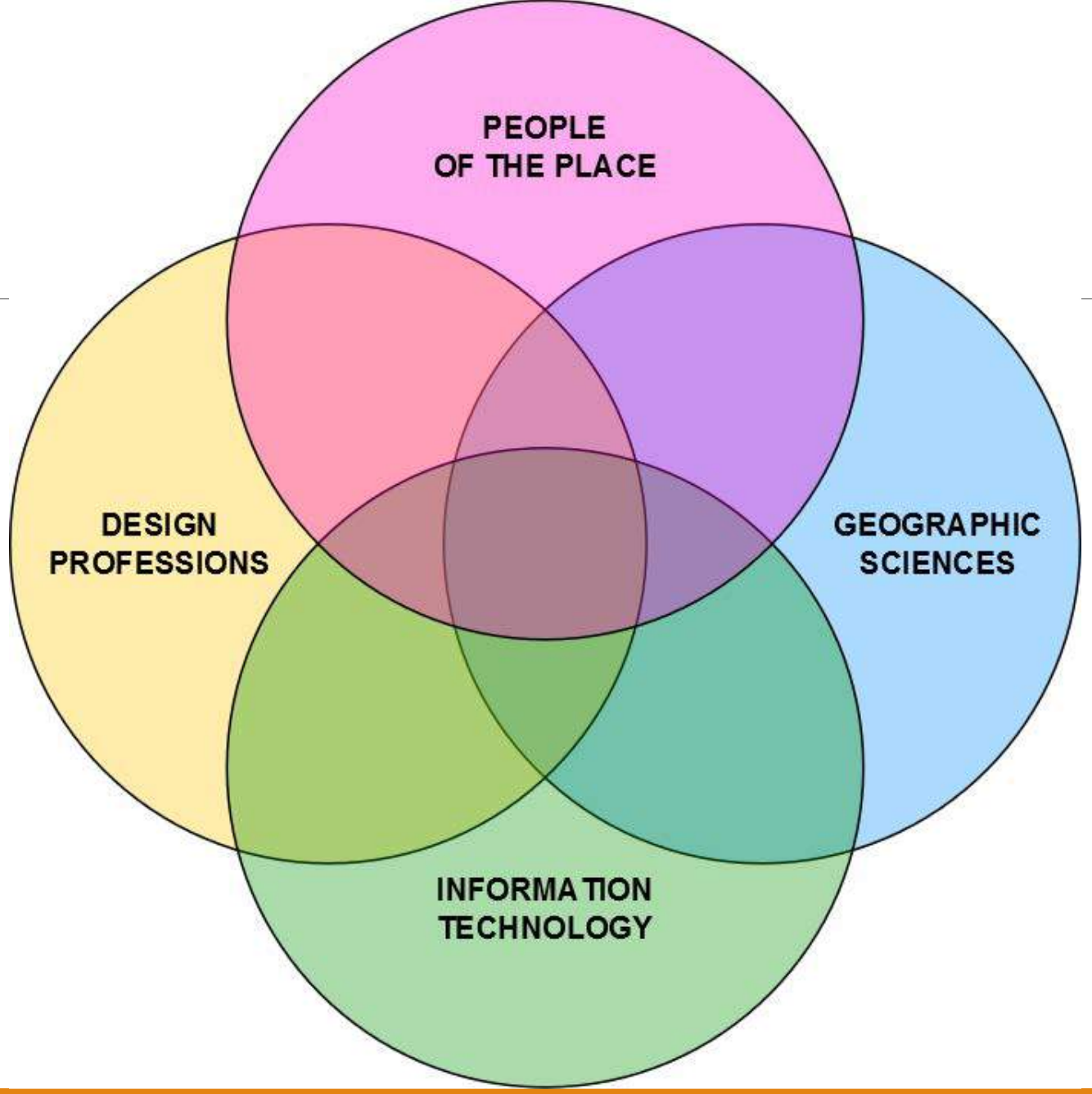
PEOPLE
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PROFESSIONS
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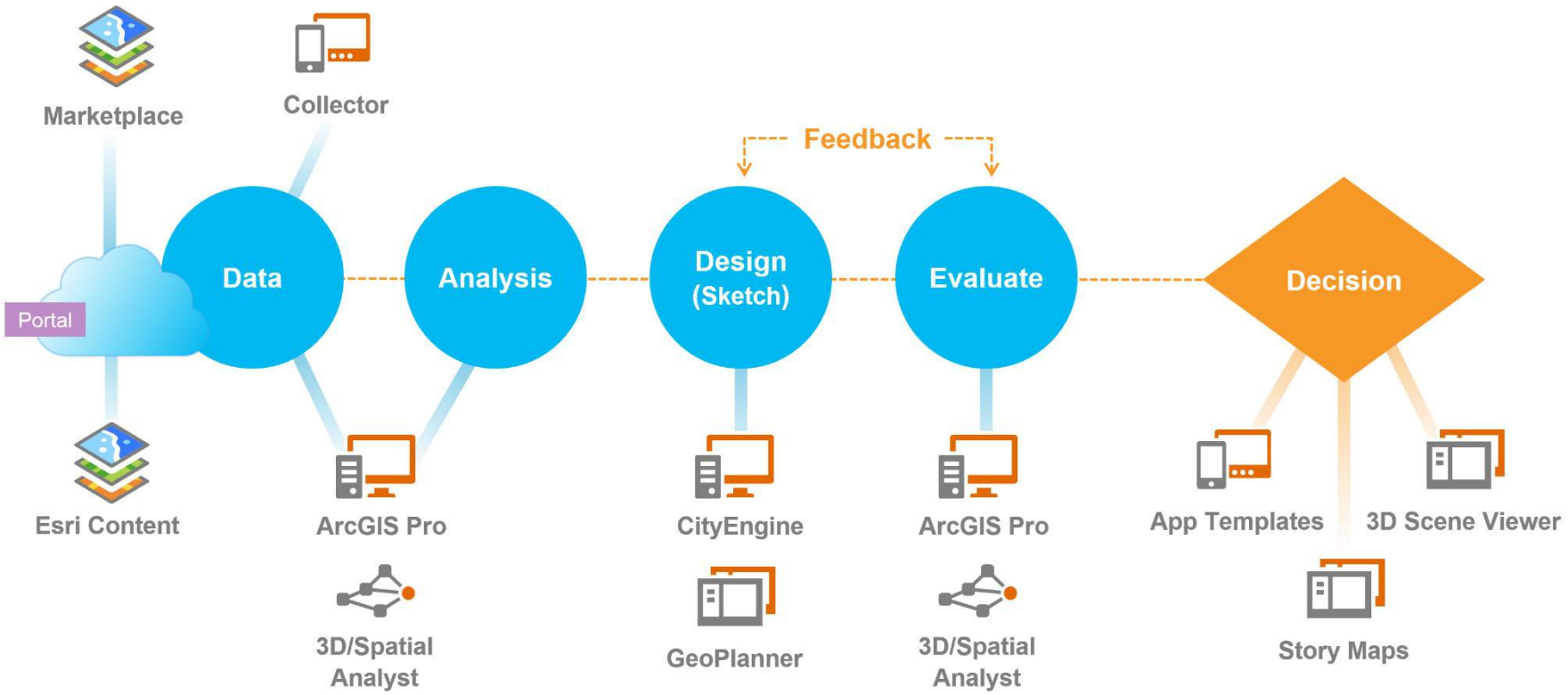
part III: technology and workflows

CITIZEN SCIENTISTS SUPPORTING STATE AND LOCAL GOVERNMENT INITIATIVES

a [modified] esri workflow



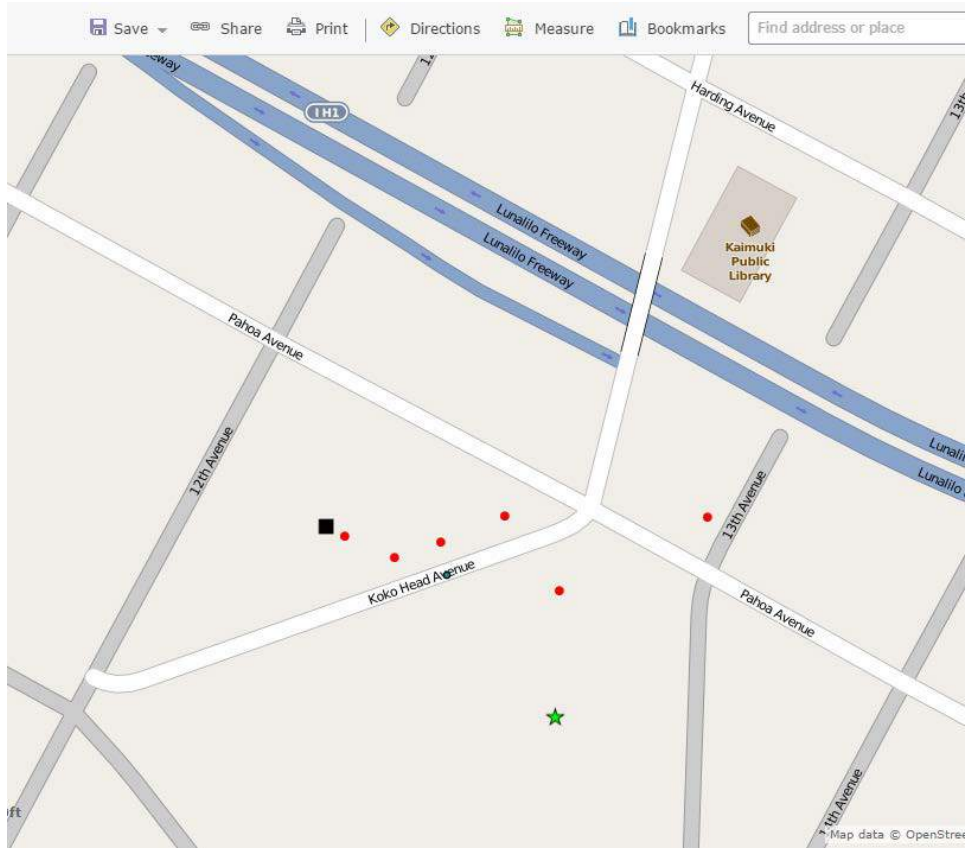
site selection using arcgis online (or portal for arcgis)

Web based

Can easily switch between basemaps to see what data is currently available

- Specifically interested in OpenStreetMap and Aerial Imagery

Users can easily draw and add notes



data collection using collector for arcgis

App allows data collection using personal mobile device

Primarily interested in:

- Buildings/structures
- Transportation
- Trees
- Public Spaces

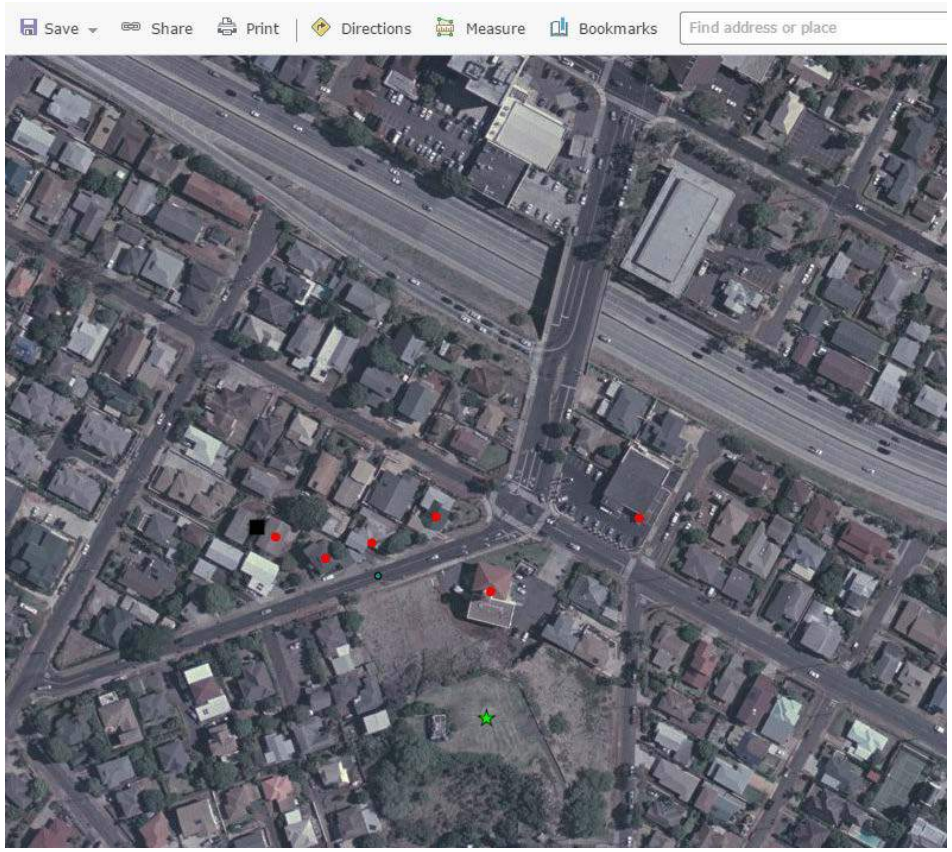
Attach photos of feature to each point

reconcile field data with openstreetmap

Digitize missing features (mainly buildings and transportation)

Report discrepancies to OSM

Provide data to OSM team



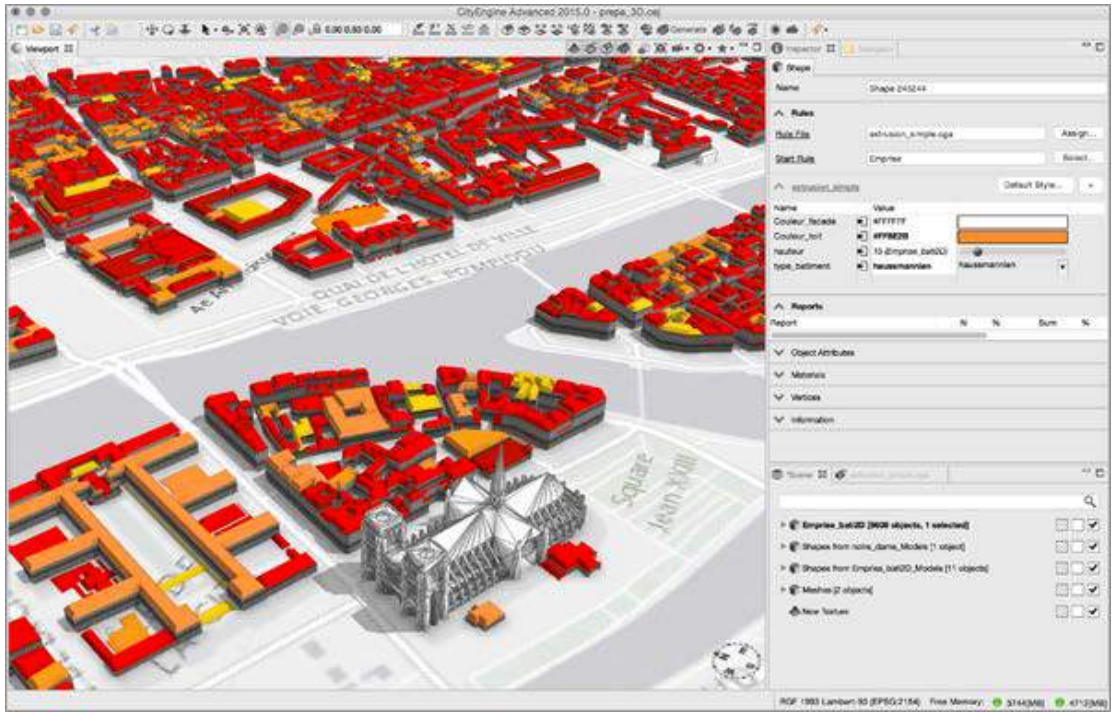
create building models using trimble sketchup

Casablanca, Morocco 2014:
Model created by Greg LeMaire, MEP Lead Architectural Designer

export models to cityengine

Combine field data, OSM data, and SketchUp Models

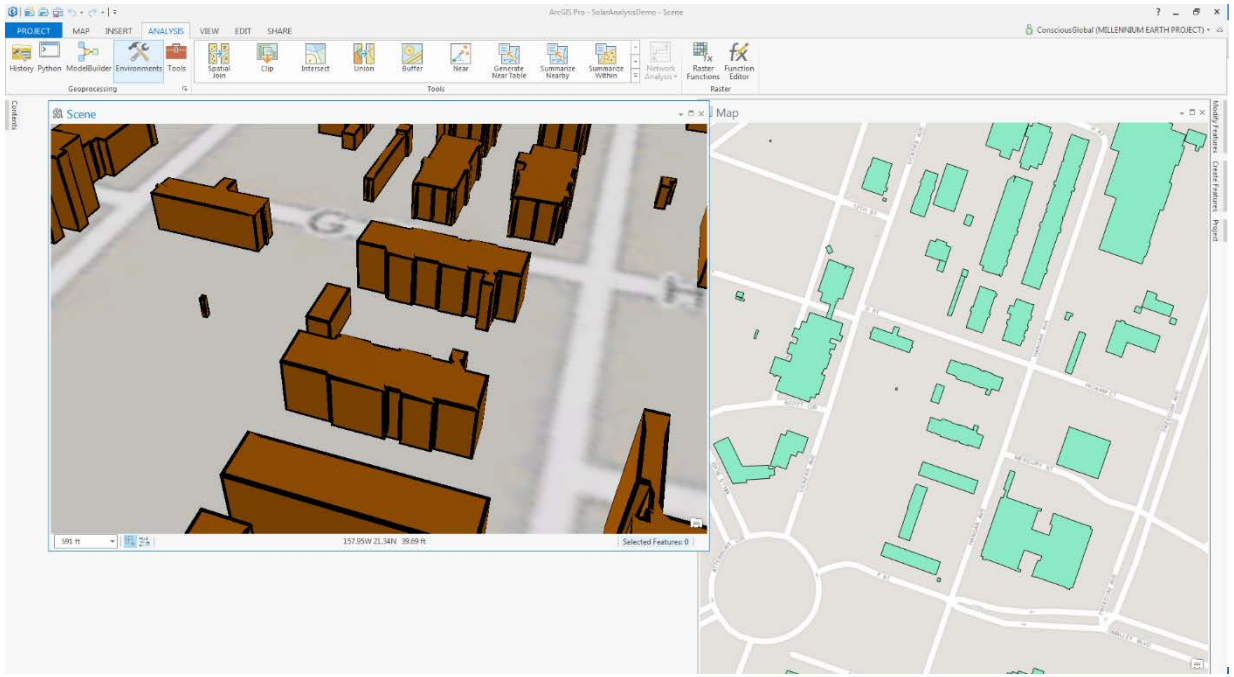
Configure web scene for “current landscape”



arcgis pro for analysis

Linked 2D/3D views

Native 64-Bit environment



use web scenes for community discussion

game-ify data for engaging younger audiences

Minecraft

Virtual Reality

Geocaching

SimCity

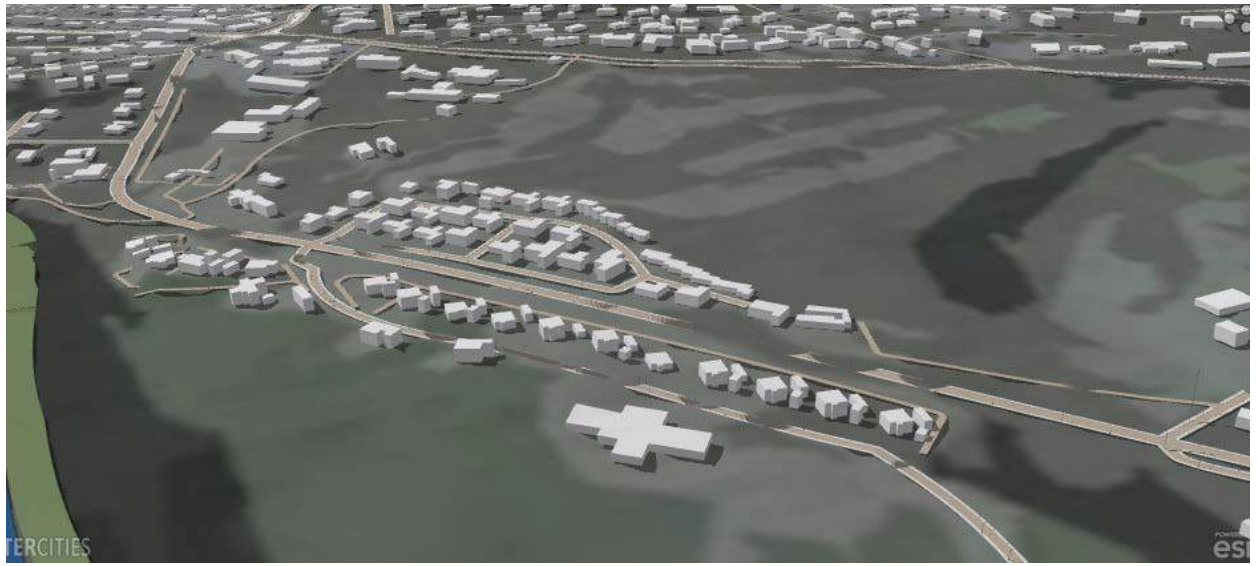
part IV: prototypes

san raphael, haiti

Tested field collection workflows in collaboration with Centre National de l'Information Géo-Spatiale (C.N.I.G.S)

maseru, kingdom of lesotho

Chosen to test the ability to pair OSM building footprints with Google Street View



part V: pilots

COMING SOON FROM THE MILLENNIUM EARTH PROJECT

new york, united states

Initiated by The Institute for Conscious Global Change and St. Johns University

Focus on SDG advocacy, social media, education

- Begin discussions with students about sustainable development and associated projects

greensboro, united states

Initiated by East Carolina University's GeoClub and Gamma Theta Upsilon

Focus on developing documentation and user materials

- Field Guides

emuhaya, kenya

Initiated by local GIS Officer, Emuhaya CDF

Testing and streamlining disconnected data collection via Collector for ArcGIS

honolulu, usa?

Lead the way for Small Island Developing Nations (SIDS)

Looking for official sponsorship from City/County/State Government as well as UHM and HPU

Focus on data collection/documentation, education, communication

end

I honestly believe that all of us, working together, with a little help from technology, have a very realistic chance of achieving our common goal: designing a better future.