Uncommon Opportunities : Geospatial Technology, Conservation and Development

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FLEDGE

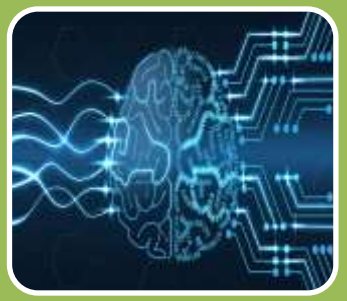

SUSTAINABLE DEVELOPMENT GOALS
17 GOALS TO TRANSFORM OUR WORLD
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS
SUSTAINABLE DEVELOPMENT GOALS

SDGs and Geospatial Information

When adopting the SDGs, the United Nations (UN) Assembly recognized the contribution that could be made by Earth Observation (EO) and geospatial information (i.e., big Earth data) in supporting and tracking progress towards the SDGs *(UNGA 2015, para. 76).*

Challenges for Big Data

LEGAL



TECHNICAL

ETHICAL

Data, Information and Indicators

The Big Data Project Inventory

- 109 separate big data projects and their potential contribution to the SDG implementation.
- Most data projects focus on goals 3, 8, 11 and, with a lesser emphasis, goals 2, 15 and 16.
- Though promising, most projects have not yet moved beyond the planning stage, and others are dealing with legal issues related to data protection

Data, SDGs

The importance of EO in relation to Goal 6 (Clean water and sanitation), Goal 11 (Sustainable cities), Goal 14 (Life below water), and Goal 15 (Life on land) are being addressed now.

Most of the perceived contribution of EO towards these goals has been around the provision of information in relation to the mapping of land cover, land productivity, above ground biomass, soil moisture content, and water extent or quality characteristics, as well as air quality and pollution parameters

Some Opportunities

- ✓ Meta-optimization of EO with external data-intensive infrastructure has led to improved mapping of built-up areas in support of the **global human settlement Layer**

- ✓ National mapping of SDG indicators 15.1.1, 15.3.1 and 2.4.1 has been achieved through **synergy of in situ and multi-resolution satellite data.**

- ✓ Big Earth Data (global census data and satellite-derived built-up area maps) has enabled enhanced **mapping of population distribution along coastlines**

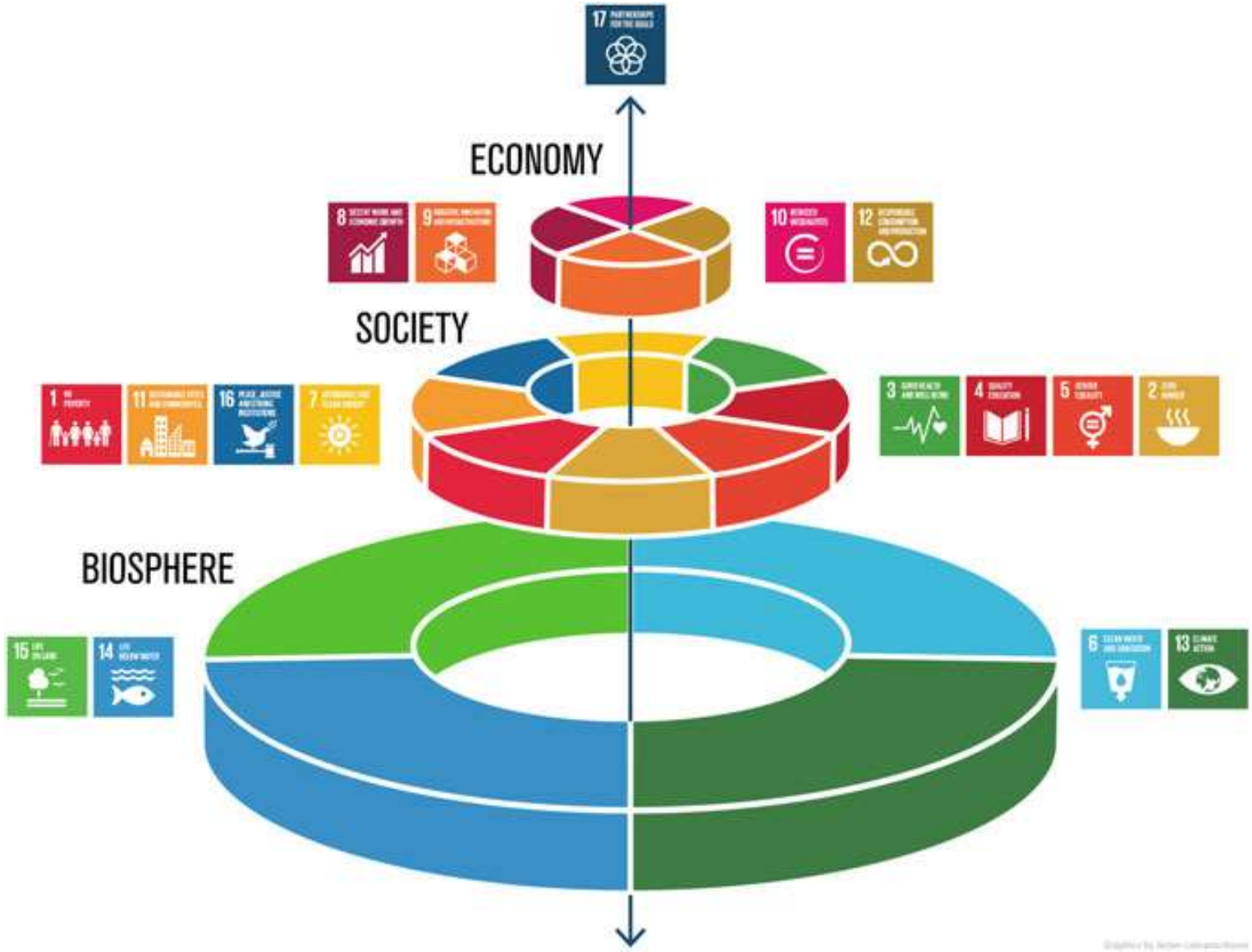
- ✓ EO and machine learning have enabled **mapping of sites associated with slavery**, in support of SDG target 8.7 (“*take immediate and effective measures to eradicate forced labour, end modern slavery and human trafficking and secure the prohibition and elimination of the worst forms of child labour”)*

The Future Options

Operationalization of big Earth Data proof-of-concepts is relevant to the scientific support for sustainable development policy strategies that are coordinated and coherent across goals.

Advances, such as, the Internet of Things and biometrics will all surely present opportunities to compile new and useful statistics.

The implications of this ‘big (data) bang’ for statistics in general, and the SDGs in particular, can help a whole host of new ways to measure and understand the human condition and the progress of development.

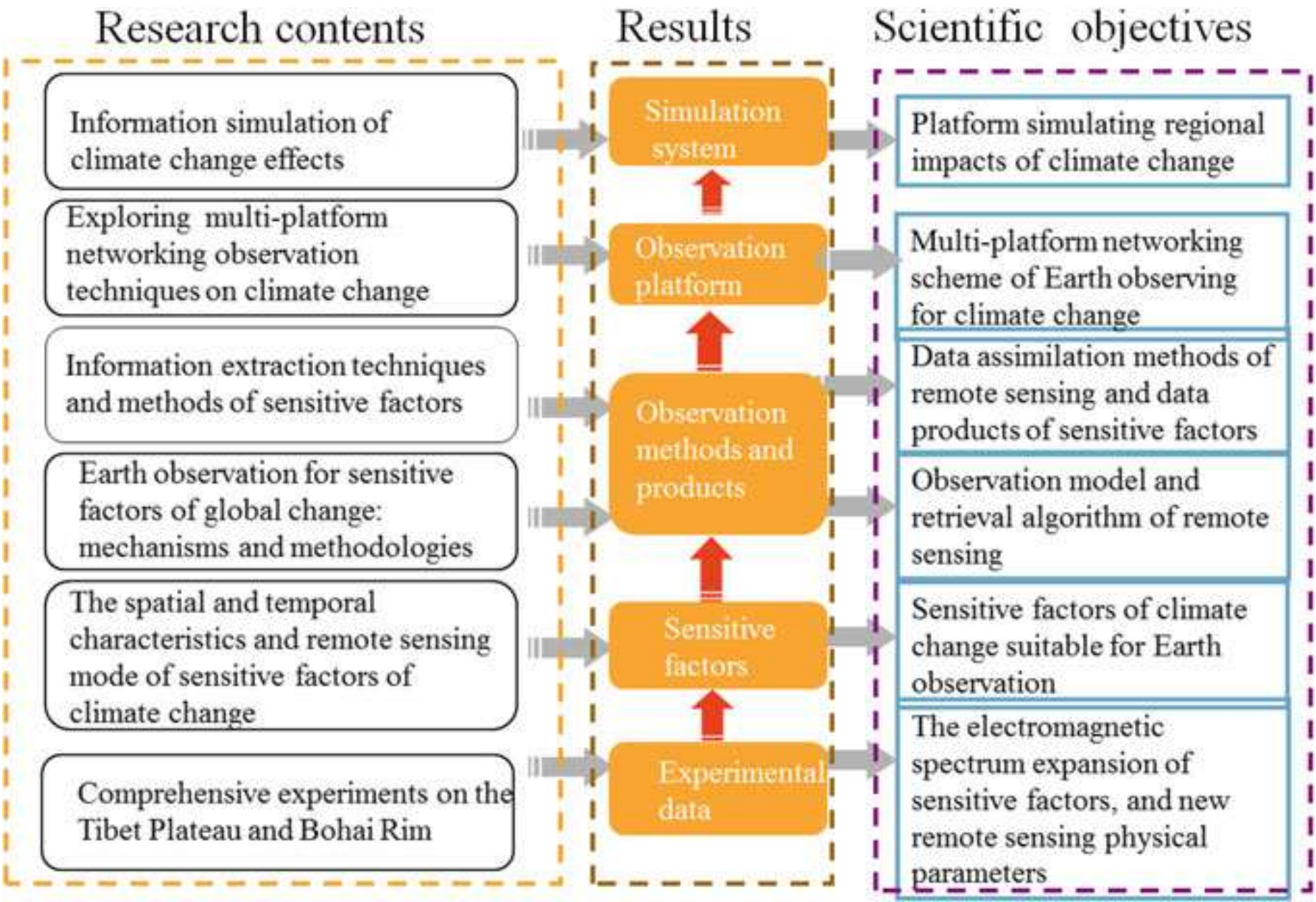

ECONOMY
SOCIETY
BIOSPHERE

Science-Policy Interface

The fact that data are produced in large amounts does not mean they are immediately and easily available for producing statistics.

Simply put, the interface between science and policy needs enhancement for context-based interpretation and communication is needed

Learning from Climate Science



The Aichi Biodiversity Targets

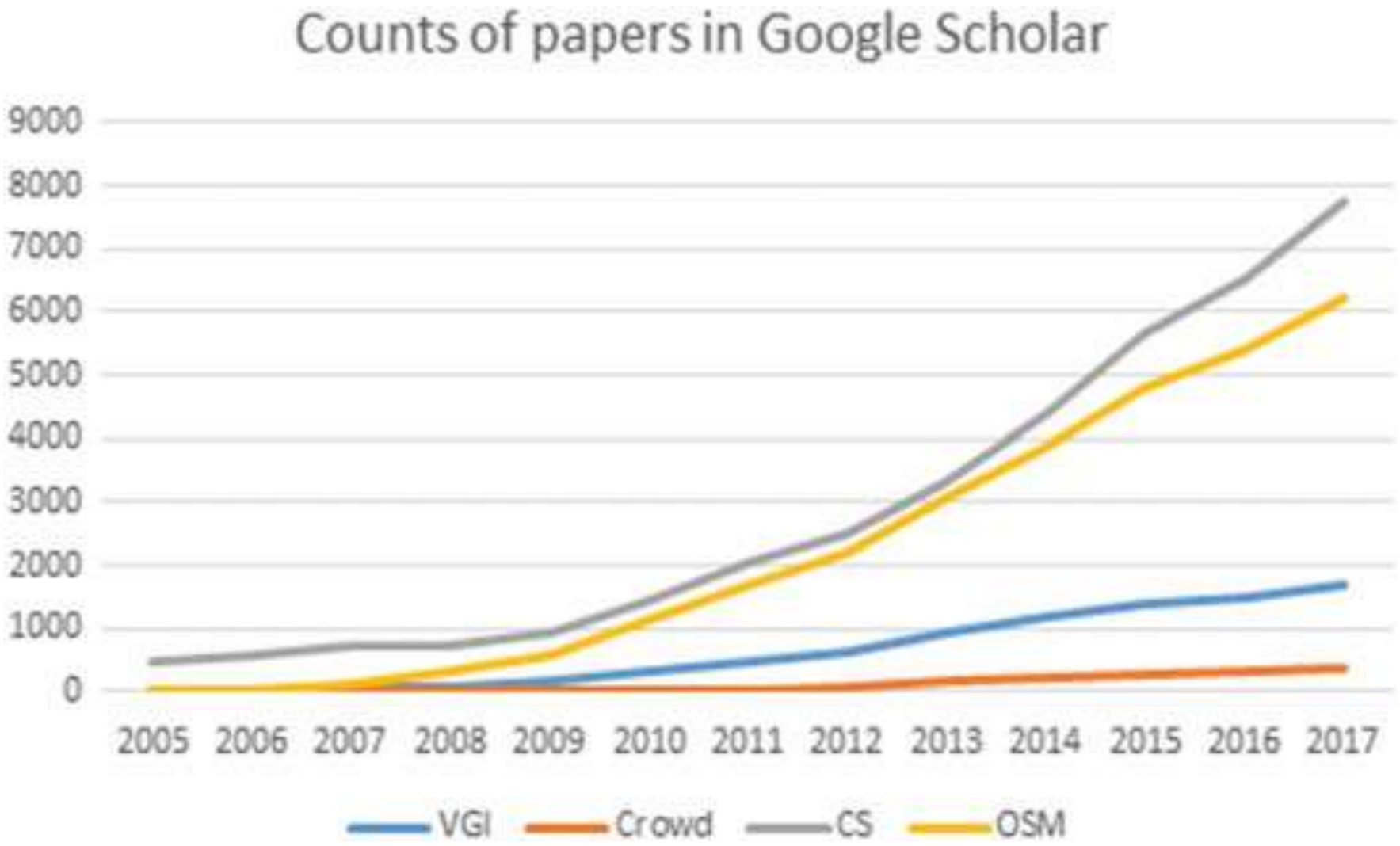
Conservation Priorities – Data based

Setting the Goals and Targets (2021-2030)	• Prioritization of goals and targets • Ensuring national relevance
Manistreaming into sectors	• Development (SDGs)
Designing policies and strategies	• Information and data sourcing and sharing • Collation and analyses

Big Data and Conservation

Digital Earth for SDGs Graciela Metternicht, Norman Mueller and Richard Lucas, 2019

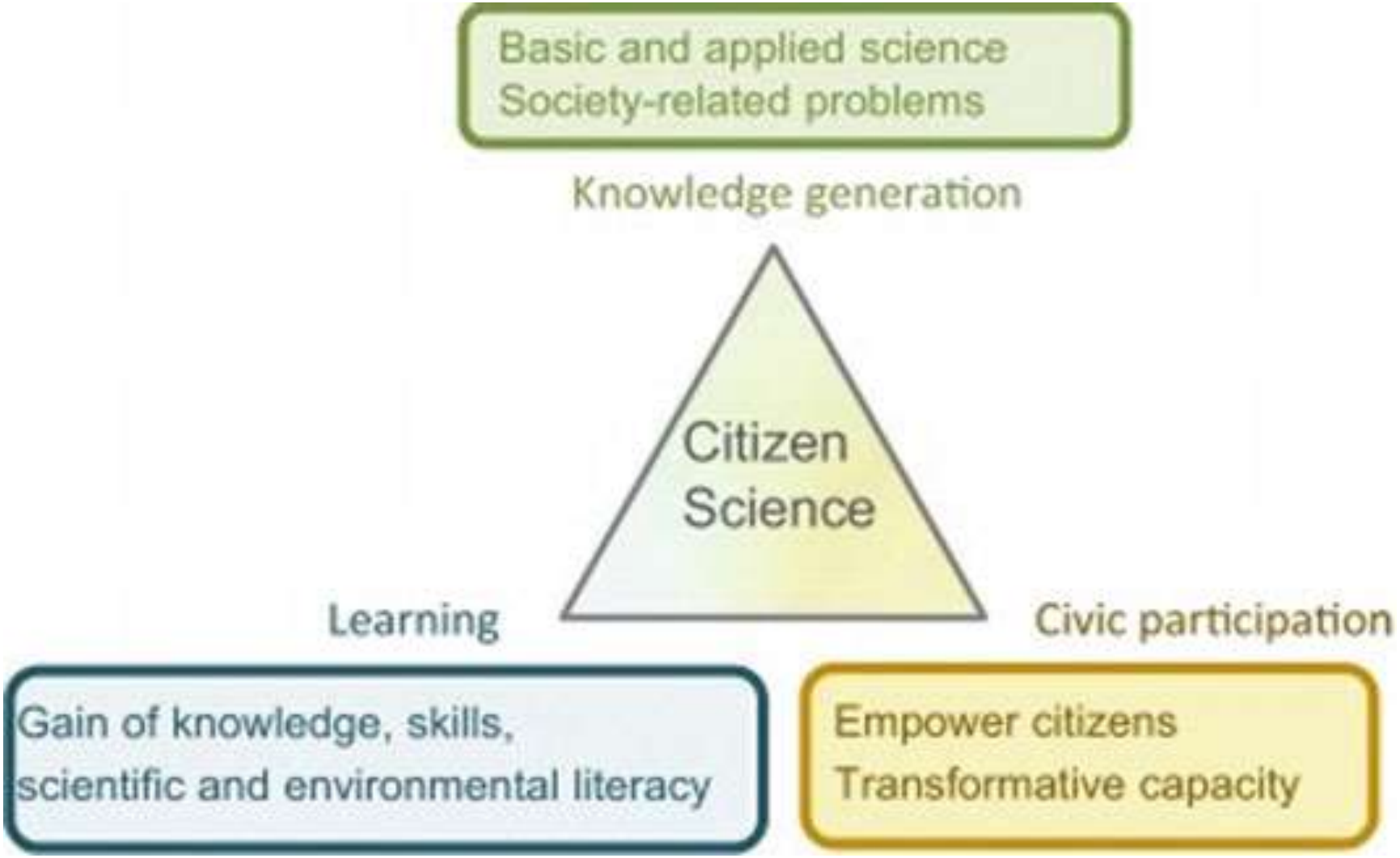
Crowdsourcing and Citizen Science



Google Scholar results for papers matching the terms 'volunteered geographic information', 'geo crowdsourced' and 'crowdsourced geographic information' (Crowd); 'citizen science' (CS); and 'openstreetmap'

Maria Antonia Brovelli, Marisa Ponti, Sven Schade and Patricia Solís, 2019

Potential of Citizen Science



Maria Antonia Brovelli, Marisa Ponti, Sven Schade and Patricia Solís, 2019

Value Chain of Citizen Science for Policy

Maria Antonia Brovelli, Marisa Ponti, Sven Schade and Patricia Solís, 2019

2020!

A new global biodiversity framework that mainstreams SDGs and others is being prepared (2021-2030)

Approaches to strengthening Science-Policy-Practice interface are being renewed

Advances in science and technology, including geo-spatial technology to being used

Achieving the framework will be **citizen driven, science based and policy directed.**