

Side-event Report

An online webinar on “Education and Capacity Building to support the Global Geospatial Information Management”



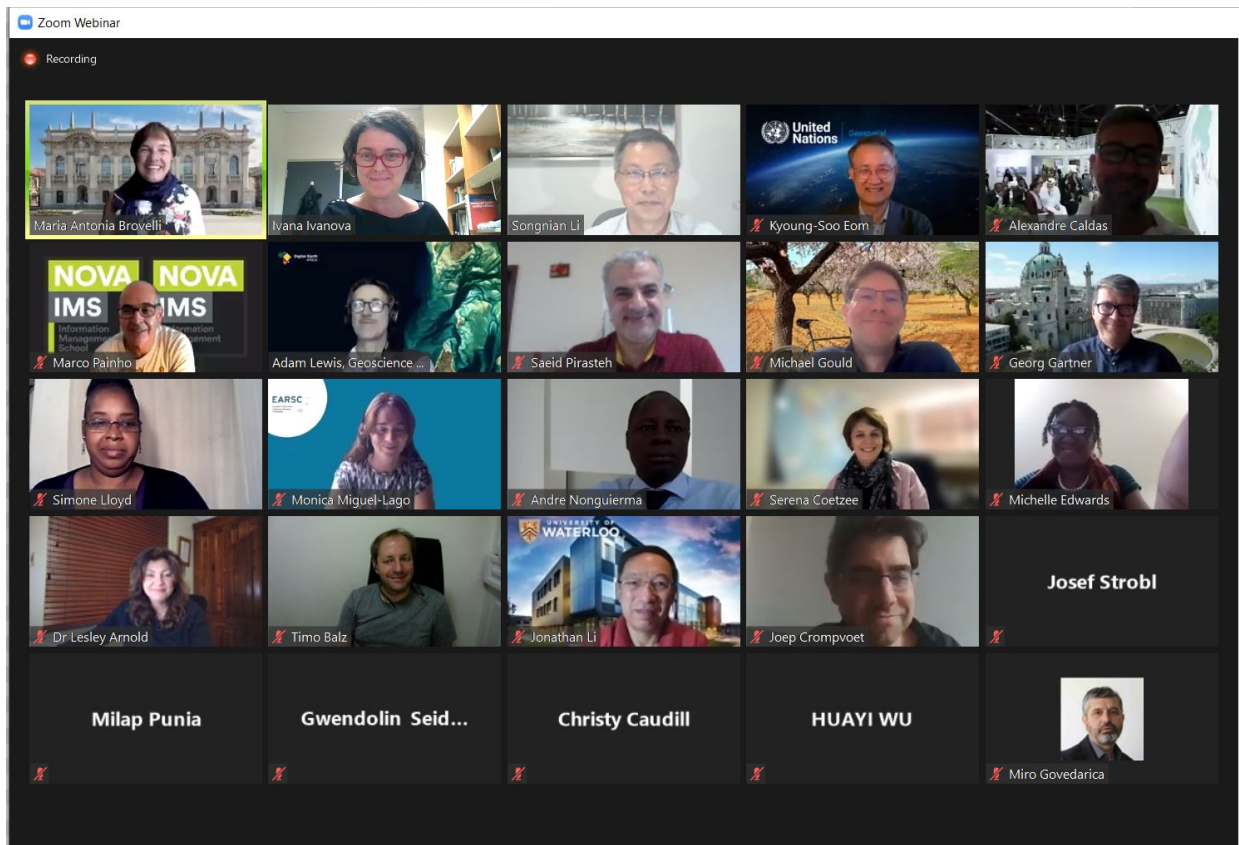
UN-GGIM
ACADEMIC NETWORK

11th UN-GGIM Session, August 18, 2021

INTRODUCTION

Attended by over 40 people from 18 countries, this side event gathered the UN-GGIM Academic Network (UN-GGIM AN) members, key people from UN-GGIM regional committees and working groups, and other interested participants to explore gaps, challenges and opportunities facing education capacity building from a global perspective in the context of rapid advancement of related technologies. The particular objectives of the side-event were to:

- Share new experiences on building educational capacities;
- Discuss about what is needed and what is urgent for education and capacity building, and how the Academic Network can contribute; and
- Explore new education initiatives for effective geospatial information management and services through public-private-partnership collaboration.



(Screenshot taken during the side-event)

The side event started with the update report of the UN-GGIM AN activities in the last

year, by Ivana Ivánová, the UN-GGIM AN Secretary. This was followed by an inspiring presentation on *Innovation in Education*, given by Serena Coetzee from University of Pretoria, South Africa. Most time of the webinar was spent on panel discussions with the following 7 experts, chaired by the UN-GGIM Academic Network Chair Maria Brovelli:

- Andre Nonguierma, UNECA and UN-GGIM Africa Secretariat
- Paloma Merodio Gómez, Mexico and President of UN-GGIM Américas
- Adam Lewis, Geoscience Australia
- Joep Crompvoets, KU Leuven and Chair of the Regional UN-GGIM Europe Academic Network
- Michelle Edwards, Jamaica and Co-Chair of the Working Group on Geospatial Information and Services for Disasters
- Alexandre Caldas, UN Environment Programme and Chair of the UN Geospatial Network
- Kyoung-Soo Eom, UN Geospatial Information Section

Paloma The event was wrapped up with a short Q/A session.

SUMMARY OF PANEL DISCUSSIONS

The panel discussion started with all panelists to address a general question: What are you expecting from the UN-GGIM AN and how do you want to collaborate with the UN-GGIM AN? The second part of the discussion focusing on the following 8 questions which panelists could choose to address:

1. What is needed, from the educational point of view, for facing the “novelties”: geo big data (sensors and satellite) and machine learning. Which is the status of expertise in the governmental agencies and how we, as UN-GGIM AN, can contribute?
2. Are you aware of support programs to train the trainers on the use of Earth Observation and geospatial technologies to achieve SDGs? Do you believe that there is a need for training material? In your experience, which are the ideal characteristics for such a kind of training material?
3. Do you believe that it is important to have a white paper with successful methodological guidelines for achieving SDGs? Have you already some material and are you interested in collaborating?
4. Which are the most urgent topics in the geospatial domain, where you see more relevant the actions of the UN-GGIM AN?

5. Do you believe that an online catalog of courses/training materials about geospatial information and SDGs can be useful? Are there resources (of any kind) you can put on this activity?
6. The pandemic has taught us that webinars and online training are feasible. Is there a need for UN-GGIM members for these initiatives? Do you believe they can be successful? Which characteristics do you see as important for such initiatives?
7. We all know that for achieving SDGs collaboration is essential. In your UN-GGIM network/body, how do you stimulate collaboration? From your experience, what works well and what does not?
8. It should be important to have an overview of all available material/events (publications, workshops, and meetings) on “geospatial information and SDGs”. What are you currently using to be informed about this topic?

Response to the General Question:

In his response to Question 1, Kyoung-Soo Eom highlighted the need for analytics to draw meaningful information from big data. In his opinion, UN-GGIM AN could focus on aspects related to this, such as advancement of technologies, organize fora perhaps with UN-GGIM to discuss these aspects.

Question 1 and 2 have also been addressed by Paloma Merodio who could not join the session in person and uploaded recordings of her responses. These are available [here](#) and [here](#).

Joep Crompvoets addressed Question 3 and in this is his response as to what constitutes a strong UN-GGIM AN:

- Open and Future Oriented Education: Education which is active, cooperative, and solution-oriented. It uses contemporary feedback and evaluation methods. Future offered education should be less focused on listening to and cramming than on actively constructing and gaining knowledge together with experts, practitioners and other students. Such education should be able to enhance knowledge transfer that should be able to deal with transdisciplinary issues and contribute to developing solutions for achieving the SDGs (and tackling the associated problems).
- Provision of activating education in terms of teaching and evaluation methods, and learning goals, which go beyond memorizing and reproducing. Examples of less traditional teaching formats are simulation games, hackathon, design projects, innovation camps. In addition the online exercises MOOC and SPOC –

MOOC for the generic knowledge transfer; SPOC for the more tailored courses. These innovative teaching methods have the potential to enhance the knowledge, skills and attitude competences.

- Research oriented learning as a key means to teach the students as critical, active and innovative thinkers. So, involve students directly in research activities that somehow are related to the achievement of SDGs. Relevant research topics refer to GeoAI, digital transformation and Mobile internet.
- Internationalization – SDGs include a strong international dimension in mobility, cooperation and policy dialogue activities. To achieve the SDGs in the world facing global challenges, a key element is the intensification of international mobility and cooperation with other countries. In parallel, the actions need to be taken to contribute to promoting values, principles and interests around common priorities, notably related to the SDGs.
- Invest in governance dedicated to strengthen education and capacity building – see development of a possible overarching white paper written by members of UN-GGIM Academic Network; involvement of representatives of the private sector, public sector and academia in associated governance structures; and placing education and capacity building on the agendas of relevant platforms, expert groups and working groups.
- UN-GGIM AN is a key player for developing white papers on open and inclusive GGIM education, and should lead the effort on successful guidelines for supporting SDGs, to serve the objectives mentioned before. Europe already has a few institutions working on the same or similar, which could serve as inspiration for global effort.

Andre Nonguierma mentioned in his response to Question 4 that there is a lack of geospatial policies on use of spatial data, how to develop services rather than data, UN-GGIM AN can help to get more cloud-based computing, analytics and real-time applications, Africa in need of skills and capacities to provide/visualize geospatial information. Developing geospatial use cases, critical mass of HQPs in the region, and courses on geospatial in business is as well essential.

Alexander Caldas responded to Question 5: UN-GGIM blueprints for a number of pathways that focus on technology (e.g., online training courses), government (e.g., geospatial data, geospatial statistics??), and people (e.g., geospatial job profiles), to focus on these aspects for AN to develop online repository and resources; existing resources - UNSAC archive, ORCD? OLA? Transform PPP - people, place and planet

Michell Edwards added her reflections on Question 5 in which she stressed the importance for UN-GGIM AN and entire UN-GGIM to develop strategic framework for raising geospatial awareness, sharing workshops, training and capacity building initiatives between AN and WG, both can work together to pull knowledge and expertise as resources.

Adam Lewis contributed through his reflections on the necessity of capacity development, with examples from the Digital Africa (DA) initiative, where capacity development is one of the important parts. DA has many existing partners using many open sources solutions, integration of resources or hubs of education materials with digital Africa. For example, DA initiative contains a courses for 1000 users (using a MIT online training platform),

Additional observations from the general discussion as captured from the chat parallel to the panel discussion.

- It would be great to have a sort of core standard curriculum in Africa. This includes localized data, as well as multilingual support. Today people who say they "studied GIS" have seen a variety of topics and often have limited hands-on problem-solving experience.
- GIS/RS can be used for many purposes, but among the most urgent are climate-change-related activities: not only showing it on a map but also analyzing data and taking action. The UN-GGIM AN might focus on that in the next few years.
- It is possible and very important to bring the geoinfo educational content 'closer to home'. But do we need to tailor the curriculum, in terms of which topics to include into a geoinfo syllabus? It should not be driven by the specific region when we talk about geoinfo education in general. E.g. the GI Body of Knowledge and that is applicable anywhere as a whole.
- Concerning the discussion on the Body of Knowledge, there is currently an initiative under the Eo4GEO project (<http://www.eo4geo.eu/bok>) which provides an ontology for the EO*GI sector to guide structured upskilling and reskilling. It defines the underpinning interrelated concepts (theories, methods, technologies, etc) of the EO*GI sector that should be covered in education, training. The EO4GEO BoK also aims to guide the design of educational offers, training materials and training actions in order to assure that they convey the skills and knowledge (and somehow competences) necessary to become an expert in the EO*GI sector. Therefore aiming to bridge the skills gap between supply and

demand of education and training in the EO/GI sector.

- The European Association of Remote Sensing Companies (EARSC), is not a member of the Academic Network but we are leading the Sector Skills Strategy under the EO4GEO Blueprint project (www.eo4geo.eu) and we are building an Alliance of stakeholders with interest to bridge the skills gap between supply and demand of education and training in the EO/GI sector. We will be pleased to contribute to the mapping of stakeholders.
- Many of the suggested resources (online courses, webinars, twinning collaborations etc) are widely available, but often under-used in many regions. Before embarking on any new initiatives it would be interesting to explore the reasons why this is the case, not to increase a supply-driven mismatch with de facto use of open and easily accessible learning opportunities.
- What leadership role does the UN-GGIM AN see for itself? As well as identifying key questions such as cooperation, open education, brokerage and connection, how can the AN provide leadership? This leadership could also go into advocacy for improvements in the academic and research data networks which are of course critical, and are limited in parts of the world - e.g. in parts of Africa. In revising the terms of reference for the UN-GGIM AN, maybe some thought could go to this?
- How might we collate educational resources? Might there be a space on the UN-GGIM AN website to document these resources, and share efforts, rather than to duplicate them?
- Should we build a repository or a catalog of educational resources - the majority of the group is for a 'catalog' (i.e. a portal with links, rather than a database with collection of resources'.
- What about a good mapping of the stakeholders active in the EO/GI Education-Training - Capacity Building – Upskilling-Reskilling activities that may be guiding already the mapping of the “organization resources” so not duplicating what is there but a good visualization of who are the actors, what they are doing and maybe their interconnections. Is not a “mapping of stakeholders” something to start first?
- The 'user group' of the UN-GGIM AN should not only be students who are being introduced to topics, but also the professionals who need upskilling with new geo-tech.
- The key points for UN-GGIM-AN in future should include „train the trainers“, curriculum templates/best practices and a catalog/list of resources. But most importantly I want to cite Andre Nonguierma: we need to work towards

„Awareness building“, which is more than learning techniques.

- A white paper on ‘successfully implemented educational resources accessible to all’ as suggested by Joep is a great way forward
- Short courses should be published through UN-GGIM AN
- A great earlier comment and its deep salience in considering stakeholders, cross-disciplinary and trans-sectional collaborations, and operating from a platform of cognitive justice. Perhaps the AN can think of: 1) Social equity (Equity= fair treatment rather than equal treatment) besides equality, 2) Game in education: To my knowledge, the Learning Design and Technology program builds the creativity, knowledge, and skills necessary to pioneer the future of equitable and effective learning, 3) The soul of education: Teaching children from childhood how to react to our environment and love our planet with awareness and the right tools and information, 4) Cross-disciplinary and connect professionals, and 5) Strengthening Quadruple Helix Model: Focusing on the Quadruple Helix Model of innovation recognizes four major actors in the innovation system: science, policy, industry, and society (industry, government, academia, and users/civil society).
- GEO has an active group on capacity building of which I am a member. There would be advantages in increased cooperation with this group. CapDev working Group at GEO (https://earthobservations.org/cd_wg.php) and CapDev group at CEOS (<https://ceos.org/ourwork/workinggroups/wgcapd/>)
- The idea was in fact not to establish just once-off or specific connections between ITU and academic institutions, but a general possibility for any academic institution to offer to their students a possibility to consult opportunities for internships available at any interested UN organization or specialized agency.
- There is a growing sense of shortage of specialized people with skills, related to covid that resulted in disruption of traditional model - how AN can help explore the new education model, how to build tools for sharing education materials.
- We’ve already seen great values of UN-GGIM AN, members of WG also part of UN-GGIM AN, received strong support of UN-GGIM AN members, talked about the 4 goals of WG as well as the importance of UN-GGIM AN in supporting targeted areas of UN-GGIM, 2 major expectations - wants to collaborate with UN-GGIM AN to build capacities and to strengthen dialogues between WG and UN-GGIM AN.
- There needs to be a step up collaboration even between UN-GGIM networks, focus on key capabilities of academics, e.g. OTP, that definitely UN-GGIM AN can provide, take advantage of all AN members - skills and expertises, need UN-GGIM AN expertise on design and development of training for supporting UN

(workshops, webinars, etc.)

- Collaboration with UN (various entities) is not an option but a mandatory aspect to support UN operations, AN to engage more closely with global geospatial players or NGOs using its knowledge/expertise as a training arm, AN to play a brokerage role between geospatial users and operation actors, how to bring students into AN activities (student chapter?)

MOVING FORWARD

The panel discussions provided a few important observations and recommendations to guide the future development of the UN-GGIM Academic Network and its activities. Opportunities were also identified for more collaboration with other UN-GGIM networks, international organizations, and ongoing initiatives. The UN-GGIM Academic Network will act on all these to maximize the benefits of its members and contributions to UN-GGIM and beyond.