

# Reflecting on the YouthMappers Movement

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## Abstract

YouthMappers co-founders and organizers reflect on the contributions narrated in this volume, and in a larger sense, the contributions of the more than 300 university campus chapters in more than 60 countries. These reflections provide a point of departure to imagine what's next and "where to go from here." We call for greater investment in youth, especially in majoritarian countries, as these contributions represent the dividend of previous investment in local capacity for the SDGs.



## Keywords

Youth · Open Data as a Public Good · Movement · Innovation · Action · Sustainable Development Goals

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## 1 **Marveling at the Movement as a Digital Public Good**

One of the major trends we see in the sustainable development discourse, and one that is emerging globally, is the idea that open data is a digital public good. This means that the open data movement is democratizing information, and actions to create open data can be thought of as contributing to democracy. YouthMappers have emerged as a major contributor to making data free, open, and available at a local level, in many corners of the planet. This data is always contributed with a purpose, often advancing local, regional, and national advances for the United Nations Sustainable Development Goals, as the many stories in this book have narrated. Embedded within these stories are the many ways youth are growing a geospatial mapping movement in itself but we also find in the open sharing of data, ideas, time, and talent, the many ways they also are contributing to this larger picture of a digital economy and creating digital public goods. We believe it would be hard to find a better example of sustainable development on the ground. The bottom-up approach, which typically gets a lot of lip service, is rarely seen in the same light as these youth authors have illuminated for us here.

In the sections that follow, we reflect on a few questions that this movement and the youth that we engage with have compelled us to consider.

### 1.1 **What Has Been the Main Contribution of YouthMappers to the Potential for Reaching SDGs?**

As noted, we see that YouthMappers is at the forefront of the democratization of data, and data is a foundational element for free and open societies. The data contributed by YouthMappers serves a global digital public good that underpins modern digital economies. It underpins deci-

sions, by policymakers, actors, and the behavior of everyday people. All of this informs the way that development unfolds, be it sustainable or not, and preferably the former.

As a network, perhaps a space for action, YouthMappers has provided these young people with a platform for self-organization, and self-expression. In order to attain collective goals like the Sustainable Development Goals (SDGs), the next generation will need the ability to self-organize, support one's peers, and strategize around helping one's local community, let alone beyond their borders. Reading the pages of this book, we find evidence that the program has not only built mappers, it has also built leaders.

### 1.2 **How Does YouthMappers Strengthen Youth Links to the UN SDGs?**

YouthMappers provides pathways to find the tools and resources to use for students to address and work towards the sustainable development goals in their communities. It enables discovery of what the SDGs mean in different local contexts, where students work collaboratively across chapters, nations, and continents. We have seen the projects and the work YouthMappers chapters do, which can spread to motivate others to take on similar projects. Ideas and methods often will spread throughout the network addressing a particular SDG. Waste mapping is one example.

More importantly, related to this exchange it is important to remember that mapping had traditionally been the domain of wealthier countries with established mapping agencies. YouthMappers helps to bring mapping back to a local level and enables contributions from people and communities living at locations of interest and need.

This is the digital generation. Connecting the digital with sustainable development is influencing how youth are interpreting what it means to be a digital humanitarian.

### **1.3 In What Ways Do You Believe Leadership Assumed by YouthMappers Has Been Able to Contribute, Galvanize, or Mobilize Their Communities?**

Giving an identity platform for youth to break open their careers and be heard is something that inspires us and inspires each other, as peers. We have seen many of the members and alumni thrive and move forward onto the professional scene and further mentor and support others. This is what digital leadership in an open data space can look like.

YouthMappers students inspire and engage local community leaders to address challenges faced locally. And then they provide solutions to resolve those challenges through public geospatial data that is created through grassroots initiatives. When these lead to tangible impacts, like those we read about in many of this book's stories, it gives youth a voice in the development in their own communities where they otherwise have limited opportunities to be involved in decision-making. Technology is often associated with youth and leveraging it to improve their community's development makes them more respected and valued. These are essential early experiences for leaders, who are not just leaders of the future, but leaders today.

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## **2 Reflecting on Innovation, a Spirit of Overcoming, and Action Towards the SDGs**

A common thread visible in the research and audible in the stories of many YouthMappers is that of a common struggle and challenge in resource and opportunity poor environments; overcome with spirit and action; resulting in an instance that could be only described as *innovation*.

### **2.1 What Are Some of the Most Unique Methodologies and Technologies Used by YouthMappers That Relate to the UN SDGs? And What Is Unique About Them?**

Not only is leveraging a suite of Open Source geospatial technology and tools to create open data something we might call an innovation, but also the ways that youth have been stepping into the OpenStreetMap community and emerged as a recognized valuable human resource. We have seen multiple times students introduced to OSM through YouthMappers grow to take on technical challenges, and share solutions with local OSM communities, and the global OSM as well.

But because YouthMappers chapters are present in majoritarian nations, and because they are comprised more representative of the gender balance of humanity, they are at the forefront of leading gender equality in the technology and geospatial world. They are pushing the boundaries of Whose Geospatial we mean, when we call OSM the "people's map of the world." Still, connectivity and access to technology issues are real and the much-touted digital divide is a barrier. Nevertheless, YouthMappers are meeting local issues head-on using technology and community involvement to solve these problems such as those related to SDGs.

### **2.2 What New Innovations or Methods Do YouthMappers Have with the Potential to Advance?**

There are many cases where GeoAI and machine learning are a part of the methodologies, when augmented feature extraction, or tag verification is used. How to do that right, ethically, and build capacity while doing it is something that the network is still wrestling with, balancing the need

for training, quality, accuracy, and all of the innovative questions that leading the use case landscape entails. But it is clear. Students are not just sensors. Responsible innovation in GeoAI for disasters, in particular, and purpose-driven mapping in general needs to be trustworthy, and also inclusive. This is a space where YouthMappers themselves may have much to say in tandem with the increased utility of AI and ML.

These developments aside, YouthMappers are poised to advance the revamping of analog technologies. Demonstrated in the cases throughout this book, YouthMappers have tremendous capacity to confirm, validate, create and contribute local information, all the more important as the knowledgeable, (and ethical!) humans-in-the-loop while mapping trends towards GeoAI.

Going back to ideas about democratization of data and of tools, we furthermore see this digital/analog presence of youth as holding the keys to the potential to advance geospatial literacy and educational trends towards Open Source/Data and tools in the first place. Because youth and young people are in the learning mode, this leverage is significant. Just merely knowing what OSM is and the existence of QGIS lets them enter the global geospatial workforce a rung above the rest. They will take that leverage to innovate.

### 2.3 What Conceptual Ideas Do YouthMappers Have the Potential to Advance?

Beyond the practical and the technical, there are ideas in motion that are of a more conceptual or academic character, and YouthMappers are anticipated to become a part of these advancements in the field. Two immediately come to mind. First, the creation of Digital Twins (Digital Cities or other terms) is coming. This means creating base data that can be used and applied to urban planning, advancing technology, and even the metaverse. Second, a mature subfield of open mapping with roots in geography includes quite a few examples of community mapping and/or participatory mapping. This continues to evolve. Looking forward, if we could progress this to

having an influential seat at the table when it comes to actual spatial planning for our own communities, YouthMappers will be a part of that process. Taking participatory mapping all the way through to participatory planning – and having data bridge that gap represents a new old approach that holds a lot of promise for SDGs.

## 3 Identifying Where We Still Have a Lot of Work to Do

Despite this good news, the YouthMappers movement continues to face barriers, challenges, and room to grow and improve. A few of these areas where much work is needed, and which youth who assume roles as future leaders should embrace, include:

- *Data informing decisions* – This area is fraught with challenges, and connecting the dots to the actual problem-solving moments can be problematic (at large, as well as with geospatial); trade-offs and unforeseen consequences are but the start of efforts that seek change. Careful engagement and wisdom are needed here.
- *Inclusivity* – while many strides have been made with respect to the acceptance of students, we anticipate that critiques about whether they are generating the quality that we know they produce will likely continue; commitment to training, validation, and quality control will remain critical to future success. Similarly, bringing greater diversity in terms of location, ethnicity, gender, and other axes of difference has been an important contribution of YouthMappers, but we believe a struggle that will continue.
- *Resource allocations* – On some campuses, students continue to wrestle with gaining the space and support from their home institutions, given that this is an informal (non-classroom) activity that they are leading. While mentoring attenuates this in many places, there are still locations that fall short of recognizing the powerful energy they can bring now to research and the reputation of

their universities. We predict ongoing resource battles, but explicit attention and tracking of the value that youth brings to their institutions could attenuate this challenge.

- *Connectivity* – The digital divide and the gender digital divide will likely remain an issue for many of our chapters going forward. There are not yet any cost-effective solutions for this in the short or medium term. If we could partner with, and potentially get the support of new actors, for instance, telecom firms, particularly in Africa, and/or other private sector support for open mapping by youth, we may be able to cover this cost and amplify our ability to give connectivity grants which would mean so much to so many chapters.
- *Privilege* – Students with the privilege of attending university are already privileged in some ways, and still sometimes need guidance on connecting to those who are the most vulnerable in their communities. We need to continue to be vigilant and work across chapters between high-income and lower-income nations, as well, to guard against reproducing post-colonial relationships that would erode the solidarity of the movement built. This includes avoiding activities that consider mappers only as “sensors,” or being (unwitting) extractive tools for development that is not ethical or truly sustainable.

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#### 4 Where Are YouthMappers Going Next

Given the vast involvement with YouthMappers addressing every SDG, we can definitely conclude that this action is impacting the world in a positive way, using open geospatial data and the engagement of youth. Looking forward we should encourage more and more work that more closely informs sector experts in helping map and apply geodata to sustainable development action that has potential to transform decision-making for the public good.

YouthMappers is much more than a data or geospatial program. It has turned into a well-rounded network program that supports the

youth, digital inclusion, gender, and many other sectors serving international development. The future will retain its geospatial roots but the community is on a trajectory to mature into a program that responds to development and SDG matters. It is not an exaggeration to say that YouthMappers has transformed into a movement. Because current students and alumni alike are so dedicated to the purpose and to each other – since they have grown it from the start – it has the potential to grow and thrive beyond its initial vision.

Whatever version of sustainable development goals that comes after the SDGs should find fertile ground in this movement. Youth are plugged in and maybe could help the international community refine/redefine / revolutionize what as a global community we need to measure, track, and aim for. They will be the generation to live this reality.

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#### 5 How Are We to Support This Journey from Here?

Reflecting on our experiences as individuals and a group of collaborators who co-founded and organize YouthMappers, we rightly ponder on how to support the journey from here. The answer needs to emphasize the importance of doing behind-the-scenes work with the right mindset when it comes to how we choose to engage with youth. In short:

**Be a good ancestor.**

We conclude with three ways that we can be good ancestors – as organizers, mentors, and the alumni who are joining in the leadership of this movement. First, we must be sure the youth understand the trajectory of the past in getting to this moment, but then let go as they **choose their own paths forward**. As Kahlil Gibran wrote, “their souls dwell in the house of tomorrow, which you cannot visit, not even in your dreams.” Make sure that strong youth leadership is in place in your chapters, give them access to the tools they need, and let them lead the way. You can also read into this, “then get out of their way!”

Second, **connect young people to each other.** This principle is one of the design aspirations of YouthMappers being a network that works collaboratively around global campaigns for mapping tasks and meanwhile encourages youth to develop local project mapping that can be shared with others. We are deeply inspired by the stories and research results in this book, which have leveraged lasting connections that can be forged by meeting around the map.

Finally, **raise visibility of their ideas and amplify their accomplishments.** Young people typically have not yet built up the means, mecha-

nisms, or reach that we have cultivated over time as older advisors, and indeed often inherited from our own ancestral professional communities. We need to continue to open up safe spaces for youth to participate, even rebuild those mechanisms. The world is changing at an accelerated pace, so we need to accelerate the transitions for youth to step up. Then give them recognition, and make sure credit is distributed fairly. This allows all of us to not only be inspired by their thoughts, innovations, and energy, but it also keeps us accountable for a sustainable future.

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