AI + Climate Futures in Asia

Building Safe and Trustworthy Digital Public Goods for Climate Action

Recommendations for Global Philanthropy and Development agencies

Report by

digital futures lab

Supported by

The Rockefeller Foundation

Report by

digital futures lab

Supported by

The Rockefeller Foundation

Action brief #2

Building Safe and Trustworthy DigitalPublic Goods for Climate Action: Recommendations for Global Philanthropy and Development agencies

This action brief is part of a project on AI + Climate Futures in Asia, supported by The Rockefeller Foundation.

Research team: Urvashi Aneja & Dona Mathew

Research Support: Swati Joshi, Sumit Kumar, Vishal Ramprasad & Veera Mahuli

Copy Editing: The Clean Copy
Design and layout: Nia Thandapani, Gulal Salil

Illustrations: Divya Ribeiro
Production: Avani Tanya

Please cite this brief as, Digital Futures Lab, 'Building Safe and Trustworthy Digital Public Goods for Climate Action: Recommendations for Global Philanthropy and Development agencies', 2023.

Acknowledgements

Sincere gratitude to members of the expert network – Aaditeshwar Seth, ChengHe Guan, Cindy Lin, Elenita Daño, Elina Noor, Gaurav Sharma, Md. Golam Rabbani, Pyrou Chung, Tien Nguyen, Veerappan Swaminathan.

We would also like to thank the teams at The Rockefeller Foundation and other experts interviewed for this study.

Any errors or omissions are our own.

Digital public goods (DPGs) are believed to play a critical role in addressing the climate crisis. Defined as open-source software, open data, open models, open standards, or any other digital tools that anyone can freely access, use, modify, and share, DPGs are already transforming the way people collaborate on disaster and climate risk.

The Digital Public Goods registry records 18 accredited DPGs for climate action.[1] Some prominent use cases include tools to calculate and monitor climate-carbon emissions, maintain carbon registries, and support agricultural planning and disaster management. The United Nations Development Programme (UNDP), for example, is developing a National Carbon Registry, a DPG that helps governments monitor carbon emissions and mitigation efforts.[2] Another example from India is Data in Climate Resilient Agriculture (DiCRA), an open data platform to collect and share agricultural data with decision-makers for policy planning.[3] Instead of governments and organizations building these systems from scratch, a DPG approach could reduce costs and ensure reusability from the start.

The proposal around digital public infrastructure (DPI) for climate action is slightly blurrier, at least partly because of the lack of definitional clarity around the term. In a loose sense, it can suggest several different types of digital infrastructures that are available to the public, such as virtual and computing spaces, or trust and safety tools. However, a more specific definition associated with linking a data exchange architecture with identity and payments infrastructure – the India Stack model – has become popular in global policy circles.

The United Nations, for example, has identified DPI as a high-impact initiative that can help accelerate progress towards the Sustainable Development Goals.[4] Specific to climate action, a DPI approach could, for example, help distribute emergency relief to populations impacted by climate disasters.

This brief outlines recommendations for global philanthropy and development organizations to advance equitable, safe and trustworthy DPGs for climate action. Development organizations can play a critical role in injecting a coordinated vision for climate action into the DPG agenda and building the partnerships and capacities needed to support that vision. The use of DPIs requires a more cautious, case-by-case approach, including an assessment of the available guardrails to prevent misuse.

1 Digital Public Goods Alliance. (n.d.). Registry. https://digitalpublicgoods.net/registry/

2 United Nations Development Programme. (2023, August 17). A newly accredited digital public good, the National Carbon Registry will help countries meet their climate targets. https://www.undp.org/news/newly-accredited-digital-public-good-national-carbon-registry-will-help-countries-meet-their-climate-targets

3 Data in Climate Resilient Agriculture: https://dicra.undp.org.in/

4 High Impact Initiatives. (2023, September). Digital public infrastructure: Scaling inclusive and open digital ecosystems for the SDGs. https://hlpf.un.org/sites/defaultfiles/2023-09/Digital%20Public%20Infrastructure%20Brochure.pdf

Recommendations

#1 Centre a Coordinated Climate Vision

The development of many current DPGs for climate action is reliant on individualized efforts by small groups across civil society, academia, and development organizations. They are not informed by a coordinated strategy for climate action at the local, national, or regional level. A more impactful way forward would be to develop an action plan for DPGs that is aligned with government strategies and plans for climate action. DPGs could be leveraged to implement these strategies, while also reducing duplication of effort and resources.

Global development agencies and philanthropy can play an important coordination role, working with national and local governments, along with regional bodies, to identify and support the type of DPGs that are required for effective climate action. They already work with a wide variety of government, industry, and civil society actors and can use this network power to bring together relevant domain and technical experts to facilitate a coordinated approach to DPGs for climate action at the country and regional levels.

#2 Support Community-Driven DPGs

Many DPGs are developed top-down and led by technical experts. Instead, we need to develop DPGs that respond to the specific climate vulnerabilities of communities – that help them adapt to climate change and advocate for action from government and relevant authorities. For example, CoRE Stack is a community-owned DPG from India that is conceptualized on the felt needs of communities and is designed to be operated by communities themselves. It uses machine learning on satellite imagery to map changes in water table levels and forest cover to generate analytics. The aim of CoRE Stack is that communities develop and report new insights, which can then be used to demand assets for resilience and sustainability under relevant government programmes.[5]

Global development organizations and philanthropy can play a critical role in enabling bottom-up and purpose-driven data collection and tool building that can be used and managed by local communities. One of the main advantages of a DPG approach is that it can enable a wider community of actors to build tools relevant to their local contexts. To do this, local civil society organizations will need financial and technical support, without which there is a chance that DPGs are leveraged for commercially lucrative ends rather than urgent climate needs.

#3 Finance DPG Maintenance and Sustainability

A recent survey found that the main issue of concern for DPG providers is the need for a sustainable business model and financing.[6] Considerable costs are entailed in not just building DPGs but also regularly updating and maintaining them. Many teams building DPGs consist of volunteers working on the project in their spare time or small civil society organizations with limited resources and budgets. It is not surprising that some of the more notable DPGs have been built and maintained by large international organizations (UNDP), academic institutions in partnership with international donor agencies (DHIP2) or volunteer networks with alternate financial means (iSPIRT).

Global philanthropy and development agencies can support DPGs for climate action by providing financing for open-source teams to build and maintain DPGs. The continued finance required to maintain DPGs can be particularly hard for developers to secure. In addition to financial support, open-source developer teams will also benefit from access to domain experts as well as support on scaling, governance, and risk mitigation strategies.

5 CoRE Stack. (n.d.). https://core-stack.org/

6 Vota, W. (2022, November 10). Digital public goods need sustainable funding for success. ICTworks. https://www.ictworks.org/digital-public-goods-sustainable-funding/

#4 Develop Assessment Frameworks and Capacities

Along with investments in building and maintaining DPGs, it is also important to evaluate their outcomes and impact for effective climate action. This can also help identify what type of tools are most effective, as well as help formulate guidelines and best practices for future DPG investments. Impartial and publicly available evaluations can also build trust in DPGs and encourage adoption among key stakeholders. Furthermore, these evaluations must not be top-down but participatory, allowing target communities to provide feedback on their experience and identify further areas for improvement. This will also require providing communities with the resources, tools, and capacities they need for these evaluations.

Global philanthropy and development agencies have played a catalytic role in developing frameworks that articulate the defining characteristics of DPGs. The next step would be to develop frameworks, tools, and mechanisms to assess the impacts of existing and new DPGs on climate action on an ongoing basis. Aside from the impact on climate action, these evaluations should also include the impact on the agency and rights of vulnerable communities and the longer-term sustainability of these DPG interventions.

#5 Considered Approach to DPIs

One of the key use cases for DPI is the provision of benefits and relief to climate-vulnerable populations. Before embracing this approach, it is important to learn lessons from the use of digital IDs in humanitarian contexts and to address potential risks, such as the mishandling of sensitive data or the possibility of exclusion from essential aid and benefits resulting from technological failures.

Where global development agencies are supporting DPIs for climate action, they must first conduct an assessment of the potential risks and the availability of risk mitigation measures.

Given what we know about the risks of exclusion, it is also essential that alternative means of accessing benefits are available to affected populations. For example, governments and agencies should be able to offer a meaningful substitute to service provision via biometrics and provide information about the options in simple language that explains where data is stored, who has access, and with whom it is shared.

Considering the risks associated with DPI, especially in conflict contexts, DPI initiatives must be guided by assessments of the socio-political landscape and population vulnerabilities to ensure that technology is not exclusionary.Dominant definitions of DPGs emphasise the idea of “open” technical architectures – open data, open models, and open standards. While openness is certainly important from the perspective of allowing multiple actors to use and adapt these tools, we must recognize that openness is a means and not an end in itself. In other words, open systems will in themselves not contribute to positive climate actions.

Taken too far, a policy emphasis on DPGs could help reduce the responsibility of states in taking meaningful and urgent action to address climate change. It could also drive development finance away from direct service delivery and policy change to technological innovation. Instead of focusing on the investments needed in physical and social infrastructure or the political action needed to address an issue, the focus shifts to creating digital infrastructures that can support market innovation (for addressing those socio-economic challenges).

Open systems are also prone to capture by powerful actors who have the resources and expertise to better leverage and utilize these architectures. For this reason, there is a tension between open data architectures and the data sovereignty of communities. To address this problem, targeted and sustained interventions will be needed to develop the capacities of a wider community of DPG developers,

particularly local governments and community organizations working at the frontline of climate action.

Finally, openness does not in itself contribute to transparency and accountability; to ensure transparency and accountability, mechanisms and capacities to audit these systems are required.

Global development agencies can play an important role in enabling such a purpose-driven vision of DPGs. They can work closely with national and local governments and a wide spectrum of civil society organizations to develop an inclusive and participatory vision and objectives for climate action. The current conversation around DPGs should be tethered to this vision or set of objectives – a coordinated action plan for change – rather than just assuming that the technical features of openness and interoperability will by themselves facilitate positive climate action. Their access, networks, and leverage provide development agencies with a clear and unmatched advantage over technology players.

Conclusion

Dominant definitions of DPGs emphasise the idea of “open” technical architectures – open data, open models, and open standards. While openness is certainly important from the perspective of allowing multiple actors to use and adapt these tools, we must recognize that openness is a means and not an end in itself. In other words, open systems will in themselves not contribute to positive climate actions.

Taken too far, a policy emphasis on DPGs could help reduce the responsibility of states in taking meaningful and urgent action to address climate change. It could also drive development finance away from direct service delivery and policy change to technological innovation. Instead of focusing on the investments needed in physical and social infrastructure or the political action needed to address an issue, the focus shifts to creating digital infrastructures that can support market innovation (for addressing those socio-economic challenges).

Open systems are also prone to capture by powerful actors who have the resources and expertise to better leverage and utilize these architectures. For this reason, there is a tension between open data architectures and the data sovereignty of communities. To address this problem, targeted and sustained interventions will be needed to develop the capacities of a wider community of DPG developers, particularly local governments and community organizations working at the frontline of climate action.

Finally, openness does not in itself contribute to transparency and accountability; to ensure transparency and accountability, mechanisms and capacities to audit these systems are required.

Global development agencies can play an important role in enabling such a purpose-driven vision of DPGs. They can work closely with national and local governments and a wide spectrum of civil society organizations to develop an inclusive and participatory vision and objectives for climate action. The current conversation around DPGs should be tethered to this vision or set of objectives – a coordinated action plan for change – rather than just assuming that the technical features of openness and interoperability will by themselves facilitate positive climate action. Their access, networks, and leverage provide development agencies with a clear and unmatched advantage over technology players.

About the Project

About DFL

Digital Futures Lab is an interdisciplinary research collective that interrogates the complex interaction between technology and society in the global South. Through evidence-based research, public engagement and participatory foresight, we seek to realise pathways toward equitable, safe and just digital futures.

digitalfutureslab.in

125, Casa Joao Francisco, Merces
Goa - 403005, India

hello@digitalfutureslab.in

About the Project

Commissioned in early 2023 by The Rockefeller Foundation, this project explores the intersection of Artificial Intelligence and Climate Action in Asia. It examines opportunities, challenges and risks across three domains – agriculture and food systems, energy transitions, and disaster response in nine countries - Bangladesh, China, India, Indonesia, Malaysia, Singapore, Thailand, The Philippines and Vietnam.

We assembled a network of regional experts to help guide our investigation and provide context specific insights.

Aaditeshwar Seth (India)
ChengHe Guan (China)
Cindy Lin (Indonesia)
Elenita Dano (The Philippines)
Elina Noor (Malaysia)
Gaurav Sharma (India)
Md. Golam Rabbani (Bangladesh)
Pyrou Chung (Thailand)
Tien Nguyen (Vietnam)
Veerappan Swaminathan (Singapore)

For additional reports and outputs from this project visit – climateai.asia

Report by

digital futures lab

Supported by

The Rockefeller Foundation