

Innovation in Education and training as a tool to enhance youth participation in adaptation action

Integration of Bottom-up and Top-down Approaches

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Key messages:

- Adaptation education and training programs require not only an understanding of climate impacts and vulnerability but also **interactions in social processes, linkages between different levels of governance and stakeholders**, and the **local context**.
- Adaptation capacity building programs need to be **context-specific** and provide **tailored education and training opportunities**.
- Bottom-up policy interventions when designing adaptation capacity building programs should encourage a **solutions-oriented thinking**, use of **local knowledge**, and **engage with new generation of educators**.
- Top-down measures should include fostering **international collaboration** among knowledge institutions from different countries and regions (including through **South-South collaboration**), provide a **platform for youth-led solutions**, and provide youth the opportunity to **engage with other stakeholders**.

Executive Summary

It has been widely recognized that even with the increase in the global average temperature to well below 2°C above pre-industrial levels, climate change impacts will still be profound, increasing the vulnerability of communities, livelihoods and ecosystems around the world. Impacts are unevenly distributed, with least developed countries and small island developing states being most affected due to their inherent vulnerability and low adaptive capacity. Furthermore, children and young people will be one of the most affected groups given their limited capacities to adapt, and lack of participation in decision-making.¹ These vulnerabilities can be reduced by implementing effective adaptation measures. Chapter 4 of the IPCC 1.5°C Special Report recognized the

importance of 'education and learning' to enhance social learning and capacity, especially of the youth for long-term and sustainable impact.

Adaptation education and training programs require not only an understanding of climate impacts and vulnerability but also cross-scale interactions in social processes, linkages between different levels of governance and stakeholders, and the local context. Globally, capacity-building for adaptation is being addressed as a part of the UN SDG Target 13.1 on strengthening resilience and 13.3 on Climate Action, with its focus on improving education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact-reduction, and early warning. Programs such as European Institute of Innovation and Technology (EIT)'s

¹ Amponsem, J., Kemeh, S., Doshi, et al. (2019). Adapt for Our Future: A Background Paper on Youth and Climate

Change Adaptation. Available at <https://cdn.gca.org/assets/2019-12/AdaptForOurFuture.pdf>.

Climate-KIC Education, ICCCAD's Climate Youth Initiative, and Global Water Partnership's YourFutureYourClimate initiative in West Africa are a few examples of capacity building programs for adaptation that have been implemented around the world.

Despite the growing momentum, this policy brief highlights certain gaps in adaptation capacity-building programs that impede their wider uptake. These include programs working in silos and lack of knowledge-sharing among different institutions, lack of context-specific and tailored education and training programs, and lack of programs aimed at building the capacity of a new generation of educators.

Finally, in the last section of this policy brief, we provide some policy interventions that can be planned by both bottom-up and top-down actors to design better and implement more comprehensive adaptation capacity-building programs. We also draw on the work undertaken by the Global Center on Adaptation (GCA) as part of its Youth Leadership Program with initiatives planned around its pillars of advocate, educate, innovate, and connect. The initiatives within the GCA's Youth Program include the Youth Adaptation Network (YAN), the Youth Adaptation Solutions (YAS) Challenge, the Young

Adaptation Leaders Program (YALP), and education programs offered by the Knowledge and Education Hub, including a Mass Online Open Course on Adaptation and Governance.

Context

Currently, there are 3.7 billion people under the age of 30² - about half of the world's population.³ Of those, 1.2 billion are adolescents or early adults, ranging from the age of 15 to 24.⁴ As of 2019, 17% out of those currently reside in least developed countries,⁵ with associated vulnerability to exacerbating climate risks. At the same time, given their predominance, young people are also deeply rooted inside every sector, local or global, and represent our most valuable resource against climate change. Despite that, young people continue to be relatively neglected from the process of climate change adaptation.⁶

Chapter 4 of the IPCC 1.5°C Special Report, 'Strengthening and implementing the global response' outlines education and learning as one of the eight general adaptation options and enabling conditions for their implementation.⁷ This option is extremely relevant to enhance social learning and capacity, especially of the youth, for a long-term and sustainable impact.

² United Nations, Department of Economic and Social Affairs, Population Division .2019. World Population Prospects 2019, Online Edition. Rev. 1. Available at <https://population.un.org/wpp/>.

³ The World's Youngest Populations. Euromonitor International. 2012. Available at <https://blog.euromonitor.com/special-report-the-worlds-youngest-populations/>.

⁴ United Nations, Department of Economic and Social Affairs. 2018. World Youth Report – Youth and the 2030 Agenda for Sustainable Development. Available at <https://www.un.org/development/desa/youth/wp-content/uploads/sites/21/2018/12/WorldYouthReport-2030Agenda.pdf>.

⁵ United Nations, Department of Economic and Social Affairs, Population Division .2019. World Population

Prospects 2019, Online Edition. Rev. 1. Available at <https://population.un.org/wpp/>.

⁶ Resurrección, B.P., Bee, B.A., Dankelman, I., et al. 2019. Gender-transformative climate change adaptation: advancing social equity. Background paper to the 2019 report of the Global Commission on Adaptation. Rotterdam and Washington, DC. Available at www.gca.org.

⁷ de Coninck, H., A. Revi, M. Babiker, P. Bertoldi, et al. 2018. Strengthening and Implementing the Global Response. In: Global Warming of 1.5°C: An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty . In Press.

At COP 21 in Paris, attention was refocused onto Article 6 of the 1992 Convention, stressing the importance of 'Action for Climate Empowerment' (ACE) and Climate Change Education. Within that discourse, adaptation is addressed as a part of the UN SDG Target 13.1 on strengthening resilience and 13.3 on Climate Action, with its focus on improving education, awareness-raising, and human and institutional capacity on climate change mitigation, adaptation, impact-reduction, and early warning. Addressing climate change requires transfer and use of knowledge – that is education and training, which enables informed decision making and action at all levels in the society.⁸ Such education and training are crucial to building capacity and empowering youth's understanding and ability to act against climate change. While significant strides have been made in this direction, especially for mitigation and sustainability-oriented programs, such programs might not be entirely suitable for adaptation.⁹

Even though climate change impacts are being driven by global forces, adaptation to these impacts is often carried out locally by the communities on the frontlines.¹⁰ Therefore, adaptation education and training programs require not only an understanding of climate impacts and vulnerability but also cross-scale

interactions in social processes, linkages between different levels of governance and stakeholders, and the local context¹¹.

Potential Policy Actions

Education and training are key capacity-building efforts to increase the sustainability and mainstream (or institutionalize) the information and knowledge on climate change adaptation.

Capacity-building programs to engage youth in climate change adaptation includes initiatives such as EIT's Climate-KIC Education,¹² which focuses on real-life challenges and on 'learning by doing' methodology to create a community of youth (graduate students) based on accelerated learning, innovation, and entrepreneurial thinking. ICCCAD's Climate Youth Initiative¹³ is another such program that looks to engage younger generations in climate change discussion through the media of seminars, radio shows, workshops, and youth conferences. Another example is the YourFutureYourClimate¹⁴ initiative launched by the Global Water Partnership and the International Secretariat for Water (with other partners) in West Africa to strengthen the capacities of rural and semi-urban young people for climate change adaptation. It focuses on the

⁸ Ledley, T.S., J. Rooney-Varga, F. Niepold. 2017. Addressing Climate Change Through Education. Encyclopedia of Environmental Science, Oxford University Press. Available at <https://oxfordre.com/environmentalscience/view/10.1093/acrefore/9780199389414.001.0001/acrefore-9780199389414-e-56>.

⁹ Mataya, C.D., Vincent, K., Dougill, A. J. 2019. How can we effectively build capacity to adapt to climate change? Insights from Malawi. Climate and Development. Available at <https://www.tandfonline.com/doi/full/10.1080/17565529.2019.1694480>.

¹⁰ Global Commission on Adaptation. 2019. Adapt Now: A Global Call for Leadership on Climate Resilience. Available at https://cdn.gca.org/assets/2019-09/GlobalCommission_Report_FINAL.pdf.

¹¹ Nilsson, A.E., & Swartling, Å.G. 2009. Social learning about climate adaptation : global and local perspectives. Available at: http://www.indiaenvironmentportal.org.in/files/sociallearningaboutclimateadaptation_gerger_nilsson.pdf.

¹² Empowering and building capacity so that innovation can be climate action. Climate-KIC. Available at <https://www.climate-kic.org/programmes/education/>.

¹³ Climate Youth Initiative (CYI). International Centre for Climate Change and Development. Available at iccad.net/climate-youth-initiative/.

¹⁴ Your Future, Your Climate – A New Challenge For Youth Involvement. The International Secretariat for Water. Available at <http://www.sie-see.org/en/article/home-page/tonfuturtonclimat-putting-youth-heart-climate/>.

implementation of three local initiatives linked to water, agriculture, and forestry.

Despite a significant increase in the number of capacity-building opportunities catering to adaptation in the recent years, education and training programs often run in silos with very few of them enabling knowledge-sharing among young people or educational institutions across different countries. There is a need for global programs that enable sharing of good practices, lessons learned and inspiration value of locally led adaptation solutions from around the world.

Alongside global programs, given the local nature of adaptation, it is also very important to have programs which are context-specific and provide tailored education and training opportunities, especially to young people who will be directly impacted by climate change, for example, young farmers.

Furthermore, young educators often remain excluded from the scope of existing adaptation programs both at the preparation phase and at the learning phase thereby inhibiting the process of knowledge-sharing and capacity-building considerably.¹⁵

Recognising this, Leal Filho, W. (2009)¹⁶ identified certain guiding principles to advance climate change communication, which could, in this context, also be extrapolated to design better and more comprehensive adaptation capacity building programs. These principles include: (1)

the need to engage different stakeholders and a broader audience (beyond just experts); (2) the need to combine technical expertise with locally-led expertise (such as indigenous knowledge); (3) the need to find and showcase solutions, thus empowering the population (such as youth) to innovate and develop solutions for their local climate problems.

Policy Recommendations

Young people have never been more important in shaping the environmental movement, but as is the case in the broader climate agenda, adaptation is often not considered as a priority. There is an imperative for young people to be involved in adaptation because their generation will be the one most affected by the increasing climate change risks and impacts. At the same time, young people also represent an invaluable resource, with their radical ambition and innovative ideas to develop adaptation solutions and implement them at scale.¹⁷

Adaptation action by young people at the community level requires an increase in capacity-building tools and information to enhance impact.¹⁸ Adaptation in its planning and implementation is diverse; there is no 'one size fits all' approach. Thus, making it imperative that capacity-building programs are innovative, customizable, and designed to empower youth adaptation knowledge and action.¹⁹ Therefore, change and innovation must be initiated through

¹⁵ Reid, A. 2019. Climate change education and research: possibilities and potentials versus problems and perils? Environmental Education Research. Available at <https://doi.org/10.1080/13504622.2019.1664075>.

¹⁶ Leal Filho, W. 2009. Communicating climate change: challenges ahead and action needed. *International Journal of Climate Change Strategies and Management*, Vol. 1 No. 1, pp. 6-18. Available at <https://doi.org/10.1108/17568690910934363>.

¹⁷ Amponsem, J., Kemeh, S., Doshi, et al. (2019). Adapt for Our Future: A Background Paper on Youth and Climate

Change Adaptation. Available at <https://cdn.gca.org/assets/2019-12/AdaptForOurFuture.pdf>.

¹⁸ Amponsem, J., Kemeh, S., Doshi, et al. (2019). Adapt for Our Future: A Background Paper on Youth and Climate Change Adaptation. Available at <https://cdn.gca.org/assets/2019-12/AdaptForOurFuture.pdf>.

¹⁹ Bierbaum, Stults, M. 2013. Adaptation to Climate Change. *Michigan Journal of Sustainability*, V 1. Available at <http://dx.doi.org/10.3998/mjs.12333712.0001.004>.

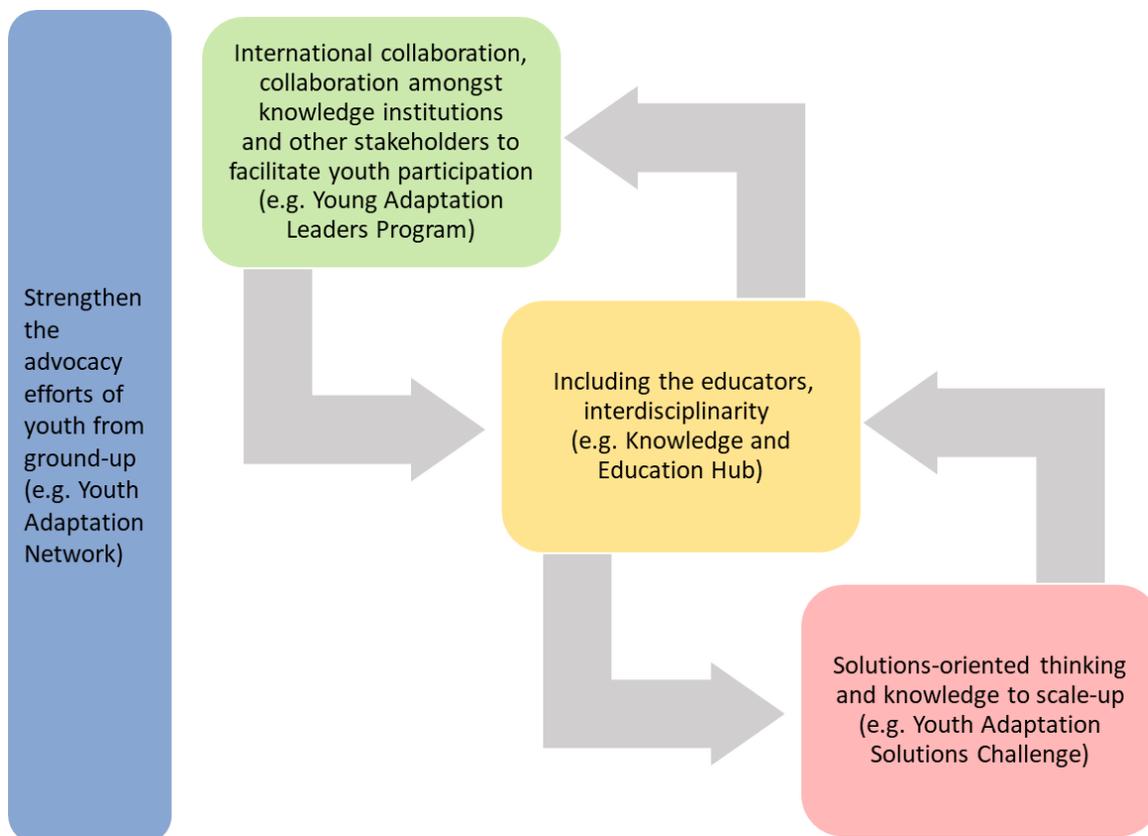


Figure 1
Capacity building approach combining top-down and bottom –up initiatives, by Cassanti, A.C., Rastogi, S. 2020.

the bottom-up and top-down approaches synergistically. Figure 1 provides an overview of how the two approaches can be combined.

From the bottom-up approach, it is important to incentivize the use of learning techniques that are especially suited to the complex nature of adaptation. This includes designing education programs and training that encourage a solutions'-oriented thinking and incorporate local knowledge,²⁰ make use of active learning

techniques, systems thinking, or use engaging and interactive simulations.²¹ Capacity-building programs must also target a new generation of educators, with teacher education essential to providing quality climate change adaptation learning at scale. Furthermore, efforts should also be made to include climate change educators in the design process of capacity-building programs.²² Finally, it is important that education programs and training are designed to be

²⁰ Granderson, A. A. 2017. The Role of Traditional Knowledge in Building Adaptive Capacity for Climate Change: Perspectives from Vanuatu. *Wea. Climate Soc.*, V. 9, pp.545–561. Available at <https://doi.org/10.1175/WCAS-D-16-0094.1>.

[refore/9780199389414.001.0001/acrefore-9780199389414-e-56](https://doi.org/10.1175/WCAS-D-16-0094.1).

²¹ Ledley, T.S., J. Rooney-Varga, F. Niepold. 2017. Addressing Climate Change Through Education. *Encyclopedia of Environmental Science*, Oxford University Press. Available at <https://oxfordre.com/environmentalscience/view/10.1093/ac>

²² Reid, A. 2019. Climate change education and research: possibilities and potentials versus problems and perils? *Environmental Education Research*. Available at <https://doi.org/10.1080/13504622.2019.1664075>.

interdisciplinary in nature and draw from different stakeholder experiences to provide lessons with greater real-life applicability.²³

From the top-down perspective, it is important for intergovernmental and international organizations such as the UNFCCC and the GCA to foster international collaborations among knowledge institutions and educators, facilitating knowledge-sharing among them and amplifying the capacity-building efforts of grassroots organizations. Cooperation and knowledge-sharing must also be encouraged among regions (and countries), including not just North-South but also South-South exchange of knowledge.²⁴ In addition to providing learning resources, international organizations can also provide supporting resources (e.g. tools and training) to grassroots organizations helping them design and implement their own capacity-building programs relevant to the adaptation challenges of the region.²⁵ Finally, for the purpose of climate change adaptation, it is also important to provide a platform for young people to showcase their solutions and collaborate with different stakeholders who can help them to scale up their efforts. Box 1 below highlights how the Global Center on Adaptation,²⁶ through its dedicated youth leadership program, is seeking to build capacity of youth through its diverse and cross-cutting initiatives.

Young people can only lead our adaptation efforts if they are provided with the right knowledge and tools to understand the science and complexity of the issue. Capacity-building programs such as education and training

programs provide a set of indispensable tools to help young people to translate their ideas into action.

²³ Anderson, A. 2012. Climate Change Education for Mitigation and Adaptation. *Journal of Education for Sustainable Development*, V. 2, pp. 191–206. Available at <https://doi.org/10.1177/0973408212475199>.

²⁴ South-South Cooperation: rewriting the approach to climate change and food security. CGIAR, CCAFS. Available at <https://ccafs.cgiar.org/blog/south-south-cooperation-rewriting-approach-climate-change-and-food-security#.XxgpSygzZyx>.

²⁵ Building capacity in the UNFCCC process. United Nations Climate Change. Available at <https://unfccc.int/topics/capacity-building/the-big-picture/capacity-in-the-unfccc-process>.

²⁶ Global Center on Adaptation. Available at <https://gca.org/home>.

Box 1

The Global Center on Adaptation Youth Leadership Initiatives

The Global Center on Adaptation is an international organization which works as a solutions broker to accelerate action and support for adaptation solutions, from international to local level, in partnership with the public and private sector, to ensure we learn from each other and work together for a climate resilient future. Founded in 2018, the GCA is hosted by the Netherlands, working from its headquarters in Rotterdam with a knowledge and research hub based in Groningen and is establishing a worldwide network of regional offices in Africa, the Americas and Asia, starting with a global innovation hub for adaptation.

The GCA believes in the transformative power of youth and wants to bring them to the decision-making table as equal stakeholders to lead the efforts to adapt for our future. With this vision in mind, the GCA has designed a dedicated Youth Program to foster youth leadership and make them central in driving the adaptation agenda and implementation forward. The initiatives planned within this program are built on the pillars of advocate, innovate, connect, and educate. These initiatives include:

- Youth Adaptation Network (YAN)

The YAN is an umbrella platform to engage, empower and amplify the role of youth in the adaptation agenda by providing them access to adaptation knowledge and campaigning materials while connecting youth with leaders and businesses leading the global response to climate change. It is open to is open for free to any young person or youth-organization with an interest in fighting climate change. Several programs are planned for the YAN, such as the development of a Call to Action and a toolkit on the topic of climate adaptation One of key initiatives of the YAN will also be the 'Train the Trainers' where the network will work with young educators and build their capacity.

- Youth Adaptation Solutions (YAS) Challenge

The YAS Challenge is a competition and awards program for young people from every part of the world, incentivizing them to develop, share, and showcase innovative solutions for climate change adaptation. Recognizing the need to involve young people as equal stakeholders in shaping the global response to climate change, the YAS seeks to unleash their ambition and creativity.

- Youth Adaptation Leaders Program (YALP)

The YALP is a six-month internship program that takes youth on an innovation route (idea to implementation) integrating them into the work of the GCA and its partner organizations to develop their expertise and skills to implement adaptation solutions.

- Knowledge and Education Hub

To sum up GCA's efforts on enhancing capacity building on the topic of climate adaptation for youth, the Knowledge and Education is a program comprising of a suite of comprehensive academic/training activities with focal points around the GCA's work programs (such as, Nature based solution, finance, infrastructure etc.), and other relevant paradigms of adaptation. It seeks to empower scholars, professionals, and youth with knowledge on adaptation and build an intellectual capacity around it.

For more information, please contact youth@gca.org

This policy brief is part of a series of briefs developed as part of the Technical Examination Process on Adaptation (TEP-A), which in 2020 is focusing on the topic of Education and training, public participation and youth to enhance adaptation action. The brief was developed by The Global Center on Adaptation in its capacity as a volunteer expert organization contributing to the TEP-A in 2020.

The TEP-A was established under the United Nations Framework Convention on Climate Change (UNFCCC) process in 2015 and seeks to identify concrete opportunities for strengthening resilience, reducing vulnerabilities, and increasing the understanding and implementation of adaptation actions. The process is organized by the SBSTA and SBI and conducted by the Adaptation Committee. For more information see tep-a.org