THE BROOKINGS INSTITUTION

WEBINAR

CLIMATE EDUCATION IN ACTION:
A COLLECTIVE AGENDA FOR BUILDING RESILIENT EDUCATION ECOSYSTEMS

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WELCOME

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WINTHROP: Good morning, good afternoon, good evening, everybody. Thank you so much for joining today. I am Rebecca Winthrop. I am the director of the Center for Universal Education here at the Brookings Institution, and I'm so pleased to welcome you to the webinar today, Climate Education in Action. This is a topic that we here at CUE have been working on for many years. We've been a thought leader on the topic amongst our-- with others, including with leadership from the people on this webinar today.

In 2024, so two years ago, we launched a partnership with CARE Zimbabwe to work together to advance research on the state of education and climate change in five countries across eastern and southern Africa. And it's been a great collaboration. We have learned a lot. The idea was really to go bottom up. What do the communities across this region have to say about climate change and education that we can then take to the rest of the world as insights for policymakers and practitioners? And that is what we're gonna be sharing today.

This event is a product of a multi-year collaborative research, which was led by Dr. Ellen Chigwanda, my wonderful colleague, who's a senior technical advisor for education and climate change at CARE Zimbabwe, and serves as our project director for the Center for Universal Education's collaborative research partnership on education and climate change. She is a longtime affiliate with our center and Brookings, which we're very proud of because she was a 2016 Brookings Echidna scholar, and she has a wealth of expertise on the intersection of education and climate resilience. And she will moderate the discussion and lead us through the webinar.

So Ellen, please come on camera, and over to you to take it away. Thank you so much for all your work

CHIGWANDA: Thank you so much, Rebecca. Thank you for getting us started, and thank you also for the welcome and, of course, for the partnership between CARE Zimbabwe and the Center for Universal Education at the Brookings Institution. Good morning, good afternoon to you all, depending on which part of the world you're currently joining us from.

Across Eastern and Southern Africa, climate change is no longer a distant threat. It is a cyclone that closes a school, it is a drought that pulls a girl out of class to fetch water, and it is a heatwave that makes it impossible to concentrate in class. So what was the central question behind this research that Rebecca has just referenced? How do schools and communities turn climate education from abstract concepts into practical and empowering experiences for adolescents and youths in Eastern and Southern Africa?

As Rebecca has already mentioned, this journey really started in 2016 when the Center for Universal Education accepted me as an Echidna scholar and enabled me to bring my curiosity around this nexus between education and climate change to Brookings and to explore research that helps to deepen the sector's understanding about this nexus.

This fellowship led to a, to the Building Climate Resilient Schools pilot in Zimbabwe, which was a post-residency project of that fellowship. Now, this research partnership, this collaborative research partnership, builds on that work, and this report is really testament to the work that has been happening not only in the past two years through this partnership, but also through this partnership that I've had with the CUE since 2016.

Now when you look at the approach, the research itself was actually embedded in active programs, so that means that we located our research in programs that were already being implemented across the different countries. And we made sure that the research itself is letting the evidence surface what was happening in the schools and what young people are already doing rather than starting with theory.

In terms of scale, this research covered eleven districts across the five countries in the two regions of Eastern and Southern Africa. From the arid pastoralist areas in Kenya and the disaster-prone mountain districts of Malawi to peri-urban and rural settings of Rwanda, Kenya, and Zimbabwe.

The study included many individual interviews and the majority of which were held with adolescents and youth through surveys, through focus group discussions through key informant conversations with teachers and with stakeholders and community members. And all of that work has now culminated into a research report and a practical toolkit with low to tech low-tech to high-tech activities, teacher professional development guidance, and a ninety-day implementation roadmap.

Now, before we go into the panel discussion, I'm going to share just a few of some of the most... what some of the findings that we found most interesting coming out of this report. And I'd like to encourage you to visit the Brookings website, where you'll be able to download a copy of this research report.

First of all, one of the most, you know, interesting findings from this research was that schools were identified not only as the most trusted anchor for climate education, but also adolescents and youths identified schools as their primary source of climate information, climate education, as well as skills related to climate action. But we also find that this impact rose sharply when teachers were supported, when resources, very simple resources were made available, and where communities were engaged as partners.

Another finding that was very interesting is that awareness in terms of climate change and its impact was actually very high. However, internet connectivity is not. So we found that ninety-eight percent of the respondents had heard of climate change, and school was often identified, as I said, as the first place where adolescents and youths learnt about climate change. But only twenty-five percent of adolescents have internet access, compared to seventy-two percent of the teachers. Radio still reaches nearly half of adolescents at forty-eight percent.

Thirdly, third finding, climate shocks are disrupting education. Ninety-one percent of the respondents said that climate change is affecting education and skills development for adolescents and youths through absenteeism, through damaged schools, through heat that compromises concentration in class, and through family income losses that push children out of school.

Another interesting finding was that girls do carry more of the burden. So girls are spending more time fetching water and on household chores, which leads to them losing study time, as well as facing a higher risk of early marriage when families are under strain due to climate change. We also found that teachers are committed, but they are constrained. They are already weaving climate content into subjects such as geography, such as agriculture, such

as science, such as social studies, but they are facing limited training, scarce materials, heavy workloads, and in some cases, skepticism about climate change.

And then lastly, we found that young people are ready to lead. So we found that young people are asking for for skills development, which includes critical thinking, problem-solving, leadership, and advocacy skills so that they can be primed and be ready to be the central pivot for climate action.

These findings raise three big questions. What this looks like in a real classroom, what it takes to embed it in a national system, and how we can scale and finance it with young people leading. And that's exactly what our panelists are going to be helping us to unpack today. Allow me to invite our panelists to join me on the screen and to switch on their cameras so that you can see them and for me to introduce them briefly.

So I'll start off with Ellena Yohane, who is joining us from Malawi. Ellena is the deputy headteacher at Chitedze Primary School in Mulanje District of Malawi. And Ellena was one of our key informants for the research so she actually participated in the research. And she will be sharing her experiences around classroom practice as well as community engagement.

We also have Christina Kwauk, who is the co-founder of Unbounded Alliance. Christina will be helping us to understand the policy, systems, and cur-curriculum considerations around climate education. And then of course last but not least, we have Andrew Cunningham, also known as Andy, who is the global lead for education at Aga Khan Foundation, and he'll be helping us to connect the scaling, financing, and partnerships angle based on this research.

Thank you all so much for joining us. I'm going to start with you, Ellena. As the report found that Mulanje is actually one of the districts that was hardest hit by Cyclone Freddy in March 2023, at a time when cholera had already contributed to school closures that year. Can you please take us to Mulanje and tell us what happened to teaching and learning during and after the cyclone, and how did that change how you and your learners talk about climate change?

So over to you, Ellena. I'll give you about yeah, three minutes for that. Thanks.

YOHANE: Okay, thank you very much, moderator. And thank you everyone for this question. You are right, in 2023 Mulanje District in Malawi was hit by back-to-back disasters. Chitedze School, primary school where I teach, was heavily hit by Cyclone Freddy, where we were still recovering from the pain of a miserable cholera outbreak.

Schools were closed for six weeks. Classroom blocks were closed, were damaged, and the sector that remained standing, they are used as evaluation centers and camps for families whose houses and properties were lost during the cyclone. Teachers and learners attended, attendance were affected. Floods that week, as road and bridges becomes impassable. Additionally, schools stakeholders at Chitedze Primary School in Mulanje were living a stressful life due to the impacts of cyclone that include loss of lives of their parents, friends, and relatives, physical injuries and loss of properties, including school and infrastructures damage. It was a pathetic, stressful, saddened, and quite disturbing period, not only for the student, but also the teachers and the communities as they live in fear and displaced settlement.

With this experience, I strongly feel that at the school level, climate education must go beyond giving learners information. It should be equip them with relevant skills such as critical thinking and problem-solving in responding to environmental challenges. Climate changes-oriented clubs, tree planting and protection plan, waste management, school garden, and disasters preparedness activities can help address and effect effective climate education. Teachers also need appropriate training, learning materials, and instruction support to deliver climate education effectively.

My key message is that climate education should help us build safe and more schools and communities. We want learners not only to understand climate change, but also to know how to protect themselves, care for their environment, community, control and contribute to solutions so that they don't fall victim to climate change impacts.

One important lesson for us as educators is that climate change should not be taught only as a topic in textbooks. Learners need to understand how environment changes and extreme weathers and this can affect their education, life, health, and communities. We can encourage them to identify hazard around their schools and the communities, discuss how these hazards affect people's lives.

Second, Freddy is one of the powerful reminders of how climate-related disasters can disrupt education and affect the wellbeing of learners, teachers, and entire communities, and in this, the cause for ensuring that schools highlight the importance of climate changing education

CHIGWANDA: Ellena, thank you so much for that response. And thank you for sharing the experience of Cyclone Freddy, how that affected you specifically at Chitedze School, and how it's also, it also had an impact on not only the learners but also the teachers. Thank you so much for sharing that that experience.

I'm going to move over to Christina now. And Christina, the research found that schools, as I alluded to earlier, are the most trusted anchor for climate change, and they were also identified as the most common first source of climate information, knowledge, and skills. Awareness is at 98%, yet teachers still feel unprepared, and the report and they report limited training, heavy workloads, scarce materials, and resources.

Now, given all of the work that you have and are still doing around climate education, what do you think explains this gap between awareness and action, and what does it take to close that gap?

KWAUK: Yeah. Thank you, Ellen. And congrats on your 10-year anniversary of being an Echidna Scholar.

CHIGWANDA: Thank you.

KWAUK: It's great to see, it's great to see how your work has progressed.

I mean, wow, 98% awareness, that's an incredible foundation to start on. Young people already, you know, turning to their teachers for answers, turning to schools for answers. But

as you point out and as we know from many cases around the world, awareness on its own doesn't lead to action.

... How we close the gap between knowing and doing is, I would say, the million-dollar question for climate change education. I, and believe it or not, I first ran into this question before I started working on climate when I was doing a lot more work in girls' life skills education. And we saw girls who know a great deal about their health and their rights but still couldn't act on it, right?

And we learned in that context that knowledge doesn't automatically turn into action on its own. It passes through what we call mediating factors, right? One is agency a girl's ability to see and make choices, and the other is opportunity structures which includes the policies, the institutions their net- social networks all around her that open up choices or close them off, right?

Climate change education is no different. A young person can know that cutting down trees harms the climate, but if her family depends on selling charcoal, knowledge isn't what's holding her back, right? The real question is whether the system around her makes the climate positive choice a real choice, and ideally, the obvious choice, right?

So the same is true for teachers. We're asking them to guide young people towards those planet positive choices, but do teachers have the opportunity structures to do that? And right now, mostly no, mostly not. As you just pointed out mo- I think in the context of Malawi especially more than nine in 10 teachers, I think, that you said sur- surveyed had no training in climate change education.

I've seen the same thing in our work with national teams i- across 10 countries as well. We see teams that are designing excellent climate lessons, yet in countries like Ethiopia and Lao PDR, in South Sudan, teachers who didn't already know about climate change couldn't use these lessons. We, so we added short background notes to try to fill in the gaps on foundational climate content and teachers loved that.

Teachers loved that extra sort of content knowledge. But imagine having to do that backfilling for every lesson and at scale, right? So, I guess the question is: How do we shape more enabling opportunity structures for teachers? And I'd probably start with two things. So first, design for both content and process.

So content is what teachers need to know about climate change, about its science and social aspects, its economic aspects. Process is how they bring climate change into what they already teach, which often, you know, from best practices, is using hands-on inquiry-based methods that many teachers haven't been trained on themselves, right?

So we have to remember that content alone isn't enough, and that process is what helps get that, that work into the classroom, gets that, those experiences into the classroom. And then second is supporting teachers across their whole career, so from the initial training through ongoing professional development and beyond, right?

So 'cause we know teachers want that content knowledge, yeah but they also want to build their confidence. They want time. They want permission to teach differently. So the knowledge action gap, you know, the problem isn't the teachers and it's not just knowledge

about climate change on its own that is the solution. The solution is rather building the structures that make climate action the choice both for teachers and for the young people that they're teaching. So, yep.

CHIGWANDA: Thank you. Thank you, Christina. I liked what you said about awareness on its own is not enough. And I, you know, was listening to you speak and you were saying, how do we create an environment where one can actually make a climate positive choice? That is profound. So I know what I need to do, but how does my ecosystem enable me to act on that knowledge? And I think that applies to adolescents and youths, but it also applies to us as adults. You know, does the environment and the ecosystem allow us to make climate positive choices? Thank you so much for that.

Andy, I'm gonna skip over to you. And as I mentioned, the report found that only a quarter of adolescents are actually online, have internet connectivity compared to 72% teachers and 87% stakeholders. Radio is reaching just under half of adolescents. The report is also arguing that approaches such as school-based clubs, play-based learning, radio programs can be scaled in low connectivity settings.

Now, I know you operate, you know, at the global stage supporting Aga Khan Foundation's work in many countries. What are the ingredients for driving scale, and where do these approaches need more support?

CUNNINGHAM: Thanks so much, Ellen, and it's a real pleasure to be on this panel with Ellena and Christina, two powerful climate champions and a real honor to be discussing really the issue that is critical for our generations to come.

And I think I just wanted to begin, Ellen, by the most important ingredient to, as you mentioned earlier, scaling, financing, and partnerships is bringing the real picture into the conversation. I think a lot of people have ideas around what a school garden is, but maybe they have that in, you know, Dallas, Texas, or they have it outside of London. I think bringing the work that Ellena discusses and that Christina highlights across the 10 countries of her community partnerships and networks is really what's missing in our conversations.

So I just wanted to start by highlighting a primary school, Chiandjeli Primary School in rural Lindi, Tanzania, where a local youth was trained by an Aga Khan Foundation initiative, similar to what Christina was saying about what kind of regenerative agriculture looks like at a school level. And dotted around this school are small drip irrigation setups, one of the easy low-cost solutions suggested by their green champion. And the school also makes its own biosprays, natural fertilizers and pesticides using locally available materials like crushed dried leaves and manure. And although this picture stems from only about a, you know, a couple of months, so it's even more lush now, you know, there's a variety of crops already growing, pigeon peas, pepper cabbage, and lemongrass.

And I think we need to get back to what it looks like, what it feels like, and that it's natural, it's green, it's fun, and it's real. And I think the report, Ellen, that you just mentioned makes it clear that there are firm limits on what digital tools can achieve at scale. Well, frankly, we need to get digital tools out of the nature-based education experiences of teachers and students themselves. You cannot feel, you cannot smell, you cannot taste what that planet positive, climate positive actions that Christina and Ellena were talking about until you

actually can get into the dirt or get into the water or think about how do you actually talk about this with your families in a way that are contextually relevant and useful.

So I would just suggest well, first, my, my, before my two ingredients, I think you already have the recipe, Ellen. The clubs, the play, the radio, the gardens, one of, I hope you can now imagine it, is not a second-best option. In most settings, they are the best ones because they start where people are rather than requiring a really long distance of different terminologies, really foreign concepts that don't answer, "I want to have reduced heat. I want to have more affordable and more nutritious food, and I want to be safe from disasters." And so I think the two ingredients answering your question, Ellen, is first, co-ownership by national and global education systems to what's happening at the school and community level. My challenge to this report is how can its findings be taken by the $3.5 billion committed by GP 2030 at last last month's UN General Assembly, and the more important number, the $471 billion committed by partner countries in domestic financing for education, which is a 32% increase from the last five years.

But how do we connect climate actions as pedagogical approaches to improve learning outcomes? So that's the second ingredient, is simplicity. Everyone says that we have a learning crisis, which we do. But we have an imagination crisis about how do we improve holistic learning outcomes beyond what has been tried and tested in the past.

We need to figure out how to work with nature as our most important R&D partner of choice, but our most exciting and enjoyable learning partner of choice. And that, to me, can get into the lexicon of how do we improve learning outcomes for children? Well, we can't do that without an engagement with nature.

So those are gonna be my two ingredients, but ultimately bringing the picture of what it feels, tastes and actually is back into the conversations and imaginations of what we could be doing at scale.

CHIGWANDA: Thank you. Thank you, Andy. Simplicity, which is a real challenge, particularly when you reflect on, you know, as as the, you know, as the education sector, everyone wants to come up with something new.

Everyone is coming up with different tools. But how do we translate them into a picture that matches what is in your background right now? How do we make sure that all of the millions and billions of dollars that are being pledged across the globe are actually making their way into making all of this possible for the learner, for the teacher, for the communities, and for those that are most affected by this climate crisis? Thank you. Thank you so much for your thoughts, Andy.

I'm gonna come back to you, Ellena. I know in Malawi, one of the findings of the report was that some community members don't believe in climate change, and that there's a lot of you know, maybe disinformation, misinformation around climate change and how it's a barrier to education. So how do you as teachers respond to community beliefs that explain climate change that maybe view climate change as witchcraft? How does this affect how you teach learners about climate change?

YOHANE: Okay, thank you. You are right, moderator, that the legisla- communities faces around climate change as they give barriers to climate change education plans has a long

history in Mulanje District. In the district sharing boundaries with Mulanje Mountain, there are a lot of beliefs and the stories around emerging fogs, haziness, and the floods in the area. The belief has been that such phenomena are influenced by spirits that live in Mulanje Mountain. To the people in the community, the issue of cyclone does not exist, but is about the migration of spirit with superpowers from the mountain to the lake. This spirit is said to be a big and powerful snake that follows its female counterpart in the lake such that as it goes down the mountain. It traces its path accompanied by a heavy sound of water.

This beliefs hinder the penetration of science of cyclones which has a close associated with issues of climate change. However, we still stand at an advantage since many peoples are struggling to understand and accepting climate change and its negative impact, say that impact of climate change such as increase of cyclone are recurring and affecting numerous districts in the country that the case has was before. We hope that with time, that that sensitization in the district in the country that the case was before. We hope that with time, sensitization in the schools-based climate education will help us win the heart of peoples who are deeply rooted in tradition knowledge.

As teachers, we continue to enlighten the community with support from other government extension workers from the Department of Climate Change and Disasters Management, Community Development, Health and Education, Agriculture. We continue to distract the belief and help people understand the best climate science. Although it is not easy to penetrate through this mindset changing fight. We believe that by maintaining climate education and making climate change a cross-cutting issue in the much sector agenda, we can win many souls. That's all.

CHIGWANDA: Thank you. Thank you so much, Ellena. It's very interesting to hear some of the traditional beliefs, and I always reflect, you know, coming from a rural part of Zimbabwe myself, I always wonder what the meeting point is of science and traditional belief systems. And how perhaps we can, bring the two together and explore how, you know, science can also be informed by, or how we can deepen our understanding of where these beliefs come from and where they could potentially become contributors to climate education. So thank you so much for sharing, and also for sharing how you as teachers are helping to bridge that divide between science and traditional beliefs around climate.

Christina, I'm gonna skip over to you because the research found variations across the countries that participated. So from Kenya's digital climate curriculum to Rwanda's competency-based curriculum with EcoSchool, Zimbabwe's heritage-based curriculum, and Malawi's climate smart education pilots. So maybe from your experience, and I know you've done a lot of work, you know, with different stakeholders, what separates climate education that is truly part of a national system from climate education that stays as an add-on? And what role should ministries of education play to achieve this?

KWAUK: Yeah. Thanks. I'll try I'll break this response up into two parts. Hopefully, I'll get to the second part on the ministries, but I want to focus in first on that, that big question around what separates climate change education that's sort of built into the system versus the add-on, because I think that's a really important one.

So each of the four countries that you mentioned and that you included in the research has something working, right? So you have a digital curriculum in Kenya, whole school action in Malawi, et cetera, et cetera. You have something that's working. They all have the pieces. But unfortunately, having the pieces isn't the same as having the system.

And I think that difference, it comes down to how we are seeing and how we're ultimately approaching the problem. So, an add-on treats climate integration as a technical problem. You sort of inject a solution. You write a climate lesson plan. You add a line about climate into an education policy and so on, right? But a system treats this as an adaptive challenge. It asks the whole system to think and be and do differently. So how we teach, how we train teachers, what we assess , what we fund, right? And I think you can really see many, many countries around the world pursuing a technical approach when it comes to the curriculum itself.

So in our work with national teams, one of the first steps that every team goes through is to first map out what their curriculum contains and covers against some global framework, right? Some global framework for what climate change education should cover. And in every single country we see the same pattern, which is that where climate appears at all, it's in science and geography.

The environmental ideas are there, but the social ideas, the climate justice, the building resilience the economic ideas, these are almost always missing And so this is how you can... You look at a system and you see, you know, climate has been added in, right? It's the add-on approach in action.

Climate's treated as a science topic rather than a way, as a way of seeing across all learning. Like, right? So the ideas that are left out, justice and resilience, these are ideas and experiences like the young people in places that Ellena represents, you know, that they're living through.

So I think a big question is, you know, how do we move towards that more adaptive approach to seeing and understanding the problem? And the teams that we've been working with have tried three different things. Not all of them have succeeded and I think it's too early to say whether they've actually succeeded in changing the system, but I think that they do point in the right direction.

So the first one is that they are bringing or they're, yeah, they're essentially bringing climate into subjects that you wouldn't expect, right? So, for example, in, in, in Ethiopia we're just wrapping up some work with them. They created climate lessons for their English language classes, for example, right?

In Cambodia we've seen history teacher educators build in lessons from, for example, the Angkor period, the Angkor Empire, to explore how communities then didn't adapt well to the environmental shifts in the, in, in their context, and how those lessons from history might shape adaptation conversations today.

So essentially, you know, with that strategy, the idea is to send is to help teachers see that climate belongs in any subject, right? So the second thing they've t- they tried is they, to design, excuse me, to design teacher training around a very different question. All right. Around a different question, right?

So it's not just how do I teach this new climate topic, but it's how do I see my own subject through a climate lens, right? So this is a very different orientation to thinking about climate change education, right? And then third is we've seen countries trying to involve their

teacher training institutions in different ways, because it's these institutions that I think really will make or break this effort.

If climate isn't part of how new teachers are trained, then every new teacher that enters the system is starting off behind, right? And this was, again, the hardest piece that I think our coun- our country partners were going through and it varied quite a lot. And I think our case of Cambodia did it really well. They brought the teacher education institution in from the start, and they kept them involved, not only in designing the climate integrated lesson plans, but really trying to develop processes for pre-service teachers to look at their subjects completely differently.

Do you want me to go into the second part of your question? Okay. I'll do it really fast. Yeah. Really fast. Or no?

CHIGWANDA: Yeah. Maybe let me skip over to Andy. But thanks, Christina. I like the idea of how do I view my own subject through a climate lens? And how do we make sure that as teachers are going for teacher training, they're already being exposed to climate concepts, they're already thinking about how to incorporate climate information, knowledge, and skills on an ongoing basis into classroom practice and experience for the learner. So thank you so much for sharing that.

Now, Andy your last question before we go, and I'm just mindful of time, before we go into some of the advanced questions that we got from the audience. So the research found that young people want to lead. So they're not shying away from leadership.

They're already aware of climate change and how it's affecting their education. They named critical thinking, problem-solving, leadership, advocacy, creativity with local materials as the skills that they require to become climate champions. That said, how do we treat young people as leaders of climate action, but without putting the burden on them? In other words, how can programs move young people from being beneficiaries to co-designers and leaders, but making sure that adults and systems retain the responsibility?

CUNNINGHAM: Thank you so much. It's the right question 'cause the tension is so real. We asked young people to lead on a crisis they didn't create. And apologies for the flicker of my background. I mean, my, my answer is ensuring that we're actually on panels, in discussions with young people about not only the doing, but also the reflecting and the decision-making.

And I wanted to highlight that because we at the Aga Khan Foundation just launched a new 10-year initiative. And so trying to think about how the recommendations of this report are really going to inform the next decade of partners, such as these behind me, that self-identify as green champions. So young people who are being trained as climate champions, but connecting learning livelihoods and lifestyles into economic opportunities to really break cycles of poverty while also supporting the environment.

So the initiative is called Regeneration. I really like the name, 'cause it's connecting livelihoods to the wider community. It's a $500 million co-financing initiative with coastal communities in Kenya, Tanzania, Mozambique, Madagascar, India, and Pakistan. And it aims at the headline to restore 150,000 hectares of coastal habitat while strengthening livelihoods and access to clean water and energy.

Now, the question becomes: Where is the lotus of agency by and for young people over the next decade? And so a number of the insights from the report really help us distill this live case study. It's not something that we're planning on doing. The Aga Khan Foundation launched this at the UN General Assembly week, the Climate Week in New York, and in partnership with many others. And so this is a live example of how do we do things differently.

And I just wanted to bring out maybe three lessons or insights that we had even before this report, Ellen, that I feel like maybe we didn't need to learn them if the report had already been done. So the first is donor partners and governments do appreciate a technical assessment, a sort of a baseline and an end line, and it's really hard to do that in this environment where the beauty is in the variety, the beauty is in context. The fascination is in contradictions, particularly in this pursuit of climate education for planetary and people health.

One of the resources that was developed in this consortium with Belmont University, Creative Action Institute, UNDRR, Aga Khan University, Aga Khan Foundation was, okay, how do you do a scorecard around what is your disaster resilience, C, in an education system? And so if you go onto UNDRR's website, there's a 27 questionnaire that allows young people, teachers, business, government officials to self-assess the levels of their climate resilience in their city or in their village. That is a crucial tool for engaging on an equal playing field: how do you have a conversation about what everyone cares about?

The second is building on Christina's point around the license to teach. Our focus at Aga Khan Foundation, too, has shifted not only from the in-service but to the pre-service, and really taking what we've learned over the last six years with that Schools 2030 initiative around how do you do human-centered design in a really simple way, how do you make sure you're solving for the right problem? And so all those tools are also available because they should be used rather than sort of, you know, restart or recreated from scratch, particularly in the context that we've been talking about today.

And then the third piece is we learned a lot by trying to create communities of practice, particularly teachersfortheplanet.org, super exciting, getting teacher driven practical solutions. I think we can do better. I think we can do a, a localized version that is led, owned, sustained by green champions like those that are sitting next to me proverbially. But also how we can rethink about who's defining the problem, who's getting the money, who's spending the money, and then who's accountable for how that money's spent.

And I think if young people are involved... And not young people, I mean just those who actually know what their living environment is and what their ambitions as a community are. If they are at the forefront of answering those four questions, we have some really exciting pathways to actually affect change.

So I tried to throw out a couple of real-life tools, and I think the other last piece I would just say, Ellen, to all of this, is making no paywall. Organizations have to stop proprietary toolkits, resources, because that is not what will get us to 2036, either through regeneration or many other initiatives that are trying to frankly work with nature. Nature does not have a paywall. Why do we create one? So thanks, Ellen.

CHIGWANDA: Thank you so much, Andy. Thank you so much. This is really interesting. And for some reason it's connected to one of the questions that came through as an advance question ahead of this webinar, and I think I might pose that to you.

And I'll give you a minute, literally a minute and a half, to respond to this, Andy, because we've got a question from Francis Dilla who is from Uganda. And he's asking, I suspect he's a teacher because he's saying, "How can we equip learners with the knowledge at a very practical level? How can we equip learners with the knowledge and practical skills needed for them to respond to climate related challenges in their community?"

So he's saying, "If I'm a teacher, if I'm Ellena in Malawi, can you give me one, you know, silver bullet?" I don't want to use the word bullet, but what is the one thing that as a teacher I can do to equip these learners with those skills that they need? Something that, you know, they can use on a very practical level so that the learners can respond to climate related challenges in their communities. This is a question from Uganda. So a minute and a half, Andy.

CUNNINGHAM: I'm so excited because I get to use my third image. So in addition to working with young people and just simply having a conversation, the Imagination at School Gardens, I really have seen the transformative feeling and knowledge and practical use around working with micro forests. And if you go onto the Aga Khan Foundation's Learning Hub, there's a free course of how to not only do it, but it's really straightforward. It uses the Miyawaki method, which is a Japanese method, you know, which plants dozens of native and endemic species close together. Then it makes the plants kind of growth up to 10 times faster and even 30 times denser.

And why is this really important for particularly schools in your context? Because it's fresh air and cool temperatures, and the growth is pretty rapid. And so understanding something that can grow within months rather than only years is really important for understanding the agency that teachers and students have right now to do something positive, to then spark the understanding and that nuance of the challenges and threats that perhaps could limit the growth of a microforest or could prevent the health of a garden. But starting positive is the most important piece in school level climate education and action in, in, in our perspectives. Hopefully that helps.

CHIGWANDA: Thank you. Yes. I'm sure, I'm hoping Francis is also online today and listening to that. And I'm gonna scooch over to you, Christina, because we have a question from Ginger Wireman, who's writing from Washington in the US. And the question is, how can we impress upon government agencies the importance of conducting climate education related to their roles? So, you know, how can government agencies understand their roles in really boosting the understanding of why climate education is important?

KWAUK: Yeah. That's a great question, and I think when we think about government agencies, their role in systems, their role in transformative change, at the end of the day, government systems are run by people.

And if we're not thinking about the capacities, the awareness the sense of agency, sense of efficacy to do something, or first even to understand, but then to understand one's role and how one's government agency is either impacted by climate or can impact climate outcomes, if we don't start there, the government agencies can't shift. You know, they can't.

And there may be other sort of externally imposed goals or internally even desirable goals to achieve when it comes to mitigation and adaptation targets, yet if we're not thinking about the capacities of the people who are driving the day-to-day decision-making, the day-to-day operations, we can't possibly see these massive systems that thrive in bureaucracy, that thrive in pr- in, you know, processes that are sometimes unclear, right?

We can't possibly expect the degree and scale of change without really addressing the fundamentals of climate change education, climate literacy, environmental literacy and so on within the people who are driving those systems. So I, yeah, I think that is a key piece.

CHIGWANDA: Thank you. Thank you so much.

And Ellena, maybe in just one minute, I might take you back to just ask, maybe let's try to imagine a decade from today. We are in 2036 and climate change has been very successful. What value do you think this research that you participated in the report, the toolkit what value do you think that research would have provided in making sure that, you know, we are heading towards a more sustainable future really for the learners and the adolescents and the youths from whose future we are currently borrowing?

As Andy said earlier on, that we are essentially asking them to be leaders for something that they didn't even partake in. So for you, Ellena, maybe in just one minute, what value do you think this research that you participated in, why was it important for you to participate in that research?

YOHANE: Thank you. I feel researchers, like research and its outputs, would help stakeholders and generation understand existing gaps in the current comparable solution that would help climate education take its course for effective impacts globally. It will help relate theory and practice. That's all. Thank you.

CHIGWANDA: Thank you so much, Ellena. That evidence can help different stakeholders inform solutions around climate education, and to also craft solutions that help to make our education sector a much better one.

Maybe I might have one minute to, to just squeeze in one more question. I think I'll give this one to I think I'll give this one to, to Andy.

And we have another question, and this is very, I think it's very much, I can see quite a few of our questions were coming from our audience in the US, and they're essentially asking, "How do you see in-class climate education programs synergizing with other climate service programs geared towards young people?" And they're giving examples such as the Civilian Climate Corps or the Seal of Climate Literacy. I think this is something that you in the US would be more familiar with, Andy.

So the question is, how do you see in-class climate programs syncing with more sort of broader programs, I guess, that the US is offering for young people? What is the connection there?

CUNNINGHAM: Thanks, Ellen. If I could share that, I think, with Christina, 'cause you might have also a, greater insight. Although I'm in the US now our work doesn't partake it in, in, in US context. But I would just, I think it's a universal question.

CHIGWANDA: Yes.

CUNNINGHAM: So one thing that I'm kind of trying to think about is why and when and how did we let go of our connection to the outdoors in our consideration of in-classroom teaching? Not even just about climate. Just as what Christina was saying, that, that disposition, that lens, that, that rootedness in realities, I've, we've let go of who we all are as part of nature. And so I'm, you know, I love the word roots. I love a good acronym. I love a good kind of figuring out. And so I've been playing on this webinar right now is, you know, ROOTS, Regenerative Outstanding Outdoor Teaching Strategies.

CHIGWANDA: Wow.

CUNNINGHAM: And what I'm curious is about outdoor strategies that are outstanding, but that are also regenerative. And I think that's where you make maybe those connections, Ellen, between work of civilian corps and other, you know, civil society organizations into, this is just the requirement of how do I prepare young professional for what we need to learn better as members of nature.

But maybe could I pass over to Christina for a couple comments? 'Cause I know she might have a view.

CHIGWANDA: Only if you can do this in 30 seconds, Christina. And then I'll have to close the webinar.

KWAUK: I can, yes.

CHIGWANDA: I'll give you 30 seconds.

KWAUK: I feel like I can. I feel like I can. Thank you, Andy and thank you for the question. I love ROOTS. I mean, that, that's so, so funny. Okay. Anyways, okay, 30 seconds.

So I think we have to think about how learning in the classroom, it's one element of a much broader education and training ecosystem, right? Classrooms are one place of learning. We don't live our lives in segregated, isolated, "Oh, I'm in school now, and this is a formal education learning that I'm doing right now," and then, you know, that's separate from the learning that I might be getting somewhere else, right? So we need to see that classroom learning as part of a broader ecosystem of educational opportunities, right? So that's one.

And then the second one, which I have completely forgot about now. Never mind. Okay. I'll let you take over the, moderation element 'cause I forgot about the second one.

CHIGWANDA: Thank you. Thank you so much, Christina. And really, let me take this opportunity to thank all of you. I want to thank you, Ellena, for bringing in the lived realities of, you know, being in rural Malawi and facing the challenges around climate change, Cyclone Freddy, some of the traditional beliefs.

Christina, thank you for the experiences in Cambodia and other places where you're working with a variety of stakeholders in trying to integrate climate education into curricula and policies, and working with governments. Andy, your work with, you know, multiple country missions with Aga Khan Foundation is... and the, of course, the pictorial and just really bringing the reality and, you know, some of those examples to life with the pictures. Thank you so much for bringing in.

And what I heard across all of your experiences and our audience is that no single actor can do this alone. Classrooms, ministries, partners, young people hold part of the answer, and climate education works best as a collective effort, and every stakeholder has a concrete step has a concrete next step. So as we launch this report today, I just want to really encourage everyone to see that they are a part of the bigger whole, and that we all have a part to play.

Allow me to thank Lego Foundation, who supported this work. Allow me to thank the Center for Universal Education at Brookings for trusting CARE Zimbabwe and for trusting me with this assignment. But also I want to thank our seven partners, Asanta Africa Foundation, CRECOM, Right To Play, One Planet, Teach For Zimbabwe, EDT, and FAWE Zimbabwe the team at CUE, and of course, all the research respondents, and most importantly, the adolescent and youth. I think young people are ready to learn and lead, and our job is to make sure that we are creating the ecosystem for that work.

Thank you so much to our audience joining us from different parts of the world for joining us today. Thank you to the tech team behind the scenes. Look forward to the blogs that we're going to be posting in relation to this report. And thank you so much for being with us this morning and this afternoon. Thank you so much and good afternoon.

CUNNINGHAM: Thank you. Bye.

KWAUK: Thank you