



Educating for the Future

Educational Programs Can Stimulate Positive Action on Climate Change in Lebanon, Palestine and Jordan



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on the ground in the Middle East

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The undeniable and escalating effects of climate change, from rising temperatures to water scarcity, are contributing to social and economic crises, particularly in already vulnerable and unstable regions. The 2023 report by the Intergovernmental Panel for Climate Change¹ projects a global average temperature increase of 1.5 degrees Celsius above pre-industrial levels by the early 2030s, exposing 3.3 to 3.6 billion people worldwide to flooding, drought, mass displacement, lack of basic services, and stifled economic growth.

Millions of those vulnerable people live in Lebanon, Jordan and Palestine. As nations with high poverty rates and large numbers of refugees, the effects of climate change have the potential to wreak havoc on food systems, livelihoods, homes, and healthcare.

Despite these challenges, effective mitigation is possible through a comprehensive, multi-level approach involving governments, companies, organizations, and local communities. UN Sustainable Development Goal 13 emphasizes the need for integration, urging the creation of national policies focused on climate action and education.

This report focuses on climate-change education and youth activism, which have been proven to positively impact communities by improving knowledge and promoting pro-environmental behaviors.



*Aerial view of the Jordan River at the Jordan West Bank border.
Maurizio De Mattei, photographer*

CLIMATE CHANGE CHALLENGES IN THE LEVANT

The predicted rise in temperatures presents a multitude of growing difficulties for the region. **Agricultural production² is anticipated to decrease significantly, leading to food shortages, increased malnutrition, damage to livelihoods, and displacement in many communities due to droughts.** While the economic impact will be severe, the Levant region is also heavily agricultural by tradition, so the region's cultural norms will be affected too.

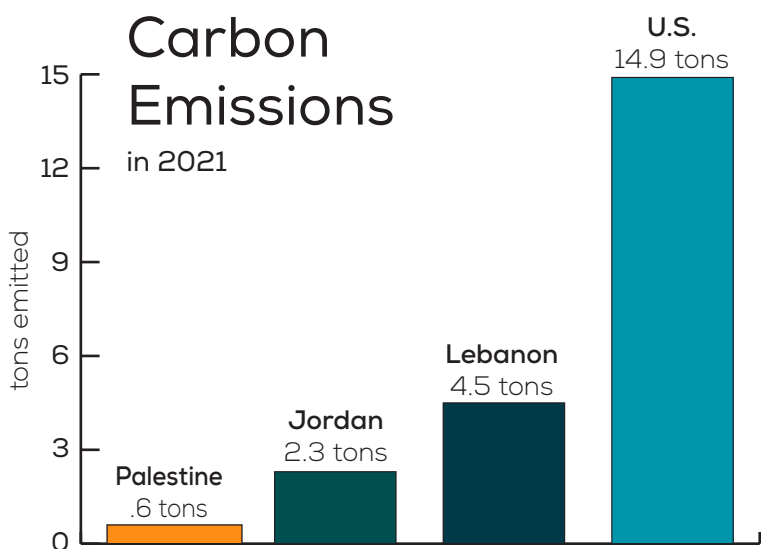
Climate change increases energy demands in many sectors, putting a strain on businesses and services as they struggle to meet their power needs. Lebanon's Ministry of Environment estimates that climate change will cause a 14% fall in Lebanon's GDP by 2040, with a further fall to 32% by 2080.³

Water scarcity⁴ is also a significant concern. Extreme weather events such as flash floods, landslides and recurring droughts have proliferated over the last decade and will continue to increase in frequency.⁵ Winter flooding in Gaza destroys homes and ruins harvests, contributing to displacement of families and impacting food production in a place where land and shelter are limited.⁶ Jordan is already one of the world's most water-stressed nations.⁷ Climate-induced record low levels of rainfall, heightened evaporation and increases in temperature will further drive desertification and exacerbate water scarcity in the future.

Worsening environmental conditions pose a particular threat to vulnerable and displaced populations in the region.⁸ Struggles such as political and economic

marginalization, loss of land and resources, human rights violations, discrimination, and unemployment will only worsen. In nearby Syria, human-induced climate change contributed to the fighting there and continues to prolong the ongoing conflict,⁹ as extreme drought in the region has contributed to large-scale migration and displacement.

Higher temperatures can also contribute to higher rates of infectious diseases, straining already struggling healthcare systems.



The Levant contributes minimally to global CO₂ emissions, yet faces significant repercussions – an inequality underscoring the urgent need for global climate action.

[Source: ourworldindata.org – Per capita CO₂ emissions]

THE ROLE OF EDUCATION

Education emerges as a critical tool in addressing climate change. Knowledge empowers individuals, especially the young, to change behaviors and advocate for climate action. In classrooms, students can learn about the impact of global warming and adaptive measures, fostering a sense of responsibility for their futures and the environment.¹⁰

Research underscores the efficacy of dedicated education on climate change. **UNESCO's Global Education Monitoring Report suggests that increasing climate education in low- and lower-middle-income countries could significantly reduce global emissions by 2050.**¹¹ Education not only can induce changes in consumer behavior but also facilitates civic engagement, pressing for policy changes from the ground up.

Individuals with higher education levels are more likely to view climate change as a threat and take actions that inspire others.¹² **Youth, in particular, can contribute significantly to climate-change advocacy, as evidenced by their participation in COP summits** and the influence of youth icons like Greta Thunberg. Youth education fosters intergenerational learning, inspiring adults toward greater climate concern and collective action.¹³

How do Jordan, Lebanon and Palestine Rank in the Global Context?

Countries worldwide face the imperative for stronger climate-change education, with the UN urging its integration into school curricula by 2025.¹⁴ Despite progress, a 2021 UNESCO study revealed that over half of nearly 50 countries assessed made no reference to climate change, and only 19% mentioned biodiversity.¹⁵

Education International's Climate Change Education Ambition Report Card evaluates countries on six criteria, revealing surprising leaders and disparities. Cambodia and the Dominican Republic top the list. Lebanon and Palestine figure much lower on the scale.¹⁶

Jordan stands out, ranking eleventh in 2022, surpassing all other Middle Eastern countries. Notably, its focus on youth development and gender equality distinguishes it. Jordan positions youth as change agents, emphasizing the need to empower them to design climate programs tailored to their needs. The country's emphasis on building sustainable entrepreneurial and technological skills contributes to green job growth and a more environmentally friendly economy.¹⁷

However, it's crucial to acknowledge that Jordan's eleventh-place ranking, while relatively high, corresponds to a real score of 38%. And climate experts say that, while

REPORT CARD

Country Ranking	Grade
1. Cambodia	A (58%)
2. Dominican Republic	A (51%)
11. Jordan	B- (38%)
58. Palestine	E (12%)
94. United States	F (4%)
109. Lebanon	F (0%)

Grades are on a bell curve. Percentages listed after the grades are the real scores.

The Best Report Cards

Cambodia consistently earns high rankings due to its proactive approach to climate-change education. The nation integrates climate change into its national education plan, prioritizing environmental education for children and youth. Notably, Cambodia involves its Ministry of Education, Youth, and Sports in decision-making on climate policies, providing a platform for youth advocates. This creates space in policy development for education and youth interests to take precedence by giving young people a seat at the table. Cambodia also promotes green schools, trains teachers, and implements data management systems tracking climate interventions.

The **Dominican Republic**, the runner-up, focuses on key sectors like energy, tourism, water, agriculture, and forestry, prioritizing capacity-building within these areas. While distinct from Cambodia's emphasis on formal education, the Dominican Republic commits to integrating climate change into its education system by 2030. Targeting teacher training, the nation aims to train 200 teachers in climate-change education by 2024, demonstrating a commitment to multi-generational initiatives. The Dominican Republic excels in specific sectors and has well-structured plans to expand institutionalized climate-change education in schools.

Source: Education International's Climate Change Education Ambition Report Card, 2021

students are certainly interested and engaged in climate conversations, much of the climate change content added to curricula in Jordan has yet to be fully implemented.

Palestine secures a mid-tier ranking, excelling in inclusion and climate justice.

Notably, Palestine is among the 33 countries specifically mentioning girls as a disproportionately affected group. While not as advanced as Jordan, Palestine's score indicates progress, albeit with inconsistent statewide implementation influenced by factors such as funding.¹⁸

Conversely, Lebanon receives the lowest possible score across all categories.

Despite some elements of climate-change education present in the system, there's a lack of future planning or organized efforts to enhance education in this regard. Economic conditions further hinder initiatives.¹⁹

THE STATE OF CLIMATE-CHANGE EDUCATION IN LEBANON, JORDAN AND PALESTINE

To enhance climate change education in Jordan, Lebanon and Palestine, a nuanced examination of their strengths and weaknesses reveals a range of efforts, capacities, and approaches. Jordan boasts one of the world's most developed infrastructures for climate-change education. However, existing generational, wealth, and regional disparities have left areas for improvement. Meanwhile, Lebanon includes climate change in school textbooks but lacks a cohesive, nationwide initiative for environmental education. In Palestine, extracurricular efforts dominate, but there's a lack of formal curricula to complement them.

Jordan

Current Reality

Jordan stands as a global leader in environmental and climate-change education with its well-developed curricula. Enacted in 2019, Climate Change Bylaw n.79 mandates the integration of climate-change concepts into Jordan's educational framework.²⁰ It is facilitated through collaboration between the Ministry of Education and the Ministry of Environment in formal and non-formal programs.²¹

The formal education system in Jordan addresses climate change-related topics from grade four to eleven, covering natural resource preservation, energy management, and recycling. Eleventh-grade textbooks delve into the impact of climate change on water scarcity, fostering a comprehensive understanding of the challenges.²² The ministries maintain a database tracking environmental content in school curricula for continuous improvements.²³

Beyond formal education, regional directorates organize extracurricular activities that provide hands-on climate-change learning experiences. Competitions engage students in creating awareness through drawings and essays that aim to instill a sense of environmental responsibility and sustainable practices.

Challenges

Despite Jordan's robust climate-change education, challenges persist. **As of 2023, there are no official standards to measure the effectiveness of lessons and initiatives.** The responsibility for environmental education is shared among multiple entities without a clear leadership structure. Strengthening leadership, improving organizational structures, and conducting research on initiative effectiveness could enhance Jordan's climate-change education.

Progress and Collaborative Initiatives

Jordan demonstrates progress with 126 environmental nonprofits²⁴ actively promoting climate-change education. The Royal Marine Conservation Society of Jordan, established in 2015, initiated the Young Climate Leaders: Autumn School project, educating students on climate change and mitigation strategies.²⁵ The Green Generation Foundation is run by young Jordanians and encourages youth involvement in climate policy changes.²⁶

An Expert's Perspective

Many experts in Jordan emphasize the need to translate policies into action.

They stress the need for sustained funding for impactful initiatives. Dr. Maha Al-Zu'bi, a sustainable water systems researcher at the International Water Management Institute, highlights the necessity of behavioral adjustments, starting with a mainstream climate curriculum for Jordan's youngest students. Her fieldwork reveals a discrepancy in climate-polluting footprints between poorer and wealthier families, underscoring the importance of education and opportunities for climate action beyond financial decisions.

Dr. Al-Zu'bi draws attention to the unequal accessibility of climate-change education between private and public schools. She advocates for formal university-level courses to engage students in sustainability and climate action. She also endorses a holistic approach, considering channels beyond curricula alone. Dr. Al-Zu'bi promotes dynamic, interactive methods, especially for young people who benefit from listening, videos, participation in events, and hands-on activities.

“I think we need to look at the channels,” says Al-Zu'bi, “the mechanisms and the platforms rather than assessing only the curricula. I think curricula [are] unable to deliver the right level of education alone, on its own. It's very important, but I think we also have to consider the other mechanisms that could be more appealing, more flexible, more dynamic, more interactive, especially for the young people who [learn best from] listening, videos, participating in events, and doing things on the ground.”

Jordan: Conclusion

While Jordan has made commendable strides in climate-change education, ongoing efforts should focus on addressing challenges, fostering leadership, and adopting inclusive, multi-generational strategies for sustained impact.

from Anera's interviews with young environmental activists...



“As activists, it is crucial that we communicate the importance, causes, and consequences of climate change to society. I started a project that focuses on recycling plant waste and producing environmentally friendly materials.”

— Sarah Al-Qadiri, 23, Jerash, Jordan

Lebanon

Current Reality

Lebanon acknowledges the need for climate-change education, but its current implementation requires refinement. There is no specific legislation mandating climate education²⁷ but environmental education is mentioned in the Environmental Protection Law (law no. 444/2002),²⁸ advocating for its promotion within the national education system. The Ministry of Education and Higher Education holds the pivotal role in Lebanon's formal education, overseeing public and private sectors and handling the execution of climate-change education.

Lebanon's public education curriculum introduces environmental concepts in the early grades, emphasizing age-appropriate topics like planting, animal care, and protecting natural spaces. However, explicit discussions on climate change only emerge in the tenth grade, focusing on air pollution, water treatment, and agricultural ecosystems. In the higher grades, climate-change education has concentrated on specific issues like waste mismanagement rather than a broader approach encompassing environmental degradation.²⁹

Much of Lebanon's environmental degradation stems from human activities like deforestation and inadequate water conservation, which can be mitigated through education targeting behavior and practices. Unfortunately, **formal education and embedded curriculum in the areas of desertification, deforestation, soil retention, and water-saving practices are lacking.** Public schools have been most affected by disrupted school years during the COVID-19 pandemic and the economic crisis.

from Anera's interviews with young environmental activists...



“Lebanon has faced numerous challenges, from economic crises to explosions, but it's precisely these hardships that fueled my inspiration to create change. I've implemented activities that address critical issues. One major focus has been supporting local businesses aligned with the UN Sustainable Development Goals. Together, we are the solution, and through innovative approaches and collective efforts, we can build a better future for all.”

— Qamar Karami, a youth-leader in environmentalist and sustainable entrepreneurship in Lebanon

Challenges

Lebanon is in the fourth year of economic collapse. Research indicates that **financial crises heighten vulnerability to the climate crisis**.

Approximately 26% of school-age children are not in school, due to a variety of factors including teacher strikes or students dropping out to earn income to help their families. In the past two years, students received around 60 days of classroom instruction annually – just one third of the total days in a U.S. school year.

60 days

of classroom instruction annually in Lebanon

There is also a **disparity between public and private schools, with more resources available at private institutions**. Because of low teacher salaries and limited resources, public schools are in need of additional assistance in order to implement any climate-change initiatives.

Progress and Collaborative Initiatives

Despite the challenges and hurdles Lebanon faces, **collaboration among national institutions, nonprofits, and educators has led to some advancements in climate-change education over the past decade**. And, the formal recognition of the importance of climate-change education by the Lebanese Ministry of Education and related institutions suggests a positive trajectory for future curriculum expansion.

There have been commendable efforts to enhance climate-change education. The National Strategy for Environmental Education in Lebanon, established in 2012, marked a turning point, leading to improved climate-change education. The Teacher's Guidebook on Climate Change for Schools,³⁰ published in collaboration with the Ministry of Education in 2015, signifies the government's commitment to incorporating climate education into the curriculum. While specific implementation outlines are lacking, the guidebook represents a substantial step forward.

The Center for Educational Research and Development in Lebanon oversees projects like Education for Sustainable Development and Protecting Natural Resources, creating learning packages and activities related to sustainable development.

The Lebanese Ministry of Environment recently initiated a mandatory 60-hour public service requirement for high school students, further emphasizing the commitment to unified climate-change education.

The American University of Beirut's Environment Academy³¹ and nonprofits like the Lebanese Organization for Green Schools are actively involved in developing climate-change education initiatives. The groundwork is laid for climate-change education to be mainstreamed in Lebanon, but further support and prioritization by the Ministry of Education will allow it to be firmly part of the education system and absorbed by students.

An Expert's Perspective

In an interview with Anera, Dr. Najat Aoun Saliba – member of Lebanese parliament, climate expert, and American University of Beirut professor – stressed a couple important points.

“We need to, first of all, have schools. We don’t have schools. It’s very devastating that, since COVID, kids in public schools and schools at the southern border haven't had a normal year... So, before we talk about understanding the environment and the effects of climate change, **we need them to know how to read and write. It’s that grim and it’s that bad.**”

Dr. Saliba also went on to point out that differentiating between environmental problems and climate change in education is crucial. Many environmental problems in Lebanon are human-made and correctable independent of climate change, while global emissions impact the country, making it a recipient of consequences. The limited introduction of environmental concerns in curricula underscores the need for a broader approach. **Raising awareness and instilling sustainable practices in areas like water conservation, waste management, improving air quality, soil preservation, and combating deforestation should be integral to educational curricula and cultural norms, and ultimately should foster a collective responsibility for environmental stewardship.**

Lebanon: Conclusion

The future success of environmental stewardship and education in Lebanon depends on functional schools, legislative mandates, narrowing the disparity between public and private schooling, and dependable support from the Ministry of Education.

Palestine

Current Reality

Climate-change education predominantly takes the form of extracurricular activities in Palestine, rather than being integrated into standardized curricula, distinguishing it from Lebanon and Jordan. The Palestinian Ministry of Education is responsible for planning, organizing, managing and improving the educational system, but it faces challenges in developing a mainstream curriculum on climate change.

In fact, there had been a module in the curriculum dedicated to the topic, called "Environment in Palestine," but the ministry canceled it, despite objections from environmental advocates. While other initiatives by the ministry expose students to climate and environmental knowledge, dedicated units continue to be in the advocacy stage.³²

Challenges

Unlike Lebanon and Jordan, Palestine's unique political situation as a non-sovereign nation contributes to additional barriers in creating and implementing climate change education. **The government budget does not allocate funds for environmental programs, affecting institutionalized curriculum implementation.**³³ Further complicating any initiative are the communication and implementation barriers that exist between Gaza and the West Bank, which is further constrained by travel constraints.

The schools of Palestine confront the kinds of barriers that affect all aspects of life in the country. The Ministry of Education runs the majority of schools, but the UN Refugee Works Agency (the UN wing that serves Palestinian refugees) operates a significant number, as does the private sector. And East Jerusalem, with its contested status, attempts to maintain a cohesive educational system, with Palestinian authorities playing a role and Israeli authorities exercising considerable influence. The differing administrative bodies across Palestine implement their own curricula, making standardization of climate-change education difficult.

West Bank & Gaza Schools

Public (74%)
2,203 schools

Private (14%)
427 schools

UNWRA (12%)
370 schools

Source: Passia education fact sheet, 2019

On top of all other challenges, there is a full-scale war in Gaza that is creating an environmental catastrophe, as it impacts agricultural lands and water quality, and causes pollution from munitions and raw sewage. The targeting of solar installations and universities by Israeli forces now adds to the environmental challenges.

Progress and Collaborative Initiatives

The Ministry of Education collaborates with the Environment Quality Authority to provide extracurricular environmental education programs. These include planting school gardens, launching environmental clubs, and onsite grey water treatment plants inside schools. The 2021-2023 cross-sectoral strategy outlines goals for Palestinian schools that aim to integrate environmental education into curricula, foster more extracurricular activities, change student behavior toward the environment, and reduce waste in schools.³⁴

Since 2010, the Ministry has aimed to foster environmental awareness in UNRWA and public schools through three extracurricular programs:

A garden and greenhouse Anera installed on school grounds in Deir Qaddis, West Bank.



the Environmentally Friendly Schools Program, Environmental Occasions Revival Program, and Green Spaces Program.³⁵

The Environmentally Friendly Schools program engages students through clubs and conservation-focused field trips, incorporating initiatives like a school radio to raise awareness about the environment. The Environmental Occasions Revival program celebrates events like World Water Day and World Environment Day, utilizing them as learning experiences. The Green Spaces Program aims to improve school environments physically by building gardens, installing greenhouses, and supplying seedlings for students to plant.

Expert Perspectives

Nedal Katbeh-Bader, former advisor on climate change at the Environment Quality Authority, participated in launching a national, digital climate change knowledge-sharing platform, which gives open access to climate-change information to everyone in Palestine. It also streamlined Palestinians' communications on climate change.

In an Anera interview with Katbeh-Bader, he emphasized that it is important to **“bridge the gap between knowledge of science and policies, and bring as much as we can from the most recent, available scientific knowledge to the attention of our kids and schools.** This should be in all kinds of communication: in curriculum, vocational training, non-curriculum [vehicles], all aspects. [Students] should understand how this will have an impact on their lives and how they should respond.”

Abeer Butmeh of the Palestinian Environmental NGO Network emphasizes the need for more comprehensive education beyond schools. Environmental centers in Palestine, such as an eco-farm in Jenin and an education center in Bethlehem, connect students with government ministries through conferences, fostering awareness and action. **While interest in climate justice studies exists among youth, expanding programs in universities and broader sectors like farming, engineering, teaching, and research is needed.**

Palestine: Conclusion

Despite successful environmental programs in Palestine, challenges persist in institutionalizing climate-change education in schools. The extracurricular focus, limited resources, and unique geopolitical challenges underscore the need for comprehensive, integrated climate education. Ongoing efforts, collaborations, and advocacy by experts and environmental advocates provide glimpses of progress, but a more robust and inclusive approach is essential for sustained impact on climate-change education in Palestine.

“We should focus more on the youth in climate work. They’re the basic pillars of change.”

— Abeer Butmeh, PENGON-Friends of Earth Palestine Coordinator

Youth in Lebanon Lead Climate Action

Anera recognizes the importance of climate-change education and its role in youth development and green economies. A major focus of our work in Lebanon is on youth. With projects ranging from recycling to solar panel installation, Anera has a wide range of initiatives that integrate environmental protection, education, and humanitarian aid. Youth education is central to this goal. The tools Anera provides youths empowers them to improve their communities and impact their local environment.



Anera's **solid waste management program** in Lebanon focuses on using youth environmental education to mobilize communities to clean up their environment. Interactive awareness sessions focus on sorting, reducing and reusing waste, as well as youth clean-up campaigns which take place in schools, kindergartens and playgrounds. Young Anera volunteers promote environmental protection among their peers, who then become leaders in their communities as they head up recycling and clean-up projects.



Solar power installation is part of Anera's vocational education program in Lebanon. The availability of electricity in Lebanon is hard to predict, and this can have life or death implications in hospitals and clinics. Teaching young people to install solar panels builds careers while addressing a critical need in a sustainable way. Graduates from the program have helped Anera install solar panels on scores of healthcare facilities across the country.



Anera programs in Lebanon train young people to **turn recycled materials into useful crafts**, transforming global sustainability efforts into local actions. Using recycled materials like wool and plastic, students craft practical items, gaining skills with potential economic benefits. Graduates have produced items like jewelry, notebooks and children's toys, showcasing the program's success in merging environmental consciousness with skill development.



Rooftop gardens are another of Anera's green initiatives. The gardens use built-in planters made from upcycled plastic barrels and a modified hydroponics system designed to provide plants with the optimum amount of water needed, without the need to irrigate on a daily basis as in traditional planter farming. This initiative trains family farmers and young gardeners on the care of their gardens and conscientious water use, allowing them to manage their crops as sustainably as possible.



Agricultural courses for young people cover specialties such as planting vegetable gardens, cultivating fruit trees, planning ornamental and medicinal gardens, and designing green spaces for recreation. Youths learn how to bring greenery into gray landscapes, both for the sake of cultivating food and for improving the environment. **Beekeeping** is also part of this program, as Lebanon has the ideal terrain and flora habitat for bees. Our courses equip students with skills to keep their bees healthy and happy.

LOOKING FORWARD

Successful models from Cambodia and the Dominican Republic underscore the significance of organized infrastructure and integration in national governance. The Global Partnership for Education's seven-dimension framework, encompassing policy and planning, infrastructure, data and evidence, coordination, finance, teaching and learning, and schools and communities, serves as a comprehensive guide for developing effective climate-change education systems.

Analyzing each country through this framework reveals specific areas of excellence and areas needing improvement. In Jordan, there's a call for more data and evidence to refine effective approaches. Palestine, while emphasizing extracurricular teaching and learning, could significantly expand climate-change education through enhanced coordination, national policy, and planning. Lebanon, however, requires improvements across almost all dimensions, including the absence of infrastructure, accountability mechanisms, and necessary data.

The Climate-Change Education Ambition Report Card recognizes Cambodia and the Dominican Republic as leaders with different yet effective approaches fitting within the seven-dimension framework. Drawing inspiration from Cambodia's focus on formal, mainstreamed education, Lebanon, Palestine, and Jordan could also benefit from the Dominican Republic's model, incorporating increased capacity building and informal or vocational training in sectors like water, tourism, and agriculture.

In Lebanon and Palestine, the dimension of finance emerges as a crucial consideration. To effectively implement climate-change education, sufficient funding must be made available. This could be achieved through increased policy and planning efforts and contributions from local and international nonprofits.

In summary, a strategic, multidimensional approach tailored to each country's unique context is essential for advancing climate-change education in Lebanon, Palestine, and Jordan. Learning from successful models and addressing specific weaknesses within the seven-dimension framework will pave the way for a more comprehensive and effective education system that prepares future generations for the challenges of climate change.

INVESTING IN THE FUTURE

The potential impact of engaged climate-change education is vast, ranging from influencing community attitudes and behaviors to fostering green economies. This imperative holds particular relevance for regions like the Middle East, which are expected to bear the brunt of climate change effects.

A handful of nations stand as examples of how to successfully integrate climate change into school curricula. In the context of Jordan, Palestine, and Lebanon, there is an opportunity to build on these positive examples and enhance climate-change education initiatives. Jordan's pioneering efforts in this arena serve as a valuable model for neighboring nations.

By directing focused efforts toward improvement, communities and individuals across the Levant can receive the education and training necessary to make a positive environmental impact. Recognizing the urgency of climate-change education, it is incumbent upon these countries, alongside local and international nonprofits and funders, to prioritize immediate and sustained efforts for improvement.

Acknowledgements

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Endnotes

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ABOUT ANERA'S ON-THE-GROUND SERIES

The Anera on-the-ground series is designed to add a humanitarian voice to the story of life in the Middle East. With data from Anera's professional staff, people who live and work in the communities they serve, and with over 55 years of experience in the region, Anera has a unique opportunity to build a fuller understanding of what life is like for families struggling to survive within an atmosphere of severe political strife and daily turmoil.