CLIMATE BOX

Guidelines for Implementing Climate Change Education Programs Using the Climate Box Toolkit

2025

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Welcome to the Climate Box Program Implementation Guide

Climate change is one of the most defining issues of our time. However, the awareness and understanding of drivers behind climate change, its impacts, or mitigation and adaptation options are still insufficiently understood by the general public.

Climate education is key for empowering the youth – future decision makers – for climate action. Innovative educational approaches help to attract the attention of the young generation to climate change and sustainability issues through what they feel is an interactive, innovative and exciting learning process.

With this in mind, United Nations Development Program (UNDP), together with the Global Environmental Fund (GEF), with the financial support provided for different phases of the program by the "Coca-Cola" company and the Russian Federation, has developed and promoted **"Climate Box"**, an integrated climate education program that raises awareness of climate change, encourages school students to lead environmentally-friendly lives, and inspires the youth to spread the word to their family, friends, and local communities.

The main component of a Climate Box program is **a toolkit** that contains interactive learning materials for school students on climate change and empowers teachers to incorporate these materials into their curriculum. However, the impact of Climate Box goes beyond the classroom as it has inspired schoolchildren to act and develop projects on topics such as energy efficiency, waste recycling, and sustainable water management in their schools and communities.

Moreover, the Climate Box program offers a wide range of activities for its participants, including training modules and workshops for teachers, international knowledge exchange conferences for educational experts, youth contests and festivals, engagement with the national ministries of education and ministerial dialogues on climate education and awareness.

Who is this guide for?

This guide outlines a **step-wise approach** (see Figure 1) on **how to implement Climate Box program for promoting climate education and mainstreaming it in general educational curricula.** Initially developed for managers coordinating the implementation of the Climate Box program within UNDP, this guide is also valuable for anyone interested in disseminating knowledge and raising awareness about climate change. Whether you work in a governmental agency

at the national, regional, or municipal level, or for a civil society organization, our goal is to make Climate Box materials and program activities easily accessible to you. This guide serves as a foundation and includes concrete recommendations, tips, success stories, and examples from countries in Eastern Europe and Central Asia that have already been engaged with the Climate Box program. It also summarizes feedback collected from program participants over the past eight years.

We are confident that this guide, along with its practical advice, will be valuable for program managers already implementing Climate Box, those newly joining the program, as well as decision-makers, school principals, educational experts, and anyone interested in disseminating climate change education through the Climate Box toolkit.

How to use the guide?

For those who are new to the program, it may be helpful to go through all the suggested steps outlined in this guide (Figure 1). More experienced Climate Box users may find additional insights or be inspired to implement new activities.

About the “Climate Box” program

“Climate change is one of the most important global challenges for humanity, as climate change is felt in all countries. We are all responsible - our common task is to reduce the pressure on the climate by reducing our carbon footprint. Children are our future, so we need to nurture a culture of environmental and climate responsibility from a young age.”, ***Maya Batyrova,*** *geography and economics teacher, Turkmenistan.*

The imperative of climate change demands that we gain all the knowledge and tools we need to protect our environment, adapt to climate change impact and reduce our carbon footprint. It is crucial to instill this understanding and these practices from an early age so that, by the time students graduate, they not only appreciate the importance of caring for our natural environment and resources but also understand the principles of sustainable resource use, the impact of their actions on the environment, and the need for proactive measures to address climate change.

The United Nations Development Programme (UNDP) and the Global Environment Facility (GEF) with the financial support provided for different

phases of the program by the “Coca-Cola” company and the Russian Federation, have developed the Climate Box - an interactive learning toolkit aimed at enhancing climate change education. The toolkit provides students with key facts about global climate change in an engaging and entertaining manner and offers teachers recommendations for integrating the toolkit into the school curriculum.

A big team of authors has worked on the Climate Box, including leading experts in climatology, geography, biology and economics, and professional writers of books for children. Experienced schoolteachers made invaluable contributions by helping to develop guidelines on classroom use of the toolkit by teachers.

The “Climate Box” program was launched in 2015 and in the first year, the Climate Box Toolkit was successfully piloted in 157 secondary schools in Russia. As a result,

over 11,300 school children have used the toolkit and around 500 teachers were trained and engaged into a new, innovative, and exciting learning process.

The initial success of the Climate Box in Russia, along with positive feedback from climate change experts and teachers and numerous inquiries from other countries, inspired the ambition to make it a truly international educational kit uniting children and teachers across borders. Consequently, the “Climate Box” was translated into English in 2015.

The Climate Box program has seen significant expansion, with several countries joining the program, developing localized versions, and piloting the Climate Box Toolkit in schools. The success over the years, marked by the following key milestones:

In 2016-2017:

- Kazakhstan, Kyrgyzstan, and Tajikistan joined the program.

In 2018-2019:

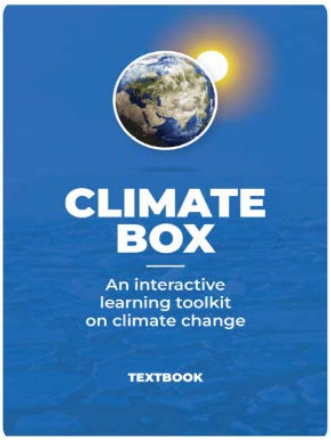
- Armenia, Moldova, Turkmenistan, and Uzbekistan joined the program.
- Moscow and the Yamalo-Nenets Autonomous District of the Russian Federation developed their own Climate Boxes.
- The program website www.climate-box.com was created.

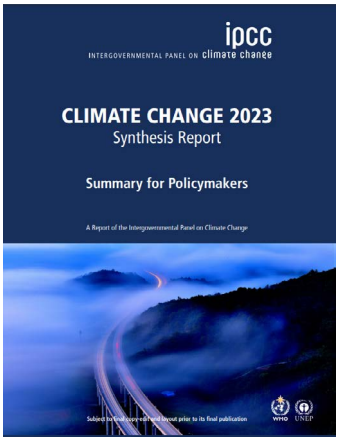
In 2020:

- Belarus and Serbia joined the initiative.
- The toolkit had reached over 60,000 students.
- Involved 3,000 teachers from 2,000 schools across all eight participating countries in Eastern Europe and Central Asia.
- Digital versions of the toolkit are available in 14 languages, including United Nations

In 2023-2026, the Climate Box program entered a new phase:

- in 2024 Climate Box toolkit was revised to include the most up-to-date information on climate change. This updated version features key findings from the Sixth Assessment Report (AR6) of the Intergovernmental Panel on Climate Change (IPCC) and incorporates feedback and recommendations from teachers and experts in the participating countries based on their experiences with the program.





- Thailand, Laos, and Vietnam joined the initiative, further expanding the reach of the Climate Box program.

The program directly contributes to the Sustainable Development Goal (SDG) 13 on Climate Action, and specifically sub-target 13.3 “Improve education, awareness-raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction and early warning”. The program also contributes to SDG 4 on Quality Education.

10 steps for the Climate Box program implementation

Below, you will find ten recommended steps and components essential for the successful implementation of the Climate Box program (Figure 1). Each step is further detailed in the sections that follow for better understanding. Please note that some steps and activities do not follow a strict sequential order and can be implemented in parallel (e.g., Step 4 'Adapt' and Step 5 'Train' can occur simultaneously).

Figure 1: Recommended steps for the Climate Box program implementation

STEP 1: Understand

At this first step, you will get acquainted with the Climate Box program. Afterward, managers and experts newly involved in the implementation of the UNDP program can receive initial guidance and support for the program's future implementation from the UNDP international program management team.

Climate Box program components

In general, the Climate Box program includes the following **main components** described in this guide:

- **Development of national versions of the Climate Box interactive learning toolkit** (Step 1) and its adaptation to the local context (Step 4).
- **Engagement with ministries, departments of education, academic community and civil society organizations** (Steps 2, 3, 8 and 9) to ensure the program's alignment with national educational standards and to foster collaboration among key stakeholders.
- **Training and engagement of teachers and educational experts** to equip educators with the necessary skills and knowledge to effectively deliver the Climate Box content, ensuring a high-quality learning experience for students (Steps 5 and 6).
- **Monitoring and evaluation of impacts** (Step 7) to assess the effectiveness of the Climate Box program, ensuring continuous improvement.
- **Youth contests and activities** (Step 8) to engage students in climate action through creative and competitive activities, fostering a sense of responsibility and innovation among the youth.
- **International conferences, networking, and knowledge exchange workshops** (Step 10) to facilitate the sharing of best practices, enhance international collaboration.
- **Support and oversight during piloting phase by UNDP** (across all Steps) aimed at ensuring that the program is effectively implemented, providing necessary guidance and adjustments based on real-time feedback and observations.

Climate Box toolkit

An interactive toolkit on climate change is the key component of this climate education program. It is an actual physical box with illustrated materials for students and teachers.

The toolkit was developed by a multidisciplinary group of authors, including climate experts, geographers, biologists, economists, educators, and professional children's book authors. Climate Box materials can be utilized by teachers and students of various ages. Additionally, the materials are suitable for a broader audience, such as university students, young professionals, or anyone interested in learning more about climate change.

The Climate Box Toolkit contains:

1. **Illustrated textbook** consisting of four Parts. The first three Parts provide information on climate change science, climate change impacts, as well as solutions, best practices and case studies from different parts of the world on how to reduce your carbon footprint and adapt to inevitable impacts of climate change. These three main parts are color-coded for easier navigation and, in fact, have a similar focus as the three volumes of the Climate Change report of the Intergovernmental Panel on Climate Change (IPCC). The Parts are structured into chapters, each focusing on distinct themes or topics. At the end of each chapter there are questions for knowledge checking, as well as tasks, practical exercises, and interactive games related to that section.

   The last part provides **methodological recommendations for teachers** on integrating the toolkit in the school curriculum or using it for youth activities.

2. **"Climate Quiz"** – a set of 100 quiz cards with questions and four possible answers with similar color-coding as the main sections of the textbook.

3. **Map** illustrating future climate change impacts.

4. **Poster** with recommendations on how to reduce the personal carbon footprint.

5. **Poster** "How to Adapt to Climate Change and Increase Resilience" (introduced since 2024)

6. **A Guide for Teacher Training: Capacity Building in Climate Change Education."** (introduced since 2020).

Figure 2: What is inside the box

The toolkits are already available in English, Russian, Spanish, French and Arabic languages, as well as in the national languages of participating countries. By 2024, Climate Box has been published in Armenian, Belarussian, English, Karakalpak, Kazakh, Kyrgyz, Romanian, Serbian, Tajik, Turkmen and Uzbek languages.

The Climate Box Toolkit (CBT) aims to engage a wide range of stakeholders in climate change education, fostering knowledge, understanding, and awareness of climate-related issues. While the primary audience of the toolkit is schoolchildren and teachers, it also extends its reach to other segments of society by providing tailored content and activities that suit their unique needs and roles in promoting climate literacy and informed action.

The main **target groups** of the toolkit are presented in a box below.

Main target groups
1. **Formal educational entities**: • School children and youth aged 7-18 years, • Teachers, educators and principals, • University students, particularly those in pedagogical fields
2. **Civil society organizations:** • Educational, art, and cultural organizations (e.g. libraries, museums, or cultural centers for youth); • Youth organizations; • Non-governmental organizations (NGOs) focused on related topics such as environmental protection, nature conservation, climate change, energy efficiency, renewable energy, sustainable development.
3. **Parents and general public** who can benefit from the program directly (using the toolkit, participating in program activities, students' projects) and indirectly (through positive climate impacts and increased awareness created by youth initiatives).

STEP 2: Team up

"In my view, one of the main reasons of the Climate Box success is a professional and passionate team implementing the program. Authors and educational experts who developed the original Climate Box for Russia, have been helping program teams in new countries. We all work closely together and occasionally meet each other at international Climate Box events using this opportunity to exchange experiences and brainstorm about new approaches to the program implementation. And we are always glad to welcome new teams from new countries joining our Climate Box family". ***Yulia Dobrolyubova,*** *Lead Author and International Technical Advisor of the Climate Box program.*

To successfully implement the program, assembling a strong and capable team is crucial. Based on our experience, the Climate Box program team ideally needs to include the following positions:

Climate Box Program Manager: This individual could be a representative of the UNDP country office, a local department of education, an NGO, or an academic institution willing to lead program execution at the national or sub-national level. The program manager will be responsible for overall management, including recruitment and procurement processes, as well as the supervision of hired experts or companies. Additionally, the program manager will coordinate with key stakeholders and ensure smooth communication and implementation. If program implementation is delegated to a subcontracted organization or individual, the UNDP country office can play an oversight role.

Educational Expert: This expert manages the application of the Climate Box toolkit to the existing national educational program, individual school subjects, and extracurricular activities. The educational expert must have strong knowledge of the national educational system and plays a crucial role in engaging the ministry of education, schools, teachers, trainers, and international experts. This role could be filled by a representative of the ministry of education (as in Turkmenistan), a local educational center or NGO (as in Kyrgyzstan, Moldova, Russia, or Serbia), an initiative-taking teacher, or even a school principal (as in Kazakhstan). Typically, this expert creates a team

of teachers to support the development of methodological recommendations and guidelines for effectively integrating Climate Box materials into the national school curriculum.

Climate Expert: This expert develops climate-related content for the localized toolkit (e.g., texts, questions, visual materials) and presents it to teachers at training events. This role is typically filled by an expert from a local NGO or an academic institution, or alternatively, by a team of subject experts.

Supportive Consultants or Companies: These individuals or entities handle specific tasks related to the program's implementation, including translation, language proofreading, communication, design and printing, event management, and other specialized services.

STEP 3: Engage

*"The Climate Box is a very accessible and well-prepared educational material on climate change that can be periodically updated to reflect new scientific developments. It is also open to additions and changes related to the national climate context. The toolkit can therefore be recommended for use by all countries". **Natalia Agaltseva**, Head of Project Preparation and Monitoring Department, Hydrometeorological Service Center of the Republic of Uzbekistan – a UNFCCC Focal Point in Uzbekistan.*

Key to the successful and widespread integration of climate education in schools is raising interest and securing support from government authorities. The most important stakeholders are typically the **ministry of education** and the **national ministry responsible for climate change** (e.g. Ministry of Environment). Engagement of at least one of these ministries, or ideally both, will provide the necessary political support for the program, including:

- **Endorsement of program activities** such as adaptation, publication and integration of the toolkit into school curricula, as well as the organization of training workshops, conferences and competitions.
- **Selection and nomination of pilot schools** and guidance on their participation in the program.
- **Assignment of educational and climate experts** for Climate Box adaptation and other related activities.
- **Provision of venues for events** (e.g., at state educational centers).

In some cases, national ministries may allocate additional funding for Climate Box if it aligns with national priorities and ongoing or planned state programs.

In **Tajikistan**, for example, Climate Box was included in the umbrella program implemented by the government under the International Decade for Action on Water for Sustainable Development, 2018-2028 – the topic that is of high priority for Tajikistan. Linking climate change and water topics helped to get an interest and an official endorsement for the Climate Box initiative from the Ministry of Education and Science of Tajikistan.

In **Uzbekistan,** the Climate Box program was initially linked to another UNDP project "Developing climate resilience of farming communities in the drought-prone parts of Uzbekistan", which has been executed by the Hydrometeorological Service of the Republic of Uzbekistan (Uzhydromet) – a national climate change focal point. Due to this, Uzhydromet authorities not only endorsed Climate Box, but were actively participating in adaptation of the toolkit to the local conditions and co-led training activities for teachers.

How to engage national/local governments?

Close collaboration with local educational and governmental authorities—such as the ministry or agency for education, climate change departments, and local authorities—is essential to secure endorsement and support for the Climate Box initiative. The main goal of this collaboration is to incorporate Climate Box materials into the general education system, ensuring alignment with local educational goals and policies.

It is recommended to organize a joint launch event to officially introduce and promote the Climate Box materials within the country and to facilitate the integration of climate change into education curricula. This event serves to engage stakeholders, showcase the initiative's importance, and foster ongoing support and participation in educational settings. The introductory workshop

provides an excellent opportunity to engage ministries. We suggest inviting governmental authorities to participate in events organized within the framework of the program so they can better understand the Climate Box toolkit and its benefits. By involving them in these activities, you can attract their attention, inspire them, and secure the desired political support while maintaining regular contact, providing updates, and ensuring continuous cooperation.

An effective approach to engaging ministries responsible for education and climate change is to include an expert on your team who has deep understanding and experience with the relevant governmental authorities. The UNDP office in your country can also assist in securing political support, as there may be already ongoing projects implemented by UNDP together with these ministries.

For instance, Moldova successfully obtained support and approval for the Climate Box activities in the country from the national authorities after a representative of the Ministry of Education and Research participated in the international teachers' conference organized under the Climate Box program and became familiar with inspiring success stories from other countries.

STEP 4: Adapt

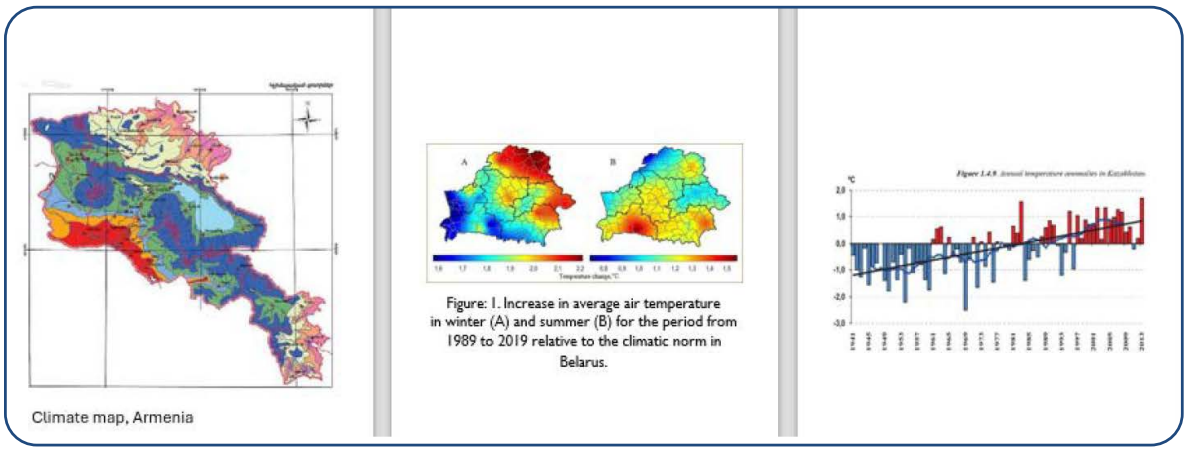
The toolkit, initially developed in English and Russian and later expanded into multiple other languages, provides a broad range of global cases and examples. Developing national versions of the toolkit involves not only translating it into local languages but also **adapting it to the local context** of each country, region, or city. This adaptation process includes incorporating more relevant examples for students and offering tailored recommendations for teachers, enhancing the toolkit's integration into the national school curriculum. To support this process, **"Design, Editorial, and Adaptation Guidelines"** have been developed to ensure that localized versions are consistent in quality and effectively meet the specific needs of each context.

There are various approaches to developing a locally adapted toolkit, with basic recommendations drawn from the experiences of eight countries that have successfully created localized versions. Typically, **localized toolkits have the following elements adapted**:

- A cover with the country's or region's title and a photo that better represents the country or region and its main climate-related challenges.
- A globe mascot featuring certain national elements in its appearance, such as wearing a traditional hat or holding a national flag.
- An introductory section presenting local climate issues and highlighting why climate education is particularly important in this context and acknowledging local partners of the program.
- Additional texts, examples, and visual materials in the textbook that highlight local impacts of climate change and the measures being taken to improve resilience and mitigate greenhouse gas (GHG) emissions.

Figure 3: Examples of different Climate Box cover designs from (left to right): Kazakhstan, Turkmenistan, Sebia and Moscow

- Additional country-specific questions at the end of the chapters, as well as tasks, practical exercises, and interactive games.
- Replacement of some questions in the quiz with country-specific ones.
- Methodological recommendations for teachers in Part 4 of the textbook, based on the national educational curriculum. This section can also be extended or become a separate guidebook for teachers within the toolkit.
- Translation of the text into national language.



To better meet local needs and inspire creativity, the localization approach remains flexible (see case studies below). Each local program team can determine the depth of localization based on their available resources and specific needs.

In general, the adaptation process could look as follows:

- Review a list of recommendations on adapting the toolkit content to the local context, along with a shortlist of typical updates (e.g., recent climate-related data) during the program's inception phase in Step 1.
- Examine hints, best practices, original design files, and terms of reference for local adaptation experts.

- Discuss with your program team the desired depth of localization. Consult with your climate expert (e.g., a research institute or local NGO) on the unique climate characteristics of your country/region/city to focus on.

STEP 5: Train

"Teachers are the ones to teach our future leaders: today's children. That's why training teachers is important. Comparing teachers between their first and second training sessions, I noticed that most of them already started to understand the climate change problem much deeper, but there is still more to be done. Systematic education and training, based on Climate Box, should be introduced to educate teachers about climate change." ***Elena Malts****, International trainer of the Climate Box program.*

One of the key components of Climate Box is a training program for teachers on climate education, aimed at building capacities to disseminate climate change topics. Through hands-on training sessions, participants can learn about climate change and how this topic can be integrated into various school subjects and extracurricular activities using the Climate Box toolkit. The training program was initially developed by a group of educational and climate experts from Russia and afterwards successfully realized in eight countries of Eastern Europe and Central Asia. In total, over 1000 teachers have participated in training sessions.

In each new country/region/city that joins Climate Box program, a team of experienced trainers conducts at least two trainings:

First introductory training is aimed at introducing the climate change topic and Climate Box program to the small (up to 30-40 people) group of from teachers of schools chosen for piloting the program (see Step 6), as well as representatives of relevant ministries, as well as academia and NGOs and educational experts. During this training, participants get acquainted with the Climate Box toolkit (international version), understand its contents and learn to apply the materials through interactive exercises. This coaching motivates participants to actively engage in the program and test international versions before a localized toolkit becomes available.

Furthermore, during this first training, the program local team has a chance to get first-hand information from the international trainers on success stories and lessons on program realization in other countries. This workshop facilitates asking questions and brainstorming on the best approaches.

It is recommended to organize the first introductory training after the main implementation partners for the piloting phase are engaged (Step 2), and it can be done in parallel with Step 4. Adapt.

Second in-depth training aims to present the developed localized version of the Climate Box toolkit to a wider group of teachers and other participants. This training provides deeper information on climate change science, local climate impacts (including gender and social aspects of the problem) and the global and local mitigation and adaptation measures. The participants are usually selected from the schools chosen for piloting.

During the second training, the participants learn how to develop typical classroom and extra-curricular activities on climate change using Climate Box. It can also serve as a platform to discuss results of the piloting phase (see Step 6 below).

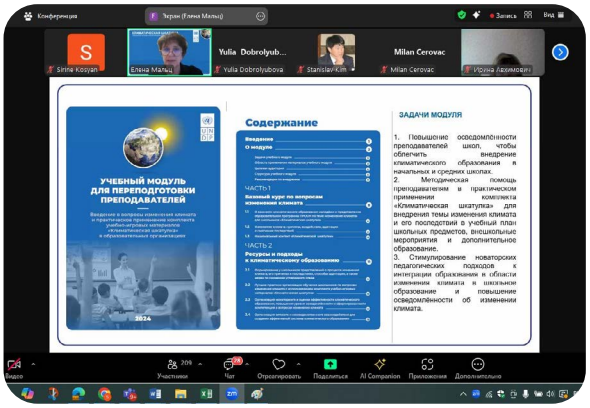
These workshops will feature interactive discussions, hands-on activities, and group work sessions designed to deepen understanding and application of climate change education methodologies. This collaborative effort aims to empower local educators and stakeholders to effectively implement climate change education initiatives tailored to their specific contexts.

Teachers and educational experts after participation in training sessions can then become trainers themselves, coaching newly involved in the program colleagues and facilitating training of teachers' workshops. This approach is crucial for spreading and scaling up the program, ensuring a wider reach and a more significant impact on climate education both within their countries and internationally.

Besides the basic training, it is important to support continuous training and guidance to encourage teachers to engage more actively in climate education by providing ongoing support and guidelines.

It is possible to organize online workshops to involve participants even from remote areas. To increase the effectiveness of online training, consider the following tips:

- **Engaging learning environment**: Keep participants involved during the sessions by encouraging participation through regular polls or interactive activities.
- **Increasing knowledge retention**: Use multimedia tools in well-designed online courses to impart information that remains with the participants even after the training ends.
- **Virtual rooms:** Split participants into virtual rooms for more active discussions and personalized engagement.



STEP 6: Pilot

"The Climate Box program is more than just an educational tool; it's a movement towards empowering the next generation with the knowledge and passion to address climate change. By equipping teachers with dynamic and adaptable resources, we are enhancing their ability to inspire students and foster a sense of urgency and responsibility. Together, we are cultivating a culture of environmental consciousness that will drive meaningful change for a more sustainable future." ***Armine Poghosyan****, Project Analyst/ Task Lead, UNDP in Armenia.*

With a motivated program team (Step 2), engaged stakeholders (Step 3), a localized toolkit (Step 4), and empowered teachers (Step 5) in place, you are now ready to begin piloting the Climate Box in your country/region/city. Keep in mind that adaptation and piloting are ongoing processes, and adjustments may be necessary as you progress.

The recommended steps for piloting are as follow:

- **Selecting a target group for piloting** (e.g. the region or the number of schools).
- **Enhancing Climate Education Using the Climate Box Toolkit by Integrating Topics into:**
  - **School Curriculum**: Introducing climate change topics into existing core subjects and lessons to build students' understanding of the issue.
  - **Extracurricular Activities**: Involving students in related initiatives beyond regular classroom lessons, providing more interactive and engaging learning experiences.
  - **Development and Realization of Projects**: Encouraging action on mitigation or adaptation by involving parents, local communities, other schools, or households in meaningful initiatives.
- **Evaluate the effectiveness of the pilot by assessing outcomes and collecting feedback.** Use this information to make necessary adjustments to improve the implementation of Climate Box.

Select schools and teachers for piloting

First, you need to select educational institutions – such as schools, educational and environmental centers and NGOs, libraries, etc. – that will spearhead the

Climate Box program at the local level. Schools selected for piloting should have teachers who have participated in the training-of-trainers workshops (Step 5) and understand how to apply the Climate Box program in schools.

The number of schools selected for the Climate Box program piloting typically varies from 10 to 30, whereas each school receives a set of toolkits.

Some countries (e.g. **Armenia, Tajikistan, Russia**) selected only schools in 1-2 core cities/regions for piloting. Other countries (**Kyrgyzstan, Moldova**) tried to cover all main regions of the country and identified pilot educational institutions in each of them. **Kazakhstan** partnered up with a network of progressive Nazarbayev Intellectual Schools and conducted pilot activities using their resources, reaching them out to their satellite schools.

Enhancing Climate Change Education

Pilot schools and educational institutions themselves decide how effectively to integrate climate education in their educational programs. Below, we provide a non-extensive list of possible approaches on how this can be done with the help of our toolkit. These approaches are introduced and explained at the training sessions (Step 5).

Table 1: Overview of possible approaches how to use Climate Box in climate education

Forms of education	Ideas of possible approaches
School Curriculum *(applying Climate Box and its materials into school curricula, specifically through classroom lessons*)	• Introduce a new comprehensive climate change curriculum • Develop individual climate classes or activities using examples from toolkit • Integrate climate change components into existing classes or activities • Team up with colleagues from other subjects to develop interdisciplinary classes (e.g. biology and geography)
Extracurricular Activities *(move outside the classroom)*	• Organize study tours and excursions, such as visits to low carbon project sites or unique natural landmarks. • Plan a subject week focused on climate change. • Develop activities for a summer or winter camp centered around environmental themes. • Arrange quizzes and contests related to climate change to engage students.
Development and Realization of Projects *(act on climate change mitigation or adaptation in communities, schools, or households)*	• Inspire and encourage students to take climate action beyond the classroom by actively participating in community or school-based projects (kids learn more when they are actively engaged) • Launch a project competition or encourage children to participate in similar contests organized at the community, regional, country or international level. • Organize community engagement activities explaining the benefits of climate action (e.g. lower electricity bills, contributing to a better planet)

Integration of Climate Box in School Curricula

Schools play a critical role in climate education as they equip young people with scientifically based common knowledge. Yet, climate change is not prioritized in most schools' curricula, and Climate Box aims to this gap by introducing climate change topics into existing core subjects and lessons to build students' understanding of the issue.

Climate Box was designed, in the first place, as a comprehensive climate education program for formal education that can be used either as a **stand-alone curriculum on climate change** or can be easily **integrated in different school subjects** – from geography and biology to mathematics, language studies and even physical exercise.

The Climate Box curriculum is flexible, offering a range of activities, experiments, and discussions that can be integrated into classroom lessons, as well as materials for individual use. **Teachers can adapt the Climate Box materials for their classroom context** considering their students' needs, interests, and capabilities. This flexibility of the program inspires new creative ideas that are beneficial for teachers, their students, and society as a whole.

Figure 5: Applying Climate Box materials into school curricula through classroom lessons.

Climate Box provides general recommendations for teachers on how to link climate change topics to the school curriculum, presenting samples for different subjects and various age groups, which can be found in Part 4 of the textbook. In localized versions, these recommendations are always adapted to the national school program.

In addition to general methodological recommendations on how to use Climate Box in different classes, **several examples of ready-to-use lessons** that have been developed by teachers from other countries are available in the program website. Based on these samples, teachers can create their own lesson plans and better understand how to integrate climate change topics into general education subjects.

SECONDARY EDUCATION					
Section in the Climate Box textbook	Programmatic and thematic content				
	Biology	Physics	Chemistry	Social Sciences	Safety basics
PART 2. How climate change affects the natural world and human beings. Can we adapt to the inevitable consequences of climate change?					
2.1. How climate change affects the weather	7th grade · Seasonal changes in the life of the plants. 9th grade · Dependence of human health on the state of the environment. · Environmentally conscious behaviour and behaviour in dangerous and emergency situations.	8th grade · Vapourization and condensation. Evaporation.	8th grade · Physical and chemical phenomena. · The water cycle in nature. 9th grade · Carbon cycle in nature. · Carbon oxides, their physical and chemical properties. Environmental problems associated with carbon monoxide, global climate change, greenhouse effect.	–	8-11th grades · Meteorological emergencies: storms, hurricanes, tornadoes, torrential rains, hail, frost, heat. · Possibilities of forecasting, warning, mitigation of consequences. Informing and alerting the population about emergency situations. · Rules for safe behaviour. Consequences of meteorological emergencies. · Evacuation of the population in emergency situations, the procedure for the population.

Figure 6: Fragment of a table in Part 4 of the Climate Box textbook providing guidance on how climate change topics can be integrated in the existing national formal education program.

"Climate Box presents a wonderful set of visual aids and useful information that we can use in the classroom. Some topics and posters, such as "reducing your carbon footprint," can be used with younger students - this encourages students from an early age to think about saving resources and energy. The older students are very interested in the scientific information presented by Climate Box", ***Maya Batyrova*** *who uses Climate Box to teach geography and economics at the Secondary School No.27 in Ashgabat, Turkmenistan.*

Extracurricular Activities

While classroom lessons are essential, extending climate change education into extracurricular activities can drive real change. Climate Box supports various activities that engage students and deepen their connection to environmental issues.

Figure 7: Engaging school children in extracurricular activities.

For instance, schools can organize subject weeks dedicated to climate change, invite field experts to share their knowledge and experiences, or hold debate sessions on climate change challenges.

Competitions and quizzes can make learning interactive, providing opportunities for students to test their knowledge, participate in art and essay contests, or develop innovative climate solutions.

Outdoor activities offer hands-on learning experiences. Students can engage in nature walks to understand ecosystems, participate in tree planting days to contribute to climate mitigation, or join eco-friendly cleanups to promote environmental stewardship.

Study tours and excursions provide real-world connections, such as visits to renewable energy facilities, recycling centers, or nature reserves. These trips help students see the practical applications of their classroom learning.

Guides and methodological recommendations for extracurricular applications of the Climate Box education program, including project-based approaches, are available on the Climate Box website. These resources offer practical insights and strategies for implementing effective initiatives, along with detailed examples of successful extracurricular activities and projects from various countries, showcasing diverse approaches to climate education. These initiatives aim to significantly reduce greenhouse gas emissions and enhance resilience to climate change.

Development and Realization of Projects

"Each country sticks out in my memory for a special and unique climate project, motivated by students, science, and my work as a consultant for Climate Box. These projects, led by teachers, are, in my opinion, the most essential legacy of Climate Box. I am convinced that, over time, implementation of these projects will play a significant role in the fight against global climate change". ***Danila Sorokin,*** *International trainer and coordinator on the international youth contest under the Climate Box program.*

Projects on climate change offer unique opportunities for innovation and impact by addressing real-world challenges with creative, hands-on solutions. When students become intrinsically motivated and engaged in projects, they develop a valuable set of skills along the way. To drive meaningful action, climate education needs to inspire and mobilize local communities. Therefore, we encourage every Climate Box practitioner to emphasize this crucial component and motivate students to take proactive steps toward shaping their own futures.

These initiatives not only enrich students' learning experiences but also positively impact local communities (see also Table 1 "Overview of possible approaches").

Organizing contests at various levels—such as school, regional, and national—can further amplify student engagement and foster a sense of competition and achievement. These contests can include creative art and essay competitions, innovative science challenges, and environmental impact projects. Moreover, students can benefit from participating in contests organized by external organizations, which offer additional platforms to showcase their work and gain recognition. By engaging in these external contests, students not only have the opportunity to compete on a broader scale but also contribute to a wider network of climate action initiatives, thereby enhancing community involvement and support for environmental causes.

Below, is a non-extensive list of successful out-of-classroom activities already implemented by the youth, thanks to the Climate Box:

- In **Armenia**, Climate Box has inspired the development of biogas reactors based on waste from a rabbit farm;
- In **Kazakhstan**, students grew herbs and composted food waste directly on school grounds;
- In **Kyrgyzstan**, a project reused battery cells, which reduced the demand and thus the emissions associated with battery waste management;
- In **Moldova**, school students found similarities between the chemical formula of a specific type of plastic and honeybee wax that can be used as a natural substitute;
- In **Tajikistan**, a project improved waste management and reduced emissions thereby;
- In **Uzbekistan**, youth introduced drip irrigation to complement the country's desalination projects.

The implementation of such projects is one of Climate Box's greatest achievements since projects on a grassroots level are essential to combat climate change in the long run.

Figure 8: Engaging school children in project development.

STEP 7: Monitor and Evaluate

Climate Box program provides a convenient system and accompanying tools to monitor and evaluate achieved results of the program's activities. The **Climate Box Monitoring and Evaluation (M&E) system** tracks the effectiveness of the program implementation in terms of trained children and teachers on the one hand, and actual impacts on climate change mitigation and adaptation in terms of **a) reduced GHG emissions and b) improved resilience/knowledge of climate risks** at schools and at household level (see Figure 8) on the other hand. While these monitoring tools are primarily intended for program managers, they can also be utilized by others who implement climate change education programs using Climate Box.

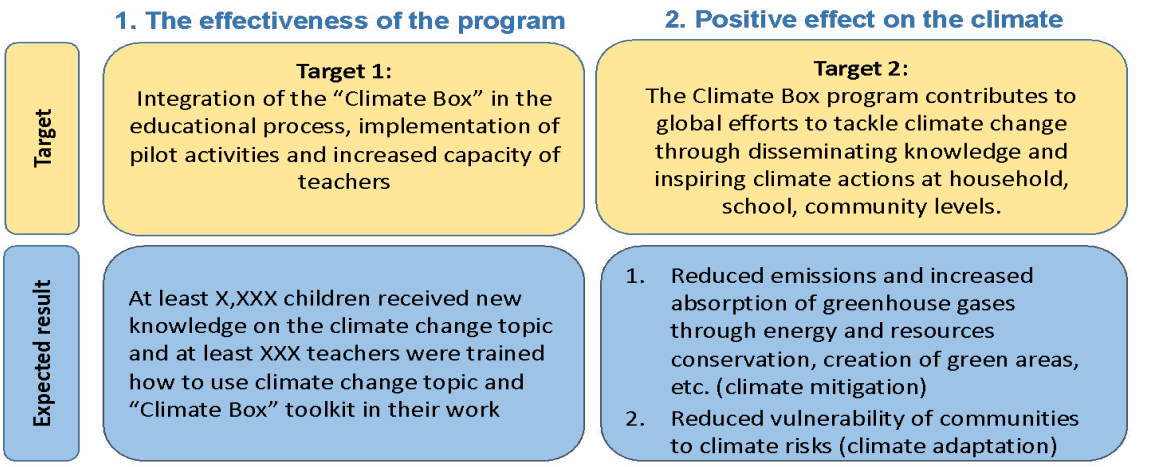


Figure 9: Main targets of the Climate Box program to monitor and evaluate

There are two approaches to monitoring climate change education:

Target 1: Immediate educational outcomes. This simpler method focuses on quantifiable metrics and immediate educational outcomes. It involves:

- **Tracking participation:** Monitoring the number of children, teachers, and schools involved in the program.
- **Assessing knowledge acquisition**: Using pre- and post-tests to measure the knowledge gained by students and teachers. This approach provides clear, straightforward data on the reach and educational impact of the program.

Target 2: Assessing impacts on climate. This more complex method aims to evaluate the broader and long-term impacts of climate change education. It involves:

- **Impact on GHG emissions and carbon footprint**: Assessing how the education program contributes to reducing greenhouse gas (GHG) emissions and influencing participants' efforts to lower their overall carbon footprint. This includes monitoring changes in behavior and practices that lead to sustainable lifestyle changes and reduced emissions.
- **Adaptation practices**: Measuring the adoption of climate adaptation strategies, such as improved resilience to climate risks at schools and households. This approach requires more sophisticated data collection and analysis methods to capture the indirect and long-term effects of climate change education on the environment and communities.

To effectively monitor and evaluate the impact of climate change educational initiatives, it is essential for schools involved in the program to collect specific data. Schools should record the number of students and teachers participating in the program, as well as document the number and types of events conducted, such as training sessions, workshops, and extracurricular activities.

To monitor the impact of climate change education, it would be essential if teachers could also gather data on impact of climate education on changes in energy-saving behaviors, such as turning off lights and unplugging electronics, and estimate how these actions reduce greenhouse gas emissions. Additionally, teachers should assess increased awareness of climate risks and knowledge of adaptation measures among students and record the use of new technologies introduced by the program. Monitoring changes in daily habits and advocacy efforts, including how students share information and encourage others, is also important. Furthermore, it would be greatly appreciated if teachers could collect participant feedback to evaluate key takeaways, preparedness for climate change, and suggestions for program improvement.

Establishing a systematic approach to collecting this information from schools is vital. This will ensure that data is consistently gathered, accurately reported, and effectively used to measure the program's impact on both mitigation and adaptation outcomes. By implementing a robust information collection system, we can make informed adjustments to enhance future program phases and ensure their continued success.

The tables below suggest how to monitor and assess the achievement of these two targets.

Table 2: Approaches to monitoring and evaluation of the program's targets

Target 1: How to assess overall program effectiveness?				
Result	**Indicator**	**Target**	**Evaluation method**	**Information collection method**
At least XXX children have acquired knowledge of climate change through the program.	Number of children who received knowledge	Defined by the country	Quantitative	Teachers' reports on conducted lessons / activities
	Improved level of knowledge	Above average (determined by the country, e.g., scoring at least 75% on tests)	Qualitative	Tests and surveys for children and summary results in teachers' reports
	The quantity and quality of children's projects		Quantitative Qualitative	
At least XXX teachers were trained how to use climate change topic and "Climate Box" toolkit in their practical work	Number of teachers	Defined by the country	Quantitative	Events registration lists
	Improved level of knowledge	Above average	Qualitative	Feedback forms at the end of the events
	Number of lessons and other events	Each teacher determines	Quantitative	Teachers' reports on conducted lessons / activities
	Format and content of lessons		Qualitative	

Target 2: How to assess impacts on climate?				
Result	**Indicator**	**Unit**	**Evaluation method**	**Information collection method**
Greenhouse gas emission reductions or increase in their absorption (mitigation)	The impact of the youth projects on energy and resource efficiency improvement	Energy savings, kW*h/year	Quantitative	• Calculations performed by students with teachers • Questionnaires for children and parents • Teachers' summary reports
	The impact of energy conservation measures at home, school, in the community	Emission reductions or increase in their absorption, CO_2e / year from baseline		
Reducing the vulnerability of communities (especially rural) to climate risks (adaptation)	The effect of the implemented project works of students on adaptation	Number of people with knowledge on adaptation measures	Quantitative	• Questionnaires for the target audience through youth projects • Questionnaires for children and parents • Teachers' summary Reports
	The effect of measures in the home, school, community	Number of people who have taken adaptation measures		

The M&E system enables collection of data and information from program participants at different levels to be eventually consolidated at the country and international program level. The main levels of the M&E system, as well as information and data processes are explained in the Figure 9 and Figure 10 below.

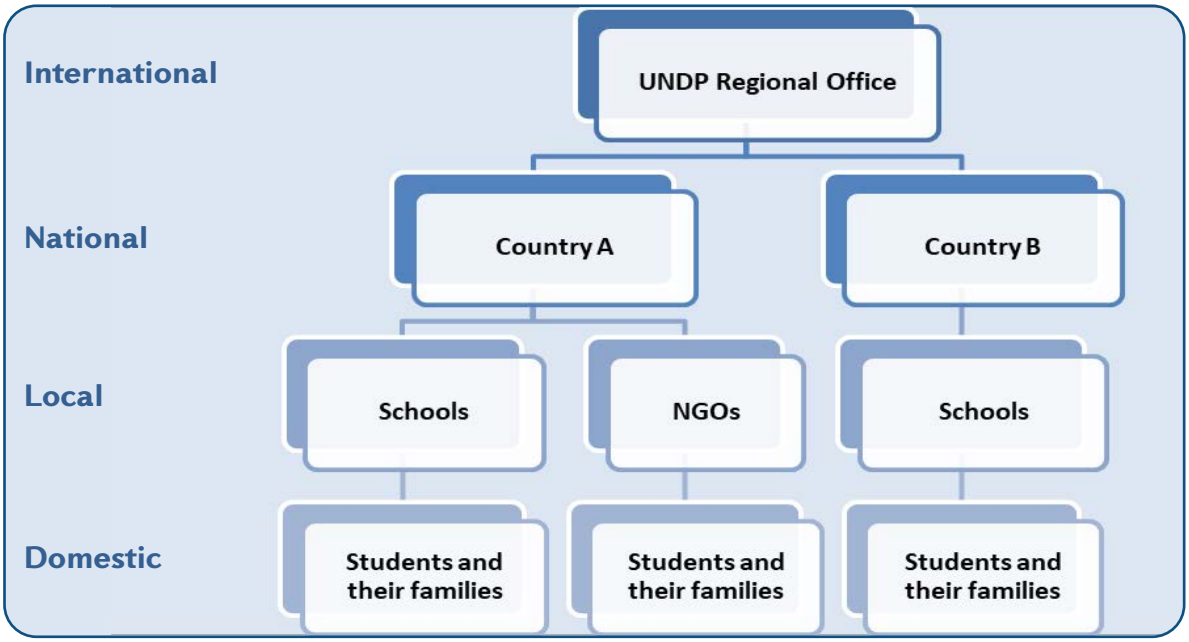


Figure 9: Levels of monitoring and evaluation system

Category	Tasks	Frequency
Children	• Complete tests and surveys to validate their understanding. • Provide feedback from community members benefiting from their projects. • Include climate impact calculations in their project outcomes.	As required by teachers
Teachers	• Develop and administer tests and surveys for students. • Support students in projects and assist with impact calculations. • Submit summary reports to the UNDP Program Manager in the country.	Min/ once per quarter/ trimester
UNDP Country Office	• Review information submitted by teachers and request additional data if needed. • Compile and forward summary reports from the country to the regional office.	Quarterly/ Trimester
UNDP Regional Office	• Standardize reporting formats across countries. • Review information submitted from various countries. • Prepare summary reports for donors and external communication.	Quarterly/ Trimester

Figure 10: Information and data flow

It is essential to maintain effective communication with the teachers and schools involved in the pilot phase and develop a structured approach to collect data on the activities carried out, including the number of students directly or indirectly involved and other relevant metrics. This system will help monitor progress, assess the impact of the initiatives, and identify opportunities for improvement.

To help the participants to understand their roles within the M&E system, we provide:

- **the main guidance document** and the accompanying PowerPoint presentation offering a thorough explanation of the M&E process. They detail the objectives, main tasks, components, and levels of the M&E process, along with the roles and responsibilities of different actors, including program managers, teachers, school students, and their parents. Additionally, the resources outline the periodicity of reporting and the specific data that needs to be reported, ensuring clarity and consistency in the implementation of the M&E system.

- **standardized tools** and **templates** to collect and report data at each level, which can be easily adapted to specific local needs.

- **learning session / webinar opportunities** with the UNDP staff to learn how to use the M&E system.

The M&E system was developed through interactive discussions and working sessions with the program's participants from various countries: representatives of ministries, school principals and teachers, parents, NGOs, and program managers at the national and international levels. It therefore contains practical recommendations from various stakeholders' viewpoints and has been piloted in the first countries that joined the program.

STEP 8: Share and Partner

Once the piloting phase is over, it is a good time to give the program participants an opportunity to share their experiences and impressions. **Knowledge sharing activities that you can organize** with the support of the Climate Box program include, but are not limited to:

- conferences, workshops and round tables for teachers and educational experts;
- youth conferences and festivals;
- competitions among teachers and students;
- communication and awareness activities (see subsection below).

Do not forget that you can also **share the results of your work through the M&E system** explained in the previous Step 7. Thus, your achievements will become visible at the international level.

Apart from schools, civil society organizations such as NGOs, environmental or educational clubs play an essential role in non-formal education. They are quick in responding to society's needs and can organize outdoor activities that are more attractive and engaging for school students compared to in-classroom lessons. Furthermore, they usually have resources and networks to support communication and awareness campaigns, helping to "spread the word" about Climate Box and engaging the wider public in the program's activities. Thanks to supporting NGOs, young people in the participating countries have become more proactive on climate actions and developed exciting projects on energy efficiency, waste recycling, or sustainable water management for their local communities.

This is why partnering with civil society organizations is important, and is initially recommended at the piloting step.

*"The role of civil society is essential for informal education. Our NGO, for example, will use Climate Box materials to develop new education and awareness initiatives – together with other local partners – that will further encourage young people to engage in climate change actions, particularly practical projects that help communities to adapt to or to mitigate climate change", **Iuliana Cantaragiu,** National Environmental Center in Moldova.*

Outreach and communication

To reach as many people as possible and involve them in implementation of the program, you can use several communication channels to deliver your key messages, to promote the Climate Box in your country or region, or to disseminate knowledge on climate change education. Instead of a one-way communication, we suggest maximizing interactive activities with target groups (particularly with students and teachers), which will increase the likelihood of active involvement.

Before exploring possible tools and channels, consider the following general principles for effective communication strategies[1]:

- Make messages personal and relevant;
- Always be upfront and honest;
- Give the initiative a 'face': share stories, appeal to emotions and aspirations to inspire students and teachers to use the "Climate Box" and encourage stakeholders to support its dissemination;
- Encourage consistent messaging across the communication program;

The teachers involved in the program in Armenia created Facebook page "Climate Box", aimed to share:

- Regular updates on the Climate Box program
- Latest news and developments in climate change
- Educational materials for teaching climate change
- Resources for educators and students
- Events and workshops related to climate change education
- Testimonials and success stories from participating educators
- Tips and strategies for integrating climate change education into curricula

[1] Hints derived from United Nations Development Group (UNDG).

- Communicate early, often, massively, intensely, repetitively, and persistently;
- Focus on the positive and give immediate reinforcement, broadly share praise and rewards.

The following Table 3 presents possible key channels for communication and outreach.

Table 3: Possible communication and outreach channels

Key Channels	Possible Actions
Presentations and meetings *(face-to-face meetings and events)*	Teachers, experts or UNDP representatives can present Climate Box at: • Conferences/workshops including relevant stakeholders (teachers, educators, NGOs, research institutes etc.); • Regional environment and climate change events.
Contest, campaigns, festivals for youth *(move outside the classroom)*	• Participate at national and regional competitions for school students (e.g. best projects, photos, painting, essays) related to environmental topics; • Participate in campaigns or festivals concerning clean energy, biodiversity, environmental protection, and other relevant topics.
PR events *(increase outreach I)*	Either to launch Climate Box as an outreach event or you could team up with national or regional authorities and link the event to one of the below-listed international environmental dates (or check for key local environmental dates). • 3 March: World Wildlife Day • 22 March: World Water Day • 22 April: International Mother Earth Day • 22 May: World Biodiversity Day • 5 June: World Environment Day
(Mass) media *(increase outreach II)*	• Contact press, TV, radio – and online platforms that are focused on education, science, or youth; • Consult with your UNDP country office to explore detailed communication/media plans and determine if they can support the dissemination of Climate Box Toolkit.
Social media *(outreach III and interaction)*	Social media platforms are cost-effective tools to communicate to the general public and youth. Most importantly, they allow us to interact with users. • Create a special group to facilitate effective communication and information sharing with teachers and schoolchildren. • Share infographics, events, and stories and encourage your followers to comment; • Use polling-tools to receive feedback; • Launch social media competitions to interact with your community.
Websites *(outreach IV and information)*	Upload information to the Climate Box program website use websites of partner organizations and educational platforms to promote “Climate Box” (websites of UNDP, UN CC:Learn and others). • Consider launching your own national/regional website.

STEP 9: Scale-up

*"I like that the program is constantly developing, with new participants joining from different countries that provide different national context. New materials are being developed for teachers and children, and international events are taking place. Climate Box participants are planning to expand the program to bring climate change education to all people in their countries, helping to create a new worldview for everyone", **Elena Malts**, International trainer of the Climate Box program.*

After the piloting phase of the program, the key questions that the program team shall address are **how to ensure program's sustainability** and **how to scale up climate education** across the entire country or region so that more schools and students get access to relevant knowledge.

Below, we have summarized a few recommendations for you. Some of them have already been mentioned under the previous steps:

- **engage the national ministries of education** that will provide the necessary political support and can help in making Climate Box and climate education part of the national education program (and other targeted programs) (see also Step 3);
- **engage sub-national (e.g. municipal or city) authorities** to disseminate Climate Box toolkits and information about the program local level;
- **partner with civil society organizations** that are interested in promoting climate (or broader, sustainability) awareness and education and may have additional funds for it (see also Step 8);

- **link climate education to other ongoing or planned donor programs** in your country/region, which often have capacity building or awareness components;
- **submit proposals to national (and international) public or philanthropic funds** supporting climate and educational activities. UNDP team in your country may help you in preparing joint funding proposal;
- **seek potential sponsorship from private companies** in your country that could provide financial support for scaling up the program.
- **organize contests** and **various awards for proactive teachers** and educational practitioners who crate best climate classes, activities, whose students develop best youth projects, etc.

The local governments of Moscow and Yamal-Nenets regions of Russia are great examples of how the national Climate Box initiative has been embraced by local authorities, who have not only supported localization of the original toolkit for the local needs, but also hosted teachers' conferences, youth contests and supported other climate education activities in their regions. Note that the original version of the toolkit for Russia was developed with the support from the Coca-Cola company under its "Every Drop Matters" initiative. Another example is Wintershall Holding GmbH from Germany that provided funding for localized toolkits for the Arctic regions of Russia.

STEP 10: Connect

"During the summer camp in "Orlyenok", Russia, where I participated thanks to the Climate Box program, I have learnt a lot, studied interesting aspects about energy saving, and met with very interesting people. And I'm extremely glad that I will be able to use this knowledge in the future," ***Serdar Chariyev*** *(16, from Turkmenistan, and a participant in the climate-themed international summer camp in Russia 2019).*

Climate Box has already united over 50,000 students and 2,300 teachers from 8 countries and counting. Soon, the program will step outside its "home region" of Eastern Europe and Central Asia with new regions and countries joining, and updated toolkits in different UN languages coming up.

Figure 11: School students from different countries at a climate-themed summer camp in Russia

An important – but also joyful and rewarding – exercise to do is to connect to other climate activists within the Climate Box program and beyond. In this last section, we present previous events that brought people together and united the world-wide effort on combating climate change. Since climate change has no borders – and climate education shouldn't have either – we want to encourage you to reach out to other schools, NGOs, teachers, school students, and other climate warriors across the globe. Perhaps you learn from each other and get inspired in a fight that is affecting every individual on planet earth. In the following, we first present exciting Climate Box activities. We then advise how to increase outreach and how to connect to other institutions.

What international activities Climate Box can offer:

- **International conferences and workshops on climate education and awareness for teachers and educators** provide a great platform to meet colleagues from other countries, exchange experiences, successful and innovative methodological approaches, and learn about the most recent science behind climate change from leading experts.

- **International competitions among teachers** to showcase the best educational methods.

- **International contests for students** to demonstrate the most interesting and successful examples of climate action in practice.

- **Thematic youth camps.** One prominent example is a climate-themed international summer camp held in Russia's Krasnodar Region in June 2019, where around 100 students from nine countries across Eastern Europe and Central Asia gathered for three weeks to exchange ideas and develop action plans on climate change.

- **Video-bridges** with schools from other countries to learn more what your peers are doing for the climate in their region.

- **Participation in regional and global climate change events**, such as United Nations conferences to join the global movement for climate action.

- **International knowledge sharing platforms for teachers and youth** to connect, learn from each other, and get inspired (under development).

Find out more: www.climate-box.com