

Learning about Forests (LEAF)

Outdoor Education activities for schools,
using nature as a classroom



Credits

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Foreword



Nikos Petrou
FEE Board of
Directors (LEAF)

In 2009, the number of city dwellers surpassed the number of people living in rural areas for the first time ever, and the gap is steadily growing wider. In our increasingly urbanised world, the “nature deficit disorder” that American author Richard Louv described in his book ‘Last Child in the Woods’ in 2005, referring to the disconnection of children from nature, is more and more common. Many children today, at least in developed countries, know nature through their screens, from documentaries and films. They may be familiar with exotic animals in faraway continents but they have no experience of nature close to home, they have not walked in a forest, they have not picked up a fallen branch and gotten their hands sticky with pine resin.

Twenty years of implementation have established LEAF as a well-respected programme for project-based learning, and a powerful tool to counter this.

LEAF help bring children to nature and provide the direct exposure that is essential for healthy development and for their physical and emotional wellbeing, as well as instill a sense of respect for, and ownership of their natural surroundings. It can increase understanding of the natural world through direct experience, evoke a sense of wonder at the complexity of forest services and the role they play in our well-being, strengthen social responsibility, collaboration, critical thinking, leadership and innovation, and, ultimately, empower children to play a role in the conservation of forests and biodiversity around their homes and communities.

The great strength of LEAF is its international family, the people, the national operators and teachers that work tirelessly to design and implement imaginative, exciting projects and actions, including: involving parents in the forest committee to strengthen relations between children, teachers, management and the whole school community; investigating the levels of awareness regarding forests by evaluating the local and national forest situation; tree-planting drives to improve forest cover; reforestation degraded areas to harvest water and tackle water scarcity; establishing vegetable farms and tree nurseries to provide food for students or income for renovating the schools; informative excursions through the forest with experts; using “smart” insects as a biological agent to prevent insect damage to trees and restore ecological balance; and many, many more.

This is their voice; these are their stories..

Nikos Petrou

Preface

Learning about Forests' vision is to see an increased level of awareness and knowledge about the key role forest ecosystems play on our planet. Through its pedagogical process, the programme helps reflect on all the functions forests fulfil; cultural, ecological, economic, and social. Understanding the balance between these functions is crucial when studying how humans can interact sustainably with forests.

The LEAF programme rests on the belief that children need to experience nature both for themselves and for society as a whole. Over half of the world's population now lives in urban areas, a fact that strengthens the need to connect with nature even more. A growing body of research in the education field suggests that outdoor learning has many benefits on an educational as well as on a personal level. Furthermore, connecting with nature from an early age has a great effect on children's sense of responsibility for the environment that surrounds them.

LEAF provides opportunities for fieldwork and follow-up of the classroom sessions, especially in science and geography. The significant life experiences the programme provides help in retention as long-term memory and facilitate the transfer and application of knowledge back in the home environment.

Experiential learning in the outdoors impacts all dimensions or pillars of learning as suggested by UNESCO:

Learning to Know – Combining a broad general knowledge with the opportunity to work in-depth on a small number of subjects.

Learning to Do – Acquiring not only occupational skills but also the competence to deal with many situations and to work in teams.

Learning to Be – Developing one's personality and being able to act with growing autonomy, judgement, and personal responsibility.

Learning to Live Together – Developing an understanding of other people and an appreciation of the interdependence of biotic and abiotic components of Planet Earth.

The programme extends learning into the community. The school grounds greening projects have the potential to engage local communities and advance social development through service-learning. This leads to the development of positive relationships, not only of the children with each other and their teachers but also with the wider community.

This publication contains twenty-three examples of activities that have been implemented all over the world through the Learning about Forest Programme. By collecting and sharing these stories we aim to promote outdoor education inspiring schools and teachers on how to use nature as a classroom.



Nicole Andreou and Pramod Kumar Sharma

BELGIUM



Caroline Bosteels
GoodPlanet Belgium vzw

A Nesting Forest in your Neighbourhood

School: Group of schools

Age groups: 2.5 - 12 years old and adults

OUTREACH

- Min. 100 groups a year (students, supervisors or teachers)
- During a specific project with Minor Ndako, 56 vulnerable youngsters and children co-created and played in the Nesting forest

Students were able to enjoy and appreciate playing out in the forest. A better communication and connection between students and teacher was observed while being in the forest. Given the problem solving and active participation of the students in the activities, teachers became more keen to outdoor learning opportunities.



A Nesting forest, or *Nestlebos* is built in a forest. Ideally, a *Nestelbos* is very varied: with water features, open terrain, a dense forest, etc. It is located in a forest, a place in the middle of nature that is spacious but demarcated, so that the children can experiment and move freely from one 'nest' to the other. Here children can play, romp, relax, but always with respect for nature. In different places in the forest, which can also be called 'nests', children can develop various skills in playful ways: building and carpentry, working with mud, making music, playing theatre, and developing their interests and qualities. Where necessary, additional plants and trees are planted and invasive exotic species are removed. Working in a *Nestelbos* means that you have to take care of it. In addition, during the warm periods, while the streets, squares and the often still concrete playgrounds can be really hot in the summer, children enjoy the shade in the forest, or the sun shining through the trees. People and organisations from the neighbourhood participate in creating, maintaining and off course enjoying the forest. By building this bond with nature, children/youngsters realise just how important it is to protect forests.

"Normally, Jan (13 years old) never gets ready on time. When I arrived in the community this morning, he was ready to leave for the Bellenbos."

”

Teacher, Jan's supervisor

The Nesting Forests project provides an opportunity to reconnect with nature, using as a classroom, and do so regularly. The teachers can observe, join the students' games and offer them the freedom to discover the area themselves. In Affligem, Belgium, the first educational 'Nesting Forest' was created, called Bellenbos, and consequently, the plan is to create more nesting forests across Belgium, with the idea that every child can play freely and can find calamity and peace in a forest nearby, with their families, or with their class. In Bellenbos, which is 0.6 hectares of the area, there is a stream and a water hole, which makes this place even more valuable. One can look for aquatic life, experiment with the current, etc. In the process of discovering the natural environment and participating in activities, the children not only learn to respect nature and its beings, but also each other, which ultimately builds their social skills through playing, working and dealing with conflict together. Children's curiosity allows them to look for possible solutions, where trial and error are possible and a 'must'. Children also learn to deal with their thoughts, behaviour and emotions to be able to control them more effectively. Playing and learning in the forest also gives an extra boost to the sensory and motor development that is so much needed throughout our digital age.

BELGIUM



Children, to the surprise of their teacher, bloom in the forest, making contact with other children, creating goals for their daily lives connected to the forest. Children develop skills of resilience, respect for one another, problem-solving, and self-management. Caroline Bosteels reflects on her experience, "as a kindergarten teacher with more than 10 years of experience, I wanted children to reconnect with nature, and offer them a place where they can fully experiment, explore, learn through play or find peace where necessary. After all, this is what children need, but unfortunately often do not find in regular education. From that idea arose the 'Nesting Forests (Nestelbossen)". In different places in the forest, which can also be called 'nests', children can develop various skills in playful ways: building and carpentry, working with mud, making music, playing theatre, and developing their interests and qualities.

"There was a child, a 6-year-old refugee who had only just arrived in our country. In class, she was always withdrawn, she made little contact. However, she found an owl's cape in the Bellenbos. When she put it on, she changed: she flew around the whole forest, made contact with everyone, it was really beautiful to see."

Caroline Bosteels, GoodPlanet Belgium vzw

How do the "Nesting Forests" work in Belgium?

To visit a Nesting forest, schools can register via a tool on the website. They can indicate which days/period they prefer, after which a schedule is drawn up. They are also asked in advance for specific topics that can be addressed, things that are important in the group, etc. When (class) groups come along, there is always at least one supervisor present, depending on the size of the group. A Nesting forest is not freely accessible, but can only be visited under supervision. This is for practical reasons: each Nest in the woods is completely transformed and provides an educational approach in its own playful way. If one could freely enter and leave the forest, it would be impossible to be able to prepare everything for the group activities. For regular class groups, this is an average of 15 to 30 children who come along for half or full day. When working with vulnerable children, groups are smaller. In future nesting forests, there is a need to experiment with more autonomous, but secure ways of opening the forest for groups, with training for supervisors and a system to register.

"If you are sad and you come to the nesting forest, you will soon be happy again!"

Student, 10 years old



BRAZIL



Ricardo Cerruti Oehling
Network Environment Institute

A Transformative Outdoor Experience!

School: EMEF Elvira Paolilo Braido

Age groups: 9-10 years old

In September 2017, 9-10 year-old students from the EMEF Elvira Paolilo Braido school, along with their teachers, visited the Mauá Ecological Park located in Jardim Itapeva. The aim was to help students experience and understand the water source of the Tamanduateí river and give them a true experience of the local water cycle. The students had a guided visit, explored the park, walked on the trails and visited the cave where the spring that acts as a source of the Tamanduateí river is located. They felt a connection to this environment and the local forest, as they saw how it breathes and transpires and how important this is in regulating the earth's climate.

The Tamanduateí River is a tributary of the Tietê River, one of the biggest rivers of São Paulo State, which gets highly polluted as the course of the river flows through urban areas. By visiting the cave where the source of the Tamanduateí river is located, students were able to appreciate how clean and pristine the water flowing from the spring is and how much human activities impact water quality downstream. As they walked around with their lanterns, students were impressed with the change of temperature in the environment, and the setting itself created a mystery for them; a sense of curiosity and great admiration for the site.

OUTREACH

- 56 students
- 4 teachers
- 3 instructors from the Ecological Park

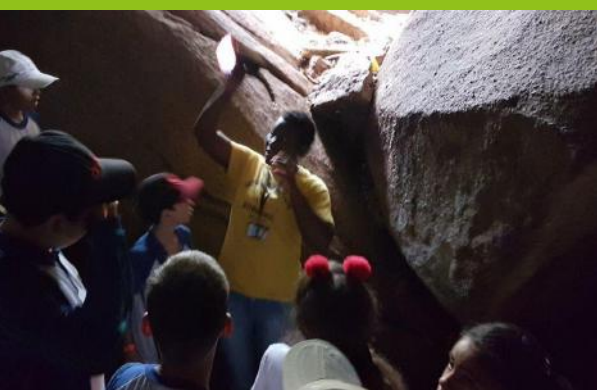
Through this outdoor experience, students have acquired knowledge about the water cycle and the impacts on water quality impact due to human activities. Being able to learn all this outdoors surrounded by trees and nature made this experience truly valuable and unforgettable for all the participating students.

"Visiting the forest and the cave was a very exciting and valuable experience for the students. It was the kind of learning experience that you would never experience inside a classroom, and that creates long-lasting memories that students are likely to remember forever."



Ricardo Cerruti Oehling, Network Environment Institute

The highlight of this outdoor learning activity was to provide students the opportunity to learn about the water cycle, the impact on water quality due to human activities, and the role of forests in regulating the local climate while being surrounded by trees and nature. Students felt in their own skins the cooling properties of water, touched the moist leaves from the vegetation and experienced the true smell of the forest.



BULGARIA

Stanimir Georgiev
Bulgarian Blue Flag Movement

Learning from Nature!

School: Stoyan Mihaylovski School, Varna

Age groups: 6-19 years old

OUTREACH

- 1000 students
- 30 teachers

Participating students, realised about the importance of forests and the precious connection we have with them. When visiting the local forests, students not only experienced enjoyable moments, but also learned along every step of the way. By the end of the school year it became clear to everyone that forest protection is a supreme duty.

The Stoyan Mihaylovski School in Varna, Bulgaria, decided to investigate the levels of awareness of the forest benefits and its impacts. The school conducted a survey among the students at the beginning of the academic year to study the level of awareness of the Bulgarian forests and the different aspects that can impact their health and balance, e.g. climate change, biodiversity loss, as well as student's own behaviours.

Throughout the school year, different activities were carried out, which helped to raise students' awareness as reflected by the school's survey. The activities included: visits to local forests, learning about the indigenous herbs and medicinal forests plants as well as exploration of the local forests vegetation and fauna. These outdoor activities were complemented with classroom activities and student debates about the problem of deforestation, the types of forests around the world and its protection mechanisms, as well as the climate change impacts and the students' transportation carbon footprint.

"We learned from the most valuable textbook - nature! And created pleasant and profound experiences. The world's most pressing problems resonated in the classrooms and knowledge of the forest enabled students to make responsible decisions within their daily lives, reaching a higher level of ecological maturity. With their future actions, they will contribute to a better future."

Rumyana Georgieva - LEAF School Coordinator

Through one of the activities, students found that their transportation carbon footprint needed to be reduced. To supplement this activity, students produced short publications where they explained the carbon footprint concept, and published it on the e-newspapers "Ekosvyat" and "Fakel", as well as on the school's website and social media. At the end of the year, the survey was repeated, and results showed how the students' awareness levels on the forest's importance and its impacts had increased overall.



CYPRUS

Michael Lerides
Cyprus Marine Environment Protection
Association

Path of Nature!

School: IAMATIKI Primary School

Age groups: 6-12 years old

OUTREACH

- 63 students
- 10 teachers
- Members of the community council, the regional communities and parents

Through this project, students have acquired knowledge about the endemic plants of Cyprus, and specifically became acquainted with the local flora of the school area, and even biodiversity references in songs, myths and traditions.

The IAMATIKI Primary School is situated in a fantastic natural environment surrounded by a forest. The possibility of an action project at their own location seemed to be an ideal activity for the students to engage in learning about their surrounding environment.

The LEAF Committee, based on their own needs assessment, decided to create a natural path of approx. 1000 square metres on the west side of the school. The only existing building in the area was a Meteorological station, which was surrounded by trees and shrubs, and the project was designed so that the station could become a hub for learning. The students and their teachers created thematic stations in the path, which included the topics of Flora of Cyprus, Local Endemic Fauna, Study of the Meteorological Station, and Benefits of Local Endemic Species. And the development began! The area was cleaned, and the path was designed and constructed. Thematic stations with environmental activities were organised for all student ages divided into groups, who then had to pass through these stations carrying out various environmental activities. These stations gave all students the possibility to study the natural and cultural context of the area.

"This activity gave to the students a hands-on experience of nature stewardship. The students were thrilled and their parents very proud."



Elias Elia, Teacher at IAMATIKI Primary School

Students learnt about the connection between the weather and climatic conditions in the area, the benefits of endemic species like the pine, olive and carob tree, as well as how they themselves have an impact on the local biodiversity. Through their magnifying lenses, students could observe the microcosm that exists in a very small area, measure the height of a tree, as well as calculate the age of a tree. They also learnt to use a compass to orientate themselves, and how to locate the neighbouring communities and cities and various monuments of the region.



CZECH REPUBLIC



Jan Froněk,
TEREZA Educational Centre

Lockdown Treasure Hunt!

School: Ostašov Primary School

Age groups: 6-7 years old

OUTREACH

- 287 students
- 40 teachers and assistants

Students were exposed to fun activities outdoors, where they were able to explore their natural and school surroundings and appreciate their local community. They were also able to express their gratitude creatively and connect with their teachers.

During the first Covid-19 lockdown in the Czech Republic in the spring of 2020, teacher Daniela Stastna felt the need to supplement online learning with some real-life learning. And so she did!

All first-graders (aged 6-7) at Ostašov Primary School received an email with a map. Each student had a personalised map and questions about their surroundings, spring flowers and a black stork who nests nearby. Children were able to add place-specific observations to their maps and in the process learnt to use the map of the area by learning and playing outdoors.

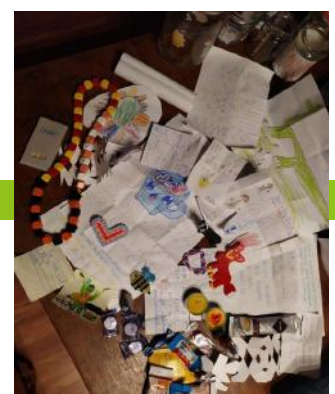
On the second day of the activity, teachers hid a little treasure - a glass jar! - within a distance of 100m from each student's home. The children again received instructions on how they could find the treasure, and took pictures of it when they did, along with some flowers they could identify nearby. When the second activity was concluded, students were asked to hide a treasure themselves for their teachers to find!

"I'm trying to entertain my kids and their parents and fill their "empty moments" with joy and expectations of what comes next."



Daniela Stastna, Teacher at Ostašov Primary School

Their treasures as received by teachers included sweet letters expressing their gratitude for the activity and outdoor learning. In the process of this activity, the students learnt to appreciate their surroundings, improved their observations of nature, were creative and also involved their parents.



ENGLAND



Lee Wray-Davies
Keep Britain Tidy

Environmental Education a Phoenix!

School: Honey Pot Garston Nursery

Age groups: 0-5 years old

OUTREACH

- 555 students
- 85 teachers

The project showed children how they are connected through the difficulties that they faced and how to connect with other nations - turning a positive into a negative they were empowered to help themselves and others.

Honey Pot is a group of 5 nurseries in Liverpool, England. Children spend a large part of their nursery days outside in all weather conditions, and each child is supplied with full weatherproof clothing. Adopting a holistic approach to learning, each Honey Pot has an amazing mud-kitchen, following an intense staff competition to create the best one across the four sites. The children are also given gardening equipment, which they use during weekly gardening sessions with 'Flowerpot Sue' (a local gardener). The children love these sessions and have become very green-fingered growing their own fruit and vegetables, which they then use in their cooking classes. Children are also taught to look after their environment through tidying up after themselves and others by completing regular litter picks in their nursery grounds. All the children at each of the Honey Pots take care of their school grounds and are very proud of them!

Back in 2019, a fire broke out at Honey Pot Garston Nursery and all their eco-activity materials and work were destroyed. Staff at each of the Honey Pot nurseries wanted to turn this negative into a positive, by using it to educate their young children and connect with their local communities. Each of the nurseries asked their communities to donate toys and games that Honey Pot Garston could use in their temporary home.

"This programme is so important to implement in our schools around England. It gives practitioners and teachers the tools to be able to teach students these important values and lessons that they can use in their lives as they get older."



Teacher, Honey Pot Garston Nursery

Later in the year, when the Amazonian fires were reported in the news, children at each of the Honey Pots sprang into action as they had a real-life understanding of just how devastating fires can be! A fundraising day was held for the Amazon, with children wearing animal masks and talking about how animals would feel if they lost their homes.



FINLAND



Sirpa Kärkkäinen
Finnish Forest Association

A Week Long Vacation in the Forest!

School: 40 schools from Helsinki

Age groups: 11-12 years old

OUTREACH

- 830 students
- 61 teachers
- 40 schools

Students participating in the Forest Games learned about the different functions and benefits their local forests provide. Through thematic hands-on activities students enjoyed the opportunity of being outdoors while getting to know forest experts.



After getting inspiration from the Swedish Forest Week, LEAF Finland along with other local partners, decided to develop a model that gives students the opportunity to visit their nearby forests and do so in a meaningful and intensive manner. The Finnish Forest week takes place annually in the Tuusula municipality, close to Helsinki and LEAF Finland was proud to celebrate its 20th edition in 2020. A number of activities are designed, taking place over a week's time, with a timetable that gives students a holistic forest experience.

In the last Forest Week in September of 2020, students arrived at the forest by bus. Once in the forest, they visited eight checkpoints where they carried out different forest thematic activities. At the checkpoints, over twenty specialists from different organisations were ready to guide children through different forest themes such as harvesting and planting, understanding biodiversity, the carbon cycle and forest species, as well as discussions around environmental rights. At the end of the different activities, students organised their own picnic by a campfire.

"I learned that old and rotten trees are important for the forest and its fauna. I learned that from cutting a tree to make paper you need a lot of skilled people. You [LEAF Coordinators] are all heroes!"



Participating Student

The Forest Week aims primarily to increase students' understanding of the different forest functions, but also give them an opportunity to learn to appreciate the functions and benefits forests provide us with. A positive impact on students' knowledge was observed through pre-activity and post-activity surveys, and both teachers and students were able to provide feedback and suggestions. According to the 2020 Forest Week feedback, students enjoyed the possibility of being outdoors and being able to talk to different forest experts. Teachers on the other hand, seemed to appreciate the way their students were able to learn and reflect on sustainability issues connected to the forest. Students were able to understand the interplay of humans and nature, and had the opportunity to do so while enjoying being out in nature.

"A lot of thanks! Rarely do I see my pupils so happy!"



Camilla Hurskainen, Teacher at Staffansby school

GREECE



Theodora Polyzoidou
Hellenic Society for the Protection of
Nature

Forest Action for Climate Change Mitigation (FACCM)!

School: 15 schools in 4 countries

Age groups: 10-18 years old

OUTREACH

- 2653 students
- 23 teachers
- 16 educational activities

The project has encouraged positive experiences outdoors, developed a positive attitude towards the environment and our forests, and helped students develop a general curiosity about nature and human interaction with forests.



This project emerged as an initiative to fulfill one of the principles of Environmental Education, to think globally and act locally. LEAF Greece had been thinking for a long time about an educational project that would involve neighbouring National Operators in achieving common goals; a project that would enable them to cooperate and share resources, especially at the regional level, where NGOs are affected by similar circumstances and face similar challenges.

When the opportunity arose, through a cooperation with Tetra Pak, fifteen schools in Bulgaria, Cyprus, Greece and Romania came together to work under the theme of 'Forests and Climate Change'. The main objective of the project was to inform, raise awareness and encourage students, school communities and local communities on environmentally responsible behaviour, aiming to combat the causes and the consequences of climate change and its various impacts on forests.

Four principle themes defined this project and engaged students on some of the most pressing forest-related issues of our age. Participants learned about the role trees play in supporting biodiversity, providing a source of renewable energy, their increasing susceptibility to fires as well as their ability to heal the damage they cause and ultimately the role trees can play in climate change by capturing atmospheric carbon dioxide. The main activities under the project included: a three-day educational conference; the development of educational material connected to the theme of forests and climate change, as well as joint action days between the four countries and wide dissemination to the school communities.

"The Forest Action for Climate Change Mitigation Project inspired and empowered me as a teacher. I realised what "united we stand, divided we fall" means and that combating Climate Change could be done in a fun and engaging way for children and adults alike."



Stamatis Skampardonis, Participating Teacher

By gamifying the study of climate change, the FACCM project actively addressed the problem of carbon dioxide emissions through fun and engaging activities, such as playing with lego bricks and card games, which educated students on the actions that result into carbon emissions (i.e. tree cutting) and carbon capture (i.e. tree planting). Some of the hands-on activities the students participated in included identifying trees in their schoolyards and making calculations on the amount of carbon dioxide that could be stored by those trees, calculating their own ecological footprint, and visiting a burnt forest to understand the impacts of wildfires.

IRELAND



Rachel Geary
An Taisce Environmental Education Unit
Ireland

A Tiny Forest brings LEAF to Tertiary Education!

School: Mary Immaculate College
Limerick, Ireland

Age groups: College students

OUTREACH

- 60 students and teachers
- Local NGO representatives
- 200 trees planted in 2021

As the *Choill Bheag* matures, nature trails can be developed and students can learn the necessary skills to maintain, monitor and study this essential ecosystem in their college grounds. Everything they learn through this process can be incorporated into workshops in their future teachings.



It was back in October 2018, when a group of third-year college students studying Geography and Global Learning at Mary Immaculate College Limerick, Ireland, met with LEAF Officers, Ray Foley and Rachel Geary, at Coillte's Curraghchase Forest Park. Their lecturer, Dr Anne Dolan, was keen for her students to learn about the LEAF programme and encouraged these soon-to-be-teachers to bring their own students outdoors and reconnect with nature.

LEAF Ireland continued this work with Education (B.Ed) students in engaging them in outdoor education training. Over the past two years, the college students were introduced to the LEAF programme and were given a brief history of Curraghchase Forest Park. LEAF then hosted a workshop, where students were introduced to different ways the outdoors can be used to carry out classes across all curricular areas. The workshop included a session on Irish native and non-native tree species, explored the theme of Forest and Products, as well as a sample of forest-related activities that can be carried out either in the classroom or outdoors.

As part of this project, a Tiny Forest is to be planted on college grounds for the first time! An *Choill Bheag* (Little woodland) is an initiative of LEAF Ireland, based on practical sustainable tree planting and long-term woodland and ecosystem education, management and practical skills. Mary Immaculate College Limerick is planting a small, dense, biodiverse native woodland on the college grounds, intended to become an outdoor living classroom with sitting spaces created so that classes can take place in nature.

“The workshop with LEAF was extremely beneficial. We learnt about the native trees in Ireland through hands-on learning experiences. We looked at different leaves and branches of different trees also. Personally, prior to this workshop, I did not know about native trees to Ireland. This workshop built my confidence in teaching about forests, as I learnt about the different trees and plant life in a non-intimidating way. I was not afraid to ask questions. Also, the cross-curricular opportunities of learning outdoors were evident as we measured the age of the trees on campus.”

3rd-year student, Mary Immaculate College Limerick, Ireland

IRELAND



Training the new generation of trainers!

Many of these soon-to-be teachers had very little confidence around the idea of bringing their own students outdoors and into nature. After just one LEAF workshop, it was evident how much more relaxed and confident they felt, knowing they did not have to be environmental or forest experts themselves. They participated in numerous activities connected to the curriculum and that could easily be implemented outdoors, e.g. measuring the age and height of trees, nature-based artwork, history, geography etc. The Web of Life activity was demonstrated to ensure students not only understood the ecological web, but also the interplay between human and nature - a crucial lesson to transfer back into their own outdoor classrooms when they graduate!



"This was an enjoyable session. I liked the way that the outdoor environment was brought inside through the inclusion of the frogspawn, small plants and nature trays. I think, visually looking at these items made the session engaging. I really liked the idea of the nature trays for investigations. In mine, I had a toy bird, a tree leaf and an insect which a person could see on an everyday basis. As a result, identifying them and looking closer at these items with the magnifying glasses was more meaningful."



I have taken away new information for teaching and have noted a range of resources, e.g., the LEAF Ireland website and the Wild Things at School book. The session also reinforced the power of the nature table, which was always there in my primary school growing up and is something that I want to have in my classroom in the future."

3rd-year student, Mary Immaculate College Limerick, Ireland



KENYA



Alvin Sika
Kenya Organization for Environmental Education

Engaging Schools to Address National Environmental Targets!

School: Migwani Secondary School

Age groups: 12-19 years old

OUTREACH

- 800 students
- 35 teachers
- 500 trees planted
- 2000 trees distributed to other schools

Students were able to understand the link between trees and humans, e.g. through agriculture. They reflected on the benefits of trees, talked about the efficient use of natural resources and their management, and developed empathy towards nature when planting and nurturing the trees.



Kenya's forest cover is currently about 6%, which is below the 10% recommended by the United Nations. Schools located within the Arid and Semi-Arid Landscapes (ASALS) have for a long time, battled with constant water shortages both for drinking and cleaning, increased soil erosion brought about by bare and rocky lands, increased heat due to low forest cover and poor dietary, especially fruit distribution. To find solutions, Kenya Organization for Environmental Education (KOE), partnered with a number of local organisations to mobilise 20 schools located within Kitui county to carry out tree planting activities and help raise awareness on natural resource management.

As part of the project developed by KOEE and its partners, Migwani Secondary School was able to plant over 500 tree seedlings and distribute another 2,000 seedlings among other participating schools to be planted in their respective school grounds. The tree planting activity was used as a launchpad for a tree-planting drive in Mwingi West Constituency and the wider Kitui county, and as a strategy to contribute to the improvement of the Kitui county forest cover, water conservation and awareness on climate change mitigation and adaptation.

"Trees are our greatest friends, but can become an enemy if not well managed. Our forefathers found food, water, peace and shade by nurturing trees. If we really care about our land and the future of these children here, then let's help protect their future, by giving them a better environment than the one we have today."

Evans Kyalo, Local Authority Representative

The ecological web between forests, water towers, climate change and soil erosion was well illustrated to the students. With most learning often taking place within the classroom, the activity provided students with an outdoor experience where each student was able to plant a tree, enjoy the beauty of nature, and realise the human impact on both environmental degradation, but also conservation through positive action. Aspects such as employment through nature conservation, agriculture and water availability were also highlighted to create awareness on green job opportunities.

During an action day event connected to the project, participants had the opportunity to hear about sustainability initiatives connected to conservation work. Some of the participating schools carried out performances in the form of poems, music, dance and speeches on water management, forest conservation, sustainable waste management and natural resource management.

Forest Expeditions!

School: Group of schools

Age groups: 12-14 years old

OUTREACH

- 5376 students
- 465 teachers
- 111 employees of JSC "Latvia's State Forests"

The forest expeditions give children a better understanding of how to work together, understand and respect each other and respect nature. The teachers also learned to provide students with opportunities for independent learning, and allowing them the chance to observe, reflect, and find solutions independently and in their teams.

The JSC Latvia's State Forests expeditions emerged in response to the schools' great interest in forests, their restoration and tending. Formerly, such activities were called Forest Days, when groups of students came outdoors to plant a new forest. It later became clear to the participants that the most important thing was not the size of restored areas, but the involvement and interest of students in the forests and the work that is done in them. Many valuable ideas for implementing Latvia's State Forests expeditions were adopted from LEAF Finland. The overall main objective of the expeditions is to give children an opportunity to be in the forest, in nature, while learning something new.

The forest expeditions take place annually in eight regions across Latvia and in three specific designated areas. The event location is important as it should ideally be a forest in which it becomes possible to observe all its development stages - from cleared areas or cut stumps, to young tree stands, to fully grown and mature trees. Forest expeditions are an exciting adventure, where in ten exploratory stations, students get acquainted with the forest management cycle and look at the forest from a forester's perspective, together with forestry experts.

"The expedition was an opportunity to explore the forest through practical activities and teamwork with some fresh air; an opportunity to ask questions, make campfires, observe, and acquire new knowledge on forest management and taking care of the forest. A wonderful connection with Science subjects!"



Forest Games Participating Students and Teachers

Each student is provided with a pencil and a little workbook, and they then perform a number of practical tasks, such as measuring the height of trees, determining the age of young trees, identifying the presence of wood in everyday objects, getting to know forest pests and understanding the need for sunlight in the forest much better. The joint construction of a wooden bridge without using any additional fastenings is one of the students' favourite activities!



MALTA



Johann Gatt
Nature Trust FEE Malta

A Wall That Heals!

School: Group of schools from Gozo

Age groups: 4-16 years old

OUTREACH

- 24047 students
- 4310 teachers
- 62 schools

The project presents tangible opportunities not only for inquiry-based learning but also for the holistic development of the students. The art of patience which children seem to be losing very fast in a society that glorifies instant gratification or the art of perseverance, lately riddled by the onslaught of the dragging pandemic crisis, to name a few.

Involving students in outdoor activities from a very early age not only ensures ownership of the project, but also allows them to be involved in decisions that affect the future of their environment. This was the intention of The Xrobb I-Għagin Nature Park boundary wall project. The project aimed at rewilding the perimeter wall of Nature Park, located in the Xrobb I-Għagin peninsula in South-East Malta. As part of the rewilding and rebuilding of the perimeter wall, the eye-sore wall was demolished, and a more nature-based wall with native plants and shrub species was constructed.

The new wall includes a 1 km long stretch of a low level 5 course wall using weathered recycled limestone. The new wall will also include two meter-long planters where native coastal plants and shrubs from the Xrobb I-Għagin peninsula will be planted. Schools will take cuttings from established plant communities around the site, grow them in the schools and then plant them in the planters on the newly built perimeter wall. The idea behind the use of native species cuttings is that native coastal garrigue plants and shrubs are already acclimatised to the site's natural conditions and thus, they stand a better chance to thrive.

Opportunities for collaboration, social responsibility, critical thinking, leadership and innovation are critical benefits of this project. These 21st-century skills equip children with some of the competencies they will need to deal with the challenges they will face now and in the foreseeable future.

"The education I wish I had in my school years, this is excellent!"



A Social Media Follower

The Eco-Schools and LEAF students from 50 schools will be responsible for the upkeep, propagation and planting of the shrubs and plants cuttings. A total of 500 planters with 3 to 4 coastal garrigue plants/shrubs to accommodate 1500 to 2000 plants/shrubs cutting are being planned at this stage. In the future, 2000 additional plants/shrubs are to be raised from seeds. The whole project is being implemented with the supervision of the perimeter wall architect and the Nature Park outdoor learning educator.





Jannette Karina Campos Vara
FEE Mexico

Oaks Reproduction for the Sacred Water Forest!

School: Escuela Secundaria Técnica Agropecuaria Number 56 Enrique Ramírez and Secundaria Técnica Number 19

Age groups: 11-16 years old

OUTREACH

- 800 students

The students take serious responsibility for their future, they are reforesting the forest, which will improve the water harvesting function and help to address the regional water scarcity issue. In the process, they get to educate their families and inspire others to take action. They also understand the conflicts of interests that arise between the environmental role oaks play in the forest and the economic value of their wood.

Since 2012, schools participating in FEE Mexico's educational programmes have been working with the idea to reforest and harvest water in the biological zone called "sacred water forest Ajusco-Chichinautzin", one of the last central forest zones in Mexico. Because of the economic value and solidity of the oak wood, deforestation in the area has become a serious problem. Given the important ecological role that tree roots play in facilitating water infiltration and the aquifers recharging, schools decided to lead an oaks reforestation project in order to tackle the water scarcity issue.

The goal of this reforestation project was to collect and grow acorns, teach students about the fragility of the forests, as well as the environmental services forests provide. Every year, since 2012, 800 oaks are grown and planted in the Mexican sacred water forest Ajusco-Chichinautzin. Thus, each year, 800 students receive an acorn, which is later planted during a big campaign organised and led by the schools. Regenerating the forest offers a clever and sustainable solution to the water scarcity problem by increasing the forest water harvesting capacity at the highest zones of the sacred water forest Ajusco-Chichinautzin. The schools have become leaders within the local communities, so the environmental activities that the teachers implement are well received among children's families. Since 2012, participation has increased dramatically, alongside a growing sense of environmental inheritance and a good collaboration between different generations.

"Students learn about the importance of protecting their surrounding environment and ecosystems as part of an educational process that touches upon the SDGs and aims to educate global citizens connected with nature."



Jannette Karina Campos Vara, FEE Mexico

Every January, when students collect their acorns they need to carry out some basic tasks, like cleaning and preparing the acorns in aluminium and towels, where they are able to grow roots. Students need to monitor their acorns regularly, water them if necessary, or add cinnamon to avoid bacteria or fungus growth. When the acorns have rooted, the students prepare temporary pots using recycled plastic bottles and prepare the soil with compost and vermicompost. Thereafter, the seedlings are planted in temporary pots with soil and the students and teachers take care of them until they are strong enough to be planted in the forest. The process also includes of taking care of the trees includes watering them, adding nutrients, cleaning the leaves and preparing an organic mix to deal with diseases. Students then take the trees home and every family must take care of the assigned tree and return it to the school when it is time for planting. In June, the trees are ready to be planted and the whole school takes part in the reforestation process.



NETHERLANDS



Daan Bleichrodt
Stichting IVN

Tiny Forest Muziekplein!

School: OBS de Ridderhof in Utrecht

Age groups: 6-12 years old

OUTREACH

- 600 students
- 40 teachers
- 15 volunteers

Students learnt how trees grow and develop, how to maintain a forest, how to organise an excursion, and how to carry out outdoor research. Children took responsibility for the future by planting trees and experienced the influence they can have on nature. They learnt all about the web of life in their own Tiny Forest!



Tiny Forest is a popular concept in the Netherlands. In 2017, an insurance company asked IVN to create a Tiny Forest near a train station in Utrecht Terwijde. The nearby school was also contacted and it joined the LEAF Netherlands programme. The Tiny Forest project was seen by the nearby school Deputy Director as a very exciting idea! Turning a parking lot into a forest was a great learning opportunity for the school students.

A Tiny Forest with an outdoor classroom was created on the Muziekplein, in a space that used to be occupied by a parking lot. The transformation was done in cooperation with the municipality, local retailers, an insurance company, the local community and the Ridderhof Primary School. After trees were planted, Stichting IVN helped the school set up an outdoor education programme. Teachers were trained, a couple of guest lessons for the students were given and an independent curriculum for the 4 to 12 year old students was developed so that at least every class at the school could carry out one outdoor lesson each month and learn everything their Tiny Forest had to offer. The main themes covered in the Tiny Forest project were biodiversity, community and climate change. Mathematics and language lessons were also created for students to learn while being outdoors in their Tiny Forest classroom.

"On the planting day, children get a tree tag and can make up a name for their tree. One girl named her tree Cheeseburger. On one of our guest lessons, kids were given the assignment to find their tree and measure the growth, as compared to the planting day. After measuring I heard this quote: 'Wow, look how much cheeseburger has grown. He is already 2 meters long, that's taller than my dad!'"

Daan Bleichrodt, Stichting IVN

Planting your very own forest can be an unforgettable childhood memory, and that is the feedback that LEAF Netherlands received from every child joining the programme. Students planted trees (in most cases, for the first time in their lives) and they monitored the forest in terms of biodiversity, soil ecology and temperature. Groups of students became the forest rangers for a month and maintained the forest, organized excursions for parents, teachers and local neighbours.

"This is definitely one of the most powerful projects I have ever done with kids in the city."

Daan Bleichrodt, Stichting IVN

NORWAY



Anna Lena Albertsen
Forestry Extension Institute

Forest Games as a Pedagogical Method!

School: 91 Norwegian Schools

Age group: 10-years old

OUTREACH

- 1971 students
- 120 teachers
- 91 schools

Every year, participating students enjoy and explore their local forests, while engaging in activities that help them to reflect on the interplay between humans and nature. Students are also encouraged to reflect upon environmental issues such as dealing with forest garbage.

Each year, LEAF Norway experiences the amazing work done by all the participating schools through the Forest Games. The Forest Games is a national competition organised every year in January, in the middle of the Norwegian winter where 5th graders (10-year old students) are invited to participate. The Norwegian Forestry Society invites students out for active learning in the forest. Every year, around fifteen schools qualify for the Forest Games finals, where they meet and compete in both practical and theoretical tasks at the National Forestry Museum.

Students highly enjoy the competition while they deepen their understanding of the Norwegian local forests by working with some of the LEAF themes, such as Forests Products and Biodiversity. Students spend a day in the forest, where they take part in "The Path of Ponder". Upon their arrival, one of the first activities the students are asked to participate is to take a picture of either something new, weird or exciting. This activity aims to encourage students to explore and observe their local forests. After participating in this photography activity, students together with their teachers can choose between different tasks, such as carrying out a local investigation at the forest and presenting their findings to another class, exploring the advantages and disadvantages of using wood as forest product, creating bird nesting boxes while coming up with of a bird-related research hypothesis, or plotting forest garbage discoveries on a map and creating an environmental plan for the local forest.

"How can we assist schools throughout the whole country? How can we encourage them to use their local forest, not only for hiking and playing but also as a "classroom"? LEAF Norway has joined forces with local partners, and together with Hamar Nature School, came up with the idea of the Forest Games."

Anna Lena Albertsen, Forestry Extension Institute

All the assigned tasks are in accordance with national curriculum goals, and teachers are responsible for the pedagogical methods employed. The main goal is to give students some tasks and ideas, but then also give them the freedom to accomplish the tasks for themselves. Pedagogical and digital resources for the schools are offered and all the schools receive individual feedback on their Forest Games work.



ROMANIA



Nicoleta Marilena Militaru
Teacher

Poems to Nature!

School: Liceul de Arte "Ionel Perlea"
Slobozia

Age groups: 17-18 years old

OUTREACH

- 25 students
- One poems publication widely disseminated

Students became motivated to take part in environmental related projects, and became more selective with the information sources they use with regards to nature, forest and the environment. They have developed a certain level of critical thinking skills that will benefit them the most in the next period of their lives.



The project "Poems to Nature" at the Liceul de Arte "Ionel Perlea" Slobozia school was organised around four domains of interest: literature, foreign languages, science and drawing. Students wanted to visit the central park in their town to discuss different problems they encountered. As the park has some green areas with trees, students also wanted to use the opportunity to talk about the importance of green spaces and forests in our lives, and the fact that urban areas should protect green spaces and not let them be replaced by concrete.

The central park has some space arranged with tables and chairs, which children saw as an opportunity for other students to have lessons in parks and other green areas. Students decided to create some materials to promote nature and forests by using literature and drawings to draw attention. The class was divided into smaller groups and together, they wrote poems and translated them into different languages: English, French, Italian, Spanish and Chinese using online dictionaries. Then, they drew different sketches to be used as illustrations.

Students also celebrated International Poem Day by presenting their poems to other students together with their findings from their trip to the town central park. They also created two games about plants and pollution to make younger students interested and more aware of environmental problems. Students became more motivated to take part in environmental-related projects and became more selective with the information sources they use with regards to nature, forest and the environment. They have developed a certain level of critical thinking skills that will benefit them the most in the future.

"LEAF is a project which really opened the perspective of what an interactive class should be about. Although at the moment we are living in a period which might not be ideal for group activities, I am looking forward to the times in which the next generations of our school will discover the connection they can establish with nature and society while learning to work in teams. I was truly inspired by these activities and I have decided to continue with my volunteering activities in the period to come as a university student. This project definitely helped me understand this humanistic perspective and I am more interested in the ecosystem and what we can do in order to protect them and prevent their degradation."

Carmen Ștefania Damian, Student

ROMANIA



"Poems to Nature" a poem publication that draws inspiration from nature

"Poems to Nature" is an original creative material, 100% created by students, which includes poems in 6 languages and original drawings. The National Library of Romania approved the material, and it received a publication code. In the end, Poems to Nature became a resource all the the students were really proud of.

"I think children do not spend enough time with their families doing activities like these and this is why schools and a programme like LEAF can help to make up for the lack of outdoor education activities. We believe small steps are required if we want our students to be able to make their own decisions regarding different environmental issues. In the end, we believe that an informed child is a future responsible and aware adult."

”

Nicoleta Marilena Militaru, Teacher



My forest, you have
secrets
Even the leaves
whisper
to you
Under a wave of
farewell
I know that only you
understand me

Up the crippled hill
Today the forest
revivified
Green emerald
grass
The warm
suns ray

"When the pandemic period prevented us from working face-to-face, my students wanted to continue working and they did not want to stop from delivering their ideas. We moved to Zoom where we had meetings talking about nature and how human activity impacts it."

”

Nicoleta Marilena Militaru, Teacher



RUSSIA



Nina A. Petrova,
Supervising Teacher

Changing for Life!

School: MAOU Experimental Lyceum
Research and Education Complex

Age groups: 10-18 years old

OUTREACH

- 1000 students
- 12 Russian regions

The students developed not only tree planting skills but also networking competencies by engaging with other schools taking part in the LEAF and Eco-Schools programmes across Russia. Moreover, communication skills were also acquired by the students, since they had to agree with local community stakeholders upon suitable seedlings planting locations.



The Forestry School was established 20 years ago. To celebrate its 10th anniversary, in 2010 the school students decided to grow cedars (*Pinus sibirica*) and give them as a present to their native city: Ust-Ilimsk (the Irkutsk Region, Russia). The goal was to plant them along the city streets, green areas as well as into the nearby forests. The need was felt due to the deforestation to serve the needs of a huge pulp and paper mill situated in the city, getting wood for processing from the neighbouring forests.

In Autumn, the students together with their teacher went to the forest, collected cedar cones and brought them to the school. They processed the cones to get the nuts out of them. The nuts were planted in the forestry school nursery. The students took care of the seedlings for five years until they reached an adequate size to be used for greening the city. As part of this learning process, the students discovered how to choose the right cedar cones, how to handle the cones to extract suitable nuts for growing cedar seedlings, how to arrange the soil composition required by cedars to grow, and they also got to learn about which are the conditions needed by the seedlings for successful development, e.g. they need shadow during the first few years. Most of the seedlings were planted in the city of Ust-Ilimsk and its neighbouring forests during 2015-2017. By that time, the first participants of the project had graduated from school and were entering university. Eighty per cent of those students who initiated the project and those who took care of seedlings while they were growing in the school forestry nursery are now studying or working within Forestry and related fields.

"The project has become an integral part of the history of not only the school but the whole city. Shortly after the project became well known in the city, the school was upgraded to an experimental lyceum in the form of a research and education complex. People in the community became more aware of the role of trees, including cedars, in biodiversity and the reduction of climate change."

Nina A. Petrova, Supervising Teacher

Given the success of growing cedar seedlings in the school nursery, the students decided to share them with other peers taking part in the LEAF and Eco-Schools programmes in neighbouring cities and other regions of Russia. They brought seedlings to several conferences and other regional and inter-regional events. The young cedars grown in the Ust-Ilimsk Forestry School have been planted in many other regions distributed across 6 of the 10 time zones in Russia. One of the small cedars made it to Copenhagen, where it was planted near the FEE Head Office. Today, there are 12 cedars in the nursery of the Ust-Ilimsk forestry school. New generations of students in the Forestry School keep learning about the project, which has become an integral part of the history of the school and the city.

SLOVENIA



Maruša Kozman
Preschool Teacher

Sensory Forest!

School: Kindergarten Velenje

Age groups: 1-6 years old

OUTREACH

- 432 preschool students
- 60 teachers

Students developed a positive attitude towards nature, enhanced senses (smell, taste, hearing, sight, touch), natural forms of moving (walking, running) and developed motor abilities (flexibility, power, balance, coordination, accuracy, persistence). Students also became more familiar with identifying the forests plants and animals.



In the kindergarten Velenje, children spend a lot of time in nature, and specifically in the nearby forest, where they enjoy all the experiences the forest has to offer. There are lots of opportunities which enable children to train many new skills, develop physical abilities and practice nature observation all year round. Teachers and students have created forest playrooms, gymnasiums, camps, and little houses, where children can enjoy outdoor play and learning. They have made small houses for the dwarfs and fairies, some bigger ones for themselves, an even bigger ones, just in case 'Ligi the Mole' pays a visit.

"We are too rarely aware that the forest is a teacher that can teach children more if we enter it open minded, experience it in silence, by observing, listening, touching, or if we just let ourselves SIMPLY BE in the forest. Only in such a way, will children experience the peace, joy and love that they deserve. They will enter it unobtrusively, respectfully, which for sure also is what the forest deserves."

Maruša Kozman & Preschool Teachers at kindergarten Velenje

With some clear rules, playing zones were designed. The forest playrooms offered endless possibilities for games. And there is no place like imagination, where dwarfs, fairies, unicorns and other creatures can join children while they play. In the forest, children were able to pick up different materials and forest products. From these materials, real forest pictures and sculptures were made. In each visit to the forest, children were encouraged to use all their senses; observe the tall trees, listen to the birds singing, the rustling of leaves, touching the tree bark, hugging trees as well as all their friends! A sensory path was created with some of the forest products children collected, sometimes, children even walked through the forest barefoot.

Children also got to visit a carpenter to create wood pieces for the forest playrooms. The carpenter presented them his work and showed them how to make a wooden crate. After having met the carpenter, children even tried themselves to do some carpentering. They highly enjoyed grinding, constructing, gluing and sawing the wood. They were so proud of themselves and their success!

When we went to the forest playroom, one of the students at some point shouted: "I love the forest!"

Maruša Kozman & Preschool Teachers at kindergarten Velenje

SLOVENIA

Using the forest as a classroom!

The forest was also used as a math classroom. The children compared sticks, cones, different forest fruits, they observed trees, got to know forms, sorting, counting, stringing, comparing. They had real fun! In the forest gymnasium, forest ranges were created and physical activities were carried out. And as the forest is not always silent, sometimes students found materials which helped them perform all kinds of music - even playing the drums!

"The children got this idea that our forest is protected by a very special creature. Together with the children, we believe in that too, and we hope that it will remain a clean and magical place also in the future."

”

"We will return to nature in the future to continue to explore, get to know new things, discover and ensure that the forest remains our priceless experience, a shelter and a warm home."

Maruša Kozman & Preschool Teachers at kindergarten Velenje



SOUTH AFRICA



Cindy-Lee Cloete
Wildlife and Environment Society of
South Africa

Growing Better Together!

School: Stanger Training Centre

Age groups: 10-12 years old

OUTREACH

- 17 students
- 5 teachers

Students gained new knowledge and curiosity and were inspired to start taking care of their local nature and school grounds. Spending time outdoors, interacting with the natural environment allowed children to learn by doing and experimenting with ideas.



Stanger is a town in KwaZulu-Natal, located inland from Blythedale in the midst of sugarcane fields, and is part of the Zulu Heritage Route and the Sugar Route. However, the area is afflicted with poverty and high youth unemployment, which has led to an increase in the crime rate. Stanger Training Centre was established 35 years ago and is a facility that takes care of and educates children 6-18 years old, who are severely intellectually impaired with down syndrome, cerebral palsy, autism and epilepsy. The centre has a total of 252 children who attend the school, where environmental education is a part of the curriculum. The school was registered as a LEAF school in 2019 to expand its ongoing projects and gain a better understanding of its local environment.

The school has developed its own indigenous biodiversity garden - one which helped enhance students opportunity for creativity and connection to nature, which consequently stimulated their curiosity. Various tree-planting sessions took place, with outdoor biodiversity lessons revolving around the value of trees and their importance to conserve nature and sustain healthy school grounds. Students gained leadership skills and self-confidence. They gained a deeper understanding of the value of their surroundings and human interactions with the environment and were able to solve local sustainability challenges by increasing native biodiversity.

"The garden was turned into something special: an outdoor classroom where students and teachers can look, observe, learn and flourish."



Cindy-Lee Cloete, Wildlife and Environment Society of South Africa (WESSA)

The project exposed students to the natural environment and outdoor education experiences. Giving them a chance to experience nature instilled a sense of responsibility and provided a different and beneficial brain stimulation. The natural experience provided students with meaningful opportunities for discovery, creativity, problem-solving, and science, technology, engineering and mathematics (STEM) education. Spending time outdoors and interacting with the natural environment allowed children to learn by doing and experimenting with ideas. Learners gained new knowledge and curiosity, and were inspired to start taking care of their local nature and school grounds.

"The positive impacts of this project will be felt for years to come."



MR KP Hira, Stranger Training Centre Principal

TURKEY



Fatma Köle
Türkiye Çevre Eğitim Vakfı

Nature Heals Nature - Smart Insects!

School: Alanya Mahmutlar Kılıçarslan Primary Schools

Age groups: 7-11 years old

OUTREACH

- 100 students, teachers, National Education Authorities, forest engineers and parents

The students developed an awareness of the importance of protecting their local forests with firsthand observation of a burned forest area.



Given the severity of the damages to the Turkish forests caused by the harmful tree-damaging species called "Pine Bark Beetle" (*Thaumetopoea pityocampa*), Prof. Dr. Cem Özkan, working at the Ankara University Faculty of Agriculture, within the Plant Protection Department, sent 300,000 smart insects or beneficial insects to schools.

The project idea was to release the so-called "smart" insects into the forest in order to prevent the Pine Bark Beetle from laying eggs on trees. The introduction of these insects into the forest is very easy, it only requires hanging the release cards containing the smart insects on the forest trees. After doing so, the so-called smart insects do the rest. These clever insects are able to find the eggs of the Pine Bark caterpillars, and lay their own eggs in these eggs, preventing further tree damage and restoring the ecological balance without causing any harm to the environment.

Before engaging the students in releasing the smart insects, it was made sure they understood what happens when the forests are lost.

"It hurt inside us. We are very sorry. We learned that forest means life."



Student

This was done by taking the children from Alanya Mahmutlar Kılıçarslan Primary Schools to the Sapadere fire area, which suffered the impacts of a large wildfire, last year. In the process, they appreciated the value of the forest and all what can disappear when the forest is burnt and turned into ashes. The students also eventually joined the Sapadere forest tour with their families.



TANZANIA



Judith August Kiwale,
Tanzania Forest Conservation Group

Tree Nursery!

School: Lusanga Primary School

Age groups: 7 to 13 years old

OUTREACH

- 1162 students

The new school tree nursery has increased the students confidence to speak about environmental issues. Students have had a major role disseminating the tree nursery activities and were able to share their newly acquired planting skills with their families by receiving banana trees for planting at home. The fact that this project is bridging the gap between theory and practice indicates that the newly acquired competences among students are likely to be long lasting.



The Tree Nursery Project at the Lusanga Primary School was a LEAF initiative aimed to bring children closer to the life of a tree, and the benefits they can provide for the school grounds, for children's knowledge and development, but also for the community's livelihood. The school's action plan was clear! They had to establish a tree nursery with teak and fruit trees to build not only knowledge but also a disposition towards conservation, whilst catering for a huge demand at the Lubanga village and nearby villages. The idea was centred on the improvement of sustainability competences among learners, while improving the school's grounds and infrastructure.

"The programme reflects all the functions forests fulfil for people: cultural, ecological, economic and social. Critical thinking skills are crucial to collect knowledge and reliable information. Based on education and knowledge, students can make well-informed decisions."

Judith August Kiwale, Tanzania Forest Conservation Group

The project planning was carried out by the school parliament, headteacher, eco-coordinator, other teachers, and most importantly the school's Eco Committee, which also includes parent representatives. The motivated group planted a total of 100 banana trees and distributed another 100 banana trees among students to plant at home. The school was also able to sell trees and seedlings to the community, and this way generated income to be used for school improvements. By selling the teak and fruit seedlings, the school managed to renovate the school's office, the preschool classroom, and improve the latrines. Furthermore, prior to the project, the school had been lacking vegetation. With the new initiative, and a total of 324 trees, the school grounds also became greener, where children could experience a more natural environment.

This project has enhanced meaningful learning, whilst providing outdoor learning opportunities. The new tree nursery at the Lusanga Primary School is now used for the subjects of geography, science, mathematics and life skills lessons, which are considered crucial in the Tanzanian curriculum.

"This project has helped to teach about tree planting to students and they have been able to replicate it at home - most of them now have trees for shade and fruits at home. When we sell these mangoes and oranges, these funds will help us a lot. We thank LEAF Tanzania for introducing this project. We have seen the community members love it. If I ever had a chance to speak with the Minister of Education, I would suggest that they expand this project so that more schools could benefit from it as we are benefiting".

Ruth Sifael Meena, Teacher at Lusanga Primary School

UGANDA



Gibonis Ayebaza Babu
Conservation Efforts for Community
Development

It takes a Village to Protect a Forest!

School: 10 schools in the Karinzu forest reserve area

Age groups: 7-45 years old

OUTREACH

- 3500 students
- 110 teachers
- 400 parents/community members

The participating students developed a sense of caring for natural forests and as a result, they participated in the planting of over 300 trees and are to date still taking care of them!

Given that most of the local community's livelihoods in the ten participating schools rely on non-timber forest products, such as medicinal herbs, firewood, rattan canes, hunting, among many others, it was decided that some action was needed to deal with current rates of forest degradation. The project intended to bring together communities in the schools surrounding the Karinzu natural forest and the forest custodians, forging a way forward on how this natural ecosystem should be protected for future generations.

The integration in the day to day teaching and learning provided students with a wide knowledge of forests and related products. When the planning began, different actors engaged in different ways - students prepared the land where the trees were to be planted, teachers ensured that trees were properly planted and they linked these activities to learning in class, parents attended and helped during the tree-planting days, and the school management provided the project with a conducive environment and ensured that land was available. In addition, the District Forest Department together with National Forestry Authority contributed the tree seedlings for planting! The formation of partnerships with local governments and government agencies led to the formation of Collaborative Forest Management Committees, which are legally acknowledged by the government in bargaining for the sharing of proceeds from the revenue collected from the forest, hence supporting the local communities.

The project encouraged positive experiences outdoors and developed a positive attitude toward the environment with a general curiosity about nature and human interaction with forests. Their questioning skills became crucial to understand the situation and be able to make well-informed decisions.

"If our parents could emulate our great grandparents and protect this forest, we would not have problems with our environment now and in the future."



Naume Tukundane, Primary Six Pupil-Kyamuhunga Central Primary School at the 2019 end-of-year Parents' Meeting

The project is still ongoing and is now planning to facilitate the procurement of more seedlings as well as equipment and materials for establishing community nurseries and to produce educational materials which will be distributed to schools and the local communities. The project would also need technological interventions at a scale in terms of energy-saving cookstoves, use of biogas, solar energy and vermicompost technologies within the communities surrounding the Karinzu natural forest.





Elizabeth Soper
National Wildlife Federation

Nature-Based Solutions for Resilience to Extreme Heat in New York City!

School: 5 schools in Brooklyn, New York

Age groups: 11-14 years old

OUTREACH

- 50 students
- 10 teachers

The participating students learned about the impacts of climate change and local extreme urban heat islands. They also learned about factors that impacted their local social and environmental resilience to extreme heat. A total of 27 trees were planted by the students!

According to an article published by the National Wildlife Federation in the USA, “each year, over 100 New Yorkers die from heat-related causes because they live in heat-trapping fenceline communities with little green space; low-income and communities of colour are most impacted by extreme heat due to historic environmental racism and disinvestment in their neighbourhoods.” To alleviate such severe impacts, young New Yorkers participating in the LEAF and Eco-Schools programmes decided to take action by learning about and planting native trees to green their neighbourhoods and create more positive and healthy living conditions.

The Resilient Schools Consortium (RISC) Programme aims to prepare youth to participate in climate resilience planning and work with their local communities to implement actions. As part of the RISC Programme running in New York, USA, and to support the heat-vulnerable communities, students from 6 to 8th grade engaged in learning about the impacts of extreme heat in urban cities, including their own areas, the important role of trees in absorbing carbon from the atmosphere, creating a microclimate, and providing healthy habitats for local biodiversity. They assessed areas of green and open spaces in the neighbourhood, tree density, area of tree shade in the neighbourhood, cool roofs and cool pavements, green roofs and other green infrastructure practices and air quality. Once they had data from this assessment, they determined that there was a need for more trees in their community to provide shade and improve the social and environmental resiliency of their neighbourhoods. So they planted 27 trees!

“Many of these schools are located in heat-vulnerable neighbourhoods. Students felt it was clear that they had to take action to protect their communities.”

Elizabeth Soper, National Wildlife Federation (NWF)

The project helped students learn about the impacts of climate change and local extreme urban heat islands and about factors that impacted their local social and environmental resilience to extreme heat. They also explored the concept of environmental justice and assessed their local neighbourhoods to determine where trees were more prevalent, where there were few to none and why this was the case. As they investigated a salient local issue, and as they went on creating a positive solution that impacts an entire community, students felt empowered - they really felt that every action matters. They were able to make their own plans, make their own decisions, and take responsibility for the future of the community and their own.



List of Acronyms

ASALS - Arid and Semi-Arid Landscapes

FEE - Foundation for Environmental Education

FACCM - Forest Action for Climate Change Mitigation

KOEE - Kenya Organization for Environmental Education

LEAF - Learning about Forests

NGO - Non-Governmental Organisation

NO - National Operator

RiSC - Resilient Schools Consortium

STEM - Science, Technology, Engineering and Mathematics

My forest, you have
secrets
Even the leaves
whisper
to you
Under a wave of
farewell
I know that only you
understand me

Up the crippled hill
Today the forest
revivified
Green emerald
grass
The warm
suns ray

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