

RCE Contributions to a More Sustainable World:

*Celebrating Five Years of
Innovative Projects on
Education for Sustainable
Development (2015–2019)*

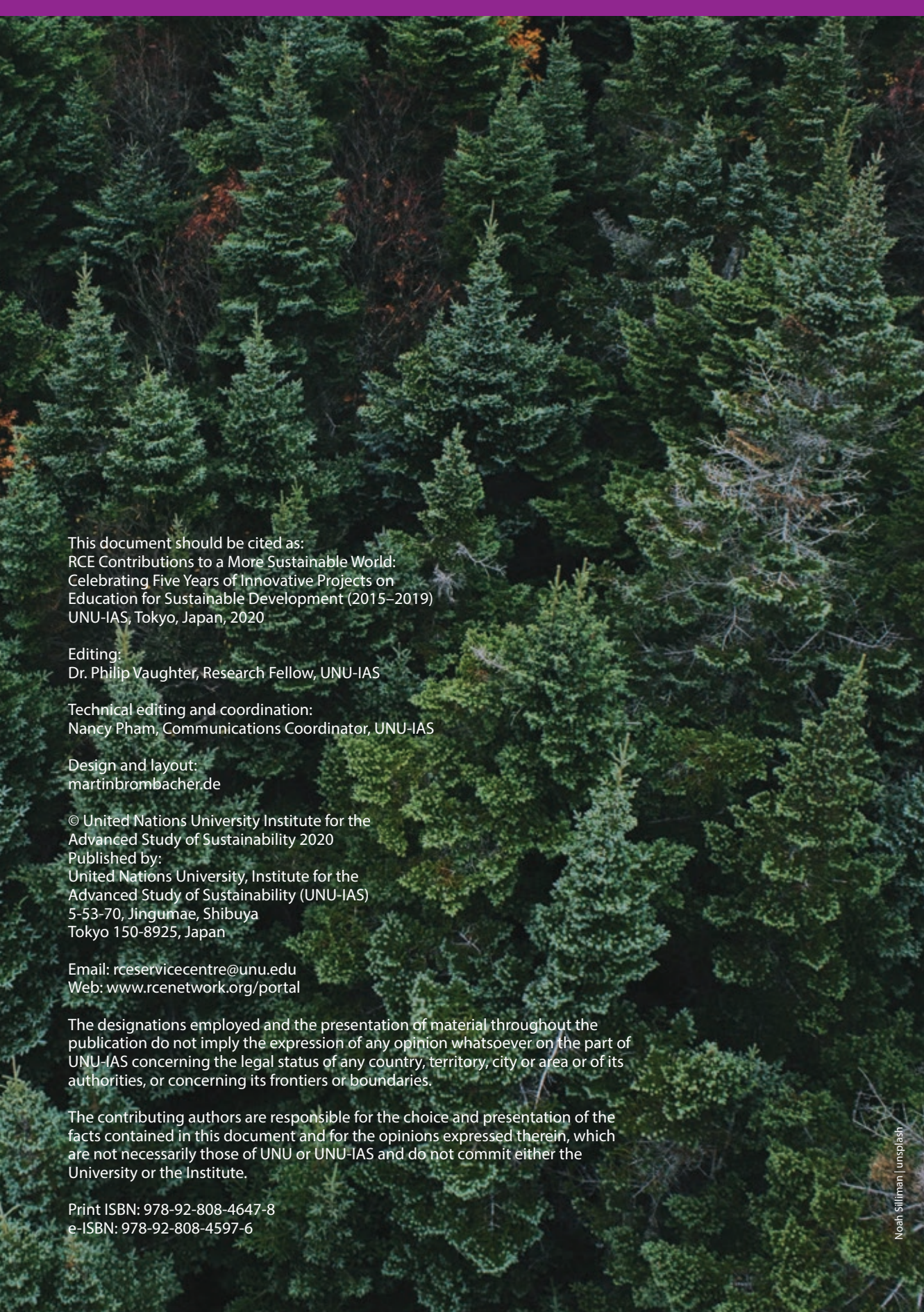
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Foreword

The Regional Centres of Expertise (RCE) on Education for Sustainable Development (ESD) Network was launched in 2005, the same year the UNESCO Decade of Education for Sustainable Development (DESD) officially began, with the aim to demonstrate that ESD principles can work in practice. The Decade is finished and also its follow-up – the UNESCO  Global Action Programme (GAP) on ESD – which has now been replaced by the  Education 2030 Agenda. The RCE founding principles remain and the network continues to grow, while the Global RCE Service Centre remains to initiate discussions at local, regional and global levels, bringing new perspectives on ESD: its goals, learning processes and quality in general.

But how could these overarching principles and goals be implemented globally, and what may be the unique contribution of RCEs in this universal effort? The case studies comprising this publication show a diversity of examples and stories of success from different parts of the world.

The RCE concept is based on the participation of a wide range of actors, who share their interest in sustainability transformation of their region. As demonstrated here, not only students and teachers (some in training) and youth may be involved, but also local communities, governments and municipality representatives, business and agricultural stakeholders, or those working with ESD in the context of the city (museums, firefighter's unions, women's associations). Each RCE must find a common ground for dialogue, coordinate processes of learning between actors, and address pressing local issues in a participatory way, to

initiate concrete improvements in its concerned area of activities. The projects and practices demonstrated in these case studies mostly have a long-term impact (such as raising literacy, mapping green infrastructure and developing an interactive geoportal, improving public transport), or may serve as inspiring events for others. All of the showcased initiatives are anchored in education, employing knowledge to generate transition – this often requires an innovative approach and leads to a shift in educational discourse. New methods are introduced, such as the global peer-to-peer model and role play simulations, field work and experiential learning, project work and engagement workshops.

The RCE network is a tool to build social capital in a geographically defined region, promote bottom-up initiatives on this basis, and develop projects that draw upon local resources and possibilities. This is a way to shape global sustainability processes from a local starting point, and implement the Sustainable Development Goals in a context-specific way. Learning processes initiated by RCEs not only raise sustainability knowledge and awareness among citizens, they also empower a wide range of actors to inspire or lead others, thus shaping the society of the future. The great contribution of this publication is that it presents case studies in a structured way, making its messages comparable and accessible in a diversity of contexts.

Dr. Jana Dlouhá
Advisory Board Member
COPERNICUS Alliance – European Network on
Higher Education for Sustainable Development
March 2020

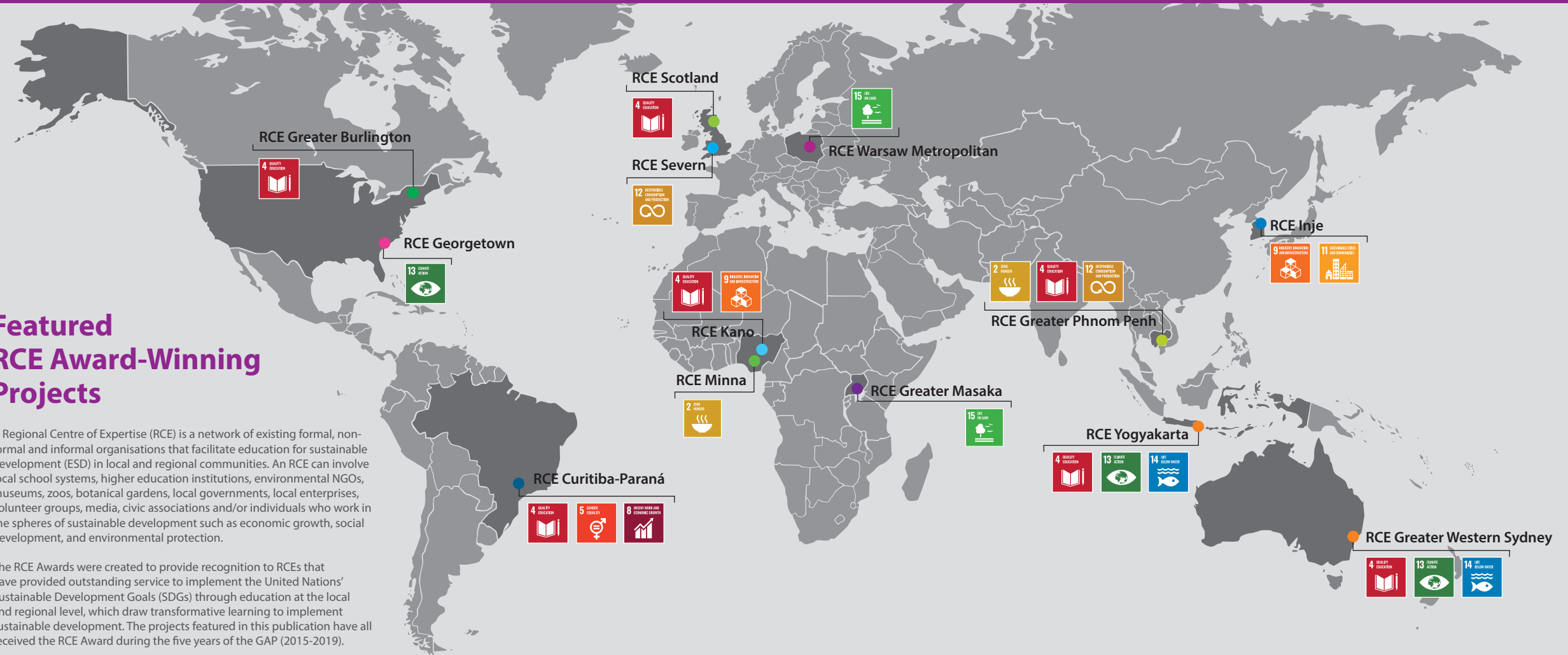


Perry Grone | Unsplash

Featured RCE Award-Winning Projects

A Regional Centre of Expertise (RCE) is a network of existing formal, non-formal and informal organisations that facilitate education for sustainable development (ESD) in local and regional communities. An RCE can involve local school systems, higher education institutions, environmental NGOs, museums, zoos, botanical gardens, local governments, local enterprises, volunteer groups, media, civic associations and/or individuals who work in the spheres of sustainable development such as economic growth, social development, and environmental protection.

The RCE Awards were created to provide recognition to RCEs that have provided outstanding service to implement the United Nations' Sustainable Development Goals (SDGs) through education at the local and regional level, which draw transformative learning to implement sustainable development. The projects featured in this publication have all received the RCE Award during the five years of the GAP (2015-2019).



RCEs Worldwide

As of April 2020, 175 RCEs have officially been acknowledged by the United Nations University.

Africa & Middle East

- Cameroon:**
 - Buea
- Egypt:**
 - Cairo
- Eswatini:**
 - Eswatini
- Ghana:**
 - Ghana
- Jordan:**
 - Jordan
- Kenya:**
 - Central Kenya
 - Greater Nairobi
 - Greater Pwani
 - Kakamega-Western Kenya
 - Mau Ecosystem Complex
 - Mount Kenya
 - North Rift
- Nyanza
- South Rift
- Lesotho:**
 - Lesotho
- Malawi:**
 - Maputo
- Namibia:**
 - Khomas-Erongo
- Nigeria:**
 - Greater Yenagosa
 - Ilorin
 - Kano
 - Lagos
 - Minna
 - Ogun
 - Port Harcourt
 - Zaria
- Senegal:**
 - Senegal
- South Africa:**
 - Gauteng
 - KwaZulu-Natal
 - Makana and Rural Eastern Cape
- Tanzania:**
 - Dar es Salaam
- Uganda:**
 - Greater Eastern Uganda
 - Greater Kampala
 - Greater Masaka
 - Greater Mbarara
- Zambia:**
 - Lusaka
- Zimbabwe:**
 - Harare
 - Mutare

Europe

- Albania:**
 - Middle Albania
- Austria:**
 - Graz-Styria
 - Vienna
- Belarus:**
 - Belarus
- Czech Republic:**
 - Czechia
- Denmark:**
 - Denmark
- Finland:**
 - Helsinki Metropolitan
- France:**
 - Bordeaux Aquitaine
 - Brittany
 - Paris Seine
- Germany:**
 - Hamburg
 - Munich
 - Nuremberg
 - Oldenburger Münsterland
- Ostwürttemberg
- Ruhr
- Southern Black Forest
- Stettiner Haff
- Greece:**
 - Central Macedonia
 - Crete
- Ireland:**
 - Dublin
- Italy:**
 - Euroregion Tyrol
- Lithuania:**
 - Vilnius
- Poland:**
 - Warsaw Metropolitan
- Portugal:**
 - Açores
 - Creias-Oeste
 - Porto Metropolitan Area
- Regional:**
 - Rhine Meuse
- Russia:**
 - Nizhny Novgorod
- Serbia:**
 - Samara
- Slovenia:**
 - Vojvodina
- Spain:**
 - Galicia
- Sweden:**
 - North Sweden
 - Skane
 - Uppsala-Gotland
 - West Sweden
- United Kingdom:**
 - East Midlands
 - Greater Manchester
 - London
 - North East
 - Scotland
 - Severn
 - Wales
 - Yorkshire & Humberside

The Americas

- Argentina:**
 - Chaco
 - Cuenca del Plata
- Brazil:**
 - Curitiba-Parana
 - Rio de Janeiro
 - Sao Paulo
- Canada:**
 - British Columbia
 - Greater Sudbury
 - Mauricie/Centre-du-Quebec
 - Peterborough-Kawartha-Haliburton
 - Saskatchewan
 - Tantramar
- Colombia:**
 - Bogota
- Guatemala:**
 - Guatemala
- Mexico:**
 - Borderlands
 - Mexico-USA
 - Western Jalisco
- Peru:**
 - Lima-Callao
- Puerto Rico:**
 - Puerto Rico
- United States of America:**
 - Georgetown
 - Grand Rapids
 - Greater Atlanta
 - Greater Burlington
 - Greater Portland
 - North Texas
 - Salisbury
 - Shenandoah Valley
- Venezuela:**
 - Gran Caracas

Asia-Pacific

- Australia:**
 - Gippsland
 - Greater Western Sydney
 - Murray-Darling
 - Tasmania
 - Western Australia
- Bangladesh:**
 - Greater Dhaka
 - Sundarbans
- Cambodia:**
 - Greater Phnom Penh
- China:**
 - Anji
 - Beijing
 - Greater Shangri-la
 - Hangzhou
 - Hohhot
 - Kunming
 - Qingdao
 - Tianjin
- India:**
 - Bengaluru
 - Chandigarh
 - Chennai
 - Delhi
 - East Arunachal Pradesh
 - Goa
 - Guwahati
 - Jammu
 - Kodagu
 - Kozhikode
 - Lucknow
 - Mumbai
 - Pune
 - Srinagar
 - Thiruvananthapuram
 - Tirupati
- Indonesia:**
 - Bogor
 - East Kalimantan
 - Yogyakarta
- Japan:**
 - Chubu
 - Greater Sendai
 - Hokkaido Central
 - Hyogo-Kobe
 - Kitakyushu
 - Okayama
 - Omuta
 - Yokohama
- Kyrgyzstan:**
 - Kyrgyzstan
- Malaysia:**
 - Central
 - Semenanjung
 - Greater Gombak
 - Iskandar
 - Kuching
 - Penang
- New Zealand:**
 - Otago
 - Waikato
- Philippines:**
 - Bohol
 - Cebu
 - Ilocos
 - Northern Mindanao
- Regional:**
 - Pacific Island Countries
- Republic of Korea:**
 - Changwon
 - Dobong-gu
 - Incheon
 - Inje
 - Tongyeong
 - Ulju
- Thailand:**
 - Cha-am
 - Maha Sarakham
 - Sakon Nakhon
 - Trang
- Vietnam:**
 - Southern Vietnam

Education for the Implementation of Sustainable Development

Dr. Philip Vaughter, Research Fellow, UNU-IAS

What is human development? If you ask a sociologist, an ecologist, and an educator, you may get three completely different answers. Human development can mean many different things to different people, but for the United Nations (UN) system, it is measured using the Human Development Index (HDI). The HDI is a composite index of life expectancy, education, and per capita income indicators for the citizenry of a given nation, which was developed by economists Mahbub ul Haq and Amartya Sen in order to give the United Nations Development Programme (UNDP) an objective measurement for these parameters of human well-being. A nation scores higher in HDI when: the lifespan of the average citizen in a population is longer; the education level obtained by the average number of citizens is higher; and, the gross domestic products (GDP) per capita is higher. It's important to note that the HDI is an index of potential human development – the maximum level of human development that could be achieved if there were no inequalities within a given nation (UNDP 2010).

If we are to keep this definition of human development in mind, humanity has made tremendous progress during the latter half of the twentieth century and into the first decades of the twenty-first. Indeed, between 2000 and 2015 – the period of time for the implementation of the UN's Millennium Development Goals – huge changes were witnessed in these traditional spheres of human development. Trends towards better health and longer lives were seen in most regions of the globe, as was better access to food

and potable water in most regions. Millions were lifted out of poverty, with reduced poverty rates especially salient in China, Latin America, and many small island states. Furthermore, more children are being educated in school systems than ever before, with the numbers of boys and girls in attendance reaching closer to gender parity than ever before in many regions.

However, our patterns of development have caused problems that threaten to undo the great progress that has been made. While significant gains have been made in the spheres of human health, education, and economic prosperity, the current development trends do not benefit all of us, with millions still struggling to have these basic needs met. Furthermore, our consumption of material resources in pursuit of these development gains threatens the very environmental systems that we are dependent on for our survival. If we are to continue to make progress in human development – or indeed to maintain what progress we have made – humanity will have to pioneer a new approach to development that makes environmental, social, and economic systems not only more fair and equitable, but also more sustainable.

In response to this imperative, the United Nations launched the Sustainable Development Goals (SDGs) in September of 2015 – a set of 17 Goals that were sourced from the ground-up from communities around the world, and that challenge societies around the world about how to safeguard human development gains while setting the world on a more sustainable path to development.

The idea of sustainable development has a long and nuanced history in many of the world's cultures, but within the United Nations system, the operational definition comes from the 1987 Brundtland Commission, stating that sustainable development is:

“Meeting the needs of the present generation without compromising the ability of future generations to meet their own needs.”

With this definition in mind, the questions became – *how do we develop sustainability?*

Humanity has long used our ability to learn in order to adapt our behaviour to the situation we find ourselves in. Our ability to educate and learn from others is critical for this adaptive behaviour, as the exchange of knowledge and skills through teaching and learning allows for us to create a knowledge base that is not individual, but societal, where the innovations and expertise of individuals can be transferred to the masses through formal, non-formal, and informal education channels.

Because education allows for the swift uptake of knowledge and practices at the societal level, Education for Sustainable Development (ESD) is an especially compelling mechanism for the implementation of sustainable development. While ESD encompasses many different components and can be highly context dependent in regards to how it is implemented on different topics, one helpful way to think about it in contrast to conventional formal education is to illustrate which key competencies it emphasises. Wiek et al (2011) describe these key competencies as follows:

- Systems Thinking Competence: the ability to analyse complex systems across different domains (including environmental, social, and economic);

- Anticipatory Competence: the ability to forecast a future using sustainable development principles;
- Normative Competence: the ability to assess the (un)sustainability of current and/or futures of socio-ecological systems and then to collectively create a sustainable vision through negotiation of values, principles, goals, and targets;
- Interpersonal Competence: the ability to facilitate collaborative and participatory problem-solving on sustainable development issues; and
- Strategic Competence: the ability to translate knowledge and strategy into action on sustainability.

These key competencies allow for learners to go beyond a banking method of education where knowledge is retained but not applied, and stresses a holistic approach to applied problem solving for the sustainable development of socio-ecological systems.

With this tremendous potential in mind, the Government of Japan proposed an initiative around ESD at the 2002 World Summit on Sustainable Development. Three years later, the United Nations General Assembly issued a resolution that between 2005 and 2014, there would be a Decade of Education for Sustainable Development (DESD) that would begin to integrate the principles, values, and practices of sustainable development into all aspects of education and learning (MOFA 2007).

In response to this initiative, United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) launched its own initiative to link the United Nations Sustainable Development Agenda to education institutions operating in communities around the world – the Regional Centres of Expertise (RCE) on Education for Sustainable Development. An RCE

is a network of existing formal (including primary schools, secondary schools, vocational training institutions, and universities) and non-formal (including local governments, NGOs, museums, botanical gardens, zoos, and parks) education organisations that facilitate education for sustainable development within local and/or regional communities. Because of this unique synthesis of actors from different sectors, an RCE can access a pool of experts from different fields to respond to different sustainable development challenges. This pool of experts are then able to better support and facilitate needed changes through innovative educational approaches.

With the first RCEs acknowledged in 2005, by the end of the DESD in 2014 there were over 120 RCEs worldwide. The RCE Awards were launched in 2014 at the end of the DESD to showcase the innovative ESD projects that RCEs had piloted over the preceding decade.

Because of the great enthusiasm for ESD, the UN General Assembly announced a second commitment period to the topic – the Global Action Programme (GAP) on ESD – between 2015 and 2019. The main objectives of the GAP were to reorient existing education and learning toward ESD, while simultaneously strengthening education and learning in all agendas, programmes, and activities that promote sustainable development (*UNESCO 2015*).

Since the launch of the GAP in 2015, the RCE Awards have become an annual showcase for ESD projects conducted over a one-year period. With the launch of the SDGs the same year, the categories for the awards were chosen to correspond to the 17 Goals, in order to demonstrate how education and learning can be utilised for the implementation of the entire sustainable development agenda.

In order to be eligible, a given ESD project must:

- Be a partnership between at least two different stakeholders within a given RCE;
- Have been implemented within the previous 12 months;
- Be submitted by all of the stakeholders involved in the given project; and
- Not be previously recognised for an RCE Award – even for successful projects that run over successive years.

Eligible ESD projects are reviewed by a pool of ESD scholars and practitioners from the Ubuntu Committee of Peers to the RCEs (including experts from UNU-IAS, UNESCO, UNEP, IAU, and the Copernicus Alliance), as well as Regional Advisers to the RCEs. The projects are assessed on a range of criteria, including the contextualisation of the sustainable development challenges in the region, the demonstration of transformative learning, the coordination among the project partners, the scale of engagement with the community, and its engagement with any existing or proposed policies relating to education and/or sustainable development.

With the conclusion of the GAP and the announcement that the next commitment period for ESD within the United Nations will be ESD for 2030, now is an excellent time to take a retrospective of some of the outstanding projects that have received the RCE Award during the five years of the GAP. Within this overview, you will see projects from educators across the globe working on a wide variety of sustainable development challenges spanning the 17 SDGs, through teaching and learning. We have tried to pull a representative sampling from across the three domains of sustainable development; people, representing outstanding contributions from education projects that seek to make social systems more sustainable and equitable; prosperity, representing some truly amazing education

projects that seek to shift our economic systems towards more sustainable modes of operation; and planet, showcasing some inspiring projects that seek to use teaching and learning to protect the earth's ecosystems.

However, throughout the projects featured here, it becomes clear that any project related to education for sustainable development is not a siloed effort that addresses one of the key competencies for ESD nor just one domain or one goal in relation to sustainability. While an RCE will typically use a given Sustainable Development Goal as a starting place for a project, other domains, goals, and themes are woven into a project with a number of different competencies to give the learners an experience in using systems thinking so critical to education for sustainable development.

RCE Minna and RCE Greater Phnom Penh both focus in on SDG 2 (Zero Hunger), but these projects on teaching sustainable agriculture practices also address the need to learn about sustainable models of consumption and production (SDG 12) and the role of the farming sector in regards to climate action (SDG 13) and protecting life on land (SDG 15). RCE Severn frames a project on sustainable design through SDG 12 (sustainable consumption and production), but also addresses how students and small business owners can take this knowledge and apply it for decent work and economic growth (SDG 8).

RCE Curitiba-Parana and RCE Scotland both stress the importance of normative competence in taking stock of the current state of sustainable development in their regions, and training teachers as well as students to develop curriculum that allows for learners to create visions of what local sustainability looks like. Both of these projects showcase that ESD – with its ability to engage with the socio-ecological

systems human societies are embedded in – is critical for relevant and quality education (SDG 4) to be achieved across the world's school systems. RCE Inje and RCE Georgetown stress the use of education for both anticipatory and interpersonal competence. These RCEs bring diverse stakeholders together across their communities to strategise what their cities will look like in relation to climate change and how their cities can respond to climate change through climate action (SDG 13), either through mitigating greenhouse gas emissions by learning to use a mass transit system, or through educating about adapting with managed coastal retreat to sea level rise. Indeed, RCEs all explicitly use interpersonal competence stressed in ESD in all of their education activities, as RCEs bring together school systems, universities, city government, and many other stakeholders in partnership to address the sustainable development challenges facing their regions through education, training, and public awareness.

Within this publication, a preview of how education can contribute to a variety of sustainable development issues is offered across all of the projects, which stress using strategic competence to actionable and concrete results. The projects feature not only classroom curriculums within formal school systems, but training and public awareness initiatives that seek to engage learners beyond school pupils – including parents, teachers, and communities at large. We are never truly done learning, and if we are to truly address the sustainable development challenges facing us with the urgency required, modalities of engaging adult and senior learners – like the ones offered here – need to go hand in hand with what we are educating youth with in formal education. It is hoped the award-winning projects featured in this publication can inspire other educators to craft their own initiatives and respond to global sustainability challenges with concrete actions for learning within their own communities.



Elaine Casap | unsplash

Chapter People

Cultivating Pathways to Sustainability
RCE Greater Burlington (Americas) 12



School Empowerment and Nutritional Supplementation through Agriculture
RCE Minna (Africa) 16



Addressing SDG 4.7: Values and Learning for Sustainability in Initial Teacher Education
RCE Scotland (Europe) 20



Promoting ESD through Food, Agriculture, and Environment in Rural Communities in Cambodia
RCE Greater Phnom Penh (Asia-Pacific) 24





Sarah M. Webb, Shelburne Farms

Students arriving at Shelburne Farms to kick off the Cultivating Pathways program.

Chapter People

Cultivating Pathways to Sustainability

RCE Greater Burlington



Rationale

RCE Greater Burlington and its partners recognise that Pre-K-12 education is an essential factor in moving communities toward sustainability. Educators and students play a key role in learning and advancing community knowledge and competencies in justice-centred practices, climate education, and place-based innovations. While schools are a place for learning about the past to understand our present day issues, they are also important places for future thinking and building the skills and mindsets necessary to create more just and healthy communities. Educators and their students are burdened with decades worth of curriculum in just thirteen years and need support in integrating skills, content, and relevant real-life issues. *Cultivating Pathways to Sustainability* was born out of the desire to help educators and students do the necessary work outlined by

Vermont's Agency of Education with the work the world requires to ensure life on the planet.

Objectives

Cultivating Pathways to Sustainability (CPS) was started to support educators and students in pairing Vermont's Agency of Education goals and initiatives with the United Nations' (UN) Sustainable Development Goals (SDGs) and to form a learning programme in which students create year-long projects to address the SDGs. Projects focus on building a socially, economically, and ecologically just community at a variety of levels - school, town, region or globally.

Schools form teams of youth and adults, and those teams gather to participate in a day-long kick-off event at the start of their school year. With the

support of RCE Greater Burlington network members, the teams prioritise the 17 SDGs according to which ones they feel are most critical to creating a sustainable future. They then work with educators to provide professional learning, formulate local or school-based projects and implement them throughout the academic year. Near the end of the school year, the teams regather to report back to one another on their work throughout the previous year, share strategies and plan for the next year.

Activities/Practices

Educators from within RCE Greater Burlington's partner organisations partnered with students and teachers in the region's secondary schools to integrate the SDGs into middle and high school curriculum and projects. RCE educators from outside of the school system (including Shelburne Farms, the University of Vermont, and UP for Learning) provided coaching on SDG topics and themes, as well as how the SDGs present themselves in the local area. Formulating ideas and opportunities for student voices and projects in addressing these global goals at the local level is at the heart of this project. Student projects have ranged across the state to include efforts to address mental health and gender equity through restorative justice/practices, to a student-run business focused on sustainable products. Students have also engaged a wide variety of community partners and school-based leaders to implement projects including local conservation groups for the development of a solar installation

Students, part of the Cultivating Pathways to Sustainability program, discuss and prioritise SDGs for local projects.




Sarah M. Webb, Shelburne Farms





RCE Greater Burlington


Region:
Americas


 **Country:**
United States


 **SDG(s):**
Quality Education


 **Theme(s):**
Youth, Curriculum Development

 **Target audience(s):**
Secondary

 **Ecosystem(s):**
Urban/Peri-Urban, Suburban, Rural, Lake, Mountain

 **GAP Priority Action Area(s):** 5

 **Language of project:**
English

 **Contributing organisation(s):**

- University of Vermont
- Shelburne Farms
- City of Burlington

 **Year awarded RCE Award:**
2018

in one community. Another group worked within their own school and held a *Cultivating Pathways to Sustainability* programme for the school community thereby scaling the effort to reach hundreds more students. There have been wonderful connections between students and network members, further expanding and strengthening ESD activities in the Greater Burlington region.

Results

Cultivating Pathways to Sustainability has resulted in an overall increase in student and teacher engagement in using the SDGs to inform curriculum and student projects in the region. The project has led to tools and resources being developed for both educators and students to develop action plans and projects related to addressing the SDGs at the local level. Another practice that has emerged is for students to communicate across the region about sustainable development using an online platform. Students share projects, local challenges, and the outcomes of their work both online and in person at the end of the programme. Additionally, there have been videos created to document their efforts including a student-run business [Cougar Co-op](#), and [Projects for Hope](#), both community-based projects. To date, more than 100 student projects have been created addressing sustainability



Middle school students gather to engage in project planning for year-long community-based projects addressing the SDGs.

issues in schools and communities in the Greater Burlington region, two events have been held each year of the project for student-educator gatherings to launch new projects and share the results of completed ones, and there has been a general increase in student-led workshops and presentations on sustainability in general and the SDGs in particular throughout the region.

A middle school student engages in a group 'chalk-talk' where they 'talk' with other students about issues that are important to them and their communities.



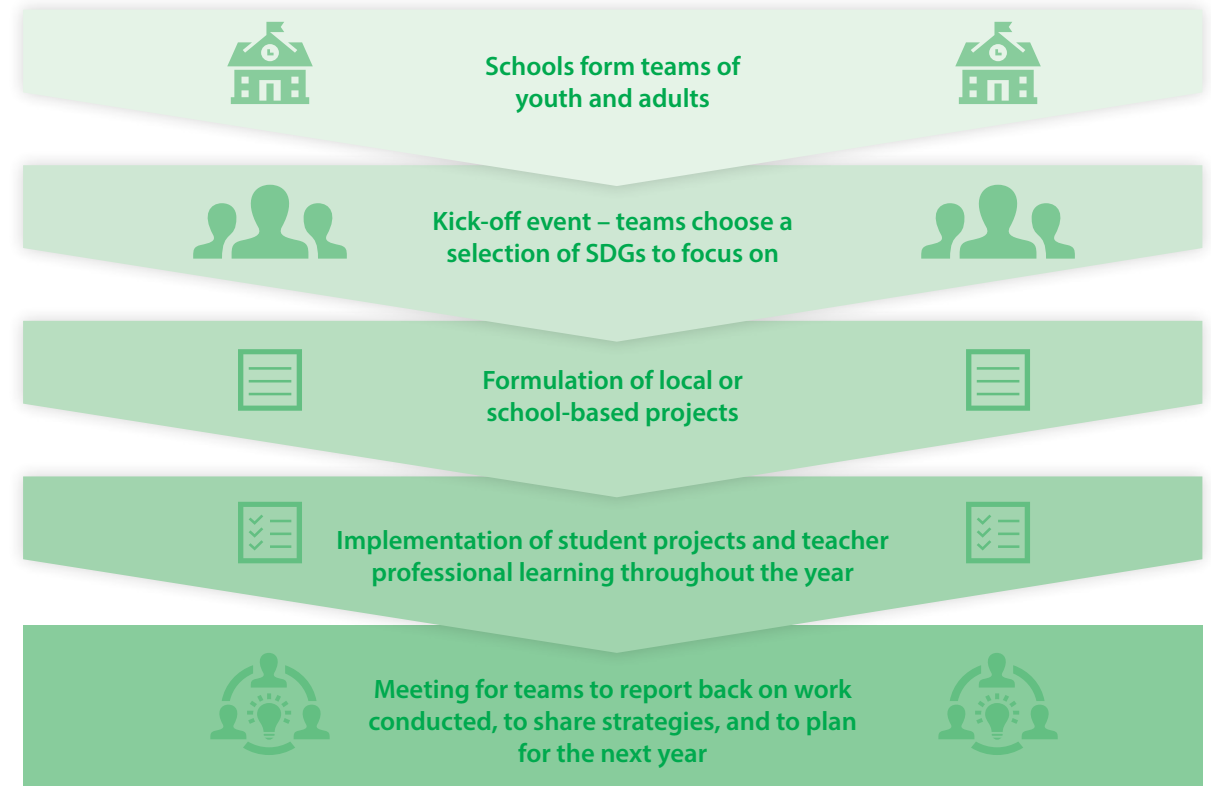
Each of the various partners has increased their knowledge and understanding of ESD, the SDGs, and how student voice is a powerful agent of change in schools and communities. Educators have deepened their capacity to integrate sustainability issues into their curriculum and address personalised learning goals with students. Additionally, teachers have grown leadership capacities in their schools and districts as leaders in ESD. Students have increased their capacity for self-directed learning, action planning to effect change in schools and communities, and an overall increase in self-efficacy and civic engagement. Organisations have developed capacities in serving middle and high schools, further understanding age-appropriate activities to engage youth in sustainability issues relevant to their organisations and contextualised to their local contexts.

Lessons Learned

The programme model is transferable across cultures and countries as it addresses the UN SDGs and offers an opportunity for global student-led projects. Already students have been connecting with programmes in Africa; specifically, Kenya and Rwanda through one of the RCE network partners. RCE Greater Burlington believe this programme could be shared globally through the RCE Network and would welcome the chance to do this in partnership with other RCEs.

The biggest challenge the network partners face is capacity. One of the benefits of the programme is an opportunity for students and educators to network in the region, learn from each other, and connect virtually. However as the programme has grown over the past three years, it has become harder to keep the size of the launch event and the sharing/closing event to a reasonable size to accommodate the aforementioned goals.

Programme Model






RCE Minna

Region:
Africa

 **Country:**
Nigeria


 **SDG(s):**
Zero Hunger


 **Theme(s):**
Agriculture, Forests/Trees

 **Target audience(s):**
Secondary, Teacher Education

 **Ecosystem(s):**
Agricultural

 **GAP Priority Action Area(s):**
2, 4

 **Language of project:**
English

 **Contributing organisation(s):**

- Association of Female Appointees and Wives of Niger State Officials (AFAWNSO)
- Niger State Urban Development Board – Ministry of Lands and Housing
- Development Initiative of West Africa (DIWA)

 **Year awarded RCE Award:**
2018



RCE Minna, SENSAs Project 2018

A disabled student planting his seedling.

Chapter People

School Empowerment and Nutrition through Agriculture

RCE Minna



Rationale

Minna is the capital city of Niger State in west-central Nigeria, approximately 150 kilometres from the capital of Nigeria in Abuja. While Minna lies close to the bustling capital, the primary economic activities around Minna consist of farming and informal commercial activities. Despite an economy focused around food production, many students in formal schooling lack awareness of agricultural practices. Furthermore, quality nutrition remains a paramount concern for youth in the region. To tackle these issues simultaneously, RCE Minna designed a programme to revive school-gardening practices in the region, focusing on sustainable horticulture and the planting of orchards and other trees.

Objectives

The primary objectives of the project were to ensure that boarding schools in the area were developing awareness and commitment among their students on agriculture and environmental stewardship through the establishment of

pedagogy and practice around school gardens and environmental protection. Each of the 15 boarding schools participating in the project set out to create teaching and learning based around the development and care for a school vegetable garden with at least five crop varieties, which would supplement students' nutrition during meals. Additionally, each of the participating schools also created teaching and learning activities based on the planting and care of fruit and shade trees which supplemented nutrition and provided additional ecosystem services to the school area.

Activities/Practices

Each of the participating schools created a school garden and a stand of trees that were actively tended by students with the supervision of faculty and experts from RCE Minna. Lessons learned in the classroom were applied within the garden on soil fertility, water conservation, and the nutrients

that each of the vegetable and fruit crops yield. This presented an applied way for students to incorporate lessons from chemistry, geography, and human health into their school day. Some of the crops planted can be harvested up to three times during a school year, and were incorporated into cooking lessons for the students for their meals. During school breaks, the vegetables were harvested and sold to the surrounding community to avoid waste. This not only created a small fund for care and maintenance of the plants, but can offer the students lessons on micro-finance and basic economic principles such as supply and demand. Most critically, teachers used the day-to-day care of the gardens and tree stands to showcase the impact humanity – both collectively and as individuals – can have on the surrounding environment. Students saw firsthand the results of stewardship vs. negligence, and could gain an appreciation for the complexity of the interactions within nature.

Students practicing the methods of planting seedlings.



RCE Minna, SENSAs Project 2018



Tree planting practice for secondary schools.



Students of Government Girls College Tegina, weeding their SENSEA vegetable garden.

Results

Currently, over 2,000 trees have been planted and have survived as of the end of 2018. In addition to the thriving vegetable gardens, the landscapes around the schools have started to change, with a pleasant micro-climate that provides shade and habitat. A video of the project has been developed to share the concept of the project widely with the hope that other RCEs and educational organisations will develop similar concepts to encourage the use of school gardens and tree plantings as educational tools that can improve lives. Understanding and replicating this idea of using education as a means to care for the environment while simultaneously enhancing nutrition is a worthy goal for any education programme.

Advocacy visit and distribution of tree seedlings by RCE Minna officials.

Lessons Learned

This project has succeeded in improving the skills of school teachers and their students in the best practices for planting and care of trees and vegetables. Practical demonstrations from experts from RCE Minna were critical to showcase the faculty's best practices so that they could in turn demonstrate these to their students. This was especially critical around issues related to the depth required when planting tree saplings, the construction of garden beds, and how to safely transplant. It was critical to educate teachers so they had the best knowledge to ensure a high survival rate among seedlings. In addition, other workshops were offered to both teachers and students from



SENSEA Sensitization visit to a secondary school by RCE Minna, focusing on the importance of trees to the environment.

RCE Minna to supplement the regular course curriculum, so teachers would have the skills necessary to create lessons around basic business and financial literacy, conflict management, and environmental awareness and sustainable

development in relation to the horticulture activities they were engaged with. These supplementary trainings for teachers provided by RCE Minna were critical to the success of the project and its continuation.

15 
boarding schools have participated in the project.

Over **2,000** 
trees have been planted.

Lessons in the classroom are applied within the garden on:

- Soil fertility
- Water conservation
- Nutrition





University of the West of Scotland ESD workshop.

Chapter People

Addressing SDG 4.7: Values and Learning for Sustainability in Initial Teacher Education

RCE Scotland



Rationale

Scotland is a country within the United Kingdom with a population of approximately 5.4 million. The natural environment of the region is diverse; from large urban areas to uninhabitable islands, and from highlands to lochs (lakes) and lowlands. However, even in very urban areas, there is an appreciation for the region's natural beauty with the majority of inhabitants directly exposed to the natural environment regularly. This exposure is likely to contribute to a general appreciation for and desire to preserve natural resources, embedded within the Scottish psyche.

Scotland has partial self-government within the UK with devolved legislative powers over matters such as education, health and transport, as specified in the Scotland Acts 1998 and 2012.

The policy framework in place in Scotland to address SDG 4.7 and ESD in general is embedded within Scotland's Curriculum for Excellence. The General Teaching Council for Scotland's (GTCS) Professional Standards for teachers require that they demonstrate ESD in their practice. However implementation in schools requires that all educators are able to address sustainability in their practice. This starts with the teacher educators in universities who are responsible for programmes for trainee teachers. This strategic project convened by RCE Scotland aimed to promote collaboration that would support the embedding of ESD across all teacher education programmes in all the eight universities responsible for teacher training, thereby having a positive impact on both the skills and knowledge of teachers and ultimately on young people.

The project contributes to the Global Action Programme on Education for Sustainable Development – Objective 1 “to reorient education and learning so that everyone has the opportunity to acquire the knowledge, skills, values and attitudes that empower them to contribute to sustainable development”, with a focus on Priority Action Area 3: ‘Building capacities of educators and trainers.’

Objectives

The aim of this project was to help teacher educators in Scotland's universities to work together to respond to the imperative to address ESD in all their courses and programmes, as a contribution to SDG 4.7, thereby having a positive impact on the values, skills and knowledge of teachers and ultimately on the young people they teach.

By promoting collaboration between all eight universities involved in initial teacher education (ITE) in Scotland, this project focused on supporting teacher educators to embed Values and Learning for Sustainability in their ITE courses and programmes. In the third year of the project a group of newly qualified teachers from each of the ITE institutions were supported to develop a school-based Practitioner Enquiry around a values and learning for sustainability theme. The aim was to help them to interrogate and improve their practice to have a positive impact on the learning of their students.

Activities/Practices

Collaboration between partners (GTCS, educators from the eight initial teacher education universities, and teachers) developed and piloted a reflection and development tool that is fit for purpose, and built universities' commitment to its use. Collaboration has led to the development of inter-university research and conference papers (Colucci-Gray, L. et al., eds. 2019).

Teachers were supported through webinars, online collaboration, and a seminar to develop an ESD practitioner enquiry in the classroom, demonstrating the positive impact of university course programmes on practice and learner outcomes.



Region: Europe
Country: Scotland, United Kingdom

4 SDG(s): Quality Education

Theme(s): Curriculum Development

Target audience(s): Higher Education, Primary, Secondary, Teacher Education

Ecosystem(s): Grassland, Wetlands, Forest, Fresh Water, Urban/Peri-urban

GAP Priority Action Area(s): 3

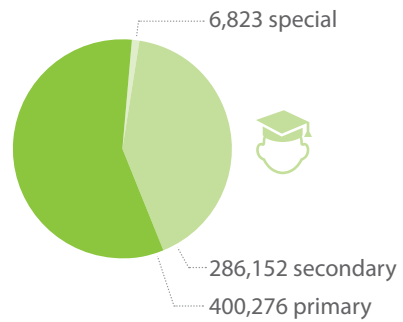
Language of project: English

- Contributing organisation(s):
- General Teaching Council for Scotland
 - University of Aberdeen
 - University of Dundee
 - University of Edinburgh
 - University of Glasgow
 - University of the Highlands and Islands
 - University of Strathclyde
 - University of Stirling
 - University of West Scotland

- Linkages to education and/or sustainable development policies:
- National:
- Scottish Government Learning for Sustainability Vision 2030+ Report 2017 and Action Plan 2019
 - General Teaching Council for Scotland Professional Standards for Educators
 - How Good is Our School Self-Evaluation Framework (Version 4) – Scotland

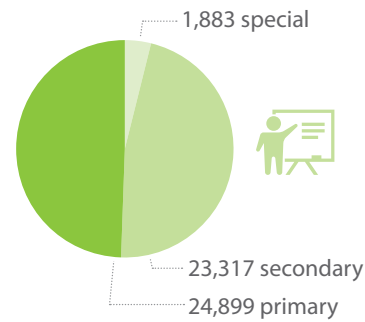
Year awarded RCE Award: 2018

693,251 students
(▲ 4,292 from 2017)



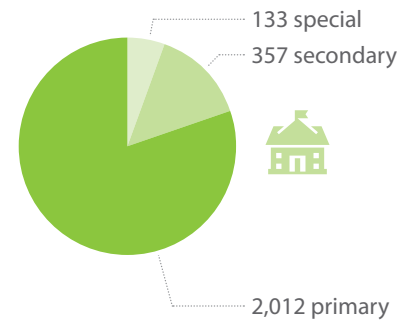
(Source: Summary Statistics for Schools in Scotland No. 9: 2018 Edition, Chapter 2, Scottish Government).

50,099 teachers
(▲ 636 from 2017)



(Source: Summary Statistics for Schools in Scotland No. 9: 2018 Edition, Chapter 2, Scottish Government).

2,502 schools
(▼ 12 from 2017)



(Source: Summary Statistics for Schools in Scotland No. 9: 2018 Edition, Chapter 2, Scottish Government).

Results

The impact of the project has been:

1. Initial Teacher Education Courses and Programmes:

The Reflection and Development Tool microsite on the GTCS website is an ongoing significant support to all of Scotland's ITE institutions. During the period of the project there has been an increased integration of Values and ESD in university courses and programmes that have been submitted for GTCS accreditation.

2. University Staff:

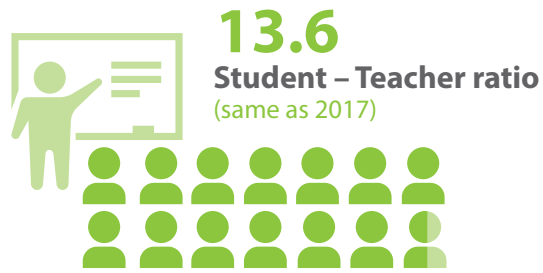
There has been an increased level of collaborative thinking and discussions on Values Education and ESD within and across the ITE institutions sharing approaches and practice. This has resulted in a research focused publication and ongoing collaboration.

3. Student Teachers:

Student teachers are being inspired to address the values and Learning for Sustainability requirements of the GTCS Professional Standards and those involved in practitioner enquiries reported considerable positive benefits for their students.

4. Scottish Education System:

We expect Values and Learning for Sustainability to be strengthened in the upcoming review of the Professional Standards and further support



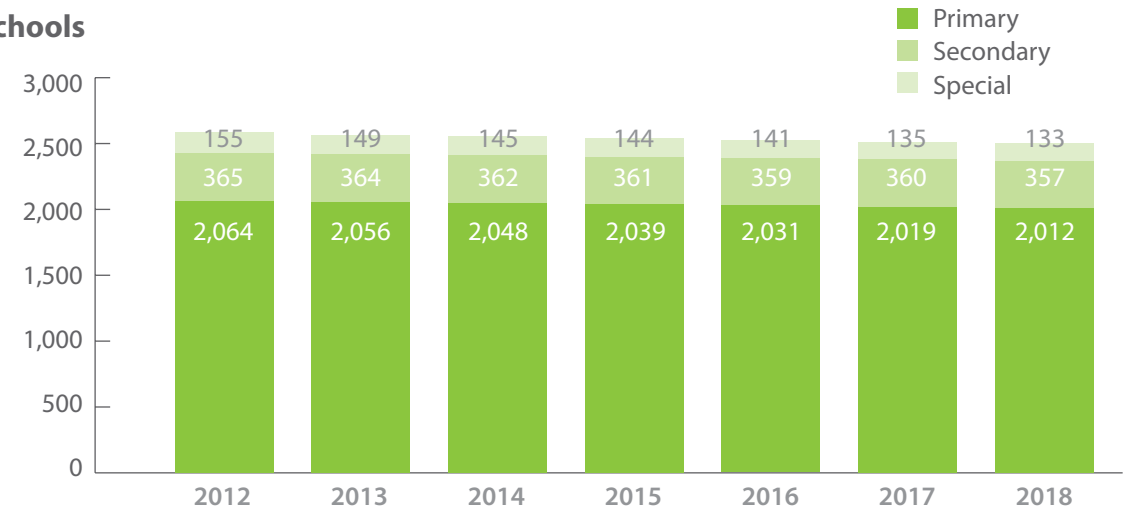
Student figure comprises of Primary, Secondary, and Special categories. Teacher figure comprises of Primary, Secondary, Special, and Centrally employed (school) categories. (Source: Summary Statistics for Schools in Scotland No. 9: 2018 Edition, Chapter 2, Scottish Government).

for ESD has also been included in the Scottish Government Vision 2030+ [Learning for Sustainability Action Plan \(2019\)](#).

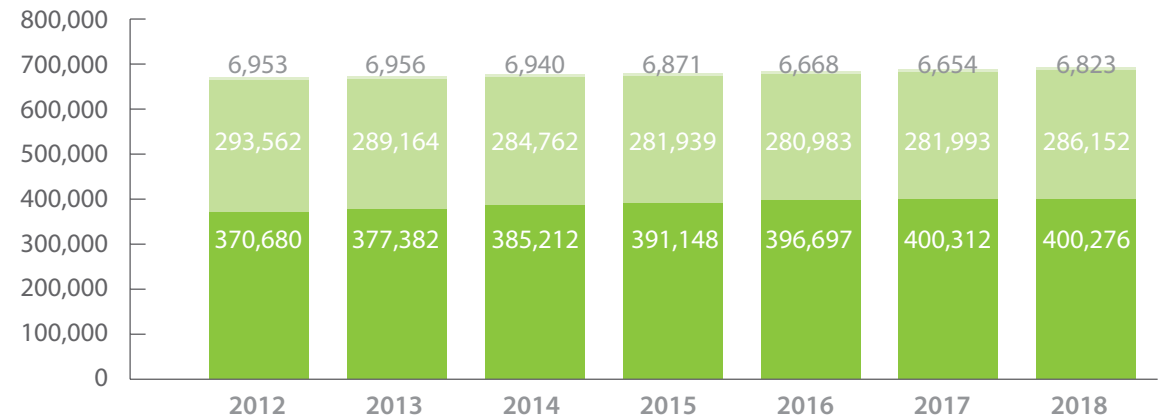
Lessons Learned

It is evident that leadership is required in the teacher training universities to ensure that the principles and practices of ESD are embedded in all courses and programmes. The project engaged both 'champions' of ESD and senior managers to ensure success. Teacher educators are potentially powerful agents of change in the educational response to sustainable development, but themselves require considerable support in acquiring the necessary knowledge, skills, values, motivation and commitment to introduce ESD into their teaching and institutions.

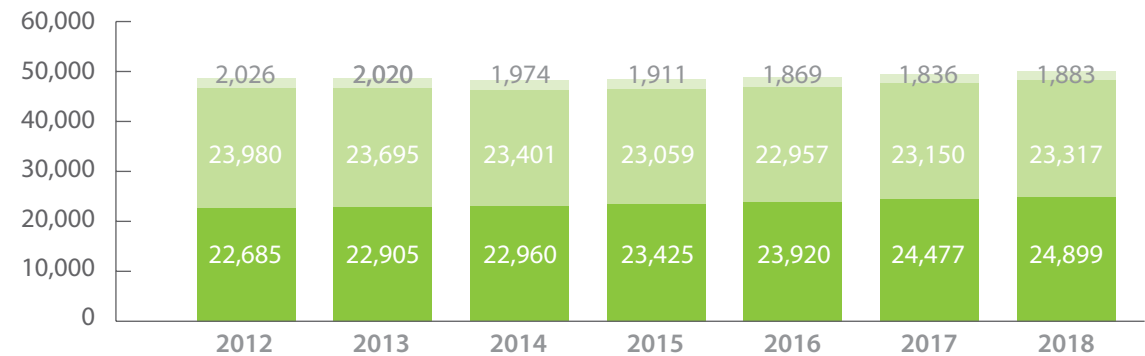
Schools



Pupils



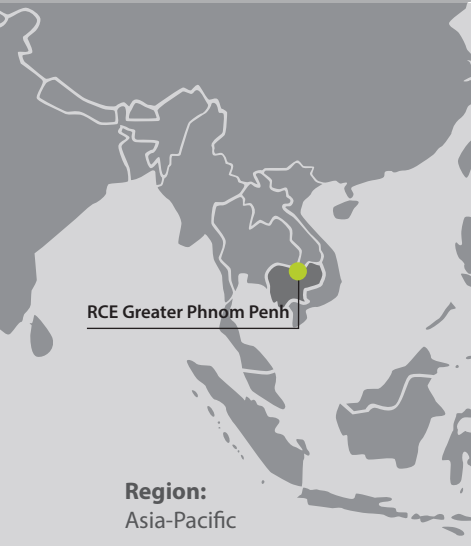
Teachers



(Source: Summary Statistics for Schools in Scotland No. 9: 2018 Edition, Chapter 2, Scottish Government).

More information

- [Learning for Sustainability Microsite](#)
- [Learning for Sustainability Scotland](#)



RCE Greater Phnom Penh

Region:
Asia-Pacific

Country:
Cambodia

SDG(s):
2 Zero Hunger
4 Quality Education
12 Responsible Consumption and Production

Theme(s):
Agriculture, Plants and Animals

Target audience(s):
Community, District and Provincial

Ecosystem(s):
Agricultural

GAP Priority Action Area(s): 5

Language of project:
English, Khmer

Contributing organisation(s):

- Institute of Environmental Rehabilitation and Conservation (ERECON), Southeast Asia Office
- Provincial Department of Agriculture, Forestry, and Fisheries (PDAFF) – Kampong Cham
- Kampong Cham National Institute of Agriculture (KNIA)
- Royal University of Agriculture - Cambodia
- Tokyo University of Agriculture - Japan

Year awarded RCE Award:
2015



Farmers attend a workshop on sustainable agricultural practices.

Chapter People

Promoting ESD through Food, Agriculture, and Environment in Rural Communities in Cambodia

RCE Greater Phnom Penh



Rationale

In Cambodia, the usage of chemical fertilisers and pesticides has significantly increased to promote agricultural productivity. However, due to the inappropriate use of agro-chemicals such as overuse and application without sufficient knowledge, especially by small-scale farmers, this practice has caused various problems to both human and environmental health. Although agricultural productivity has increased temporarily, environmental issues such as soil degradation, water contamination from agro-chemicals, and water degradation through eutrophication have occurred.

Although many farmers realise the adverse impacts of agro-chemicals to human and environmental systems, they lack knowledge related to sustainable or alternative farming systems. Meanwhile, agricultural extension officials who are responsible for enhancing farmers' knowledge are simply not enough in number compared to any one assigned area. Hence, the intervention from the RCE and its partners such as NGOs and education institutes to tackle this problem is indispensable.

Objectives

This ESD project has the following three objectives:

- 1) To build the capacity of agricultural extension officers and other staff in the Provincial Department of Agriculture, Forestry, and Fisheries (PDAFF) and the District Office of Agriculture (DOA) in regards to the dissemination of skills, knowledge, and facilities for a cyclic use of natural resources in farming;
- 2) To use education for sustainable development to promote sustainable farming practices to local farmers; and
- 3) To use education for sustainable development to promote conditions for the sale of agricultural products with low chemical inputs.

Activities/Practices

Based on the project's objectives, through education for sustainable development, improved farming conditions based on sustainable agriculture were set up in the project areas. The following are

the practices employed by the project to meet its objectives:

- 1) Capacity building for agricultural extension officers through technical trainings in Cambodia and Thailand, and through publishing a series of guidebooks on sustainable farming with cyclic use of natural resources with the RCE members;
- 2) Building collaboration among universities, local government, and farmers through workshops and trainings facilitated by the RCE;
- 3) Establishing Centres within local government for promoting sustainable agriculture through education and training;
- 4) Promoting sustainable farming practices based on cyclic use of natural resources through agricultural extension services provided to local farmers; and
- 5) Promoting conditions for sales of agricultural products with low chemical inputs through public information campaigns.

Farmers learn and try to make bio-pesticides from plants.





Vegetable farm and paddy field that was applied with compost and bio-pesticide.

After more than five hundred compost boxes were set in the project area, farmers started to make compost and apply it in their farmland continuously. Moreover, after received training on making bio-pesticides from plants, farmers have applied bio-pesticides instead of chemical ones. Through the participatory training, farmers feed back their ideas to the project team to revise media and focus more on demonstration and practice rather than lecture.

Results

Through the series of activities of this five-year project, agricultural extension officers and farmers gained more knowledge of sustainable farming systems and have changed their practices from conventional ones, which rely heavily on agricultural chemicals, to sustainable farming practices that have led to responsible consumption and production, as well as healthy producers, consumers, and a healthier environment.

Before the project was started, agricultural knowledge dissemination was a one-way communication from agricultural extension

officials to farmers. Farmers were asked to attend meetings or workshops arranged by the agricultural office for the given district. Due to the limited number of extension official staff, the scope of education was not only one-way, but also very limited.

After two years of the project implementation, it was observed that the knowledge dissemination from agricultural extension officials to District Model Farmers and district farmers to general farmers in the project area is well practiced. District Model Farmers have become the centre of knowledge dissemination to farmers in nearby communities. Through this type of education, knowledge dissemination has become a two-way communication. Farmer's feedback to the project's curriculum outputs, such as posters and handouts, led to the improvement of both the curriculum and the outreach practices to make messages on sustainable agriculture easier to understand.

The capacity of agricultural extension officers has been greatly enhanced through technical training and practice in giving lectures to farmers,

especially for junior officers. Moreover, due to the multi-stakeholder approaches, more project stakeholders participated in the evaluation and monitoring process at regular intervals. This gives an opportunity for farmers to feed back their knowledge and practices learnt from the project's activities. Interestingly, some farms of District Model Farmers in the project have become a learning place for agricultural students from Kampong Cham National Institute of Agriculture (KNIA). Farmers shared their knowledge and sustainable practices to students in addition to farmers from nearby communities who regularly visited their farm to learn and exchange experiences of sustainable agriculture practices.

The project also contributes to the Agricultural Extension Policy in Cambodia in the aspect of improving human resource capacity and capability in delivering extension services in response to local needs by building capacity of agricultural extension officers through a series of trainings. The project has also contributed to the provincial and district agricultural strategic plans by promoting farmers in the province to produce low agro-chemical input or organic products to local markets. Moreover, the project also has enhanced food security at the household and community level through increased crop diversity and productivity.

Lessons Learned

As a result of the multi-stakeholder approach employed in the project, relevant agencies such as NGOs and educational institutes can play a vital role in promoting sustainable agricultural practices by partnering with local government agricultural extension services. The outcomes of the project can be taken into consideration by the Department of Agriculture, Forestry and Fisheries, at the national or sub-national level to involve more stakeholders and to implement more sustainable agriculture activities.

This is an ongoing project, but the challenges that were faced during the project implementation include the low literacy level of farmers. This has challenged the RCE to modify its conventional outreach material – such as pamphlets or handouts – into demonstrations, which can engage more farmers and make them understand the content and message of the curriculum more clearly. Encouraging farmers to monitor their resource use as well as reciprocal farm visits to learn from other farmers are some of the practices that encourage farmers to practice more sustainable agriculture practices.

Crops that farmers have been able to grow sustainably in the project areas include:





Tom Ohlin | unsplash

Chapter Planet

Asia-Pacific SDG Youth Challenge 2018
RCE Greater Western Sydney and RCE Yogyakarta (Asia-Pacific) 30



Coastal Institute for Sustainability Leadership (CISL)
RCE Georgetown (Americas) 34



Green Go! Promoting the Role of Green Infrastructure in Sustainable Development of Non-Urban Areas
RCE Warsaw Metropolitan (Europe) 38



Lake Victoria Catchment Environmental Education Project
RCE Greater Masaka (Africa) 42





Youth-led ocean clean-up event on local beach in Vietnam.

Chapter Planet

Asia-Pacific SDG Youth Challenge 2018

RCE Greater Western Sydney and RCE Yogyakarta



Rationale

The Asia-Pacific region is huge – stretching from Turkey and Caucasus in the west to the islands of Micronesia and Polynesia in the east. It also faces a wide range of Sustainable Development challenges, varying significantly from country to country. This project sought an international approach to place-based education, taking a theme that was important to youth across the region and designing educational content around these themes and tailoring it for local audiences. The focus of this project was on Climate Change and Life Below Water – SDGs 13 & 14. Both of these themes are areas of great concern for youth in the region and have profound effects on one another.

Today is a critical time for youth. Not only do young people face extraordinary global challenges but they also possess many powerful tools to solve these problems, especially with technology and social media. Youth are often pressured to make changes, yet very often are not given the chance to do so in a meaningful way. This project used a global peer-to-peer model whereby youth shared information about ESD and SDG 13/14 with other youth in their region (and beyond) on issues that mattered most to them and their communities. Led by the Asia-Pacific RCE Regional Youth Leaders, the first preliminary Asia-Pacific Youth SDG Challenge commenced in February 2018 and focused on 'Youth for

the Sustainable Development Goals', specifically Goal 13 (Climate Action) and Goal 14 (Life Below Water). RCE Greater Western Sydney and RCE Yogyakarta invited all youth among the Asia-Pacific RCE Youth Network and beyond to get involved to make a difference in their local community with on-the-ground projects that address their community needs, the stated Sustainable Development Goals (SDGs), and that involved and inspired youth.

Objectives

The main goal of the project was to inspire youth to make a practical, on-the-ground change in their local communities through ESD while involving as many youth as they could around the SDGs relating to climate action or protecting the world's marine environments. The uniqueness of the SDG Youth Challenge gave young individuals the chance to create their own projects/programme that were relevant and important to their region which is critical when engaging with sustainability. An additional goal was for youth to better connect with their 'parent' RCEs and get involved in the network more generally.

Indian school girls sharing messages about greening communities in India.



Region:
Asia-Pacific

Countries:
Australia & Indonesia
(Secretariat)

SDG(s):
4 Quality Education
13 Climate Action
14 Life Below Water

Theme(s):
Climate Change/
Life Below Water

Target audience(s):
Primary, Secondary, Higher,
Community, Youth (Informal)

Ecosystem(s):
Urban/Peri-urban

GAP Priority Action Area(s):
4 & 5

Language of project:
English

Contributing organisation(s):

- RCE Bogota
- RCE Cebu
- RCE Central Semenanjung
- RCE Delhi
- RCE Gippsland
- RCE Greater Pwani
- RCE Greater Western Sydney
- RCE Penang
- RCE Tasmania
- RCE Thiruvananthapuram
- RCE Tongyeong
- UNESCO ESD Youth Leader, Vietnam
- World Youth Foundation, Malaysia

Year awarded RCE Award:
2018

Activities/Practices

Commencing in February, the SDG Youth Challenge had expressions of interest from 32 youth-led projects across the Asia-Pacific region, as well as one from South America and one from Africa. With a follow-up in May, 20 youth-led projects were selected by the organising RCEs from the mixture of proposed projects from RCEs and UNESCO ESD partnerships. The Challenge projects varied in activities from bottle top lid art installations, beach clean ups, conservation camps, youth summits, and school-based workshops – all on either SDG 13 or 14 – and all with an educational focus. Following the completion of the Challenge, a half-day virtual youth summit was held in conjunction with the Asia-Pacific RCE Regional Meeting to celebrate these projects and to give youth a voice. Presentations from nine youth representatives were featured, including from Australia (RCE Greater Western Sydney, RCE Gippsland, and RCE Tasmania), India (RCE Delhi), Malaysia (RCE Central Semenanjung and the World Youth Foundation), Indonesia (RCE Yogyakarta), South Korea (RCE Tongyeong), and Vietnam (UNESCO ESD Youth Leader).

Results

Collectively as of June 2018, the projects have engaged with approximately 8,000 youth across the globe. Twenty youth-led projects in Malaysia, Vietnam, South Korea, India, Indonesia, Colombia, and Australia have been worked on. After final project reports for each project were submitted for the e-publication, it is estimated that the number of youth engaged indirectly by these ESD projects is over 34,000 – over four times the amount of youth who directly participated as facilitators. The presentations and final project reports have been released as an e-publication as of 2018. It has been so successful that the Asia-Pacific RCE Community will be hosting a 2020 SDG Youth Challenge with three new goals as the areas of focus.

Lessons Learned

Lessons learned from this project from feedback from the participants is that projects often evolve and change - many found that their original ideas couldn't/wouldn't work and had to come up with innovative teaching techniques and other ways around the obstacles they encountered. However,



Hana Syarifah

Mangrove replanting in coastal area as part of 2-day youth environmental camp in Indonesia.

all reported that this was a great learning exercise for them. Lessons learned from the coordinating team for this project include the need to take the time to work individually with each project, so that providing assistance and support is relevant and contextualized. It is also necessary to motivate and encourage, which was done virtually via

WhatsApp and social media. While this can be a time-intensive task, it is well worth the end result. Working internationally was not as hard as expected with regular video-conference meetings and with participating members for the most part being in time zones where the working day overlapped somewhat.

Western Sydney University communication students documenting the impact of climate change with local environmental leaders in Vanuatu.



Tanya Notley

The projects have engaged with approximately

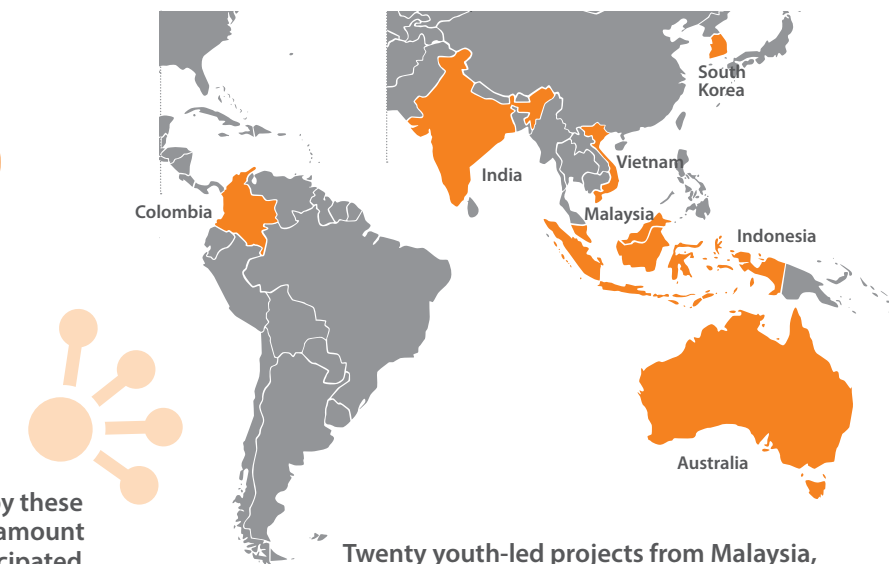
8,000

youth across the globe.

Estimated over

34,000

youth engaged indirectly by these ESD projects – over 4x the amount of youth who directly participated as facilitators.



Twenty youth-led projects from Malaysia, Vietnam, South Korea, India, Indonesia, Colombia, and Australia.

More information


📄 [Asia-Pacific SDG Youth Challenge: 2018 Final Report](#)





RCE Georgetown

Region:
Americas

 **Country:**
United States


 **SDG(s):**
Climate Action


 **Theme(s):**
Disaster Risk Reduction,
Curriculum Development


 **Target audience(s):**
Higher Education,
Community

 **Ecosystem(s):**
Wetlands, Marine,
Urban/Peri-urban

 **GAP Priority Action Area(s):** 5

 **Language of project:**
English

 **Contributing organisation(s):**
• Carolina Coastal University
• National Estuarine Research Reserve
• The Bunnelle Foundation

 **Year awarded RCE Award:**
2017



Near East Bay Park, Georgetown, South Carolina.

Pamela Martin

Chapter Planet

Coastal Institute for Sustainability Leadership (CISL)

 [RCE Georgetown](#)



Rationale

Georgetown County, South Carolina, is located along the Grand Strand area of the Atlantic Coastline of the United States and is part of the Intra-Coastal Waterway. It houses part of the UN Man and Biosphere Reserve along the Atlantic Coast and has some of the most pristine waters along it. The population of the County increased 20.5% between 1990 and 2000 to 60,158. It is predicted to increase by 17% by 2030 (*Georgetown County South Carolina Government 2016*). The county has a rich history and culture of Gullah Geechee ancestors who were slaves from West Africa. It is now part of a National Heritage Corridor for this unique and diverse population. Compared to all but one of the neighbouring counties, Georgetown has lower average income and higher poverty rates that disproportionately affect the African-American residents in the county. RCE Georgetown is a joint effort among public and private stakeholders to collectively impact change in the county through the utilisation of the UN SDGs as a framework toward comprehensive and strategic planning for the future.

Objectives

The Coastal Institute of Sustainability Leadership (CISL) is an experiential learning class that covers aspects of people, planet, and economies as well as the local and global policies that shape sustainable development around the planet. The Institute was designed by RCE Georgetown to integrate university student learning and young people in the community into both UN processes and the county community. The class was based on Front Street, the main street of the county seat in the City of Georgetown, and included guest lectures from policy makers and government officials on the theme that the RCE selected as significant: sea level rise and flooding.

Activities/Practices

This class examined sea level rise, flooding, and climate change policy culminating in a community engagement role play simulation of a fictitious town in New England to gauge community awareness and readiness for climate change mitigation and adaptation policy on the coast. Students combined science and policy skills within a framework of the UN Sustainable Development Goals, using systems thinking and cultural and historical analysis. The RCE used the Institute as a platform to test the viability of a) a student institute on the SDGs in Georgetown and b) the development of role play simulation case studies on sea level rise and flooding developed

for Georgetown County, rather than using ones based in New England. Student evaluations demonstrated a desire for further institutes on sustainable development in Georgetown County and a new understanding of the interaction of social, economic, and environmental issues that face the county. It should be noted that the City of Georgetown is located to the south of the university campus by almost one hour and students infrequently travel here. Thus, a course such as this could have presented a challenge, but instead presented a new opportunity for transformative learning. At the end of the Coastal Institute for Sustainability Leadership (CISL), students facilitated a community engagement workshop using the role play simulations with about 20 local citizens. For two hours, people in the county discussed solutions to sea level rise and flooding problems that the county has faced for decades, but that of which has greatly increased in the last three years.

Results

At the end of the CISL, citizens voted to move forward through RCE Georgetown to apply for a United States National Oceanic and Atmospheric Administration (NOAA) grant to produce role play simulations specific to the county with localised downscaled data. The RCE, led by Pamela Martin of Coastal Carolina University, applied for and

Front Street Georgetown, South Carolina.



Marsh Deane



Pamela Martin

Flooded homes in Georgetown, South Carolina.

received a \$100,000 NOAA Grant with co-sponsors and lead investigators Michelle LaRocco (now of Georgetown County) and Maeve Snyder from the National Estuarine Research Reserve to engage the community in conversations about sea level

No. of properties at high risk* from flooding in the Georgetown, SC, USA area in the next 15 years



Residential

↑ 17.8%



Commercial

↑ 60%

* A property is considered at risk if at least 3% of its area, or 10% of the roads in a 1/10th of a mile around it, are projected to flood. (Source: FloodiQ.com).

rise and flooding, integrate local scientific, social, and economic data into a modeling simulation, and produce role play case studies on the issue to contribute to the county's comprehensive planning process.

Georgetown Climate Adaptation Project Downscaled Climate Data

Indicator	Historical	Projected		
	(1976-2005)	Short term (2010-2039)	Medium term (2040-2069)	Long term (2070-2099)
Precipitation (inches)				
Average annual precipitation	51.5	53.3	53.8	53.9
Storms (events per year)				
1" in 24 hours	10.4	11.3	11.6	12.1
2" in 48 hours	6.5	7.4	8.1	8.7
Sea Level Rise (feet)				
Increase compared to the year 2000		Between 1.9 and 2.13	Between 3.58 and 4.3	Between 8.66 and 10.6

Note: The pink column includes real data – measurements that were taken between 1976 and 2005 and then averaged over that period. The projected numbers are in the orange columns. They assume that the Earth will continue to warm because of greenhouse gases in the atmosphere from the burning of fossil fuels. These numbers assume humans will continue to use fossil fuels at the rate currently being used, or even increase that usage (thus, the “worst case” scenario). Source: Georgetown Climate Adaptation Project (GCAP), NOAA, produced by the University of South Carolina Carolinas Integrated Sciences and Assessments, Dr. Greg Carbone and Dr. Kirsten Down.



Pamela Martin

Role play simulation at Coastal Carolina University.



Pamela Martin

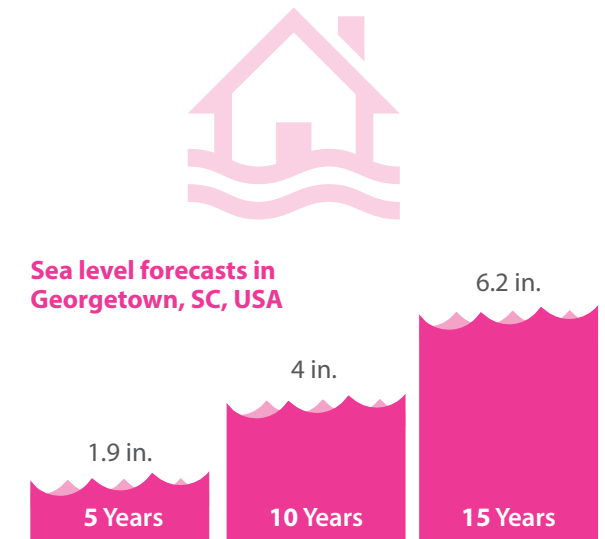
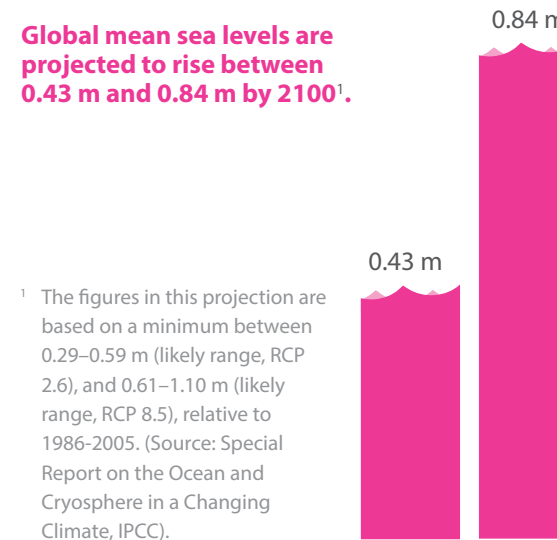
Role play simulation in Murrells Inlet, South Carolina.

Lessons Learned

The CISL was a great first step in integrating climate science and policy into a course designed for university students that can also be accessible to and serve community members. While it was a fruitful start, RCE Georgetown plans to enhance the course by adding interdisciplinary field experiences beyond climate science and political

science, including a field team with professors from the marine science department, archaeology department, and business department. This way, students will gain multiple skills and an appreciation for different tools in understanding how to build resilience into coastal communities in the face of climate change.

Global mean sea levels are projected to rise between 0.43 m and 0.84 m by 2100¹.



(Source: US Army Corps of Engineers, FloodiQ.com).



Young people investigating in-field woodland with the use of a mobile map application.

Chapter Planet

Green Go! Promoting the Role of Green Infrastructure in Sustainable Development of Non-Urban Areas

RCE Warsaw Metropolitan



Rationale

One of the huge challenges of our time is to stop the loss of biodiversity and preserve the world's natural and semi-natural ecosystems in good condition. Many of these ecosystems are critical in fighting climate change through sequestering carbon in vegetation and soil, as well as being a critical habitat for biodiversity. But how can this be done in areas where the need for food production seems to contradict the protection of nature and landscape values? One solution is to maintain and develop green infrastructure (GI) – infrastructure that builds with nature and uses existing components of landscapes for storm water management, climate change mitigation, biodiversity protection, and food production. The

'GreenGo!' project was launched as a response to the need for broadening both the local municipal governments' and the general public's knowledge about the role and methods of sustainable development used in green infrastructure in rural areas. It was also linked to the need for better recognition of the value of local natural resources and the need for joint actions to protect and develop elements of green infrastructure at the local scale. Therefore, RCE Warsaw Metropolitan decided to cover quite a broad audience of learners for this ESD project, including representatives of local authorities, young people (aged 12-19) - particularly those attending agricultural schools who are farmers-to-be, and local community members as its target groups.

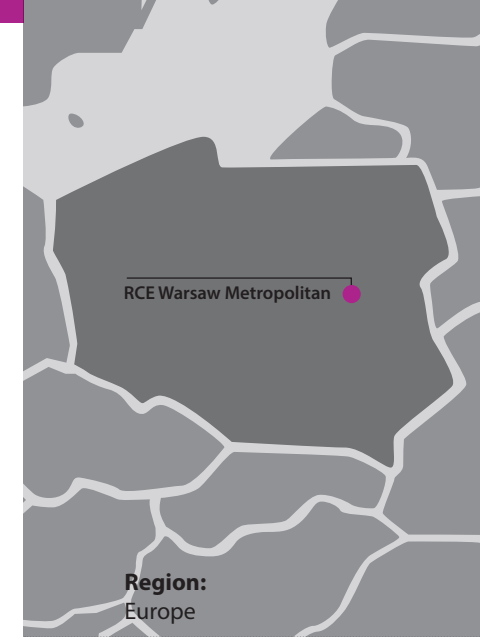
Objectives

The main goal of the project was to increase ecological awareness within the recipients of the lessons. In particular, the project aspired to:

1. Broaden the target groups' knowledge about the role of green infrastructure in rural areas, showing practical examples of ecosystem services provided within the local ecosystems, and also to educate the target groups on the importance of local ecosystem services in the context of climate change adaptation;
2. Educate the target groups on how to collect information about existing green infrastructure using geo-information tools, and how to plan for the maintenance and development of new green infrastructure in a sustainable way;
3. Change the attitudes of the target groups towards green infrastructure, proving that taking care of nature means also saving money for both municipalities and also individual farmers.

Activities/Practices

During the course of the ESD project, the project team developed a GreenGo! portal with an interactive 'knowledge base' including a wide range of information resources on green infrastructure. In addition, a series of trainings, workshops and demonstration lessons were organised for students, employees of local governments, and members of Local Action Groups who were interested in the topic of shaping green infrastructure in rural areas (about 700 participants in total). The project team also proposed a competition for young people called *GreenGo! We are mapping green infrastructure!*, with the goal of preparing a local database on green infrastructure elements in the area, using modern tools that would facilitate the management of the natural, landscape, and cultural resources of the rural communities. To further this objective, the project team developed an interactive geoportal application supporting inventory and mapping of green infrastructure elements which was used by all participants of the project. All activities were designed



RCE Warsaw Metropolitan

Region:
Europe

Country:
Poland

15 SDG(s):
Life on Land

Theme(s):
Traditional Knowledge,
Agriculture, Forests & Trees,
Plants & Animals

Target audience(s):
Youth, Community

Ecosystem(s):
Agricultural, Fresh Water,
Grassland, Urban/Peri-urban,
Wetlands

GAP Priority Action
Area(s): 2, 3, 4, 5

Language of project:
Polish

Contributing organisation(s):

- UNEP/GRID-Warsaw Centre (leader)
- Mazovian Agricultural Advisory Centre in Warsaw
- Municipalities from Mazowieckie and Lubelskie Voivodeship regions

Year awarded RCE Award:
2019



Complex of Community Schools in Frampol

Analysis of the green infrastructure database on the GreenGo! geoportal.

to foster the integration of local communities and the cooperation of young people, employees of municipalities, farmers, and representatives of non-governmental organisations, with experts for the sustainable development of green infrastructure. In some communities, many people got involved in the competition mentioned above, helping students to collect the needed information. Finally, the project team also organised a series of educational picnics for local community members to further disseminate the findings of the project.

Results

The main result of the project has been that about 15 local Green Infrastructure Databases have been developed. All of the databases include a Geographic Information System (GIS) dataset, an

Assessment of the role of green infrastructure elements in the rural landscape.

inventory with information about the location of specific landscape elements and ecosystem services (results of the extended fieldwork), as well as a full report presented on the portal, including an assessment of the current status and role of green infrastructure in each community. Furthermore, there are also suggestions included on how to maintain and develop green infrastructure in the area to help provide ecosystem services in the most comprehensive way possible. All GI Databases are available online.

These amazing local outputs are the result of the common work of approximately 180 young people (very often future farmers), local governments, farmers, foresters, and experts from Centres of Agricultural Advisory Services. These GI Databases are the proof that sometimes only a little support is needed to make big change for sustainable development on the local level. These outputs represent changes in the level of knowledge, skills, and attitudes of the project's participants and are available as an inspiration for all other communities.

Lessons Learned

Through implementation of the 'GreenGo!' project, RCE members have learned that to really engage people in a discussion about sustainable development in their local area, activities need to



UNEP/GRID-Warsaw Centre

Identification of different tree species in rural area.

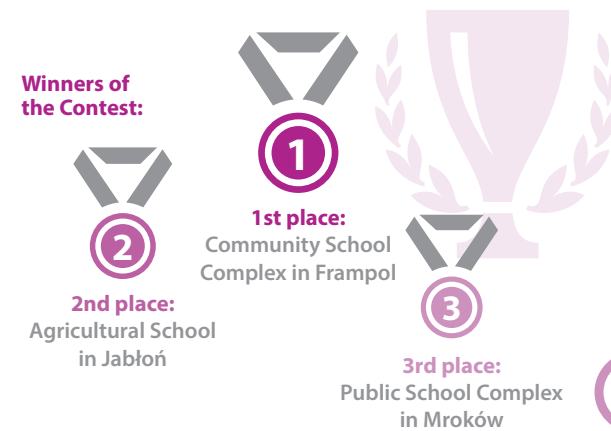


UNEP/GRID-Warsaw Centre

Water quality analyses – are the green buffer zones protecting a pond from contamination?

be set up in a local context so people can 'feel the topic'. Additionally, local resources should be used to create the educational content – knowledge and expertise of community members and experts who have been living in the area for a long time are invaluable resources. Another lesson learned is that any results from a project must be visible to the public, meaning that work done gets presented to

a broader audience than just participants so that the people involved feel that their engagement really matters. Critically, young people should be invited into discussions about project design and implementation as fully active members – the creativity and potential expressed by younger generations can propose solutions that other project members would never have thought of.



Schools involved in the project

- Public School Complex in Mysiadło
- John Paul II Public Gymnasium in Świercze
- School Complex in Michałówka
- School Complex in Samogoszcz
- Gymnasium in Kazimierz Górski School Complex in Wierzbica
- John Paul II Public School Complex in Łązy
- Władysław Reymont Public Gymnasium in Stoczek
- Władysław Reymont Agricultural School in Sokółów Podlaski
- John Paul II Public Gymnasium in Wieliszew
- Queen Jadwiga School Complex in Czerwińsk
- Antoni Kwiatkowski School Complex in Bychawa
- Agricultural School in Wola Osowińska
- Agricultural School in Siennica Różana
- Agricultural School in Okszków



UNEP/GRID-Warsaw Centre

Lake Victoria Catchment Environmental Education Project

 **RCE Greater Masaka**



Rationale

RCE Greater Masaka is a network that covers the lower catchment of the Lake Victoria Basin, which is south of the equator. The catchment region covers the districts of Lwengo, Kalungu, Bukomansimbi, Lyantonde, Sembabule, Rakai, Gomba, Kalangala, and Masaka itself. While the Lake Victoria Basin has provided resources for the inhabitants of the catchment for countless generations, a fast-growing population in the region is stressing the natural resource bases around the lake. If the population of the catchment region is to develop sustainably, the people need to be equipped with the knowledge and skills necessary for leading healthy and productive lives in harmony with nature, and therefore moving away from over-exploiting it. This will enable the pursuit of Uganda's vision statement of "A Transformed Ugandan Society from a Peasant to a Modern and Prosperous Country within 30 years" (*National Planning Authority 2013*).

Objectives

The main goal of the Lake Victoria Catchment Environmental Education Programme (LVCEEP) is to secure the ecological integrity of the Lake Victoria Catchment Area through the application of Education for Sustainable Development – for the improvement of the inhabitants' livelihoods and the conservation of the biological diversity found within the area. It has a two-pronged approach, targeting both children in formal schooling (primary and secondary school students) as well as community members through non-formal education and capacity-building activities, paying special attention to gender balance in both teachers and members of the community. The primary objective of the project was for participants to acquire the knowledge, motivation, and ability to



Lake Victoria Catchment Environmental Education Programme (LVCEEP) group training.

pursue the sustainable use and management of natural resources within the catchment area by the end of the programme.

Activities/Practices

RCE Greater Masaka used a number of activities and approaches for empowering participants during the implementation of the project as detailed below:

I. The Whole School Approach:

The programme used a variety of ESD pedagogical approaches and activities to build the capacity of teachers, students, youth groups, and communities in order to promote sound environmental management and the conservation of natural resources. These included: onsite training of teachers and non-teaching staff in thirty of the region's primary and secondary schools; and a combination of seminars, workshops, and meetings to train teachers and non-teaching staff (such as cooks and school caretakers) on how to embrace ESD pedagogy and model sustainability activities through their duties on campus. In addition, teachers and staff were trained to develop programmes and events to link their school's sustainability activities with the surrounding community.

II. Model Village Approach:

The programme also worked with a wide variety of community members to incorporate ESD into their daily lives, including working with local governments

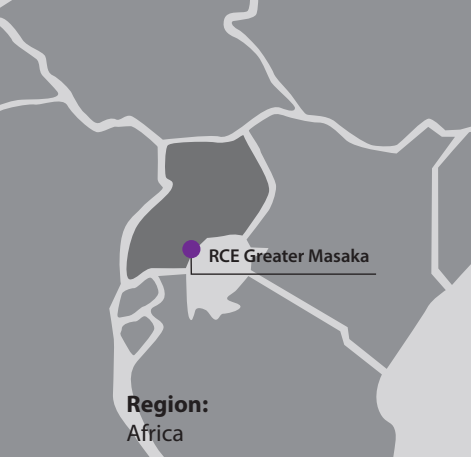
to develop policies and curricula on ESD at the school board level and training youth through non-formal green entrepreneurship projects such as bee keeping, preparation of tree nurseries, fish-farming, and planting orchards.

III. Holistic Approach for Community Participation:

Communities participated in decision-making processes through regular meetings to plan for actions and initiatives that needed to be undertaken. Governance structures (election of members of ESD villages to provide leadership) were put in place, and communities took steps to develop tools for good governance. Through these, a democratic and transparent culture for decision-making was developed, as was participatory implementation and assessment of ESD activities.

IV. Education and Learning Approach:

Through this approach, communities were able to reflect, rethink and reform through formal, non-formal, and informal education. They developed the capacity to assess the needs and possibilities within different groups and across the groups to learn, interact, and achieve support and innovations needed to promote sustainable development. It also ensured that all community members could engage in defining problems and searching for solutions.



Region:
Africa



Country:
Uganda

15

SDG(s):
Life on Land



Theme(s):

Agriculture,
Traditional Knowledge



Target audience(s):

Primary, Community



Ecosystem(s):

Wetlands, Forests



GAP Priority Action Area(s): 5



Language of project:

English



Contributing organisation(s):

- Uganda Martyrs University – Nkozi
- National Environment Management Authority (NEMA) – Uganda
- Ministry of Water and Environment – Uganda
- Nature Uganda
- Swedish International Development Cooperation Agency, Sida
- World Wide Fund for Nature (WWF)
- Uganda National Commission for UNESCO
- Uganda National Association of Community and Occupational Health (UNACOH)



Year awarded RCE Award:
2017



St. Maria Goretti Mpugwe Primary School Demonstration School gardens.

Results

Twenty-six of the thirty schools within the catchment area have developed a structured routine for incorporating ESD into school curriculum (including activities around rainwater harvesting, wetlands conservation, hands-on agriculture, and ethno-botanical knowledge transmitted through field visits) with the support of their respective School Management Committees; and, twenty of these schools now have policies mandating ESD be a core subject taught in their schools. In these targeted schools, the learning on sustainable development has increased significantly and the grounds and compounds have turned into learning environments.

Increased knowledge and awareness has also helped to reduce destruction of forests in the catchment area. Soil conservation measures have helped to improve farming practices and increased food security at the household level. Better farming practices have also reduced pressures on wetlands, as villages surrounded by wetlands have turned into ESD villages with sustainable communities. These sustainable communities

have taken on the responsibility of managing their natural resources, which has also improved their livelihoods.

There has been remarkable improvement in the management and conservation of the biodiversity, soil, water, and other natural resources in the catchment. Longer term sustainability perspectives are being used to guide decisions regarding production, management, and consumption, incorporating principles of sustainable land use, sustainable production and consumption, including initiatives for zero carbon and waste.

School-community partnerships as well as external partner cooperation has proliferated around sustainable development activities with schools participating in community cleaning days to help collect and sort waste and outreach programmes where schools sensitise communities to undertaking different conservation efforts. A number of demonstration gardens have also been added to school campuses, showcasing resource efficient ways to grow crops sustainably, as well as educational gardens that demonstrate to the students and community members how to care for and protect endangered plants in the region.

In addition, creative and participatory processes are now encouraged where Indigenous and new knowledge and thinking meet in new ways to find solutions with a long-term perspective. Locally relevant solutions to challenges, such as waste management, housing, mobility and food, have also been explored to meet present and future needs.

This project involved school pupils, teachers, community members and leaders in the Lake Victoria catchment area in the Greater Masaka region. These groups are able to see the reciprocal influence of poverty and environmental destruction and degradation in the catchment and the mitigating impacts of the Environmental Education project.

In target schools, the learning on sustainable development has increased significantly and the grounds have turned into learning environments. Improved knowledge and awareness of the alternative school and household energy resources such as biogas and solar energy has helped to reduce destruction of forests in the region.

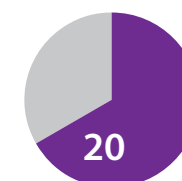
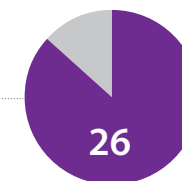
Lessons Learned

While working with individual schools is a great way to engage directly with teachers and staff, RCE Greater Masaka has learned that it is important to prioritise policy and curriculum review to ensure that ESD is mainstreamed into school systems rather than just in individual schools. It is also recommended that schools try to work closely with the surrounding community

and local government in order to create sustained interest on the topic within the community and not just among the students.

It is also recommended that ESD programmes should embrace themes that are vital to given communities. For Greater Masaka, food security is of paramount importance to families in the catchment area, and so there are many existing school programmes on food that could be enhanced with an ESD perspective. And while the majority of the population of the region by and large speaks English, it would also be recommended to produce future publications in local languages such as Rutooro and Luganda in order to enable all stakeholders to understand more easily the concept of ESD, and interpret it in their own linguistic and cultural contexts.

Twenty-six of the thirty schools in the area have developed a structured routine for incorporating ESD into school curriculum



Twenty of these schools now have a policy mandating ESD be a core competency taught in the school

Whole School Approach

- Trained teachers and staff on site
- Seminars, workshops, and meetings on ESD pedagogy
- Training provided to develop programmes and events to link school sustainability activities with the community

Model Village Approach

- Worked with local governments to develop policies and curricula on ESD at the school board level
- Trained youth on non-formal green entrepreneurship projects

Holistic Approach for Community Participation

- Communities participated in decision-making processes through regular meetings
- Participatory implementation through the development of governance tools by communities

Education and Learning Approach

- Communities developed capacities to assess needs and possibilities through formal, non-formal, and informal education
- Provided opportunities for community engagement in defining problems and developing solutions

More information

[Lake Victoria Catchment Environmental Education Programme \(LVCEEP\) video](#)



Chapter Prosperity

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Alan Kofl' unplash



Children during one of the outdoor exercises.

Chapter Prosperity

Community Mobile Solar Powered Tech Classrooms

RCE Kano



Rationale

Nomads in Africa are largely overlooked by humanitarian aid organisations, because they are hard to find and hard to help, as they are frequently moving in search of adequate pasture. As a result, formal schooling for children in these communities becomes very challenging. In Nigeria alone, “out of the 9.4 million nomads in Nigeria, 3.3 million are children of school age”, with a literacy rate ranging between 0.2% to 2.9%, according to the Federal Ministry of Education in Nigeria as of July 2018 (*National Commission for Nomadic Education 2018*).

Objectives

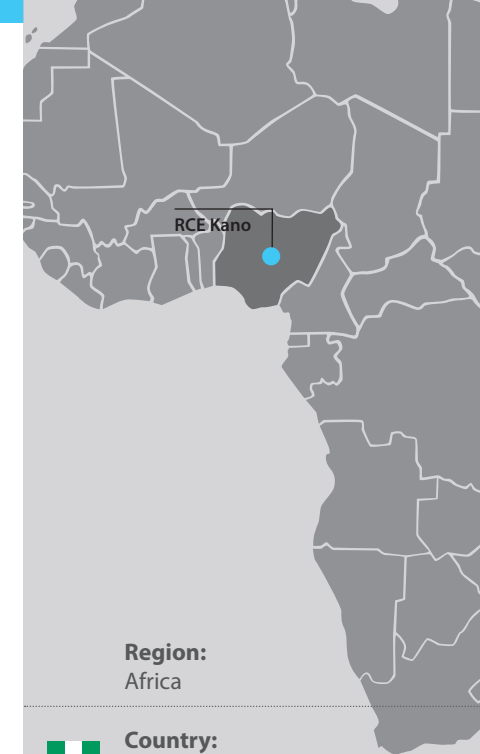
In order to solve the challenge of access to formal education for the most marginalised and hard to reach communities in Nigeria, the partners within RCE Kano under the leadership of the Centre for Renewable Energy and Action on Climate Change created EdTents – digital solar powered tech classrooms. EdTents are inventively designed to function as mobile classrooms in order to help roaming nomads’ communities gain access to education. Each tent uses a collapsible setting that can be assembled or disassembled within twenty

minutes and is easy to transport; a whole classroom could be carried conveniently by a pack animal. The EdTents model is 2.8 x 3.5 metres in area and 2.5 metres in height with a mixture of galvanized metal pole, a crossed guy-line, a black board, collapsible chair, a rug, and is equipped with visual teaching aids. The classroom has space for twenty to thirty children, which makes it significantly cheaper to construct than a conventional classroom. Each EdTent is meant to provide a formal learning space for children from nomadic communities in the region, with curriculums that operate over different time scales.

Activities/Practices

Teaching in an EdTent means teaching for multiple grade levels in order to ensure that all of the school-aged children in the community benefit. The established mobile solar classrooms focused on basic literacy and numeracy skills for children between the ages of seven to twelve. Each solar classroom houses a mobile classroom teacher who is sourced and selected by the community or neighbouring communities. The teacher continues to live and move with the community and provide continuous education for pastoralist children. As a result, children can attend secular lessons for two hours in the late afternoon and two hours in the night after they are done with herding for the day. The EdTents have adopted both traditional classroom teaching methods as well as outdoor exercises, and presented curriculum through gamification and online platforms. For example, MIT’s *Fishbanks: A Renewable Resource Management Simulation* game was introduced to the children, and certain responsibilities were shared among them while tackling sustainability issues in their communities in order to test their leadership skills. The teachers also initiated other simulation methods during outdoor time to sharpen the children’s minds and rejuvenate them, including through meditation times among the students.

When conducting needs assessments during outreach activities, the RCE included Fulani traditional rulers and religious leaders to inform them of the importance of education, especially of the benefits children gain if they are able to read and write. This has helped greatly



Region:
Africa



Country:
Nigeria



SDG(s):
Quality Education
Industry, Innovation
and Infrastructure



Target audience(s):
Primary, Community



Ecosystem(s):
Grasslands



GAP Priority Action Area(s): 5



Language of project:
English



Contributing organisation(s):

- Centre for Renewable Energy and Action on Climate Change
- Bayero University Kano
- Economic Security Initiative (EcoSec)
- Partnership and Child Welfare for Sustainable Development
- National Television Authority Kano



Year awarded RCE Award:
2017



Cross-section of children after classes.

in both enrolment and retention of school pupils. The children enrolled during the first year of the programme got other children motivated to join the classes, including some that came uninvited. RCE members had to meet their parents to get permission for their children to become enrolled.

Results

In the communities where mobile classrooms were started, a formal school system had never existed; children in those communities have never had access to a formal education system. Every three months, the children were assessed based on what they were taught in terms of basic literacy and numeracy skills. Almost all of the children were able to read and write at the appropriate grade level by the end of the school year. Each grade has carried 30

children per class, and four sets have graduated as of August 2019, totalling 120 children graduating from primary school with critical literacy and numeracy skills. The happiness and pride on their faces tells a lot, because before the EdTents initiative, these children had never had access to the opportunities that education has opened up for them.

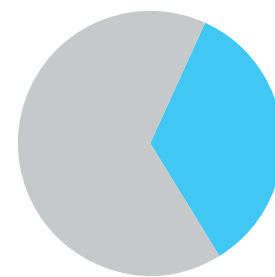
Lessons Learned

Although it can be difficult to deal with traditional rulers in rural areas, RCE Kano found that it was helpful to involve religious leaders as well as local government authorities before conducting a needs assessment. These people were critical in encouraging the nomadic communities to enrol their children in classes. Another lesson learned is that the teachers in mobile classrooms must be properly

incentivised for them to continue their work. Both parents and governments often assume teaching itself is its own reward, but appropriate incentives must be in place and neither parents nor local

government should put too much burden for child rearing onto teachers themselves. Furthermore, it is imperative to build trust with the local communities to guard against the theft of equipment.

9.4 million nomads in Nigeria



3.3 million
are children
of school age



Literacy rate ranging between
0.2% to 2.9%¹

¹ National Commission for Nomadic Education (As of July 2018).




RCE Severn


Region:
Europe





A practical workshop at the launch event.

 **Country:**
England,
United Kingdom


SDG(s):
 Responsible Consumption
and Production

Theme(s):
 Waste

Target audience(s):
 Primary, Community

Ecosystem(s):
 Urban/Peri-urban

GAP Priority Action Area(s): 5

Language of project:
 English

Contributing organisation(s):

- University of Gloucestershire
- Stroud International Textiles
- Atelier Stroud

Year awarded RCE Award:
 2017

Chapter Prosperity

Thread Counts

 **RCE Severn**



Rationale

RCE Severn provides a platform for ESD partners across the West Midlands and South West of England to work together in developing and implementing innovative projects and programmes related to learning for sustainability. Like many areas in high income economies, this region has seen an explosion of fast fashion and disposable textiles over the last twenty years, due to new technologies and a rise in offshore manufacturing that have led to cheaper clothing. As a result, an estimated 300,000 tonnes of used clothing is thrown away across the United Kingdom each year (WRAP 2020).

Objectives

The Thread Counts project was developed to address some of these big problems in the fashion industry. The project aims to engage businesses and fashion designers across the region to reduce textile waste by supporting peer-to-peer learning, research and development, and industry partnerships to make a local impact. Through a series of events and activities, Thread Counts aims to connect people so they can share skills, develop sustainable business practices, and create projects that will enable the fashion designers of the region to drive a wider change effort in the fashion industry.

The Thread Counts project has four key aims:

1. Business engagement: Supporting and collaborating with fashion businesses in the

region so they are able to learn about and apply sustainable and ethical principles in their commercial practice.

2. Research development: Driving a national and international agenda for sustainable production and consumption through the use of ethical designs among community partners.

3. Education and learning: Facilitating a platform for discussion and developing pedagogic frameworks for ESD in relation to fashion design and textiles.

4. Community Impact: Raising awareness of ethical textiles and sustainable fashion, promoting engagement, and creating a network for discussion, skill-sharing, and collaboration.

Student exhibition titled 'We need to talk about clothes'.





University of Gloucestershire, RCE Severn

Student learning.

Activities/Practices

Year 1 of Thread Counts in 2017 worked at three levels to facilitate education and learning around the consumption and disposal of household textiles:

1. **Community event** – the launch event centred on a practical workshop to engage local and regional communities and businesses in discussion and practice around the challenges of the consumption and disposal of household textiles including clothing. The event also included an exhibition of work from students and creatives.
2. **Student curriculum brief** – a curriculum-linked brief ‘we need to talk about clothes’ developed students’ practical and professional insights into sustainable fashion and textiles. Students created an exhibition to engage in partnership with community and business stakeholders, bringing to life the principles experienced through the Education for Sustainability focus of their curriculum.

3. **Academic professional development** – a conference presentation engaged industry and shared good practice in sustainability education around responsible consumption and production of textiles.

Results

The success to date can be observed in four main areas:

1. **New schools partnership and wider reach** – the profile and mission of Thread Counts has attracted attention from the local schools partnership who will run educational workshops that help children to understand the principles of the circular economy and build skills in the repair and upcycling of textiles over the next 12 months.
2. **Community interest** – there is growing evidence of requests for community clothes swaps and repair initiatives in the local region built from links through Thread Counts.

3. **Research developments** – research is now being explored between the fashion design group in the University’s School of Arts, and the marketing and retail group in the Business School that are interested in the retail behaviour and consumption patterns of fashion with a view to new projects.
4. **Curriculum development** – sustainability principles continue to be embedded in the fashion curriculum at the University of Gloucestershire. In 2019, students entered their work into the Radical Sustainability competition run through the RCE, with one student achieving a highly commended award for her work to address textiles waste from military clothing.

Lessons Learned

As a project with little capital resource, the successes of Thread Counts are under-pinned by its strategic connectedness with the Fashion Design Curriculum and Education for Sustainability programmes of the University. By working closely with these programmes and with other RCE projects, impact is scaling and regional partners are making connections through education with wider responsible consumption and production issues in the region.

In the UK:

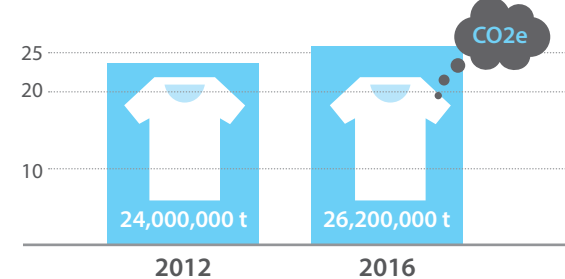
£140 million

worth of clothing goes into landfill each year

Source: WRAP (Waste and Resources Action Programme). 2020. Household Waste Prevention Hub: Clothing.



Carbon footprint of clothing in use in the UK in million tonnes CO₂e:



Source: WRAP (Waste and Resources Action Programme). 2017. Valuing Our Clothes: the cost of UK fashion.

In the UK:

336,000

tonnes of used clothing is thrown away each year.

Source: WRAP (Waste and Resources Action Programme). 2020. Why Love Your Clothes?



Civic Forum.

Chapter Prosperity

Improving a Public Transport System in Inje

RCE Inje



Rationale

Inje County was a battlefield during the Korean War from 1950 to 1953, and is still a relatively disconnected area due to its history of war and confrontation in the middle of the demilitarised zone. Inje County is located at the intersection of Baekdudaegan mountain range – which runs through most of the length of the Korean peninsula – and the de-militarised zone (DMZ). The area has both the best ecosystem diversity and abundance in Korea due to limited development activities because of its proximity to the DMZ, as well as

its constituent geography and ecology. It is an area of South Korea with a population of only 20 people per square kilometre, and still holds many characteristics of the mountain villages that have been present in the region since antiquity.

The area is becoming an eco-tourism hot spot due in part to the high quality of its water and air, in addition to a number of natural wonders. More than 1 million tourists visit the area annually to visit the natural environment. Attractions in the area include Soraksan National Park – Korea's first

UNESCO Biosphere Reservation Area, as well as South Korea's first Ramsar Wetland site – the High Moor, Yongneup of Mount Daeam. Also in the area is the preserved area within the DMZ, as well as the Wondaeri Birch Forest.

The public transportation of Inje County is very inconvenient and very uncomfortable. The majority of the one million tourists who visit Inje County annually, in addition to the local residents, use private vehicles as their main source of transportation because public transit is expensive and inconvenient. In addition, there are not many routes for public transportation in Inje County, making access to many of its natural wonders difficult, and when public transit routes do exist, transfer rates are not applied. Inje County has been paying over 1 billion South Korean won (KRW) in transportation income loss to guarantee the profit of a private bus company, but the service provided remains unsatisfactory. By improving the public transportation system used by local residents (including students, seniors, women, soldiers) and visitors, Inje County can improve accessibility to its many natural wonders, in addition to reducing greenhouse gas emissions and other environmental pollutants – and all while making the cost of public transit more affordable.

Objectives

The objective of this project was to teach residents about usage of as well as participation in the design of a mass transit system within Inje. The short-term objective was to educate the citizens of Inje about the route plan and fare structure for the new transit routes. Over the long-term, the project aims to educate tourists on access to the transit system as well as educate the area's citizens on improving and expanding route coverage.

Joint commitment signing ceremony for Inje County transit project.



Region:
Asia-Pacific

Country:
South Korea

SDG(s):
9 Industry, Innovation and Infrastructure, 11 Sustainable Cities and Communities

Theme(s):
Eco-tourism, Waste

Target audience(s):
Community

Ecosystem(s):
Urban/Peri-urban, Mountains

GAP Priority Action Area(s): 2

Language of project:
Korean

Contributing organisation(s):

- Inje Local Tour
- Inje Cheonryul Gil
- Inje Life Society Practice
- Yeonganj Association
- Inje Prosperity Council
- Military Council
- Aging Council
- Women's Association Council
- Farmer's Association
- Multiple Student Councils
- Multiple Regional Newspapers

Year awarded RCE Award:
2018

Activities/Practices

RCE Inje organised a committee with local residents to discuss the situation of public transit within Inje County and how it could be improved upon. A committee with a representative from each of the constituent organisations within RCE Inje was created to develop a plan to improve the public transportation system both in the short-term and over the long-term.

The committee's first order of business was to educate the local residents on the problems with the current transit system. Teams from RCE Inje visited many of the county's villages and addressed many of the organisations that are part of RCE Inje (such as the Women's Association Council and the Farmer's Association) as well as those that were

outside of the RCE (the Firefighter's Union). After educating local residents about the shortcomings and possible ways to improve the public transit system, RCE Inje carried out a residents' signature campaign to improve the local public transit system.

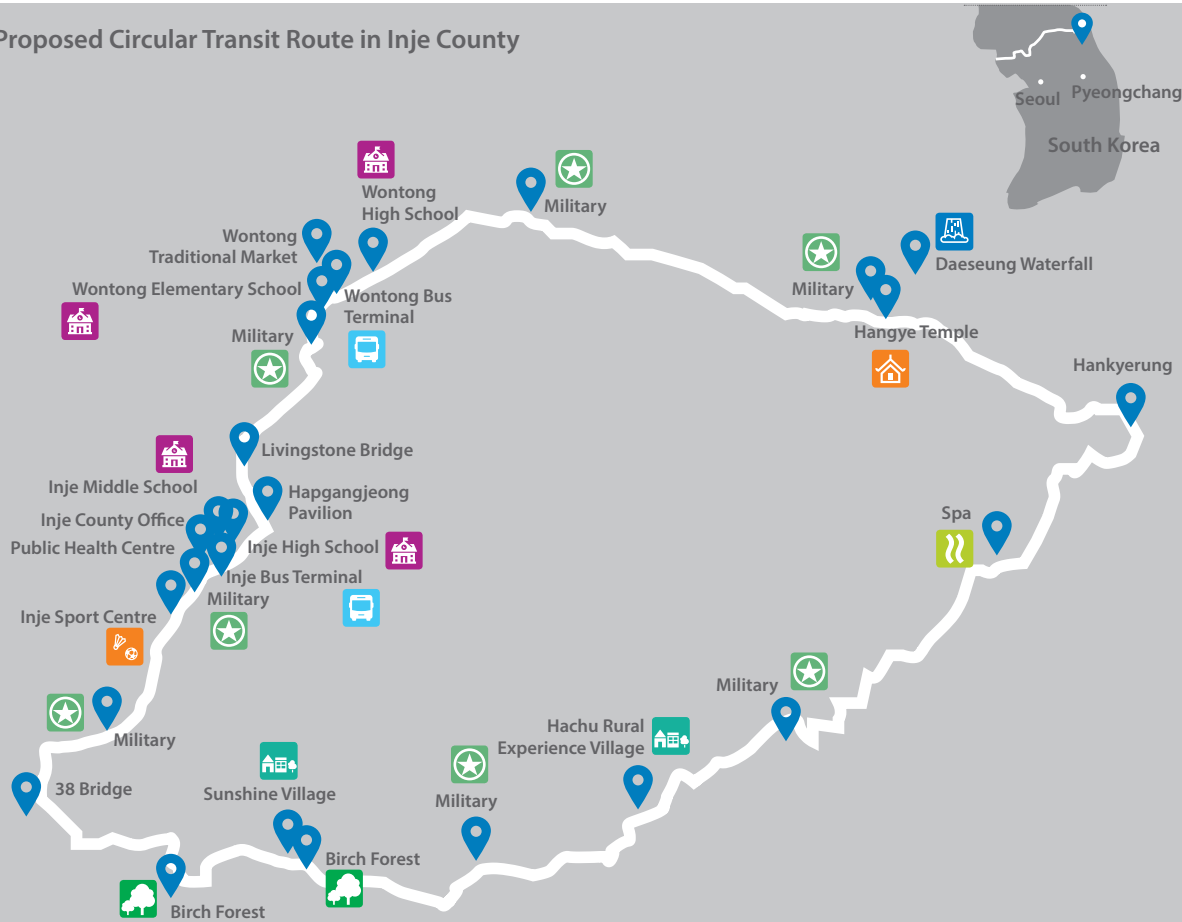
Through forums and seminars, RCE Inje invited the local government and county lawyers to inform residents about the current traffic policy, and encouraged residents to reflect on current policies and brainstorm solutions for new policies with public officials who were present. Approximately 5,000 residents (one-sixth of the county's population) participated in the education sessions and signed a petition for a new transit system which was delivered to local government.



RCE Inje

Social organisation education.

Proposed Circular Transit Route in Inje County



Results

As a result, the local government confirmed the implementation of a new fare structure and additional routes to accommodate both tourists and local residents and improve fuel efficiency. Thanks to the broad base engagement with education and co-learning facilitated by RCE Inje, the initiative had overwhelming public support, and the local government was able to save costs, decrease pollution from transit emissions, and improve access to both local residents and tourists.

Lessons Learned

The smaller the city, the greater the influence a group of well-educated citizens can make on local government. In order to improve the transit system within Inje County, it was important to educate the residents and create a centre point where citizens could participate in the design and

implementation of a new system, using their new and existing knowledge in order to express their voices.

In the initial education and training sessions, it was discovered that many local residents were not aware that the public transit situation could be improved, making it more convenient and less polluting. This indicates that citizens' awareness of the problem was not high, despite the hardship this system inflicted on students, soldiers, and the elderly.

Furthermore, by promoting public transit rather than private vehicles for tourists, Inje is now able to promote food and lodging along bus routes, promoting local business while decreasing the number of cars on the road.



RCE Curitiba-Paraná

Region:
Americas

Country:
Brazil

SDG(s):
4 5 8
Quality Education, Gender Equality, Decent Work and Economic Growth

Theme(s):
Arts, Curriculum Development

Target audience(s):
Primary, Community, Teacher Education

Ecosystem(s):
Urban/Peri-urban

GAP Priority Action Area(s): 2, 3, 4

Language of project:
Portuguese

Contributing organisation(s):

- Margarida Dalagassa Municipal School
- Cátedra Ozires Silva
- ISAE (ISAE Business School)
- UFPR (Federal University of Paraná)
- UTFPR (Federal University of Technology - Paraná)

Year awarded RCE Award:
2019



The 'II Sustainable Entrepreneurship Fair' (second edition), held in December 2019.

Chapter Prosperity

Sustainable Entrepreneurship in Schools

RCE Curitiba-Paraná



Rationale

Brazil is a country of great inequality, with some families living in great wealth while many families live in poverty. Additionally, much of the wealth in Brazil comes from non-sustainable practices with many impoverished households and communities under the belief that they have no choice but to contribute to an unequal and non-sustainable system in order to survive.

With these facts in mind, this project was created to change school childrens' perception and attitude about what the future of entrepreneurship and agency in the country could

be, as these students will inherit the country in the future. The project aims at transforming both the thinking and behaviour of school children in regards to rejecting a status quo of inequality and non-sustainable communities and economies, with the adaptation of other forms of teaching/learning and the greater participation of the children in the classroom. The objective is to shorten the distance between concepts and knowledge from the development of abilities and attitudes, in addition to increasing the students' autonomy and protagonism.

This initiative started in 2018, when the coordination team of the Municipal School asked for the RCE's help to develop a project addressing the Sustainable Development Goals (SDGs), which led to the creation of a project on Sustainable Entrepreneurship in Schools that covered not only the education of students, but also teachers and staff in the school during the second half of the year. At the start of the school year, each class chose an SDG to learn about and work with, addressing challenges in relation to it in their community. However, everyone realised that even when choosing a specific goal to work with in the class,

there will always be the need for the integration of everyone in solving problems relating to the different situations that may arise. Courses were structured so that students could identify the needs and define priorities for their community in relation to the goal, together looking for mechanisms and strategies to reach a favourable result. At the end of the academic year, there was a fair with the presentation of what the students learned as well as the solutions they proposed both for their peers as well as for their parents and community. Children work with the SDG while learning science, math, Portuguese, and other issues contained within the scholar curriculum.

The project is currently held at the Municipal School Margarida Dallagassa, but the idea is to amplify the network to other schools in poverty-stricken areas around the region.

Objectives

The objective of this ESD project was to create a methodology for teaching about the Sustainable Development Goals in primary schools that would frame school children as the protagonist in the struggle for sustainable development. The idea

SDG panel opening in March 2019. After the exhibition of the panel, each class presented how they would work with their chosen SDG.





Maria Cecília Araújo

Alignment meeting with the teachers in September 2018.

was to use school curriculum with the SDGs as a reference point for discussing social, economic, and environmental issues within the community. Students were presented other developmental paradigms for reference, but the focus was put on sustainable development to expand the repertoire on what could be, rather than what was. This was done to encourage students to seek solutions to local problems through an entrepreneurial approach of taking agency, and in the process creating sustainable development pathways for the community. Once the methodology was developed, the idea was to use it to create curriculum for each subject matter – not a special subject, so that that content would transverse all content during the school day.

Activities/Practices

Activities employed for the project centred on making the student the protagonist in her or his own learning. All of the classes used a ‘flipped classroom’ style of learning, where one student or a group of students would educate the rest of the class about the topic they were investigating in relation to sustainable development. Students also used more applied learning activities such as creating newspapers or radio programmes to disseminate information about sustainable development to the wider community – these

activities came to contribute to the practice of reading, writing and improving public speaking skills. They also learned to tend vegetable gardens to help supplement nutrition and to compost in order to reduce waste. Field classes were also employed to give students practical experience with the various actors working in sustainable development at the city level, including visits to the Museum of Life, Paraná State Legislature, Mananciais da Serra, and the Paraná State Federation of Industries FabLab. For teachers, regular meetings were held with RCE members and teachers and school administrators at the school to provide assistance on creating lesson plans and pedagogical instruction for the project.

Results

At the beginning of the 2018 school year, the project was in the pilot phase. From the start of the 2019 school year, the project ran until the end of the year. In 2019, a questionnaire was developed to direct the redesign of actions and students' understanding of the SDGs and sustainability in general, and to verify if there was any kind of attitude change by the students and their families. The instrument was applied at the beginning of 2019 and will be applied again at the beginning of 2020 to identify any gaps that remain. Also, the 2019 questionnaire clarified issues important to the

community to be incorporated into the project, such as the excessive use of straws and plastic bags in the region. Both the teachers' and students' perceptions of their work has been overwhelmingly positive in regards to implementing more sustainable behaviours. Teachers have said that students have become more participatory and interested in classes. Students have expressed they have become more confident and some of them have managed to change their family's routines.

There has also been an impact on the wider community through activities such as doing a blitz against river pollution, a Mother's Day SDG presentation, seed delivery (incorporating SDGs 2, 6, and 15), and the development of games for Children's Day, with these games printed by the school and offered as gifts for families in the community.

Lessons Learned

The main challenge in a project such as this is to keep people (including teachers, students, and community) believing in the ideology of the project. To do this, building a support network for the project with out-of-school experts from the RCE is critical to help it evolve. While project development is done jointly, it is important for teachers to have the autonomy to decide how they wanted to teach the content about SDGs and entrepreneurship, and it is important the students have the autonomy to choose the SDG they wanted to study. This has generated greater engagement and interest.

Also, it is advisable to create a network between the school and various sectors of the community to share and learn sustainable entrepreneurial practices. This helps in awakening the consciousness that we can all be transformers.

Testimonials from teachers and coordinators:



The school has grown together with the community and currently plays a very important role for these families. Ensuring quality education means empowering students and employees to face the constant challenges they need to face. For us, the school must be an institution that allows positive changes, inside and outside its walls, inside and outside everyone who is part of it.
- Maria Cecília Araújo & Sandra Mendes

Working with this project made us change our perspective on what is important. Assisting in the learning process and providing conditions for the development of sustainable protagonism is the way to transform a society. - Maira Ruggi & Josué Sander



Working with the SDG project is something new and challenging... it gives us as teachers much more than we were used to developing in the classroom. This challenge led us to research on the subject so as to become aware of the goals to be achieved, and more than that... it created in us a restlessness, led us to move in a new direction. I realised the size of our reality as educators to lead our students to become protagonists in their own lives.
- Sandra Neres

With the project, I realised that the students developed more autonomy. We have developed a solidarity campaign and the idea came from the children – most of the ideas come from them. It is the second year that I have followed this class and it is noticeable that they speak with more ownership of the subject, have more arguments to discuss. The children say that SDG 1 – No Poverty is very important. At the parent meeting, the parents ask about the SDGs and want to know more about them. Others say their children talk about the content discussed in class.

The SDGs enriched my way of teaching. We think it is difficult, but if everyone holds together, doing their part, we will see these children shining in the future.
- Bruna Paula Vieira de Brito Kurzydowski





A community involved in a river bank afforestation project at Sambainsa, Zomba, Malawi.

Next Steps

Dr. Philip Vaughter, Research Fellow, UNU-IAS

The projects that are featured here are just a small cross-section of the work RCEs around the planet have been engaged with during the Global Action Programme on Education for Sustainable Development and the first five years of the Sustainable Development Goals. But this is not where the work of RCEs begins or ends. RCEs have been working with innovative multi-stakeholder education initiatives for sustainable development since 2005, and will continue on into the future. Anywhere teaching and learning can contribute to the development of a more sustainable world – and this is everywhere – RCEs will have a role to play.

Humanity has used its ability to teach and learn in order to adapt to our environment since the beginning of our history. The recent large-scale proliferation of formal schooling systems since the onset of the industrial revolution has meant that more children than ever before have become competent in literacy, numeracy, and many other skills, carrying these skills into their adulthood. However, the proliferation of formal schooling has also lulled many into a false sense that learning ends after a given graduation date. In reality, learning is life-long, and as many of the projects featured here show, learning done in the classroom needs to be translated into learning done within a community at large in order to leverage actionable change for more sustainable living.

RCE Greater Western Sydney and RCE Yogyakarta's SDG Youth Challenge features a combination of initiatives where youth – many of who are students – have taken the initiative to act as educators not just to their peers but to their elders and to their whole communities on meaningful actions to take to mitigate and adapt to climate change. This is also showcased in RCE Greater Masaka and RCE Curitiba's projects, where school students have started to educate their parents and their neighbourhoods about the conservation of biodiversity and sustainable consumption and production systems, showcasing why education should not stop at teacher to student in the classroom.

This is one of the critical reasons ESD is so relevant to sustainable development going forward. The social conventions and technologies that have proliferated since industrialisation and globalisation have brought about many gains for conventional measures of human well-being, such as longer lives, more education, and greater wealth for many, though certainly not all. However, these same patterns of development have brought about many unintended consequences, and for this reason it is imperative to not rest on past laurels or rely solely on 20th century conventions of progress. ESD, with its focus on systems thinking, coalition building, and actionable solutions offers a way forward from education that focuses on siloed expertise,

Next Steps

individual learning, and banking knowledge, and instead uses it to implement action.

For many societies around the world, ESD is nothing new, and may indeed be seen as back to basics for many traditional knowledge systems. It is imperative that these societies are recognised for their sustainability practices and the teaching and learning associated with them. Learning from these societies will be a critical piece in maintaining what progress has been made while trying to undo the damage to the world's social and ecological systems that has been done.

With this in mind, it becomes critical to re-emphasise that education is a life-long necessity for everyone. The multi-stakeholder nature of RCEs represent the critical role that local governments,

NGOs, and the private sector also play in creating, innovating, and maintaining learning initiatives that can link to curriculum in formal schooling systems but can also reach community members who are not in formal education systems. The role of continuous training and public awareness efforts through informal education is paramount in advancing sustainable development, and for this to be successful many societies are going to have to expand their definition for who the target audience for education for sustainable development is.

RCEs –with their multi-stakeholder platform and their explicit commitment to engage with both formal and non-formal education initiatives – offer a working model on how to do this. The projects that are highlighted here offer a glimpse at how formal education institutions can partner with each other



Aboriginal cultural talk at Brewongle Environmental Education Centre, New South Wales, Australia, as part of a field trip during the 11th Asia-Pacific RCE Regional Meeting.

RCE delegates gather to learn about youth engagement and leadership addressing the SDGs at the 8th Americas RCE Meeting, held in Vermont, USA.



and also non-formal education actors to increase both the quality of the learning they are providing, but also expand the audience they reach. By working together in an RCE, educators – both those working in formal education and those working with informal education – reduce duplicate efforts, increase resilience, and expand their reach.

The award-winning projects featured here are highlighted not only to celebrate the successes of these RCEs, but to also offer a view of what needs to come next in order to use teaching and learning as a mechanism for implementing sustainable development across a number of different areas. It is hoped that these projects can inspire other educators and education policy makers to take a serious look at the need for partnership and action within their own communities as they address any number of sustainable development challenges that they are facing. Any of the ESD projects featured here are worthy of replicating and scaling up, and the global RCE community invites

readers to consider this for your own communities and regions. Education is such a powerful tool because it is exponential in nature – one good idea from one talented educator can inspire dozens, hundreds, even thousands to view the world in a new light and change their actions in it.

To learn more about other ESD projects within the RCE community, or to learn about how educators within your own city or community can become recognised as an RCE, please visit the portal for the Global RCE Network at:

<https://www.rcenetwork.org/portal/>

This site provides all of the most up-to-date information about activities and resources within the RCE community, and serves as a learning space and archive for educators from RCEs around the world to share their successes, challenges, and innovations for working with ESD at the community-wide level across a wide range of topics, themes, and audiences related to sustainable development.

List of Abbreviations

AFAWNSO	Association of Female Appointees and Wives of Niger State Officials	LVCEEP	Lake Victoria Catchment Environmental Education Programme
CISL	Coastal Institute for Sustainability Leadership	NEMA	National Environment Management Authority – Uganda
CPS	Cultivating Pathways to Sustainability	NGO	Non-Governmental Organisation
DESD	Decade of Education for Sustainable Development	NOAA	National Oceanic and Atmospheric Administration
DIWA	Development Initiative of West Africa	PDAFF	Provincial Department of Agriculture, Forestry, and Fisheries – Kampong Cham
DMZ	De-Militarised Zone	RCE	Regional Centre of Expertise on Education for Sustainable Development
DOA	District Office of Agriculture	SC	South Carolina
ERECON	Institute of Environmental Rehabilitation and Conservation	SDGs	Sustainable Development Goals
ESD	Education for Sustainable Development	SENSA	School Empowerment and Nutritional Supplementation through Agriculture
GAP	Global Action Programme (on Education for Sustainable Development)	UFPR	Federal University of Paraná
GCAP	Georgetown Climate Adaptation Project	UK	United Kingdom
GDP	Gross Domestic Product	UN	United Nations
GI	Green Infrastructure	UNACOH	Uganda National Association of Community and Occupational Health
GIS	Geographic Information System	UNDP	United Nations Development Programme
GTCS	General Teaching Council for Scotland	UNEP	United Nations Environment Programme
HDI	Human Development Index	UNESCO	United Nations Educational, Scientific and Cultural Organization
IAU	International Association of Universities	UNU-IAS	United Nations University Institute for the Advanced Study of Sustainability
ISAE	ISAE Business School	UTFPR	Federal University of Technology - Paraná
ITE	Initial Teacher Education	WWF	World Wide Fund for Nature
KNIA	Kampong Cham National Institute of Agriculture		
KRW	South Korean Won		

GAP Priority Action Areas

Priority Action Area 1	Advancing policy
Priority Action Area 2	Transforming learning and training environments
Priority Action Area 3	Building capacities of educators and trainers
Priority Action Area 4	Empowering and mobilizing youth
Priority Action Area 5	Accelerating sustainable solutions at local level

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Contacts

For more information about RCEs or how to become a member, please contact the Global RCE Service Centre, Education for Sustainable Development Programme, UNU-IAS, rceservicecentre@unu.edu.

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