



United Nations
Educational, Scientific and
Cultural Organization



United Nations Decade of Education for Sustainable Development
(2005-2014)

Education for Sustainable Development Good Practices in Addressing Climate Change



Education for Sustainable Development in Action
Good Practices N°5 - 2012
UNESCO Education Sector

**Education for Sustainable Development Good Practices in
Addressing Climate Change**

U N E S C O

**Education for Sustainable Development in Action
Good Practices N° 5**

2012

Published by the United Nations Educational,
Scientific and Cultural Organization
7, place de Fontenoy, 75732 Paris 07 SP, France

© UNESCO 2012
All rights reserved

The designations employed and the presentation of material throughout this publication do not imply the expression of any opinion whatsoever on the part of UNESCO concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

The authors are responsible for the choice and the presentation of the facts contained in this publication and for the opinions expressed therein, which are not necessarily those of UNESCO and do not commit the Organization.

Education for Sustainable Development Section (ED/PSD/ESD)
UNESCO,
7 Place de Fontenoy,
75352 Paris 07 SP, France
email: esddecade@unesco.org
web: www.unesco.org/education/desd

Cover design: Helmut Langer

ED/PSD/ESD/2012/PI/18

Introduction

Since the beginning of the UN Decade of Education for Sustainable Development (DESD, 2005-2014), the DESD Secretariat at UNESCO Headquarters in Paris has received numerous requests for case studies and descriptions of good practices in Education for Sustainable Development (ESD). These requests have increasingly included issues of providing an educational response to climate change. The increasing number of requests is only one indicator that climate change education is increasingly recognized in the broader education community as an essential part of ESD and life-long learning.

ESD is a complex and evolving subject, and how it is applied and implemented is a challenge for all countries. The Decade aims to see ESD implemented in thousands of local situations on the ground, involving its integration into a multitude of different learning situations. These initiatives can be catalysts for action and contribute to the goals and objectives of the Decade. In such ways, organizations, local communities and individuals can be actors within the global movement for sustainable development.

To support the growing interest in climate change issues and ESD, UNESCO is publishing this volume containing 17 examples of programmes addressing climate change in ESD settings and practices. These good practices and shared experiences, which were provided by a range of different stakeholders, are concrete examples of successful implementation of ESD in different fields and sectors, from the political to the school level, and including formal, non-formal and informal learning situations.

We trust that this selection of good practices will assist different stakeholders in their efforts to implement education for sustainable development and encourage sharing of experiences between different parts of the world.

Contents

Introduction

1. Corporate Contributions to ESD: the development of *Kids X change* Learning Materials by Nippon Express 7
Japanese National Commission for UNESCO, Japan
2. Compass Schools Initiative 10
AtKisson Group – Responsible Affiliate: Systainability Asia, Thailand
3. The Role of Education for Sustainable Development in Combating Climate Change 16
Emirates Environmental Group (EEG), United Arab Emirates
4. Phénoclim : quand les citoyens mesurent l'impact du changement climatique sur la végétation 21
Centre de Recherches sur les Ecosystèmes d'Altitude (CREA), France
5. CarboSchools 25
Max Planck Institute for Biogeochemistry, Germany
6. NaturGut Ophoven 29
NaturGut Ophoven e.V, Germany
7. ECO-UNESCO's Youth for Sustainable Development Peer Education Programme 33
ECO-UNESCO, Ireland
8. Fighting climate change: human solidarity in a divided world. Educational material based on the 2007-2008 Human Development Report 38
UNESCO Center of Catalonia-Unescocat, Spain
9. Ekospinning – Share your energy 41
Jesús Obrero Secondary and Vocational Training School & Ingurugela, Spain
10. Earth Hour education 44
WWF Sweden, Sweden
11. Inquiry-to-Insight: learning climate change through environmental e-learning 47
Sven Lovén Center for Marine Science, University of Gothenburg, Sweden
12. A Transition Town approach to empowering the pupil's voice 52
Susted, United Kingdom
13. The lived experience of climate change: e-modules and virtual mobility 55
The Open University, United Kingdom
14. School's Global Footprint 58
WWF Scotland, United Kingdom
15. Ambientarte 62
Programa EcoPlata, Uruguay

16. Carmelo: desde el rescate de sus refranes y recuerdos colectivos hacia una Cultura de Prevención 66
Amigos del Viento Meteorología Ambiente Desarrollo, Uruguay
17. Food security and climate change challenge badge 71
FAO, Rome

1. Corporate Contributions to ESD: the development of *Kids X change* Learning Materials by Nippon Express

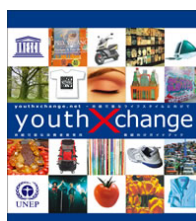
Japanese National Commission for UNESCO, Japan

CONTACT Japanese National Commission for UNESCO
3-2-3 Kasumigaseki, Chiyoda-ku, Tokyo 100-8959
Japan
Tel: 81-3-5253-4111
Email: jpnatcom@mext.go.jp

Takashi Asai (Mr), Deputy-Secretary General, Japanese National Commission for UNESCO

DESCRIPTION Youth X change is a program by UNESCO and UNEP. It aims to cultivate an understanding among people aged from 15 to 25 on how we should live and consume in order to realize a sustainable society. Nippon Express is the first Japanese corporation to cooperate with the program, in producing a Japanese version of the learning materials for use by teachers.

Based on “youth X change,” Nippon Express has launched the “kids X change”, an environmental learning material, and disseminated it for elementary schoolers, as one of their community/social action programs. The “kids X change” project comprises learning materials for children in the 4th to 6th grade, as well as teaching manuals for teachers.



OBJECTIVES Through the use of these learning materials in elementary schools, it aims to cultivate the ability of children who are expected to establish the sustainable society in the future. It also aims to encourage children to think about more profound issues on the earth and our societies, utilizing familiar “goods” as a catalyst. It uses the slogan “if children change, the earth will change” to express their ideals.

WHO?

Type of organization managing the initiative Private Sector

Partners/stakeholders involved Nippon Express

Persons involved Elementary school students and teachers

WHAT?

Educational / learning setting and level Elementary school

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings
 Education of educators
 Tools and materials
 Research and development
 Regional/international Cooperation

Themes Overcoming poverty
 Environment
 Climate change
 Sustainable production and consumption
 Responsibility in local and global contexts

WHEN?

Starting year and duration 2007

WHERE?

Geographical setting Japan

METHODOLOGY

Methods approaches & Development of learning materials is supervised by teachers with real-life experience. Through its use in regular classes, children enhance comprehension and gain a broader perspective, by linking the topic of the earth's environment with subjects such as social studies and home economics. It also provides quantitative and example-based learning on global environmental issues such as climate change, including rising ocean surface temperatures and hurricanes. In addition, it is structured in a way that facilitates learning of the links between environmental issues and daily life, enabling children/students to realizing a familiarity with issues facing the global environment.

Teaching manuals comprise worksheets that are designed to enhance the comprehension of education contents and provide management models that indicate class time allocation. They also help children exercising ingenuity to foster deeper understanding. Additionally, each item is linked with the MEXT Course of Study, making it easy to formulate class plans/schedules. The materials are distributed to elementary school children and teachers. In addition, the teaching manual and DVD for open-class are distributed to teachers, which the teachers can base their classes on, utilizing the "kids X change" textbook. Those materials are used utilize them as tools for 3rd and 4th graders to prepare for 5th grade (and above) material, and 5th and 6th graders to review junior high material.

Working language(s) Japanese

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

Results Learning materials started to be used in January of 2008. They were distributed to 73 elementary schools around the Kanto area primarily. In July of 2008, Nippon Express and MEXT collaborated in organizing the "UNESCO School Symposium" at Nippon Express headquarters. The symposium featured a model class of the Shinonome Elementary School (in Koto-ku, Tokyo) utilizing the "kids X change" textbook, as well as a discussion panel on ESD.

By March of 2010, classes utilizing the "kids X change" textbook were conducted at

fifty-eight schools, with a total of 3502 children attending. Of these, Nippon Express independently implemented “home delivery classes” at five schools.

Such environmental learning materials never existed before, and survey results showed that teachers and children both rate the materials very highly, and generally expressed their satisfaction. Many children, as well as their guardians, reported that studying these materials inspired them to come up with unique ideas for protecting the environment, changing their perspective on environment in the process. There has also been a request from a university to utilize the materials for teacher training. These materials have gained remarkable popularity, beyond their original target audience.

Perspectives

Conditions for successful replication for Revise learning the contents of materials to reflect the opinions and voices of teachers and children/students in school; and continue to carry out ESD activities at schools.

2. Compass Schools Initiative

AtKisson Group – Responsible Affiliate: Systainability Asia, Thailand

CONTACT

AtKisson Group – Responsible Affiliate: Systainability Asia
55/170 Lad Prao Soi 29, Lad Prao Road, Chatuchak district, Bangkok 10900
Thailand
Telephone: +66 (2) 513-5063 Fax: +66 (2) 513-5064
E-mail: robert@atkisson.com Internet: www.atkisson.com
Robert Steele, Director, Systainability Asia (www.systainabilityAsia.com)



OBJECTIVES

The Compass School Initiative engages school communities in using a holistic and systemic approach in understanding and modelling sustainability practices and to facilitate transformational change in how schools teach, learn, operate and interact with the broader community. The network works with students, teachers, administrators, parents and communities to:

- Promote fluency in ESD, such as processes for learning how to take local action for climate change;
- Apply systems thinking to school strategic planning, learning and other transformational processes;
- Share examples and lessons learned on using the Compass in teaching,

student-led activities and school planning; and

- Learn how to accelerate institutional change to address climate change and sustainable development, in general.

Relate to national priorities The Compass School Initiative engages schools in a process of identifying relevant sustainable development priorities within the school community that are significant to each nation's sustainability agenda (e.g. climate change) and developing locally relevant strategies to address them.

WHO?

Type of organization managing the initiative Non-governmental

Partners/stakeholders involved Schools
Higher education institutions
Non-governmental organizations
Private sector

The Compass Schools Initiative (CSI) is a program of the AtKisson Group, an international network of sustainability service providers. The network includes both for-profit and non-profit organizations throughout the world. Key affiliate organisations are located in Europe, Japan, South East Asia, North America, Australia, and in the near future, West Africa. Currently, the affiliate coordinating the Initiative is Sustainability Asia (Bangkok), working with a team of professional educators from international schools, international consultants, and education specialists.

The Compass Schools Team facilitates organizational learning in the adoption and use of the Sustainability Compass: N=Nature, E=Economy, S=Society, W=Wellbeing. Institutions using the Compass -- and a related set of learning, planning, and assessment tools called Accelerator -- include a growing network of international and public schools, universities and civil society organizations in Asia, Europe, and North America, with a special focus on East Asia. The program builds on previous programs in community and business-related sustainability, which also use the Compass framework.

Leading practitioner schools and institutions in Asia include: Thailand Department of Environmental Quality Promotion (DEQP) – 31 pilot Eco-schools throughout the country; Prem Centre for International Education (Chiang Mai, Thailand); New International School of Thailand (NIST – Bangkok, Thailand); International School Tianjin (Tianjin, China); Trisakti University (Jakarta, Indonesia); Xavier University (Mindanao, Philippines); Western Academy Beijing (Beijing, China); University Science Malaysia (Penang, Malaysia). In Europe, adoption of the Compass is led by the Baltic University Programme, a network of over 200 universities focused on education for sustainable development and based at Uppsala University in Sweden.

These schools and institutions are using the Compass in diverse ways and at different levels of application. For example, the 41 pilot schools participating in Thailand's Eco-school programme are using the Compass to help them integrate sustainability into four areas of school life: 1) Resource Management (particularly energy conservation and water management); 2) Teaching and Learning; 3) Facilities and Grounds, and 4) Networking and Participation with Community. Many of the schools are using Compass in the classroom with the existing curriculum to aid in more holistic analysis of perspectives and cause-effects.

Throughout the Compass Schools network, teachers, lecturers, and administrators are using the Compass as a common platform for integrating sustainability into every area of school operations. Teachers use it to link climate change to different subjects across the curriculum and to guide holistic lesson planning, including classroom discussions and school events. Students use the Compass to guide group work, to help them think holistically about their assignments, and to develop/conduct community projects related to climate change. School administrators are learning to use the Compass to guide school strategic planning in consideration of climate change and relevant sustainable development issues in their communities. Universities are also beginning to use Compass and the Accelerator tools in their sustainability programs, within specific

courses as well as used in stakeholder analysis of current issues and in planning. The CSI Team is also developing strategies for linking the Sustainability Compass to school monitoring mechanisms, engaging the broader school community in climate change related issues, and adapting the Compass to different school contexts. CSI network members are encouraged to share good practices and examples of using the Sustainability Compass through an online web platform and regional workshops.

Almost all of these school and university initiatives are focused on understanding and mitigating the key drivers of global warming and climate change on their campuses and institutional facilities. Compass-related programming addresses the behaviours of students, teachers and staff, as well as institutional management issues such as purchasing or food service.

CSI is headed by a steering committee of AtKisson Group affiliates who provide oversight and technical support to the network and to CSI events and projects.

Persons involved

To date, the Compass School Initiative has focused on engaging participating schools and universities to reach out, primarily, to the student body and teachers of each school or institution. Administration, staff, and often parents, are also secondary target learners for this initiative. To date, the CSI network consists of 41 government schools in Thailand, approximately 15 international schools in Asia-Pacific, several universities in Asia and Europe, and an international NGO in East Asia. It is difficult to estimate the total number of people reached, but the learners certainly number in the thousands. The Sustainability Compass has been introduced to over 2500 teachers and administrators throughout Asia during international conferences and workshops; and to hundreds of university teachers and students in northern Europe. Many of these teachers have then gone on to use the Compass in their classroom activities.

Network members continue to learn from each other by sharing good practices and examples of using the Compass in different educational settings. As different school contexts continue to nurture interest and learning about the Sustainability Compass, CSI intends to extend its outreach to public schools and to work with more school communities, universities and civil society organizations outside of Asia.

WHAT?

Educational / learning setting and level Further and higher education
 Primary education
 Teacher education
 Secondary education

WHY?

General focus of the initiative Policy, regulation, governance (in schools)
 Learning for sustainability in formal, non-formal and informal settings
 Education of educators
 Tools and materials

Themes Cultural diversity
 Citizenship
 Environment
 Climate change
 Water
 Biodiversity
 Natural resource management
 Governance
 Economy
 Sustainable production and consumption
 Responsibility in local/global contexts
 Well-being

WHEN?

Starting year and duration The Compass Schools Initiative was launched in July 2009. This will be an on-going initiative that is intended to gain momentum and become a global network of schools, universities and other education and training institutions who are using the Compass to aid in holistic teaching, learning, thinking, decision-making and action.

WHERE?

Geographical setting Local: School Communities
 Regional: South East Asia, Europe, China
 International: the initiative has the capacity to go global in the future

METHODOLOGY

Methods approaches & The Sustainability Compass was developed in the late 1990s by Alan AtKisson, founder of the AtKisson Group, as a contribution to an international research program on sustainability indicators. The framework then grew from a platform for indicator development for communities, into a general sustainability framework with several different applications, including Corporate Sustainability/CSR management, Integrated Water Resources Management, general stakeholder dialogue management, and the present Compass School Initiative.

The Sustainability Compass uses the four points of a compass to create a simple, practical, and comprehensive framework for thinking holistically about climate change and sustainability. The directions "North, East, South, West" are renamed Nature, Economy, Society, and Wellbeing, drawing on the pioneering theoretical work of ecological economist Herman Daly. The Compass is one of several tools used by AtKisson Group associates to promote holistic thinking about sustainability in businesses and communities worldwide.

The Sustainability Compass began to make its way into International Schools in Asia in 2008. The enthusiasm of the first pilot schools led to the creation of the Compass School Initiative, which provides a formal platform for: 1) sharing among schools already using the Compass to promote holistic thinking about climate change and sustainability; and 2) supporting new schools who wish to engage with the Compass. The Compass School Network facilitates learning and exchange for using and adapting this sustainability framework in a variety of school contexts through workshops, a Compass School Practitioner Handbook, and an online platform.

Working language(s) English, with local translation/adaptation of the Sustainability Compass encouraged

Budget and funding sources Compass School Workshop tuition contributions (current), Compass School network membership fees (future)

RESULTS & EVALUATION**Presentation of effects, results or impact of the initiative**

Evaluation initiative of As the Compass School Initiative is just completing its first year, a formal evaluation has yet to take place. However, formal evaluation feedback has been received from participating schools and improvements are currently made through experiential and reflective learning processes. A web-based sharing platform has been established whereby participating schools are encouraged to share their experiences, reflections and lessons learnt on using the Compass. This is still an informal and qualitative assessment. In the future, university institutions, and particularly education faculties, will be invited to assist in evaluating various aspects of the programme and network, including baseline information, process and context, facilitation and learning as well as outputs, outcomes, impacts and performance. Currently, the Faculty of Education of Chulalongkorn University (Thailand) is monitoring the use of Compass with the 41 pilot schools of the DEQP Eco-school project.

Results Early tangible results have emerged in one of two ways: 1) motivated teachers begin using the Sustainability Compass in their classrooms; students respond very positively; and the administration and other teachers gradually come on board as

students gain interest and demonstrate more in depth critical thinking; and/or 2) the school leadership engages with the Compass from the beginning, uses it as a basis for school planning, and encourage teachers to use it in their own teaching and planning. Impacts have included changes in waste management, transport, food service, community outreach programming, and energy conservation, to name a few. It is important, however, to note that the program is still at a relatively early stage of development; we expect increasing tangible results over time.

Analysis of success factors

Strengths The Sustainability Compass is perceived by schools to be practical, intuitive and easy to use. For the most part, teachers are “quite keen to introduce it to students as a tool to promote a ‘different kind of thinking’” (quote from workshop participant). Grade 1 primary school students in an international school in China, for example, have used the Compass with their *how we share the planet* unit to consider how they can change the environment by the choices they make about garbage. Students in Thailand have also used the Compass as a basis for school science fair projects related to climate change and responsible energy use.

Schools who are deeply engaged with the Compass have been able to identify clear links and benefits between student learning, school governance, management and even teacher professional development. In a school in Thailand, students have used the Compass to learn about climate change and, in the process, identified links between climate change, air conditioning and school costs. As a result, students worked with the administration to cut unnecessary air conditioning use, which resulted in financial savings for the school – teachers, students and administrators all learned in the process.

Weaknesses & risks As of June 2010, the Compass School Initiative has had the most opportunity to engage with private international schools. Due to the availability of resources, international schools offer a solid platform for identifying practical challenges and solutions for using/adapting the Sustainability Compass in educational settings. However, by focusing on international schools at the outset, the Compass School concept can be perceived to be inaccessible by public schools, especially those in rural developing countries. Therefore, additional examples are needed to further engage the public school sector. Universities and civil society organizations may be able to assist through research and learning about the Compass in their affiliated schools.

A need also exists to link the Compass School Initiative to existing school standards and indicators to complement school planning, teaching, learning and administrative processes. Otherwise, the Compass runs the risk of being perceived as “something extra” for discussing climate change and sustainability, rather than supporting ongoing curriculum and school planning processes.

Constraints

Problems encountered A key challenge exists in building initial school support for the Sustainability Compass. Like any new initiative, unless school leadership is on board from the beginning, teachers who wish to try the Compass can encounter resistance from colleagues and school administrators.

Unresolved issues As of June 2010, the formal network structure and business model require fine-tuning to facilitate network expansion. Additional capacity is also envisioned to develop supplementary network materials, facilitate online discussions, conduct webinars and provide technical assistance to schools on a regular basis.

Perspectives

Conditions for successful replication Fine tuning the network business model, linking and adapting the Compass School Initiative to existing school standards and indicators, school leadership support for ESD and/or climate change in education initiatives.

Why do you consider this a good practice? The Compass School Initiative builds on momentum that already exists for using the Sustainability Compass in educational settings. Through regional workshops and advocacy, momentum continues to grow. The Compass was introduced to 1500 international school teachers and administrators at the East Asia Council of Overseas Schools annual conferences for teachers and administrators in March and November 2008, and to 1000 public school teachers in Indonesia in May 2010 at the Indonesia Teachers Congress. CSI also engages schools in learning for climate and sustainable development through practical means. Teachers have noted that the Compass is intuitive, that it encourages holistic and critical thinking, that older

students *enjoy* using it and that younger students *can* use it. In consideration of climate change and sustainability, CSI also helps schools transform through school planning, school-wide events, student-led projects in the community, lesson planning, classroom discussions and student group work. In short, the Compass School Initiative maintains many of the positive benefits that characterises good practices, especially opportunities to learn, improve and be adaptable to the local context.

3. The Role of Education for Sustainable Development in Combating Climate Change

Emirates Environmental Group (EEG), United Arab Emirates

CONTACT

Emirates Environmental Group (EEG)
P.O.Box 7013, Dubai
United Arab Emirates
Telephone: 00 9714 344 8622 Fax: 009714 344 8677
E-mail: eeg@emirates.net.ae Internet: www.eeg-uae.org
Mrs. Habiba Al Marashi, Chairperson, Emirates Environmental Group / Board Member – United Nations Global Compact

DESCRIPTION

By conducting workshops for teachers and students on education for sustainable development, EEG enhances the knowledge and equips the educational segment of the society with the tools to combat climate change at the local level.





OBJECTIVES To improve the quality of basic education for sustainable development in the UAE and to sharpen the environmental skills of the students as well as their teachers. To encourage 'green thinking' among the participants and offer opportunities to build up channels of communication and networking. To address the role of ESD in engaging the youth in combating climate change

Relate to national priorities According to the 2008 WWF Living Planet Report, the UAE's per capita footprint was found to be 9.5 global hectares which means that UAE is being named as having one of the biggest carbon footprints in the world. Hence, it has become imperative to monitor human activity, and curb our adverse effects on the planet. EEG believes that the youth of today will be the most affected and hence can become a key player in contributing to cutting carbon levels. This can be achieved through education that will help to empower young people to make informed choices that will lead to a sustainable future.

WHO?

Type of organization managing the initiative Non-governmental
Voluntary organization

Partners/stakeholders involved Local authorities
Pre-school institutions
Schools
Higher education institutions
Non-governmental organizations
Private sector
Media
Intergovernmental, international institutions

Persons involved The key stakeholders for the workshops are:

- Teachers/Students from various schools and colleges in the UAE
- Participants from various organizations those who are interested in the topics
- Trainers running eco-clubs
- Sponsors
- Speakers from international and regional contacts

EEG has strong relationships with participating institutions. Although our relationship with supporters and sponsors is strong and mutually supportive, each year we have to renew our partnerships and seek out assistance with running the programmes.

Teachers, students, individuals and organizations that deal with that aspect of the environment, corporate members that wish to support such environmental endeavours. (Teachers' Workshop – 100+ attendees / Students' Workshop –

500+ attendees)

WHAT?

Educational / learning setting and level Further and higher education
 Primary education
 Teacher education
 Secondary education
 Non-formal: Several social groups that work towards protecting the environment as well as members of various eco-clubs

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings
 Education of educators
 Tools and materials
 Research and development
 Regional/international cooperation

Themes Environment
 Climate change
 Water
 Biodiversity
 Natural resource management
 Corporate responsibility
 Sustainable production and consumption
 Sustainable urbanization

WHEN?

Starting year and duration Since 2001, EEG has been conducting annual workshops for the teachers and the students. Since 2005, our workshops have been giving special emphasis on 'Education for Sustainable Development'. Topics like global warming and climate change, green education, sustainable futures are brought forth in these workshops.

On March 29 – 30, 2010, EEG held its workshop for the teachers to enlighten the trainers on the topic "bridging the generational challenge: Youth and Climate Change. Pictures and write up of the teachers' Workshop can be seen on EEG's website: <http://www.eeg-uae.org/>

EEG will also be conducting a similar workshop for students at four levels: (10 – 12 years / 13 – 15 years / 16 – 18 years and 19 – 22 years) from October 18th to 21st, 2010 on the same topic but with a students' perspective.

WHERE?

Geographical setting Local: all the workshops have so far been conducted in Dubai since 2001
 Regional: Regional environmental experts pool in presenting the workshop in Arabic
 National: participation from all the 7 Emirates in the UAE

METHODOLOGY

Methods approaches & EEG's approach is to engage all members of society in its environmental endeavors, with specific attention placed on the educational sector, thereby creating environmental awareness and proactive-ness at many different levels.

Working language(s) English

Budget and funding sources EEG has been conducting the Teachers and Students Workshop since 2001 and plans to maintain its momentum for years to come. To fund the events, EEG engages

its corporate partners in a strategic plan to support these Workshops in succeeding years.

EEG also collects a token registration fee from participating teachers/students; these act as a sign of commitment from participating attendees and partly cover administrative costs.

At times, EEG is able to procure a venue for such workshops from its member institutions, in exchange for some services rendered to the concerned institution. At other times, environmental experts from the region conduct their lectures and give presentations on a complimentary basis; in return for the exposure they get to this country and a platform to sensitize the pulse of the UAE residents.

However, being an NGO, EEG has to constantly meet the challenges of sourcing its funds from its network of corporate and associate members who partner with the organization for different events.

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation of initiative of yes

Results

The concept of Education for Sustainable Development is at its infancy stage in the UAE. Nevertheless, the awareness that is gained through these workshops have led to the following;

Schools have begun to have special days like: paperless day, water awareness day, collection of old clothes and books that can be given to charity houses.

More than 150 schools have joined the EEG various recycling campaigns that include collection of recyclables like paper, aluminium cans, glass, plastic, cartridges/toners, batteries, tetra pak and mobile phones.

The formation of environmental clubs in schools, science days dedicated to environmental issues, etc

Programs like 'cool challenge' have student volunteers that are responsible for keeping the usage of electricity to the basic minimum and switching the lights/electrical gadgets off rather than on a sleeping mode. The amount of electricity saved on comparative scales is measured in terms of energy saved and the cost reduced.

Corporates that sponsor such events display their corporate social responsibility by willing to support such workshops repeatedly even if it is in the form of partial sponsorship.

The workshops have attracted a wider participation from all the seven emirates in the UAE. The event, being a workshop has compelled EEG to follow 'first come first served' policy for registering its participants

The interest generated through these workshops lead to greater participation from the academic as well as the corporate businesses- in EEG's activities or undertaking environmental projects and awareness building on their premises. Every year more members of EEG get together to join the EARTH HOUR organized by DEWA.

EEG's Million Tree Project (an offshoot from UNEP's Billion Tree Campaign) has attracted a huge participation thereby facilitating the planting of 1,615,110 indigenous trees in the UAE.

Local Municipalities and several businesses support and participate in EEG's Clean Up Campaigns and Can Collection Drives.

Analysis of success factors

Strengths

To achieve qualitative and quantitative success in future events, EEG works on the feedback it receives from its participants. A CD, reducing paper consumption, is presented to every attending institution with all the material presented during the course of the workshop. This helps the attendees to use it as a blueprint in their respective schools and colleges to conduct similar workshops, thereby passing on the valuable information to a greater segment of the community.

Students' workshop: The workshop on climate change contributed to a new learning experience for the students, in gauging the impact of man towards the changing climatic conditions. The accompanying teachers felt better equipped to deal with the subject on 'Green Education' with the material shared during the workshop. Important

topics like the carbon cycle, emission limits, carbon quota were well presented and gave a clearer picture of what needs to be done.

Teachers' Workshops: The workshop helped the delegates to handle the environmental challenges confidently as they were able to have a greater understanding of issues. They had greener ideas on how to contribute towards reducing CO². The 'closed loop' concept was well accepted as the participants felt it was the right direction towards a sustainable future. This project also builds the capacity of the Arabic Speaking teachers as the workshop conducted on the first day caters to the English speaking faculty, while the second day the workshop is facilitated by a regional speaker, presenting the translated version of the workshop in English that is generally conducted by an international speaker. In this way, EEG is able to reach out to all the private and government schools in the UAE.

These events enhance EEG's scope of activities making it the key catalyst and campaigner for climate change education in the Emirates.

Weaknesses & risks EEG has been able to conduct such workshops physically in the Emirate of Dubai only.
Being an NGO, all initiatives recommended by EEG are taken on a voluntary basis. As long as there is interest and societal acceptance of the healthy green practices, people will be proactive. Should there be a non acceptance from any management to support these endeavors, that organization or institution has to abide by the policies chalked out by their management

Constraints

Problems encountered Cultural acceptances of saving the natural resources, the need to reuse, reduce and recycle.

Individuals that take the lead in changing behaviours are at times isolated or move on away from the UAE as the expatriate community is high and always changing.

Unresolved issues Technical assistance in formulating an accurate carbon calculator to enable the actual footprint at the individual and organizational levels that is appropriate for the climate and lifestyle in the UAE.

Energy saving meters – to assist in measuring saved costs and energy due to initiatives taken by students and management to close the educational loop and prove to students that their actions have had an impact.

Perspectives

Conditions for successful replication Constant research on recent environmental concerns, finding experts in that field to present in our workshops, funds to conduct the workshops every year and active participation from the various educational institutes in the UAE.

Why do you consider this a good practice? Conducting such workshops are very effective. EEG believes that the teachers are responsible for shaping young minds into greener mindsets. Pertinent environmental topics are put forth and experts in the field are invited to further educate and update the teachers. The knowledge, skills and experience gained in the workshops is passed on to thousands of students, contributing in the social preparation of the future leaders of the land. The students workshop give an insight into the similar topic from the students' perspective thereby bridging the gap of the teacher and the student.

4. Phenoclim: measurement by the general public of the impact of climate change on plant life

Centre for Research on High Altitude Ecosystems (CREA), France

CONTACT Centre for Research on High Altitude Ecosystems (CREA)
Observatoire du Mont Blanc – 67 lacets du belvédère – 74400 Chamonix
France
Telephone: (+33) (0) 4 50 53 45 16
Email: phenoclim@crea.hautesavoie.net Website: www.crea.hautesavoie.net
Phenoclim Programme website: <http://www.crea.hautesavoie.net/phenoclim>
Floriane Macian, Scientific Communications Officer and Phenoclim Network Coordinator



OBJECTIVES

- To measure the impact of climate change on plant life in the Alps by studying phenology, or the date at which seasonal events occur, such as flowering or leaf drop. These phenomena are intimately linked to temperature, as measured at a network of stations specially installed for the Phenoclim programme. Participants choose three plant species out of a list of ten and follow three plants per species. The study area must be located near to the participants' home as, every week during Spring, they are required to note the dates at which buds, leaves and flowers appear and, in Autumn, when the leaves drop (mid-point and end of leaf-drop) and change colour (beginning and mid-point).
- To provide a concrete and guilt-free way of raising public awareness of climate change
- To establish links between the general public and the research community
- To develop a sense of civic responsibility through participatory science projects

- To develop skills of observing everyday natural phenomena.

Relate to national priorities

This initiative reflects the desire to develop research on climate change in order to improve capacities for adaptation, as well as to raise public awareness, especially in this International Year of Biodiversity (2010).

WHO?

Type of organization managing the initiative

Non-governmental

Partners/stakeholders involved

Government (National/provincial/district)

Local authorities

Schools

Research institutions

Non-governmental organizations

Private sector

Conservation areas

Phenoclim volunteer observers comprise schools, individuals, associations, conservation areas and, recently, some local governments (see map of participants: <http://www.crea.hautsavoie.net/phenoclim/page.php?id=2&m=2>).

Scientific partners (collaborating on data collection) comprise the Vanoise, Ecrins and Mercantour national parks, the Vercors, Bauges, Queyras and Chartreuse regional parks and nature reserves such as the Vercors high plateaux and Lavours wetlands, Lautaret and the Asters Alpine station.

Scientific partners (collaborating on data analysis) comprise the Centre for Functional and Developmental Ecology (Centre d'Ecologie Fonctionnelle et Evolutive) (CEFE), the Alpine Ecology Laboratory (Laboratoire d'Ecologie Alpine) (LECA) and GDR CNRS 2968.

Educational partners (development of the educational aspect of the programme, networking) comprise *Planète Sciences*, *Tela Botanica*, *Alpine Mountain Environmental Education Network (Réseau d'éducation à l'environnement montagnard alpin)* (REEMA), ALPARC and *Environmental Education Network 05 (Réseau d'éducation à l'environnement 05 et écrins)*

Technical partners comprise Charles Poncet, The Arve Valley and CECAM Lycées (building the temperature stations) and CITIC (hosting the website and database).

Funding partners comprise the State (Ministry of Ecology), the Regions (Rhône Alpes and Provence Alpes Côte d'Azur) and private enterprises (Somfy, Crédit Coopératif and Forsitec).

Persons involved

1,700 volunteer observers take part in Phenoclim each year as individuals or as members of a school group, association or conservation area.

WHAT?

Educational/learning setting and level

Primary education

Secondary education

Vocational education

Individuals and professionals in environmental education for sustainable development (EESD) (associations, conservation areas) who use Phenoclim as a

teaching aid.

WHY?

<i>General focus of the initiative</i>	Learning about sustainable development in formal, non-formal and informal settings. Research and development
<i>Themes</i>	Citizenship Environment Climate change Biodiversity

WHEN?

Start year and duration Phenoclim was launched in 2004 for at least 10 years.

WHERE?

Geographical setting The Alps mountain range (international).

METHODOLOGY

<i>Methods and approaches</i>	All supporting teaching materials for the Phenoclim programme can be downloaded from this address: http://www.crea.hautesavoie.net/phenoclim/page.php?id=9&m=4
<i>Working language(s)</i>	French (sometimes English)
<i>Budget and funding sources</i>	€100,000 for 2010. Funding bodies: State (Ministry of Ecology), Regions (Rhône Alpes and Provence Alpes Côte d'Azur) and sponsors (e.g. Crédit Coopératif).

RESULTS AND EVALUATION

Presentation of the effects, results or impact of the initiative

Evaluation of the initiative Each year a statistical analysis is carried out on changes in the numbers and types of participants as well as the data they collect.

No official analysis is carried out on the qualitative aspects, but the programme has implemented several improvements over the years in the light of informal feedback from participants.

Results Although there has been a steady increase in the number of observations collected since 2004, the evaluation shows that participants must be supported and encouraged to continue to be involved over the longer term, as there is a high turnover from one year to the other.

Analysis of success factors

Strengths Closer links between “scientific research” and “teaching”, and thus “public interest” and “awareness-raising”.

A full-time network coordinator who also acts as interface between participants and researchers.

Strong teaching and social support (online learning materials, meetings, talks in participating schools, newsletter and programme representatives in the more remote areas).

A programme designed from the outset for the general public (adaptation of the

scientific protocol).

Sense of group identity (for Phenoclim, “mountain” residents).

Weaknesses and risks

Need to supervise participants efficiently in order to ensure that their observations are reliable.

Constraints

Problems encountered

Difficulties in sustaining participants’ commitment for several years to a programme that requires a weekly investment of time each Spring and Autumn.

Difficulties in sustaining funding bodies’ commitment for several years.

Perspectives

Why do you consider this a good practice?

In terms of ESD, awareness-raising efforts too often amount merely to prescribing good behaviour and acts. Phenoclim breaks with this sometimes guilt-inducing approach to climate change issues. It provides those who are interested with an opportunity to contribute to dealing with the situation and to devising new approaches, while furthering scientific research. Education and learning are integral parts of Phenoclim, which, above all, offers all people an opportunity to participate actively in shaping their own future.

5. CarboSchools

Max Planck Institute for Biogeochemistry, Germany

CONTACT Max Planck Institute for Biogeochemistry
 PO Box 100164 07701 Jena
 Germany
 Telephone: +49 36 41 576 801
 E-mail: philippe@carboschools.org Internet: www.carboschools.org
 Philippe Saugier, coordinator

OBJECTIVES CarboSchools links researchers from several leading carbon science laboratories in Europe with secondary schools. In these partnerships, young Europeans conduct experiments on the impact of greenhouse gases and learn about climate research and the reduction of emissions. Scientists and teachers co-operate over several months to give young people practical experience of research through true investigations, interactions with real scientists and public presentations.

Since January 2008, nine research institutes in seven countries are exploring how they can best motivate and support such partnerships at the regional level across a wide variety of contexts, topics and age-groups. European co-operation makes it possible to compare results, learn from each other and develop replicable good practice. In support to partnerships, CarboSchools identify, develop and test appropriate materials (descriptions of experiments, activities, project ideas etc.), both at the local and European level, and give access to them through the project's website. Pupils gain European experience by doing comparative measurements through a common "school CO₂-web". An in-depth study of impacts on attitudes, beliefs and skills will allow a better understanding of how knowledge and perception of science and global change are evolving, in part as a consequence of these projects.

Started in 2004 by CarboEurope and CARBOOCEAN, two major research projects on the carbon cycle, CarboSchools is currently funded until 2010 by the Science in Society programme of the EU¹ with a target of ca. 100 schools directly involved. Furthermore, in 2008-2011, EPOCA, a new EU research project on ocean acidification, is also joining forces with CarboSchools.

Relate to national priorities CarboSchools relates to the EU "Science in Society" policy.

WHO?

Type of organization managing the initiative Network of schools

Partners/stakeholders involved Schools and scientists
 Key stakeholders are Teachers & scientists. The whole project is about setting partnerships between them

Persons involved about 100 teachers
 about 3000 pupils

WHAT?

Educational / learning setting and level Secondary education

¹ Coordinated by the Max-Planck Institute for Biogeochemistry in Jena, Germany, the project receives almost 1 million euro for 36 months, the biggest part of it being used for coordinators' salaries within the 9 partner institutes.

WHY?

<i>General focus of the initiative</i>	Learning for sustainability in formal, non-formal and informal settings Education of educators Tools and materials
<i>Themes</i>	Climate change

WHEN?

<i>Starting year and duration</i>	2005-2010
-----------------------------------	-----------

WHERE?

<i>Geographical setting</i>	Europe
-----------------------------	--------

METHODOLOGY

Methods approaches & The basic approach of CarboSchool consists in promoting *direct partnerships* between secondary school teachers and global change scientists for young people to learn about climate change, gain a positive experience of scientific research and act locally to reduce emissions of greenhouse gases. The two main goals are (i) to re-activate students' interest for science & scientific studies and (ii) to equip them with basic understanding of this major scientific challenge and its interaction with the society.

The strength of partnership projects is to involve pupils in a process over several weeks or months, or even years, built on a *direct relationship* between scientists and teachers to enable young people to gain *practical experience of research*. The stakes here are no longer only to inform or transfer knowledge, but also to *encourage questioning* among young people and to increase *their desire for understanding* and *their will to build a future* which will enable us to manage the challenge of global change.

Partnership projects can feature different activities, such as real-time experiments (in lab, field or at school), site visits, lectures, debates, access to research results, communication by e-mail etc. CarboSchools projects are coordinated by teachers, and the partner scientist is usually involved in two or three activities within the duration of the whole project. A final output, such as an article, an exhibition, a conference, a webpage, a set of measurements and their interpretation, concludes the students' work by sharing the findings with a wider audience (parents, friends, local community, city...).

In contrast to many climate change education projects essentially based on delivering information through the internet, CarboSchools is first and foremost based on *human contact* and on placing scientific issues in their wider social & citizenship context. Young people are overwhelmed with information about climate change – but not with offers of meaningful activities in their school education, nor with personal connections with real scientists working on a topic which remains fascinating and tremendously concerning, and graphically illustrates first-hand the uncertainty of science.

<i>Working language(s)</i>	English at the EU level / Catalan, Dutch, Italian, French, German, Norwegian in local projects
----------------------------	--

<i>Budget and funding sources</i>	980 k€ for 36 month (January 2008-December 2010), funded by the EU Science in Society programme.
-----------------------------------	--

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

<i>Evaluation initiative</i>	of The project includes an evaluation component focused on measuring attitude changes of participating students. Three instruments are used for that:
------------------------------	---

- *Self-evaluation tools (SET)* to evaluate CS+ projects, implemented either by regional coordinators or by teachers. SET is a short questionnaire with closed and open questions asking for students' personal information and opinions. SET gives information on the perception of projects by students, and on how students perceive science and school science and whether their opinions and career plans have been affected by CS+ projects. SET makes it possible to correlate students' answers to their characteristics, like sex, school level, grades for science subjects etc. The tools are now available in English, Italian, Norwegian, German, Dutch, Catalan and French.
- *Attitude questionnaires* to measure students' attitude changes towards science, school science and climate change. The attitude instrument will be administered twice to selected groups as pre-test and post-test.
- *Interviews* with participating pupils and teachers

Results This evaluation study is still under development and will be concluded in the autumn.

Analysis of success factors

Strengths Climate change research is highly international, systemic and interdisciplinary, exciting and exotic, full of unknowns, and influence decision-making more and more at every political & economical level. School science is often perceived as boring, theoretical, disconnected from social issues and real life and not related to real science. Grounded on this contrast CarboSchools connects school education with authentic scientific learning based upon:

- questioning and experimenting rather than on transmitting pure knowledge,
- addressing a complex issue that affects all of society,
- developing close personal contact with researchers to discover how they work to challenge the stereotype and see scientists as real people.

Weaknesses & risks Lack of time and familiarity with "school agenda 21"-like strategies prevented many schools to go beyond the science and get involved in local mitigation projects. Lack of time prevented many schools from involving in transnational cooperation projects (discussing results, experiences at a European level)

Constraints

Problems encountered one of the project activity : schoolCO2web consisting in measuring atmospheric CO2 and sharing data between schools in various countries did not meet all its expectations. It caused a lot of technical difficulties to get the sensors working well, and the opportunities for discussing data across borders were not so obvious as initially expected.

Perspectives

Conditions for successful replication Institutional support from a research organisation + enthusiasm by an initial nucleus of teachers & scientists + dedicated time by a local coordinator to make partnerships happen

Why do you consider this a good practice? Independantly from replicability, CarboSchools can be useful to the broader educational community through its end-products.

More than 3000 pupils, teachers and scientists took part in this experience from 2005 to 2010 with a great variety of approaches and projects of all topics, ages, duration etc. All these projects & the European co-operation among them constituted a full-scale educational laboratory where innovative tools & methods have been tested and systematised, and are now available to many more schools outside the initial nucleus of participants. These resources are all publicly available in the one-line library of the www.carboschools.org website. Two kinds of teaching materials are available:

1) A series of brochures for teachers (and anyone else interested in climate change research):

- "*What we know, what we don't know and how we try to better understand global change*" (available in Dutch, English, French, German & Norwegian) offers an overview of the key questions science is facing to improve our knowledge of the Earth system and the way human activities disturb it. It explains how scientists collect and interpret findings from observations, experimentation and modelling, and how they do that in the frame of two large EU research projects,

CarboEurope and CarboOcean - giving a particularly exciting example of how new knowledge is built through scientific research.

- *"What we have learned, what we still don't know and what we must do to combat climate change"* (available in English, French and Italian) offers a synthesis of the key findings from 5 years of EU carbon research on land and ocean, and gives the wider picture of the human perturbation in the global carbon cycle. It gives an overview of the large-scale changes society has to implement to achieve sustainable development - i.e. where the atmosphere would no longer be a mega-dustbin for our CO₂ waste - and how scientists, schools and individuals may contribute. The booklet also features 6 examples of school projects from various countries.
- *"How to integrate hands-on global change science education in secondary education"* (publication expected autumn 2010). Collecting the best materials produced throughout years of CarboSchools activities in European schools, this 3d booklet will offer concrete ideas and advice to make science learning more engaging, challenging and attractive, and to encourage pupils to experience their global impact on the Earth system and how they can help restore the balance.

2) An on-line library of resources "Resources for teachers and people involved in climate change projects at school", providing descriptions of experiments & project activities, divided into three parts:

- Activities (Indoor hands-on / Outdoor hands-on / Using scientific data)
 - Other resources (Scientific reports, Links, tools and videos)
 - Carboschools brochures (mentioned above)
-

6. NaturGut Ophoven

NaturGut Ophoven e.V., Germany

CONTACT NaturGut Ophoven e.V.
 Talstr. 4, 51379 Leverkusen
 Germany
 Telephone: 0049-2171/73499-0, Fax: 0049-2171/30944
 E-mail: zentrum@naturgut-ophoven.de; Internet: www.naturgut-ophoven.de
 Dr. Hans-Martin Kochanek, Managing Director

DESCRIPTION **Climate Campaign in Leverkusen**

In autumn 2008 we started the local campaign "Climate protection – everyone, everyday!" in Leverkusen. Our partners are two local association for nature protection NABU and BUND as well as the municipality of Leverkusen. Also the local media guaranteed support for our initiative. Initially, the campain consisted of three parts: media involvement (press activity once a month), 40 info stalls at city or street fairs and festivals per year, the exposing of 15 banners (1 m x 6 m) saying "Klimaschutz – Jeder, jeden Tag" (Climate protection – everybody, everyday!) circulating from one public building to another in Leverkusen. The campain was funded by Stiftung Umwelt und Entwicklung (Foundation for Environment and Development). Since the campaign was very successful we expanded parts of our activities to Cologne. KlimaKreis Köln funded 20 info stalls and the circulation of 10 more banners in Cologne (2010). The Landesamt für Naturschutz, Umwelt und Verbraucher Nordrhein Westfalen (State Office for nature protection, environment and consumer North-Rhine Westphalia) will continue to fund the project until end of 2011.

Even before the start of our Climate Campain in 2008 climate protection has been a major issue in our pedagogical efforts. The "Children and Youth Museum Energy City" at NaturGut Ophoven comprises a permanent exhibition of about 500 sqm on renewable energy sources. About three groups of students and kindergarden kids visit the exhibition every day.

In 2006/2007 a two-years research project investigated on how to raise awareness for a sustainable use of energy among kindergarden kids. NaturGut Ophoven published the results in the book "Ein Königreich für die Zukunft" (A kingdom for the future). The book has been so popular that we are printing a second edition now. Around 6000 copies have been sold already.

In 2008 we started a EU-wide project called Inspire. The aim was to develop and exchange education units on climate change for formal and non-formal education. The project was funded by the EU and involved the countries: Latvia, Poland and Germany. The result of the project is published under www.inspire-project.eu.

In 2010 NaturGut Ophoven developed 13 comprehensive educational programmes on energy, renewables, climate change etc. for kindergarden and schools. These units were funded by KlimaKreis Köln.

Since 2009 we are organising a yearly business fair on energy efficient technologies for small and medium-sized enterprises. Our partners are the local chamber of industry and commerce, the chamber of crafts, the urban administration and various local companies.

In 2005 solar artist Odo Rumpf started installing a SolarAllee, a SolarPyramide (5m), SolarFlashes (4m) und a SolarFlower (8 m) on the 6000 sqm large property of NaturGut Ophoven. Art has been a new pedagogical approach climate protection.





OBJECTIVES Education and awareness raising for climate protection in day to day life for kids, youth, grown-ups and seniors in Leverkusen and Cologne.

Relate to national priorities Education for climate protection is a focal point of the North Rhine-Westphalia Action Plan called „ Learning for the future“ and it supports the efforts the German National Commission of the UN-Dekade “Education for Sustainable Development 2004-2015”.

WHO?

Type of organization managing the initiative Non-governmental

Partners/stakeholders involved Government (State/provincial/district)
Local authorities
Pre-school institutions
Schools
Vocational education institutions
Higher education institutions
Research institutions
Non-governmental organizations
Community organizations
Private sector
Media
Other: Institutions and organizations running day care centres
Schools, media, public, enterprises

Persons involved 50.000 people per year

WHAT?

Educational / learning setting and level Early childhood
Further and higher education
Primary education
Teacher education
Secondary education
Professional education
Non-formal
Informal : Families

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings
Education of educators
Tools and materials
Research and development
Regional/international cooperation

Themes Environment
Climate change
Water
Biodiversity
Natural resource management
Corporate responsibility
Sustainable production and consumption
Sustainable urbanization
Responsibility in local and global contexts
Acquisition of competences

WHEN?

Starting year and duration Ongoing

WHERE?

Geographical setting Local: Implementation in the communities (in participating pre-schools)
 Regional: Implementation at state level via a total of 8 regional offices with responsibility for 1-3 federal states each
 National: National project control and coordination

METHODOLOGY

Methods approaches & 1. Campaign on climate change including:
 a) media involvement (press activity once a month),
 b) 60 info stalls at city or street fairs and festivals per year,
 c) exposing of 15 banners (1 m x 6 m) saying " Klimaschutz – Jeder, jeden Tag" (Climate protection – everybody, everyday!) circulating from one public building in Leverkusen and Cologne to another. The banner remains on each building for 6 weeks.

 2. Development of 13 comprehensive educational programmes on energy, renewables, climate change etc. for kindergarten kids and students

 3. A permanent, 500 sqm large exhibition on renewable energy sources in the Children and Youth Museum called "Energy City" at NaturGut Ophoven

 4. Two-years research project: How to raise awareness for a sustainable use of energy among kindergarten kids?

 5. Development and exchange of education units on climate change for formal and non-formal education. A EU-project with four countries involved: Latvia, France, Poland and Germany.

 6. Yearly business fair on energy efficient technology

Working language(s) German

Budget and funding sources Sponsorship through trusts and foundations, the EU, the Federal State of North Rhine-Westphalia and City of Leverkusen

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation initiative of Since the campaign on climate is still ongoing, only small parts of the programme have been evaluated yet, i.e. the 13 educational programmes on energy, renewable, climate change.

 The initiative has not yet been evaluated since it is still ongoing. NaturGut Ophoven is well known in the area. 96 per cent of Leverkusen's inhabitants know the center for environmental education.

7. ECO-UNESCO's Youth for Sustainable Development Peer Education Programme

ECO-UNESCO, Ireland

CONTACT ECO-UNESCO
 The Greenhouse, 17 St. Andrew Street, Dublin 2
 Ireland
 Telephone: 00353 1 6625491 Fax: 00353 1 6625493
 E-mail: info@ecounesco.ie Internet: www.ecounesco.ie
 Elaine Nevin, National Director, ECO-UNESCO

DESCRIPTION ECO-UNESCO's Youth Peer-Education Programme seeks to engage and empower young people between the ages of 15 and 18

The Peer Education Programme is a Youth-led programme that explores ESD and related issues such as Climate change and encourages young people to explore development, what it is, how it relates to them, how it relates to people in the developing world and to examine the links between the personal and the global linking their lives to the lives of people in the developing world. One issue investigated in the programme, which links the local to global, is Climate Change.

The programme encourages the Youth Peer Educators to think more holistically, critically, both globally and locally about issues relating to sustainable development with a particular focus on developing countries. The peer education programme also encourages young people to link in with other groups in their local community and to develop links to other groups in the developing world using the UNESCO clubs network. The programme consists of a 10-12 week series of workshops that include: *peer training, introduction to action projects, up-skilling in using drama and arts with young people, developing communications skills, engaging the community, developing links with the developing world plus an Action Project that the young people engage in.* Young people are introduced to key environmental and sustainability issues including: water, energy and Climate Change and explore solutions to these issues. The Action Project will use young people's creativity and can incorporate any development or environmental issue or method – *they will be encouraged to use interactive, engaging methods* - they would like to use. The programme will provide support and training in the following areas:

- Environmental Youth work
- Youth development education



ECO-UNESCO Peer Educators Ally Nevin (far left) and Mark Shipley (far right) with ECO-UNESCO National Director Elaine Nevin and Minister for the Environment, John Gormley.

OBJECTIVES

The main objectives of the initiative are the following:

- To raise awareness of local and global issues in relation to sustainability (i.e. – Climate Change, Millenium Development Goals's, Global Justice, Understanding Development, Fair Trade, increased environmental awareness)
- To up-skill young people involved in the programme in peer education methodologies such as communication and facilitation skills.
- To encourage young people to think critically and holistically about their own role in global and local issues.
- To encourage young people to engage with their peers in subject matter relating to sustainable issues.
- To encourage young people to complete an environmental action project

ECO-UNESCO uses peer education — an innovative pedagogical technique — to empower and up-skill young people in Sustainable Development and encourages them to connect the local to the global and examine links between the environment, society and economy. ECO-UNESCO's 'Youth for Sustainable Development Peer Education Programme' provides young people with the opportunity to become peer educators and explore issues of sustainability as it relates to their own life and the world. This youth training programme allows young people to explore the complexities of Sustainable Development while developing their own skill sets. As part of the programme they are encouraged to carry out an environmental action project with their peers. This can be on any environmental or sustainability theme.

In conjunction with the peer education programme a Youth for Sustainable Development Peer Education Resource Pack is being developed. The aim of this resource pack is to document ECO-UNESCO's experience with the programme and to reference other examples of good practise in peer education and Education for Sustainable Development. The resource pack will act as a toolkit and source of reference for other organisations to implement their own peer Education for Sustainable Development programmes.

Relate to national priorities

National Priorities were outlined in the draft Irish National Strategy on Education for Sustainable Development – this highlights the role of non-formal education in the promotion of education for sustainable development in Ireland.

The initiative encourages young people aged between 12 and 18 to develop an insight into the issues and principles of sustainable development.

WHO?

Type of organization managing the initiative

Non-governmental

Partners/stakeholders involved

Government (State/provincial/district)
 Schools
 Community organizations
 Media
 Intergovernmental, international institutions
 Private individuals, participants

Key Funder. Irish Aid (Department of Foreign Affairs)

Additional Funder's: Leargas (EU Youth in Action funding)):

Community Stakeholders: Local Community Groups, Youth Organisations. Community Schools. Any young people aged between 15-18 years who want to enhance their knowledge of sustainable development.

Persons involved

The learners in this initiative are the participants in the programme itself. This participants (the peer educators) act as multipliers for disseminating information learned and skills developed through the programme to their various peer groups, schools and community groups. There have been three sets of groups to date who have gone through this programme. The number of participants has been 49, aged between 15-18 years. There is also an emphasis on ensuring that there

is a diverse ethnic and cultural mix within the programme.

WHAT?

Educational / learning setting and level The Youth for Sustainable Development Peer Education Programme comprises of many young people from a variety of backgrounds. Essentially the group forms a youth club

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings
Tools and materials
Research and development

Themes Intercultural understanding
Cultural diversity
Citizenship
Peace, human rights and security
Environment
Climate change
Water
Natural resource management
Democracy
Justice
Sustainable production and consumption
Responsibility in local and global contexts
Other (Foreign Aid, Peer Education, Perception and Values, Facilitation and Communication, MDG's).

WHEN?

Starting year and duration September 2007 until April 2011. Each Youth Peer Education programme lasts between 10-12 weeks. Action projects can then take up to an additional ten months.

WHERE?

Geographical setting Local: The Programme is run for youths from within the Greater Dublin Area

METHODOLOGY

Methods & approaches The Youth for Sustainable Development Peer Education Programme can be broken down into three distinct phases. Phase one involves the participants getting involved in the programme, learning about sustainability and related issues and peer education and provided with basic training on becoming a peer educator. Phase two involves the young people learning more about peer education and becoming involved in the delivery of successive programmes. Phase three provides some young people with the opportunity to become involved in a 'graduates' programme, where the youths' skills as peer educators is further enhanced and put to use in additional community projects. The programme also involves the development and running by the young people of local action projects with their peers running parallel to various phases of the programme.

The methodologies that are being used focus on Education for Sustainable Development (ESD) good practice. ESD develops and strengthens the capacity of individuals, groups, communities and organisations to make judgements and choices in favour of sustainable development.

The five key area's of ESD are Knowledge, Skills, Perspectives, Values and Risks. The Key to ESD is that it doesn't teach a particular subject but requires participants to consider different issues regarding sustainable development and develop a deeper understanding of sustainable development's key principles. This is facilitated through a number of different methodologies.

- Simulation games, group work
- Practical activities
- Issue tracking
- Photographs , artwork and images
- Surveys/questionnaire
- Working with texts
- Discussions
- Roleplay
- Brain-storming
- Group work
- Practical activities (e.g. Urban Safaris, Drum Facilitation, Outdoor Excursions, etc).

ESD methods are holistic and interdisciplinary, values driven, encourages critical thinking, are locally relevant, multi method and involved participatory decision making.

Working language(s) English

Budget and funding sources €210,000 Irish Aid over 3 years (Department of Foreign Affairs) in addition to match funding and €10,000 – Youth in Action EU funding

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation initiative of Yes. After each individual workshop the participants fill out an evaluation form to show their learning during the workshop and also their level of enjoyment. There has also been a focus group impact assessment of the programme by the young people. The programme is also assessed internally by the Programme Co-ordinator and National Director. The programme is also currently being evaluated by an external evaluator. These evaluations are then fed back externally to our primary funder Irish Aid.

Results The impacts of the initiative have been largely positive based on feedback from the participants during focus group sessions and through written evaluations in the form of questionnaires. From these focus groups and questionnaires adjustments and amendments have been made to the programme to provide for the needs of the participants. Many young people have gone on to carry out action projects related to environmental issues which have impacted on their peers and their local community. As a result of the evaluations we have also focused on providing a progression path for young people entering the programme and have developed an advanced Peer Education Training programme.

Analysis of success factors

Strengths One of the main strengths of the programme is its uniqueness, and the methodologies used during facilitation. To date, the programme is unique within Ireland as a peer education programme on sustainable development. The strengths of this programme are the ESD methodologies that are used to deliver the sessions (as outlined above) combined with the peer education training.

Weaknesses & risks The programme engages a number of different young people from a broad demographic base in Dublin and the Greater Dublin area. This ensures that there is a diverse group of individuals involved in the programme. However because of this, retention rates at the beginning of the programme were low. There is also the subject matter; Sustainable Development can be a difficult concept for young people to grasp, and therefore there can be an initial reluctance to get involved in the programme.

Constraints

Problems encountered The content of the programme initially created difficulties. For instance, how to relate many of the complex issues of Sustainable Development to young people in an interactive and exciting way.

Perspectives

- Conditions successful replication* for There are a number of conditions to replicate this programme successfully:
- adequate resources including funding;
 - ensuring the correct level of engagement and commitment from young people
 - ensuring appropriate content in the programme and the peer education training meets the needs of the young people;
 - ensuring there is are strong supports in place for peer educators to carry out their projects and programmes with their peers
 - ensuring the scope of the project is far reaching enough so that thereis provision in place to accommodate young people's development once they have completed the programme, i.e. – a 'graduates programmme'?
 - ensuring the programme has a strong multiplier effect within the participants peer group(s) and local community i.e. through the action project element;
 - having suitably experiencedfacilitators who (a) are skilled enough to facilitate and motivate young people involved and (b) have an understanding of the complexities inherent to sustainability.
- Why do you consider this a good practice?* One of the primary reasons why this could be considered good practice is the programme's use of Education for Sustainable Development methodologies combined with the use of peer education. Many studies have shown the benefits of peer education models. Through this programme young people develop a more holistic mindset, discover how to think more critically and develop skills to allow them work with others. They learn about the links between their lives and the lives of young people in the developing world. The methods used are practical and encourage the development of sensitivity towards nature and the environment by providing opportunity to be involved in outdoor activities and projects. The programme also encourages the use of local action projects by young people with their peers.
-

8. Fighting climate change: human solidarity in a divided world - Educational material based on the 2007-2008 Human Development Report

UNESCO Center of Catalonia-Unescocat, Spain

CONTACT UNESCO Center of Catalonia-Unescocat
 c. Nàpols 346, 1r. 08025, Barcelona
 Spain
 Telephone: 00 34 93 4589898 Fax: 00 34 93 4575851
 E-mail: centre@unescocat.org Internet: www.unescocat.org
 Sara batet (Head of Unescocat's Sustainability Department)

DESCRIPTION In September 2009, with the support of the Catalan Ministry of Environment and Housing, Unescocat published digital educational material based on the *Human Development Report 2007/2008. Fighting climate change: Human solidarity in a divided world*. The material is aimed at older secondary school pupils and published only in Catalan language. It is a tool that provides the latest scientific data on climate change and economic and social perspectives to be taken into consideration in order to tackle this global challenge. Therefore, Unescocat has adapted the contents of the United Nations Development Programme report, in an innovative and dynamic format.

The material is accessible on the UNESCO Centre of Catalonia website: <http://www.unescocat.org/materialsidh/canviclimatic/index.php>.



CENTRE UNESCO DE CATALUNYA
UNESCOCAT

C/ Nàpols, 346 1r pis - E - 08025 Barcelona
 Tel. +34 934 589 595 - Fax +34 934 575 851
centre@unescocat.org - www.unescocat.org

- OBJECTIVES**
- Raise students awareness on global environment challenges
 - Show the relationship between our societal model and climate change
 - Explain the human dimension of climate change effects
 - Understand social inequity derived from the current development model
 - Know different parts of the world vulnerability to climate change
 - Understand the "carbon footprint" concept and analyze the different contributions of countries to global warming
 - Raise awareness about the need of a urgent, strong, collective response to climate change
 - Know how to fight against climate change

Relate to national priorities Two of the great national challenges identified in the Sustainable Development Strategy of Catalonia (2026.cat) are:

- Establish effective mechanisms to provide the citizens with relevant information about the socio-environmental problems that facilitate understanding and induce them to participate in their resolution.
- Significantly increase the incorporation of sustainability at all levels of formal and informal education with the goal that critical reflection and co-responsibility are pillars of training, and that it is action-oriented.

In this sense, Unescocat educational materials are a contribution to both national objectives.

WHO?

Type of organization Non-governmental

managing the initiative

<i>Partners/stakeholders involved</i>	Government (State/provincial/district) Intergovernmental, international institutions <ul style="list-style-type: none"> - <u>UNDP</u>: They granted the permission to elaborate these educational materials based on their Report - <u>Catalan Ministry of Environment and Housing</u>: they sponsored the project
<i>Persons involved</i>	The main learners are older Catalan secondary school students -14 to 18 years old-, to whom these materials are addressed. Also secondary school teachers who use these materials in their class. In total 415,000 people.

WHAT?

Educational / learning setting and level Secondary education

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings

Tools and materials

Themes

Overcoming poverty
Cultural diversity
Peace, human rights and security
Climate change
Democracy
Governance
Justice
Responsibility in local and global contexts

WHEN?

Starting year and duration Starting year: 2009. Duration: it is difficult to say how long they will be updated materials

WHERE?

Geographical setting Catalonia

METHODOLOGY

Methods approaches & The educational material is designed to work in small students groups around 6 subjects, formulated in an interrogative form, so that, after the work proposed, students are able to answer the question and explain their findings to the rest of the class-group. The subjects are:

- Is the current climate change dangerous?
- Will Climate change have consequences on human development?
- Are all carbon footprints the same?
- Will Climate change affect everybody in the same way?
- Is it possible to stop climate change?
- Is it necessary to adapt to climate change?

Each topic is organized as an electronic folder that contains: a short text, two graphics and a world map with associated photos, as well as a synthesis-screen which will support the exposure of each group's findings.

Each of the six issues discussed in these materials is associated with a block of activities for students. Each issue presents two activities (A and B) as well as a complementary one, designed for older-most advanced students. This last activity, despite being a little more difficult, may be also appropriate for younger students if the teacher considers that has enough time and that the level is appropriated for the group. The activities are designed for students to do them with the information in their electronic folder (analysis of images, graphics and text).

After working around their subject, each group must prepare and do a presentation summarizing the main conclusions they reached, with the support of the projection of the synthesis screen. Like this every group will share their findings and knowledge with the rest of the class. The materials include a brief online questionnaire, through which students can test what they have learned not only about the six subjects.

In addition to the electronic folders, the activities and the evaluation forms, these materials include a dossier for teachers, containing all the necessary information to develop the activities in the classroom: the dynamics proposed, a summary of the contents of the UNDP report, the links with the official curriculum.

As the Human Development Report 2007/2008 argues, climate change poses challenges at many levels. In a divided but ecologically interdependent world, it challenges all people to reflect upon how we manage the environment of the one thing that we share in common: planet Earth. It challenges us to reflect on social justice and human rights across countries and generations. It challenges political leaders and people in rich nations to acknowledge their historic responsibility for the problem, and to initiate deep and early cuts in greenhouse gas emissions. Above all, it challenges the entire human community to undertake prompt and strong collective action based on shared values and a shared vision.

Working language(s) Catalan

Budget and funding sources 21,500 €, provided by the Catalan Ministry of Environment and Housing

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation of initiative The educational materials have not been rigorously evaluated. But they have been shown and discussed in different teacher's workshops.

Results Teachers have found the materials really interesting

Analysis of success factors

Strengths Multidisciplinary: linking social and natural sciences
 Global perspective
 Cooperative work in small groups
 Original format and dynamics
 Human dimension of climate change
 No paper

Weaknesses & risks Only useful for schools with access to computers and internet
 Some teachers may not feel comfortable experimenting new ways of teaching-learning

9. Ekospinning – Share your energy

Jesús Obrero Secondary and Vocational Training School & Ingurugela, Spain

CONTACT Jesús Obrero Secondary and Vocational Training School ²
 Francia street, 32 CP 01002 Vitoria-Gasteiz, Basque Country
 Spain
 Telephone: 00 34 945000333 Fax: 00 34 945000334
 E-mail: ochoa@jesusobrero.org Internet: www.jesusobrero.org

INGURUGELA ³
 c/Ondarroa 2- 48004 Bilbao, Basque Country
 Spain
 Telephone: 00 34 944114999 Fax: 00 34 944114778
 E-mail: a-fostolaza@ej-gv.es Internet: www.ingurumena.ejgv.euskadi.net

Eduardo Ochoa de Aspuru Gutiérrez. Coordinator of the Environmental Commission.
 Asun Fernández Ostolaza. Headmaster of the INGURUGELA of Biscay



OBJECTIVES The main objectives of the project are:

- To provide the necessary knowledge, skills and experience about climate change and its consequences.
- To foster readiness to cooperate and participate with responsibility in their local environment.
- To minimize the scholar contribution to greenhouse effect.

The specific objective of the project is to develop a system for generating clean energy that promotes sustainable mobility through physical exercise, relaxation, innovation and creativity.

WHO?

Type of organization School
managing the
initiative

² JESÚS OBRERO is a Secondary and Vocational Training, of Christian inspiration, based on the principles of Ignatian Pedagogy.

³ INGURUGELA centres were created in 1990 from an Agreement between the Departments of Education and Environment of the Basque Autonomous Community of Spain, for the purpose of promoting Environmental Education at non-university levels. Since 2003 their main programme of education for sustainability is "School Agenda 21".

<i>Partners/stakeholders involved</i>	<p>Government (State/provincial/district)</p> <p>Local authorities</p> <p>Vocational education institutions</p> <p>Higher education institutions</p> <p>Private sector</p> <p>Students of different levels and teachers from different departments: promoters, developers and implementers of the initiative.</p> <p>Private sector (EXERCYCLE, ADIM-LIFT, ZIGOR...): Technical advice and provision of bicycles and ancillary equipment: converters, generators, batteries and monitors.</p> <p>Vitoria-Gasteiz Municipality: Purchase of LED lights; Progressive implementation of the experiences of developed energy efficiency and renewable in Jesus Obrero in municipal facilities by the students of Jesus Obrero; Dissemination and communication of the project; Awareness and training in energy efficiency and renewables.</p> <p>EVE (Basque Energy Agency): Technical advice and training in energy efficiency and renewables.</p>
<i>Persons involved</i>	<p>The main learners of the project are students and faculty from Jesus Obrero. The initiative has also been shown to students and teachers from other schools who have had the opportunity to see first hand the features and operation of the project.</p>

WHAT?

<i>Educational / learning setting and level</i>	<p>Secondary education</p> <p>Professional education</p>
---	--

WHY?

<i>General focus of the initiative</i>	<p>Learning for sustainability in formal, non-formal and informal settings</p> <p>Tools and materials</p> <p>Research and development</p>
<i>Themes</i>	<p>Climate change</p>

WHEN?

<i>Starting year and duration</i>	<p>Since 2005 until 2009</p>
-----------------------------------	------------------------------

WHERE?

<i>Geographical setting</i>	<p>Local: School (2447 students)</p> <p>Subnational</p>
-----------------------------	---

METHODOLOGY

<i>Methods approaches</i>	<p>& The project is due to both the previous work of Jesus Obrero in Agenda 21 School of Vitoria-Gasteiz past several years, and especially during the year 2005-06, in which the subject matter was sustainable mobility, as the activities of the Department of Electrical-Electronics in the field of renewable energy for over 10 years.</p> <p>The project has been developed in the following steps:</p> <ul style="list-style-type: none"> - Project and / or activities selection related to sustainable mobility within the Agenda 21 for Schools. - Technical feasibility study of the Eko-spinning (selected proposal), taking into account the reports of the technical departments of Electricity - Electronics & Mechanics. - Forming the working team. - Obtaining equipment. Study characteristics and project development.
---------------------------	---

- Project implementation.
- Result verification.
- Dissemination and communication of the project.

Working language(s) Basque and Spanish, both of them are official languages of the Basque Autonomous Community.

Budget and funding sources Basque Government

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation initiative of This initiative has been evaluated and recognized by the Departments of Education, Environment and Industry of the Basque Government.

Results Bike prototype that uses the mechanical energy generated by the user to generate electrical energy usable by the bicycle itself, accumulated and exportable.
 Creating a stable multidisciplinary group composed of students, teachers and businesses, renewable components for the development of pioneering projects in the field of energy.
 Development of a methodology of motivation through the display of the usefulness of the effort exportable to other areas.

Analysis of success factors

Strengths Completing and diversifying the skills of students.
 Improving the education of future students, through the inclusion of technology and methodology of the Eco-spinning in the Formation of Regulated and Occupational.
 As a transversal and multidisciplinary project, the involvement of teachers in technical (Electrical-Electronic and Mechanical) and non-technical departments (Science and Environment) and students from Secondary and Vocational Training.
 Wide dissemination strategy of the project.
 The replication possibilities.

Weaknesses & risks Initial ignorance of specific aspects in the technical electronic and mechanical fields.
 Difficulties in charging the batteries for the electric intensity drop.
 Decreased initial enthusiasm over the different phases of the project.
 Replacement of part of the students participating in the development process, which involves the need to re-explain the project to new entrants.

Perspectives

Conditions for successful replication for No specific conditions are required.

Why do you consider this a good practice? The project faces a global problem, complex, looking for a simple but effective strategy for contributing to its mitigation.
 We have designed and manufactured a prototype from an existing without the same characteristics.
 It has been designed and constructed a prototype from an existing one without the same characteristics.
 Disused materials have been reused, contributing to the reduction of the consumption of raw materials.
 The environment has been approached in a different way, from the sport and, emphasizing the value of effort and speed of consumption of the generated profit.
 Ekospinning is a competitive and motivating tool for the promotion of self-generated energy, transportable in sports facilities and private homes.
 The project combines the physical and mental relaxation.

10. Earth Hour education

WWF Sweden, Sweden

CONTACT WWF Sweden
 Mailing address: info@wwf.se
 Sweden
 Telephone: +468 624 74 00 Fax:+468 85 13 50
 E-mail: info@wwf.se Internet: www.wwf.se
 Germund Sellgren, project manager

OBJECTIVES We want to reach 1 000 preschools and schools to be reducing their ecological footprint and to be active in reducing their emissions of CO₂.

Relate to national priorities WWF's mission is to stop the degradation of our planet's natural environment, and build a future in which humans live in harmony with nature. To achieve this, we are working with our many partners to: Save biodiversity, and Reduce humanity's impact on natural habitats (the ecological footprint). The initiative contributes both to the fulfillment of the Swedish curriculum and the Swedish environmental objectives.

WHO?

Type of organization managing the initiative Non-governmental

Partners/stakeholders involved Pre-school institutions
 Schools

Persons involved 150 000 pupils in preschool, primary and secondary school

WHAT?

Educational / learning setting and level Early childhood
 Primary education
 Secondary education

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings
 Tools and materials

Themes Environment
 Climate change
 Sustainable production and consumption

WHEN?

Starting year and duration 2009-2011

WHERE?

Geographical setting Sweden

METHODOLOGY

Methods approaches & **Background**

This initiative is a part of one of the biggest manifestations globally to combat climate change. *Earth Hour* started in 2007 in Sydney, Australia when 2.2 million individuals and more than 2,000 businesses turned their lights off for one hour to take a stand against climate change. In March 2009, hundreds of millions of people took part in the third *Earth Hour*. Over 4000 cities in 88 countries officially switched off to pledge their support for the planet, making *Earth Hour 2009* the world's largest global climate change initiative. On Saturday 27 March, Earth Hour 2010 became the biggest *Earth Hour* ever. A record 128 countries and territories joined the global display of climate action. People across the world from all walks of life turned off their lights and came together in celebration and contemplation of the one thing we all have in common – our planet.

In Sweden has WWF worked with *Earth Hour* for two years. To stimulate people, and especially students, to develop their in knowledge and action competence in relation to energy and climate change an education part of the programme was developed. Teaching materials were produced for the three levels: preschools, primary and secondary schools. Schools were encouraged to register their participation on Internet and also report their plans and actions implemented.

Examples of what the schools did:

- Students and teachers at many schools stimulated all parents to take part in Earth Hour too
- Students made “handprints of action” – handprints in paper with an action written on each finger, describing what they would do for a better climate. This action was initiated by one school and infused by WWF in teaching materials to stimulate more schools to do the same.
- One municipality collected “handprints of action” from schools in the whole municipality and representatives brought them to the Copenhagen meeting to forward their messages.
- One school sent their “handprints of action” to a school in South Africa and in return they got their suggestions for environmental actions they would take in South Africa.
- In another school the older students became teachers for the younger students, teaching them about climate change by performing theatre and having discussions.
- Many schools arranged a Day for the climate or a Week for the climate when they worked on climate issues in a cross curricular way.
- The students took photos during the Earth Hour and then discussed the outcome and the feelings.
- Some classes worked hard with the theme “Earth Week” and then used WWF teaching material and they also tried to involve the parents in the campaign.
- The students produced posters to be used in the society to challenge people to switch off the light during Earth Hour.
- Pupils in one school turned out the lights in the whole school and published information about Earth Hour on their blog, which is an EU project with another school from Romania. They urged the school in Romania, all parents and relatives to turn off the light.

Overall there was a huge creativity and engagement from all participating schools. The programme was highlighted in teacher magazines and through Internet.

Teaching material

In schools you can intensify a campaign and have much larger impact on increased knowledge, development of values and action competence. Therefore we focused broadly on three levels: pre-school, primary- and secondary school with educational materials in PDF format. We have also had some training courses linked to the Earth Hour. The training materials are guides for teachers, containing exercises, activities and competitions with a focus on climate change and our use of energy.

Energy is both a simple and difficult concept. Most people think they know what

energy is, but when having to describe or define it, it becomes a challenge. Therefore several exercises in the materials support the development of a "sense for energy".

The guides also contain games, pictures to start reflections and discussions, contests about giving suggestions on how we can reduce the climate change and then actually implement innovations and actions.

Working language(s) Swedish

Budget and funding sources 200 000 SEK from the insurance company Trygg Hansa

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation initiative of The number of schools increased from 673 schools in 2009 to 822 schools in 2010, an increase of over 20%. This means around 150 000 students participated. It is estimated that even more schools actually participated in 2010. Many schools received instructional materials directly from the community management and may have forgotten to register on the WWF's website.

Last year 42% of the schools joined Earth Hour the same week the actual Earth Hour took place. This year that figure dropped to 18%, which means that more schools registered more in advance and had more time for planning and implementation.

Most of the teachers indicated that they came in contact with Earth Hour through the WWF's website. Two-thirds of the schools that were registered for Earth Hour had to some extent also worked with the teaching material. 22% of the schools implemented their own Earth Hour events in their schools.

59% of the schools felt that their Earth Hour was successful or very successful. Only 3% stated that it was unsuccessful.

A majority (65%) thought that working with the Earth Hour in the school was very good / good.

The teachers who participated in the evaluation believed all that Earth Hour led to increased knowledge on climate change (71%) and increased climate commitment (62%). An overwhelming majority, 99%, want the school to participate in Earth Hour 2011

Constraints

Unresolved issues How can we reach "all" children and youths?

Perspectives

Conditions successful replication for The message is easy to understand and adopt. You can work with the issue as much as you want.

11. Inquiry-to-Insight: learning climate change through environmental e-learning

Sven Lovén Center for Marine Science, University of Gothenburg, Sweden

CONTACT

Sven Lovén Center for marine Science, University of Gothenburg,
The Sven Lovén Centre for Marine Sciences – Kristineberg, S-450 34 Fiskebäckskil
Sweden
Telephone: +46(0)523185007 Fax: +46 (0)52318502
E-mail: Geraldine.fauville@loven.gu.se Internet: www.loven.gu.se/english

Hopkins marine station at Stanford University
120 Oceanview Blvd., Pacific Grove, California 93950
USA
Telephone: 1 (831) 655-6200 Fax: 1 (831) 375-0793
E-mail: pam.miller@stanford.edu Internet: www-marine.stanford.edu/
Geraldine Fauville, MSc and Pam Miller, MSc

DESCRIPTION

Climate change is one of the most important challenges today. Global and personal action is the only solution to prevent dramatic consequences. We must understand the issue and how our behaviors impact it. Adequate understanding is needed for real action!

Inquiry-to-Insight (I2I) is an e-learning project where students meet and collaborate with pairs from abroad and learn about climate change in order to take action. Throughout the year students will complete activities in which they become virtual scientists and conduct a virtual lab that illustrates an effect of climate change. They will also observe how the behaviors impact their carbon footprint and will come to understand how they can make a significant difference. Students will investigate a topic related to climate change and then educate other people on that topic by creating a multimedia presentation that will be available online.

Students will leave the I2I experience with an up-to-date knowledge on climate change (foundation for a responsible action against climate change), a better scientific way of thinking, a sharper critical thinking skill, many new friends, a broader perspective on climate change, a real vision of what Science world is and mean today.

The screenshot displays a virtual laboratory environment. At the top, there are tabs for 'Objectives', 'Procedure', and 'Glossary'. The 'Objectives' tab is selected, showing a list of six tasks: 1. Set up the experiment. 2. Observe the growth of the larvae. 3. Change the larvae's water with clean sea water ("water change"). 4. Measure the larvae. 5. Graph your data. 6. Compare your data to the larger data-set. Below the objectives, there is a 'Slide Box' containing a microscope. In the center, a pH meter is shown with a reading of 8.0. To the left, there are two flasks labeled 'pH 8.1' and 'pH 7.7'. At the bottom, there are instructions: 'Place the pH electrode/probe into both flasks to check the pH.' and a task: 'Drag the pH electrode/probe to the flask with sea water, pH 7.7.' There are also icons for 'Clean Area' and 'Mix Area' with instructions to drag items there. A 'DAY 01' indicator is visible at the bottom center.

OBJECTIVES

I2I makes use of e-learning, collaborative and social tools to help students:

1. Improve understanding of climate change through web-based (1) activities, (2)

laboratories, (3) interactive talk on ocean acidification.

2. Understand their responsibility for climate change through answering the I2I-carbon footprint calculator and discussing results and misconceptions on the I2I private social network.
3. Get international perspectives on climate change issues through discussions with peers abroad.
4. Lead a fruitful international collaboration by investigating a topic related to climate change with peers and creating an engaging multimedia presentation available on Internet.
5. See the world of science as it really is by interacting with cutting-edge scientists on climate change rather than as an uninteresting world of formulae to remember.
6. Increase critical thinking skills through students' inquiry of climate change issues with the help of the I2I-staff members.
7. Learn about the process of working as a scientist and getting knowledge by experimenting rather than memorizing.

Relate to national priorities

Climate change is a concern for all citizens. To prevent dramatic consequences of such changes to climate, citizens need to be knowledgeable about the environmental issues. Nowadays the media release tremendous amount of information of different quality and accuracy on climate change and people need good critical thinking skill to sort out the information. Moreover those issues are international and the only way to find solutions is to promote international collaboration. I2i focuses on these 3 mains goals.

Today the proportion of young people studying science has decreased in Europe and in the US. The decrease is related to the way science is taught in schools. School authorities suggest to make Science education more relevant to students and to promote hands-on experimentation and inquiry-based curricula. I2I project is deeply rooted in this philosophy of relevant and practical curriculum.

WHO?

Type of organization managing the initiative

Academia

Partners/stakeholders involved

Schools
Research institutions

1. Sven Loven Center for Marine Science (SLC)-Kristineberg, University of Gothenburg, Pr. Thorndyke; PI for SLC. Dr. Dupont; scientific consultant. Msc. Fauville; I2I-coordinator.
2. Hopkins marine station, Stanford University, Pr. Epel; PI at Stanford University. Dr. Hodin; ITC expert. Msc. Miller; I2I-coordinator.
3. University of Gothenburg, Department of Education, Pr. Säljö and Dr. Lantz-Andersson evaluate the digital applications and how students develop their skills of doing experiments. Pr. Sylven will evaluate the effect of I2I on the students' proficiency in English.
4. 3 high schools from Sweden implement I2I in their biology class and collaborate with I2I-staff.
5. 3 high schools from California implement I2I in their biology class and collaborate with I2I-staff.

Persons involved

Natural science high schools teachers and high school principals: 15 persons on the Sweden side and 13 persons on the Californian side being involved in I2I project to this date but we work toward an expansion of the project.

Natural science high school students: 90 students involved during the 2 first years, 120 students involved in academic year 2010-2011 and 400 students testing the ocean acidification virtual lab.

WHAT?

Educational / learning setting and level Secondary education
 Informal: Some of our tools (e.g. I2I carbon footprint calculator and I2I ocean acidification virtual lab) can easily be implemented in a science center or museum.

WHY?

General focus of the initiative Tools and materials
 Regional/international cooperation

Themes Intercultural understanding
 Environment
 Climate change

WHEN?

Starting year and duration 2008-2009: planning grant (one year)
 2009-2012: full grant (three years)

WHERE?

Geographical setting Regional: Students visit marine institutions based in their region
 International; Collaboration between Sweden and USA and expansion in new countries in fall 2011.
 National: Students are in contact with top scientists from their country, students are using the virtual labs through free and open access websites

METHODOLOGY

Methods approaches & I2I brings a variety of tools to raise awareness and to promote discussion:
 Most teenagers are familiar with social networks. In order to use a tool appreciated by students, I2I creates private social networks to pair classes from different countries to discuss climate change and to investigate solutions.
 Students complete the I2I-Carbon footprint calculator and visualize the impact on the environment of their personal choices. Students can see the group footprint on the social network and debate on questions such as, "Why do some students have higher footprints?" and "How can I take action to decrease it?"
 The I2I-*Acid Ocean* virtual lab is an e-learning activity where students become a virtual scientist studying the impact of ocean acidification on sea urchin larvae growth. Students recreate a real, up-to-date climate change experiment. They learn important general scientific principles related such as the importance of sample size and number of replicates.
 A Virtual talk on ocean acidification has been created by our scientific consultant. Students follow the talk at their own pace, browse in the presentation and leave their questions to the scientist who will answer.
 I2I promotes group research projects where students collaborate to investigate a topic related to climate change and create a multimedia presentation to educate others via Internet.

Working language(s) English

Budget and funding sources 650K\$ over 3 years funded by Wallenberg Global Learning Network

RESULTS & EVALUATION**Presentation of effects, results or impact of the initiative**

Evaluation of Preliminary evaluations have been conducted on students' knowledge on ocean

initiative acidification and on the impact of virtual lab on students' scientific thinking skills. In Early September 2010 the full evaluation plan will take place.

Results The preliminary results indicate that the ocean acidification virtual lab has 2 positive effects on students. First there is a 30% increase in their ocean acidification knowledge both in Sweden and in California. Moreover when students are asked to design an experiment (e.g. how would you design an experiment in order to test the impact of X on Y) before and after using the virtual lab they provide longer and more scientifically accurate answer after the activity.

Apart from the effects shown by the evaluation of I2I, students appear to be deeply impacted and aware of their responsibility in greenhouse gases emission:

"I am going to truly start working on saving energy in my household and doing my best in helping our environment with the emissions. I really liked how this website showed me and taught me all the different ways CO2 is released into our environment."

Finally students understand the urge to work all together to mitigate climate change, they understand the international bound that climate change create amongst people:

"We share more likenesses than differences with other countries with regard to environmental problems."

Analysis of success factors

Strengths One of I2I strengths is how the project is rooted in students' everyday life. The relevance of I2I has been highlighted by students...

"What I like the most was the chance to get involved in the [climate change] problem us humans are facing today"

and teacher...

"I like the contextualization of climate change in I2I and the chance that students have to be in contact with scientist! Very inspiring for them!"

Moreover we add a human dimension with this international networking ...

"I think the collaboration between the countries was really interesting, I've never done anything like it before"

... and the meeting with famous national researchers:

"I was impressed to meet Pr. Thorndyke, I see him in newspaper often and there he was welcoming us at the marine center!"

Other organizations dealing with climate change have shown deep interest in I2I; Greenpeace China contacted us to produce a Chinese version of the ocean acidification virtual lab and the European Program on Ocean Acidification (EPOCA) funded the French translation.

EPOCA express its interest in our project as follows:

"The virtual laboratory provided by Inquiry-to-Insight is a very valuable and amusing tool for pupils to learn about ocean acidification and one of the key products recommended and used by EPOCA in its educational activities."

Weaknesses & risks The implementation of I2I in school requires computers available for students, a good internet connection and teachers ability to manage an e-learning project. This might be an issue in welcoming less developed countries in I2I.

A fair amount of schools block the access to some websites needed for the project (social networks, Youtube...). In that case discussions with the principal can solve it.

Constraints

Problems encountered The program faced a number of challenges and managed to solve them.

We realized how challenging it was to create a team spirit between students. We worked hard to improve it and we strengthen the social input by developing a blog in the social network allowing them to have discussions that are not related to climate change but to students' everyday life. This section is where students create strong and real bonds that will be the foundation for a fruitful collaboration.

Collaboration with the teachers made us realized how difficult it was for them to embed a new project in an already over busy schedule and which requires from them some extra work. In order to help teachers we are writing a teacher's instruction book.

This manual will help them to have a clear vision on how the topic studied in I2I can fit in the courses goals. Moreover, the book will provide explanation on how to embed I2I in the classroom and all the resources (e.g. instructions sheets) needed for the activities and assignments will be provided too.

Although Swedish students are very good English speakers, they feel a bit shy to communicate to native speak. This problem was solved by emphasizing regularly how good they were in English and how proud they should feel to be able to speak a foreign language. Moreover some message on the social network helped to give them self-confidence:

"I am impressed with the Swedish students' English. It really is remarkable how well you all communicate."

Unresolved issues

Many students from both sides wished to meet each other as expressed by this student when asked how I2I could be improved:

"We should meet each other, person to person. I would like to meet them in person." So far we haven't found any foundation that will fund the travel cost for all the students.

Unfortunately the I2I funding doesn't allow us any trip of this kind.

Perspectives

Conditions successful replication

for The goal of I2I is to be sustainable by 2012 (end of the WGLN funding) and that any teacher would be able to implement I2I project in her/his classroom. In order to reach our goal we need to work in these following directions:

1. I2I need to be based only on open-access and free software in order to give any school the chance to join with no cost. So far all our tools respect those conditions and any teachers can find them on our website and use them in their classrooms.
2. I2I will have a broader impact if translated in other languages. The objective is to translate the project in French and Spanish.
3. I2I-staff is developing an instruction book for teachers with all the information and documents requested to implement I2I with minimum extra time investment.
4. An online I2I community would be useful to create a teacher network. The new teachers will learn from the experiences I2I-teachers and will find partners over there. Moreover, when a teacher encounters a problem with I2I, he/she can share it with the community and get some help or advises.

Why do you consider this a good practice?

Social networking is invading our life, but in this case it is being used to help students interact with scientists and peer students from another country facing the same issue; climate change and getting all together a better awareness and will to mitigate it.

I2I-students dive into the world of science by leading experimentation on climate change that school cannot usually provide and by getting in contact with scientists who dedicate their life to have a better understanding of climate change consequences. Thus, students will get a real view on how science works and what science careers truly involve.

Students will make new friends from abroad, improve their English skills and have an international discussion on climate change. As a result of this experience, students will broaden their point of view on climate change issues and envision international solutions.

I2I provides students with tools they will need to make responsible environmental decisions.

I2I has already been spotted by Greenpeace and EPOCA, leaders in rising climate change awareness.

12. A Transition Town approach to empowering the pupil's voice

Susted, United Kingdom

CONTACT Susted
Brewery House, Ketton, Stamford PE9 3TA
UK
Telephone:0044 1780 729 208
E-mail: adam@susted.org.uk Internet:<http://stamfordtransition.ning.com>
Adam Cade, Director, Susted and coordinator of the Education Group of Stamford Transition

DESCRIPTION A Teachers Workshop
<http://stamfordtransition.ning.com/group/youngpeople/forum/topics/march-18th-teachers-workshop>
A Pupils Curb the Carb Workshop http://www.4shared.com/dir/b1VP-_b_/RCCWorkshop.html
Stamford Transition <http://stamfordtransition.ning.com>



OBJECTIVES To work with all the 12 schools and colleges in and around Stamford to support them in curbing their carbon emissions and help their community learn about climate change and peak oil.

Relate to national priorities The UK Government's Climate Change Bill and the Schools Carbon Management Strategy indicate the national priority for school carbon management. Local authorities have estimated that over 50% of their carbon emissions are from schools.

Who?

Type of organization managing the initiative Voluntary organization

Partners/stakeholders involved Local authorities
Schools
Vocational education institutions
Community organizations
Private sector

Stamford Transition (<http://stamfordtransition.ning.com>) is a small community

organisation based in a small market town of 20,000 people, one of the 800+ new Transition Towns (www.transitionnetwork.org) around the world.

Persons involved 50 Key teachers and 100 key pupils in 9 schools and a vocational education college

WHAT?

Educational / learning setting and level Further and higher education
Primary education
Teacher education
Secondary education
Non-formal: 80 volunteer members of the Stamford Transition community group

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings
Education of educators
Tools and materials

Themes Citizenship
Climate change
Natural resource management
Corporate responsibility
Sustainable production and consumption

WHEN?

Starting year and duration 2009 and for last 12 months

WHERE?

Geographical setting Local: a small market town of 20,000 people with 9 schools and a vocational education college

METHODOLOGY

Methods approaches & We used resources from a range of government and voluntary organisation websites, produced a list of useful online resources, made these available to all the local schools on a website, and developed and adapted some resources as a group. See <http://www.4shared.com/dir/b1VP-b/RCCWorkshop.html> for the pupils workshop and <http://stamfordtransition.ning.com/group/youngpeople> for the other resources. The sites also include the programmes for the workshops etc.

Working language(s) English

Budget and funding sources Lincolnshire County Council £2,950
Rutland County Council £1,000
East Midlands Network for Global Perspectives in Schools £1,000

RESULTS & EVALUATION**Presentation of effects, results or impact of the initiative**

Evaluation of initiative of Yes

Results

Monitoring systems, awareness and partnerships in place across the town community to reduce carbon emissions.

30 key teachers and 30 key pupils developed teaching resources and awareness-raising events at three separate all day workshops. Pupils attending the workshops came up with ideas ranging from having “no electricity” days, limiting the number of cups of tea teachers are allowed a day, having a loyalty card to collect points for energy saving behaviours, to having a board game day, all in the name of reducing energy use and therefore reducing CO2 emissions and our contribution to climate change.

School bursars and premises managers offered advice on low carbon management in schools.

A successful joint green week focusing on climate change organised by the vocational education college, state school and private school in the town working together, with engagement by all 200+ staff and 2,000+ pupils.

More than half the schools organised whole school events such as No Electricity Days, Low Carbon Days. Some schools organised activities such as Flashback:Fastforward – learning about local people’s lifestyles in the past to develop low carbon lifestyles for the future.

Vocation education college established a new Renewable Technology course which is oversubscribed.

Digital electricity monitors loaned to and set up in several schools.

Carbon emissions of schools estimated to account for 60 – 80% of the local authority carbon emissions.

Several schools committed to 10% carbon reductions over a year, some schools reduced electricity use by up to 26% during special focus Days or Weeks.

Business community represented by the local Chamber of Commerce pledged, through its Climate Change Charter, to spreading the message of energy efficiency, taking a leading local role in changing behaviour and working in partnership with local stakeholders such as schools.

Transport Group of Stamford Transition analysing the common concerns and suggested solutions in each of the School Transport Plans.

Analysis of success factors

Strengths

Whole town community approach, with a focus on a cluster of 7 feeder primary schools around 2 secondary schools and a vocational college.

Pupils voice as a focus of the teachers workshop and the pupils workshop with 2-3 key pupils, as representatives of a School Council or Eco-School group, given support and empowered to lead the behaviour and culture changes in school.

Lead and coordination from a voluntary community organisation who engaged with schools, businesses, food producers and the local council.

Strong focus on global citizenship through video clips, games and international school links.

Weaknesses & risks

Only been an active project for a year even though a lot achieved.

Links between schools and the voluntary community organisation and businesses may not extend into the long-term.

Constraints

Unresolved issues

Measuring real reduction in carbon emissions for procurement, transport, electricity, heating etc. in the schools, even though the measurement of electricity use is now possible.

Perspectives

Conditions for successful replication

Willingness and commitment of a few voluntary local champions, local authorities, community organisations and business networks to support a small cluster of schools in a small market town.

Why do you consider this a good practice?

It is easily replicable, at little cost, over a short timescale, and with very local clusters of schools working closely with the local community.

It empowers pupils to take the lead in changing behaviours.

13. The lived experience of climate change: e-modules and virtual mobility

The Open University, United Kingdom

CONTACT The Open University
Walton Hall, Milton Keynes, MK7 6AA
United Kingdom
Telephone: +44 (0)1908 653548 Fax: +44 (0)1908
E-mail: g.a.wilson@open.ac.uk Internet: www.leche.open.ac.uk
Professor Gordon Wilson

DESCRIPTION This EU Erasmus project develops postgraduate curriculum and virtual learning communities to support dissertations on the lived experience of climate change -- how individuals and organisations conceive and respond to its impacts (for example extreme weather or biodiversity changes), while going beyond previous conceptualisations in terms of indigenous knowledge. The resources will ultimately become open educational resources.

One virtual learning community comprises students undertaking dissertations in the area and their supervisors, forming a virtual mobility space across Europe. A second learning community includes additionally individuals, communities & organisations with which students engage in their research.

Student dissertations will form a knowledge base on citizen behaviour and will be used to influence EU policy on climate change.

Conceived as an interdisciplinary project involving natural and social scientists, and technologists and engineers, the resources are designed to support students from any disciplinary background who wish to undertake a dissertation in the area.



- OBJECTIVES**
- To support Masters study in 'the lived experience of climate change';
 - To complement postgraduate natural and social science studies of climate change;
 - To understand and evaluate the potential of knowledge derived from lived experiences in both the global North and the global south to contribute to climate change policy in the EU;
 - To support an informed European citizenry on issues of climate change.

Relate to national priorities

Within Europe, a renewed EU Sustainable Development Strategy (adopted by the European Council June 2006) stresses the importance of "high-quality education for sustainable development at all levels" (article 14) and links the promotion of ESD explicitly with the Lifelong Learning Programme (LLP) (article 17). It is in this vein that this initiative for teaching and learning on the lived experience of climate change is produced. Each of the 6 participating countries has policies related to education for

sustainable development.

WHO?

Type of organization managing the initiative Academia

Partners/stakeholders involved Higher education institutions
 Open Universiteit Nederland (Netherlands), FernUniversität in Hagen (Germany), Universidad Nacional de Educación a Distancia (Spain), Universidade Aberta (Portugal), Katholieke Universiteit Leuven (Belgium), Derby University (UK), Wageningen University (Netherlands), European Association of Distance Teaching Universities. These are full collaborating partners in the project, with a devolution of responsibilities between them.

Persons involved Masters students across the 9 participating HEIs initially (30 in the pilot); ultimately Masters students across the world; citizens who are the objects of dissertation research; the academic staff involved in the project who will be working collaboratively across their national and subject boundaries; ultimately national and regional policy makers who will be able to make use of dissertation research in the area.

WHAT?

Educational / learning setting and level Further and higher education
 Non-formal: The materials available at the project end as open educational resource will allow anyone in the world to engage in non-formal learning.
 Informal: A virtual learning community will include both the researchers (students researching for Masters dissertation topics) and the researched (those who have been the objects of dissertation research).

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings
 Tools and materials
 Regional/international cooperation
 Indigenous knowledge

Themes Cultural diversity
 Citizenship
 Environment
 Climate change
 Water
 Natural resource management

WHEN?

Starting year and duration October 2009; 31 months.

WHERE?

Geographical setting European Union

METHODOLOGY

Methods & a) Cross-cultural, cross-disciplinary collaborative production of three 120-hour teaching modules and dissertation support package, between 9 HEIs across 6

<i>approaches</i>	EU countries. One module directly concerns the 'lived experience' concept, moving beyond longstanding concepts of indigenous/local knowledge.
	<ul style="list-style-type: none"> b) Virtual learning space to contain all teaching materials, plus two learning communities: (i) for students and supervisors, thus creating a virtual mobility package across participating institutions; (ii) an expanded community to include also those who are the objects of dissertation research, thus promoting a lifelong learning space in relation to climate change. c) 15-month pilot with students from each participating Institution, plus evaluation of their experience.. d) The teaching modules to become open educational resource (OER) at the project end (May 2012) for any HEI in the world to use, adapt, accredit, etc. Individuals will also be able to access OER. e) Masters dissertations to be analysed as data to inform EU policy.
<i>Working language(s)</i>	English
<i>Budget and funding sources</i>	Euros 386,905, of which 75% grant from EU Lifelong Learning Erasmus Programme; 25% from the 9 partner institutions.

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

<i>Evaluation initiative</i>	<i>of</i>	No, the project is currently 9 months old and will last 31 months. It will be evaluated in the final months.
------------------------------	-----------	--

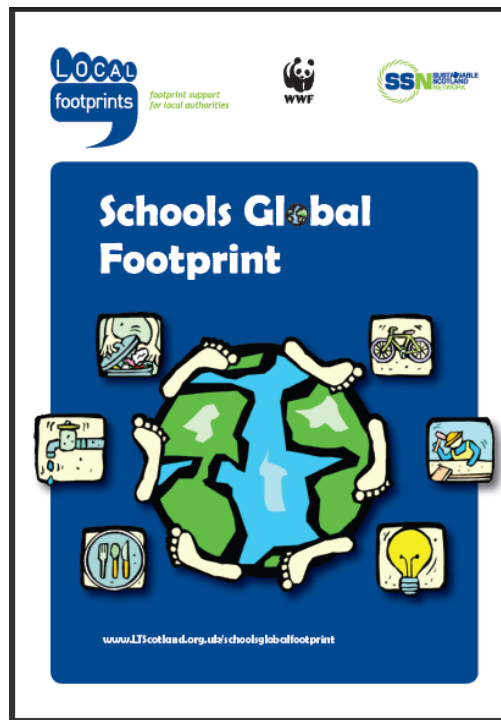
Perspectives

<i>Why do you consider this a good practice?</i>	Because of the cross-cultural, collaborative work practices in relation to a subject of global importance.
--	--

14. School's Global Footprint

WWF Scotland, United Kingdom

CONTACT WWF Scotland
 Little Dunkeld, Dunkeld, Perthshire, PH8 0AD
 United Kingdom
 Telephone: 01350 728200
 E-mail: BKing@wwfscotland.org.uk
 Betsy King, Education Policy Officer



OBJECTIVES Schools across Scotland are taking action to reduce their ecological footprint with the help of the School's Global Footprint resources. Schools Global Footprint is made up of two main teaching tools: a handbook for teachers and an online footprint calculator for learners, both found at www.LTScotland.org.uk/schoolsglobalfootprint. The school community is able to make decisions on how best to reduce its footprint by calculating the school's ecological footprint (based on the contribution of several components: buildings, energy, food, transport, waste and water) and carbon footprint and agreeing on a programme of action.

With the interactive [calculator](#) schools are able to calculate their footprint at a whole school level, and develop strategies to reduce it. The teaching materials promote creative and practical learning across all areas of the curriculum, targeting learners at 9-14 years. The resources have been accompanied by a training programme for teachers and published case studies showing how schools have examined, measured and reduced their footprint.

Relate to national priorities Reducing the local and global environmental impact of our consumption and production is a priority for Scotland. Scottish Government is committed to reducing greenhouse gas emissions in Scotland by 42 per cent by 2020.

To reduce our ecological footprint we must reduce our waste, energy and transport use and consume more sustainable food and other materials. The crucial first step is a change in our behaviour. As consumers of resources reduction in a school's footprint can make a positive contribution to the overall local authority and national footprints. At the same time schools are using the ecological footprint tool to increase their understanding of unsustainable consumption and learning how to make more sustainable choices.

Schools Global Footprint is an integral part of Scotland's response to the UN Decade of ESD, ([UN Decade of ESD](#)) the aim of which is that 'by 2014 people in Scotland will have developed the knowledge, understanding, skills and values to live sustainable lives'.

Schools Global Footprint work aligns well with Scotland's new *Curriculum for Excellence* which is less prescriptive, more open to professional judgement and reflection and involves more interdisciplinary and cross-curricular working, providing learners with 'real-life' experiences. Sustainable Development is recognized as an important theme within Curriculum for Excellence, alongside international education and citizenship.

WHO?

Type of organization managing the initiative Non-governmental

Partners/stakeholders involved Government (State/provincial/district)
Local authorities
Schools
Non-governmental organizations
Private sector

This innovative approach to sustainability learning was developed through 'Scotland's Global Footprint', managed by WWF Scotland and Sustainable Scotland Network and supported by Eco-Schools Scotland, Learning and Teaching Scotland, Scottish Enterprise, Scottish Executive, SNH, SEPA and Scottish Power. The calculator was produced by SEI, York and teachers materials written by Lynnette Borradaile. They were piloted in schools in Aberdeen City, Aberdeenshire and North Lanarkshire.

Support in using the resources was made available through 'Local Footprints', a partnership between WWF and the Sustainable Scotland Network, with funding and support from the Scottish Government, Improvement Service, Eco-Schools Scotland and Scottish Power.

Persons involved Primary and secondary schools teachers are the initial learners in this project, with this learning shared with the school pupils as each teacher takes forward individual projects within the class and across the school. To date more than 600 teachers have attended the teacher training, this represents about 1% of teachers in Scotland.

WHAT?

Educational / learning setting and level Primary education
Teacher education
Secondary education

WHY?

General focus of the initiative Learning for sustainability in formal, non-formal and informal settings
Education of educators
Tools and materials

Themes Environment
Climate change
Water
Natural resource management
Sustainable production and consumption
Responsibility in local and global contexts

WHEN?

Starting year and duration The project was initiated in 2004 and is ongoing.

WHERE?

Geographical setting Local: The tool is designed to be used in individual schools across Scotland, and could easily be used in other parts of the world

METHODOLOGY

Methods approaches & Teaching materials and a CD-Rom were developed by a partnership group (see above) as part of a larger Footprint pilot project in three local authorities in Scotland. They were piloted for a year in 17 primary and secondary schools with training, support and feedback sessions. Feedback indicated that an online calculator would be easier to use in classroom settings; this is now hosted on Learning and Teaching Scotland’s website.

The calculator focuses on six key elements: energy, waste, food, water, transport and buildings, breaking ecological footprint down into easily accessible topics. Practical, curriculum-based teaching and learning ideas and background information are offered for teachers, in a broad global context. Activities are presented to introduce and investigate each of the components and their interconnections.

The resources are available to all schools with training for teachers. Moving forward these resources will be freely available, with networking, through Scotland’s education intranet Glow.

Working language(s) English

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation initiative of Yes

1. As a component of the Scotland’s Global Footprint and Local Footprints projects the initiative has been evaluated externally. As part of the evaluation teachers trained to use the resources were contacted to find out whether they had used or intended to use the resources.
2. Detailed research has been carried out at eight schools, using the Schools Global Footprint Calculator to measure the size of their school’s footprint, has identified ‘Factors for success’ They give information on what made measuring their footprint successful and, in some cases, how they have linked the footprint work into the curriculum.(<http://www.localfootprints.org/index.asp?pg=5>)

Results The Local Footprints project surpassed its initial outcome of having 30 per cent of schools in Scotland (768 schools) measuring and taking action to reduce their footprint and 15 per cent of schools (384 schools) having achieved footprint reduction.

The Schools’ Global Footprint training has encouraged use of the resources in schools, from a recent survey of those trained in the footprinting resources:

- A very high proportion of teachers plan to use the teaching materials (83%) and calculator (72%) again or for the first time in the coming academic year.
- Only 12 teachers of the teachers that responded (1%) have not used the resources and have no plans to use them in the coming year.
- As expected a higher proportion of the teachers that responded have already used the teachers’ materials (51%) than the calculator (37%) in their classroom teaching.

Five best practice case studies have been published and launched by the Minister for Schools and Skills, showing how primary, secondary and special schools have reduced their footprints (<http://www.localfootprints.org/index.asp?pg=5>)

Analysis of success factors

<i>Strengths</i>	Teachers value the training and support that has been provided. Footprinting is being used in curriculum areas and subjects, during interdisciplinary Eco-weeks and by Eco-Committees. The teachers' materials and calculator are seen to support the requirements of the Curriculum for Excellence. The calculator is particularly being used by Eco-Schools Green Flag schools as monitoring and evaluation evidence.
<i>Weaknesses & risks</i>	Teachers require local help to resolve technical difficulties such as getting onto the calculator, finding their school's data, losing input data and to answer queries. This finding resulted in the proposal to provide training and support for intermediaries and local projects and to integrate materials, support and guidance into Scotland's schools intranet GLOW. Advance planning is needed for teachers to build work into their curricula.

Perspectives

<i>Conditions successful replication</i>	<i>for</i>	<ol style="list-style-type: none"> 1. Piloting the resources in schools before wider distribution. 2. Developing a wide partnership to develop the project and promote the initiative across the country. 3. Linking the schools initiative with the Eco-schools programme
--	------------	---

Six key Factors for Success were commonly cited during the interviews as being key to schools successfully measuring and reducing their school's footprint.

- Support - The teachers have lots of support from other staff, non-teaching staff and in some cases external adults. Essentially this means that responsibility is shared, assistance is forthcoming and they do not feel isolated in trying to do the work.
- Personal commitment - A large number of the teachers interviewed have a strong personal commitment to environmental issues and knowledge and confidence gained through this personal commitment.
- Integration across the curriculum - Pupils engage most with footprinting and the ideas around environmental responsibility in schools where environmental issues are used as the vehicle for learning in various curricula areas.
- Ambition within Eco-Schools - Many of the schools see measuring their school's footprint as an ideal way to monitor and evaluate progress for Eco-Schools and plan on using the footprint work as part of their assessment for their next flag.
- Excellence within Eco-Schools - The schools who have a very strong Eco-Schools co-ordinator, a strong committee and who have a genuinely full school approach to Eco-Schools are very well placed to succeed with measuring their school's footprint.
- Time - A key factor in successfully measuring a school's footprint is that the teacher has enough time to coordinate the readings, to design the teaching, to communicate with other staff and to ensure the results are used meaningfully.

<i>Why do you consider this a good practice?</i>	Schools Global Footprint helps pupils to extend their understanding of sustainable development and citizenship and to adopt more sustainable practices. The resources have helped pupils to make a difference, reducing their impact on the planet.
--	--

There is an opportunity for Schools Global Footprint to be used in other nations.

15. Ambientarte

EcoPlata Programme, Uruguay

CONTACT

EcoPlata Programme
 Galicia 1133 piso 1
 Uruguay
 Telephone: 598 2 917 07 10 int. 4164; Fax: 598 2 917 07 10 int. 4163
 E-mail: ecoplata@ecoplata.org Website: <http://www.ecoplata.org>

PARTNER ORGANIZATION

Instituto de Educación Popular “El Abrojo”
 Soriano 11 53, Postcode 11100
 Uruguay
 Telephone: 0598 2 903 01 44 Fax: 0598 2 903 01 44 int 15
 E-mail: ambienta@elabrojo.org.uy Website: www.elabrojo.org.uy
 Leonardo Seijo: Coordinator of the Socio-Environmental Programme of the Instituto de Educación Popular “El Abrojo”

DESCRIPTION

Ambientarte is an environmental education scheme that combines two complementary approaches. The first consisted in conducting classroom activities in schools and public areas in Uruguay’s six coastal departments, and the second in designing and developing an education web portal covering the same themes, providing support and games for learning and establishing a social network for climate change and integrated coastal management.

Participants comprised children and teaching staff, who interacted both in the classroom and online. Uruguay’s primary education authorities, who signed an agreement both with the National Environment Directorate and with the “El Abrojo” NGO which, as executing agency for the initiative, ensured that the scheme was substantively linked to the formal education curriculum.

The foundations were thus laid for the conduct of new in-class environmental education initiatives, for the Internet provision of supporting educational material (with the special contribution of one laptop per child under the Ceibal Plan) for use in the environment-related content of the curriculum and for the development of a social network on climate change and integrated coastal management.



OBJECTIVES

The main objective of the initiative was to “contribute to the development of responsible environment-friendly behaviour, particularly with regard to beaches and coastal areas in general”.

Specific objectives

- Teach integrated coastal management and the phenomenon of climate change in the formal education system.
- Contribute to addressing environmental issues by combining pleasure and enjoyment with learning under the Year 5 and Year 6 curricula.
- Raise the teaching staff’s awareness of integrated management and of the play-based approach to environmental education by using ICTs to deliver curricular content.

Relate to national priorities

The national government had ascertained that the people lacked knowledge of and training in environmental matters. It is considered that the project met the objective of improving public knowledge by encouraging the people to participate in environmental management. It promoted the integrated approach to coastal management and mainstreamed the phenomenon of climate change which had been defined as a priority by the government and detailed in the National Climate Change Response System.

WHO?*Type of organization managing the initiative*

Programme financed by the Canadian Cooperation Office and the Government.

Partners/stakeholders involved

Government (State/provincial/district)

Non-governmental organizations

Children, classroom workshops in schools. They also used the web portal to study, peruse materials, play, discuss and publish information on issues and build social networks with their peers.

Teachers, in classroom workshops and in exchanges with the team before, during and after the workshops and on the online portal, using the contributions for educational purposes, discussing and sharing with other teachers in groups established for the proposed social network.

Persons involved

Six coastal departments in Uruguay (Colonia, San José, Montevideo, Canelones, Maldonado and Rocha).

48 groups of Year 6 primary students, 48 teachers and 12 classroom workshop leaders and a potential of 280,000 children using the web portal under the Ceibal Plan (one laptop per child).

WHAT?*Educational/learning setting and level*

Primary education

Teacher training

WHY?*General focus of the initiative*

Learn about sustainable development in formal, non-formal and informal settings

Training of trainers

Tools and materials (for example, communication media and ICTs)

Themes

Climate change

WHEN?*Starting year and duration*

2009. The classroom workshops were held for six months in schools, while the web portal has been maintained continuously to ensure updates and administration of the social networks.

WHERE?*Geographical setting*

Local: Coastal departments (Colonia, San José, Montevideo, Canelones, Maldonado and Rocha)

METHODOLOGY*Methods and approaches*

Two lines of action were conducted simultaneously through:

- classroom workshops on environmental issues, using teaching materials specially designed for the Uruguayan coast;
- the development of a web portal containing educational games, thematic worksheets for teachers and pupils and a coastal newsletter in support of the establishment of a collaborative social network (including publications, comments, messages and other materials) for children and teachers; all materials were based on an analysis and devised to support the primary-school curricula for Year 5 and Year 6;
- environmental workshops, using teaching materials specially designed to reflect Uruguayan coastal features.

The workshops were led by a team of experts trained in environmental topics, in particular, integrated coastal management. The team specialized in sociocultural recreational activities and leadership conducive to a play-based approach to environmental issues.

Furthermore, as the teams used teaching materials specially designed to reflect Uruguayan coastal features, emphasis was laid on curricular subjects and integrated coastal management through play. Materials suitable for children (in terms of safety, design, colour and ease of handling) were developed.

The materials were tested in 2008 through more than 30 trials on the Canelones coast and in eight schools and in 17 trials on the beaches of Colonia, Montevideo, Canelones and Rocha in the summer of 2009. The evaluations have shown that the initiative was considered very favourably by the participants, their parents and teachers.

Activities

An agreement was reached with the National Primary Education Administration (ANEP), the highest primary-education authority in the country, on ways and means of institutionalizing and facilitating the team's work with schools. Curricular content was adapted and schools were selected jointly by ANEP and the local governments of coastal departments.

Between May and December, teachers at each school were briefed in a coordinated drive to give them advance knowledge of the content and methodology required.

The phenomenon of climate change was mainstreamed, in particular under the following topics:

- ecosystems and coastal ecosystems – characteristics and components;
- biodiversity;
- sources of pressure and impacts – pollution, fires, and coastal erosion;
- waste management;
- promotion of reflective and collaborative attitudes, teamwork and critical thought;
- promotion of environmentally responsible behaviour.

To address these topics, thematic games adapted to the school environment were devised, drawing on the local flora and fauna. Actual coastal dynamics were enacted in each game.

A web portal was developed, containing educational games, technical fact sheets for teachers and worksheets for pupils.

All web portal functionalities were consistent with the Ceibal Plan (one laptop per child). Moreover, both worksheets and games were printable and children could thus share them with their peers and, in particular, their families.

The portal contains five sections delivering climate-change and coastal-ecosystem content through 24 educational worksheets for children, parents and teachers for use both in the classroom and in field work. A specific was specifically dedicated to promoting and supporting the formation of a social network for the exchange of ideas, opinions and activities on the issue.

The website comprises the following six sections.

Sections	Content
1. Climate Change	Developed for use in the classroom by teachers and pupils.
2. The coastal ecosystem	Developed for use in the classroom by teachers and pupils. There are 15 educational worksheets providing coastal information. They are for online use in the classroom by teachers or to enable pupils to retrieve information on a particular topic.
3. The coast as part of the curriculum	Aimed at teachers and education specialists for work in other fields of the applied sciences that are relevant to the coast. Coastal issues are addressed through the natural sciences, mathematics, physics, chemistry and biology.
4. Educational recreational activities	Coastal themes are addressed through educational recreational activities, both in field work and in the classroom.

5. Coastal newsletter	Teachers and pupils at all of the schools produce content for the newsletter, which has been designed for the exchange of experiential data, opinions and information on activities relating to the coast. It is a collective exercise in which all interested parties can participate through a social network as <i>coastal reporters</i> , publishing their opinions, experiences, reports and comments in general on the site. A contacts database is generated automatically in order to enhance links among all network participants.
6. Contact	Contact with EcoPlata and useful e-mail addresses.

This educational scheme capitalized on the following points:

- enactment coastal ecosystem dynamics and components in the school environment;
- games as a method of learning, conducive to creating opportunities for learning in a relaxed environment, while promoting integration, socialization and meetings;
- use of innovative teaching material designed and produced specifically to address the key issues listed;
- consideration of concepts contained in the environmental education curriculum for primary schools.

Working language(s)

Spanish

Budget and funding sources

Resources for this project were provided by the national Government through the Climate Change Unit of the National Environment Directorate and by the Canadian Government's contribution under the EcoPlata programme amounting to 772,400 Uruguayan pesos (US \$36,262).

RESULTS and EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation of initiative

The initiative was evaluated by children and teachers at the end of the workshops as very satisfactory.

Results

Teachers' and pupils' awareness of the issues was enhanced.

Handy tools were distributed to teaching staff for use in education.

A platform was established for social networking on climate change and coastal management issues.

Analysis of success factors

Strengths

Children and teachers were highly motivated and enthusiastic about the proposed activities.

Environment, learning and collective and individual enjoyment were interlinked in addressing the various topics.

Weaknesses and risks

The available educational methodologies and tools must be disseminated sustainably over time in order to capitalize on them to the full.

Perspectives

Why do you consider this a good practice?

It is conducive to the inclusion and discussion of complex themes in formal education, while creating opportunities to meet others and enjoy the learning process. It places the child at the centre of the educational endeavour and provides the necessary tools for children to be actors in the education process.

16. Carmelo: from the safeguarding of sayings and the collective memory to a culture of prevention

Friends of the Wind, Meteorology, the Environment and Development, Uruguay

CONTACT

Amigos del Viento meteorología ambiente desarrollo

Luis Piera 1931 apto 1

Uruguay

Telephone: +598 2 411 28 24

E-mail: amigosdelviento@adinet.com.uy; gracielasalaberri@yahoo.com.ar

Website: <http://amigosdelviento.webs.com>
<http://proyectocarmelo.webs.com/>

Graciela Salaberri, Project Coordinator

DESCRIPTION

Carmelo, a city situated 80 kilometres away from the departmental capital, has been struck by very strong tornados, in which lives have been lost, such as in November 1985. Its inhabitants, extremely proud of their traditions, culture and origins (Carmelo is the only city founded by José Artigas that is still flourishing), therefore, considered it to be an ideal setting for compiling existing sayings on prevention relating to meteorological events. Proverbs and maxims are forms of expressions of popular knowledge that simultaneously transfer knowledge, values and collective memories. Such knowledge is held by adults, but the project was designed to secure not only the safeguarding of oral traditions, but also the adoption of a proactive attitude towards disaster prevention and mitigation and emergency preparedness. The activities were therefore focused on pupils in the first year of secondary education and took the form of “inverse education”, with the young encouraging “more environmentally correct” behaviour among the older generation. Moreover, the national tradition was taken into account: schools are recognized as local centres for the dissemination of culture – in this case, the dissemination of a culture of prevention and adaptation to variability and climate change. Lastly, the project was designed to combine the protection of the older generations’ traditions with the dissemination of new preventive criteria by the younger generations, thus shoring up intergenerational bridges and strengthening culture.



OBJECTIVES

Safeguard local sayings and oral traditions, particularly those concerning the weather and climate within the Carmelo community, in order to and bring together and enhance the value of the various aspects of our history that are intangible but can still be expressed by those who have experienced them.

Inculcate habits and practices that are appropriate to severe weather and climate conditions in secondary school-aged children so that they can actively promote associated preventive measures.

Foster intergenerational linkage between popular knowledge that has been enriched by the local historical heritage and by the new scientific and technical knowledge acquired by young people.

Relate to national priorities

The project laid the foundations for a governmental priority that is now known as the Strategic Action and Response Plan to Climate Change in Uruguay.

WHO?

Type of organization managing the initiative

Non-governmental

Partners/stakeholders involved

The media

Secondary Education Institute

In 2008, a school in Tarariras, in the department of Colonia, was buffeted by strong winds that among other things, blew off the roof of one of the side buildings of the Tarariras High School early in the afternoon while lessons were in progress. Although no life was lost, the pupils, teachers and the entire community of this small town were deeply shocked. Even before that event, AdelV, a civil society organization, had initiated contacts with public, social and educational authorities in the city of Carmelo (only a few kilometres away from Tarariras) in the department of Colonia, but it is considered that the teachers, the head of Carmelo's education centre and the population were deeply motivated to support the activities scheduled under the Friends of the Wind project, which had, at the time, won the first prize for the systematization of traditions, with funds being granted by the Ministry of Education and Culture (MEC). In the activities carried out under the project, emphasis was laid on the inventory of oral traditions and their enhancement through an enriching intergenerational exchange (between the younger generations and their elders, neighbours, parents and grandparents) in order, first, to identify and then to safeguard the collective memory relating to climate matters. Owing to the invaluable coordination by the head of the school, a tradition of extracurricular activities and excellent synergy among the teaching staff, activities were conducted smoothly and workshops, seminars, lectures and conferences were held for a mixed audience. After the project implementation period ended, prevention activities were continued by high school pupils who visited schools in the area to raise awareness of the issues covered by the project. The local media played a key role before, during and after the implementation of the project, ranging from the launch and an appeal to persons over the age of 60 to participate, encouraging them to relate their memories and sayings about climate, to the broadcast of radio programmes produced by the pupils themselves, providing information to their community and urging it to take preventative action. We have continued to be involved through various activities and meetings in the communities and we have given advice, materials and support to young people for their activities to raise their community's awareness, as we have specialized technical skills in that field.

Persons involved

First year high school pupils: 780 pupils. First year pupils who produced prevention posters and radio programmes: 306 pupils.

WHAT?

Educational/learning setting and level

Neighbours

Secondary education

Non-formal settings: neighbours invited through radio and local television announcements to meet in a local museum.

WHY?

General focus of the initiative

Learning about sustainable development in formal, non-formal and informal settings.

Traditional knowledge

<i>Themes</i>	Citizenship
	Climate change
	Disaster reduction
	Responsibilities at the local and world levels

WHEN?

<i>Starting years and duration</i>	The project was implemented between July 2008 and July 2009 with grant funds, after being ranked first by the Ministry of Education and Culture (MEC) in 2008 for the systemization of traditions.
------------------------------------	--

WHERE?

<i>Geographical setting</i>	Local: Carmelo, a city in the department of Colonia
	Other: city further inland and its surrounding area, involving tourism and rural activities

METHODOLOGY

<i>Methods and approaches</i>	Background and focus of the project
-------------------------------	--

Since ancient times, practical knowledge about the weather and climate has been encapsulated regionally in the form of sayings. In the Río de la Plata area this has led to a mixture of proverbs from the European regions previously inhabited by immigrants, which were not always well-suited to the reality of South America, and knowledge arising from the local, plural anonymous experience. However, a negative consequence of cultural globalization is the slow but persistent loss, not only of localisms, but also of local precautionary measures against dangerous events. This is entirely at odds with expansion in the built-up environment in Uruguay, where the maroon's farms have been replaced by farms in which large amounts have been invested in the land (improved and artificial meadows, dairy farms, vineyards, orchards and horticulture), which has increased social vulnerability to extreme events, some of which now occur more frequently as a result of climate change in this part of the world.

At the same time, there is no "culture of prevention" in Uruguay, no doubt because it is not in a region where volcanoes, earthquakes and hurricanes cost hundreds of lives each year – but disasters strike here, too, always as a result of atmospheric processes. These hazards are increasingly costly in terms of human and economic losses. For example, Carmelo, a city 80 kilometres away from the departmental capital, has been struck by very strong tornados, in which lives have been lost, such as in November 1985. Its inhabitants, extremely proud of their traditions, culture and origins (Carmelo is the only city founded by José Artigas that is still flourishing), therefore, considered it to be an ideal setting for compiling existing sayings on prevention relating to meteorological events. Proverbs and maxims are forms of expression of popular knowledge that simultaneously transfer knowledge, values and collective memories. Such knowledge is held by adults, but the project was designed to secure not only the safeguarding of oral traditions, but also the adoption of a proactive attitude toward disaster prevention and mitigation and emergency preparedness. The activities were therefore focused on pupils in the first year of secondary education and took the form of "inverse education", with the young encouraging "more environmentally correct" behaviour among the older generation. Moreover, the national tradition was taken into account: schools are recognized as local centres for the dissemination of cultures – in this case, the dissemination of a culture of prevention and adaptation to variability and climate change. Lastly, the project was designed to combine the protection of the older generations' traditions with the dissemination of new preventive criteria by the younger generations, thus shoring up intergenerational bridges and strengthening culture.

Key elements/stages of implementation

- Contact was made with public, social and educational entities in the city of Carmelo.
- Coordination with the authorities and teachers of the leading high school in the city of Carmelo.
- Steps taken to launch the project through the local media (newspapers, radio and television programmes).
- Appeal in the oral and written press to persons over the age of 60, urging them to relate their stories on severe meteorological events and prevention practices.

- Open-ended interviews with persons over the age of 60.
- Inception of work on the compilation of the “oral history” in order to design and produce the historical annals of the city of Carmelo.
- The following were accomplished:
 - a conference on climate change for students and the general public;
 - conferences on weather, climate and severe phenomena for high school pupils from Carmelo’s Secondary Education Institute and Vocational College;
 - preparatory workshops with the project team and teachers from Carmelo for joint activities with the pupils;
 - workshops on weather, climate and severe phenomena with first year high school pupils;
 - work on local traditions and on their experiential history and relevant meteorological information (information submitted at professional events such as meteorological congresses and symposia attended by the Organization’s technical experts, who explained the content to pupils from the Secondary Education Institute with whom the extension work was carried out);
 - research work, inventory of popular sayings and collective memories;
 - classification of the material and the preparation of the preliminary edition on the basis of the popular knowledge that had been collected;
 - participation of the young people in the community via posters that they had designed and produced;
 - Inclusion of young people in prevention activities within the community.

<http://proyectocarmelo.webs.com/> ; <http://amigosdelviento.webs.com/>

Working language(s) Spanish

Budget and funding sources Amount awarded from grant funds: 99,029 Uruguayan pesos, approximately US \$5,000.

RESULTS and EVALUATION

Presentation of effects, results or impact of the initiative

Evaluation of initiative

The initiative has been evaluated under the competitive grant procedure and has also been outlined in various presentations by local actors, high school pupils and educational authorities who have taken part. To quote Dr David Bonjour, the head of the high school, “...In special synergy, teachers and students were all engaged in an endeavour that began with meetings of family generations and dialogue between young people and their parents, grandparents and neighbours as a first step in ‘safeguarding’ memories, proverbs and maxims on climate phenomena. Such dialogue between the young and their elders on a topic of common interest, which occurs so rarely nowadays, gave rise to genuine human experience of climate issues and the reconstruction of collective memories on the subject. That was the trigger. The workshops in which both teachers and students participated led to a wide range of activities, including, most outstandingly, pictorial representations, texts, interviews, the production of a handbook on prevention, training of a group as climate observers, radio programmes and the design of leaflets. Owing to all of these activities, young people participated and became active and accountable movers in society, echoing one of the key ideas underlying the project, namely ‘while human beings can do very little to change the incidence of most natural phenomena, they can take precautions to ensure that events do not become disasters as a result of their own actions and omissions.’ This is also one of the basic principles of personal and social survival that young people must learn”.

Results

Awareness of vulnerabilities and risks and of related preventive measures has been raised. As a result of the initiative taken by young people after the project had come to an end, high school pupils gave talks on the subject and raised awareness in primary schools. Community action was taken to raise awareness of climate change and rural productive activities. Radio programmes and local television programmes, too, were broadcast on the subject. A prevention handbook and posters were produced collectively (178 disaster prevention posters on severe meteorological phenomena).

Analysis of success factors

Strengths The project covered the safeguarding of oral traditions, the adoption of a proactive attitude to disaster prevention and mitigation and emergency preparedness. Owing to research, collection and even creative work by first year pupils at the David Bonjour High School in Carmelo, many gems of Carmelo's folk heritage have been collected. The majority of the participants are mentioned by name in respect of their memories and their own research. Others are listed as "neighbours", "grandmother", "my mother", "dad", all proof of genuine intergenerational links, in that the young questioned their elders about their experiences, while the elders allowed themselves to be questioned with pleasure and recounted their memories. Stories of the 1985 tornado featured prominently time and again in people's accounts of the experience and suffering and in the proverbs and maxims collected on the weather and climate.

Weaknesses and risks The planned activities were ambitious, in view of the small budget available, which was limited to that granted under the MEC competitive grant procedure.

Constraints

Problems encountered The project began halfway through the year and covered the 2008 (July-December) and 2009 (March-July) school years. In the latter year, despite an attempt to support the scheme on the basis of the previous year's programme (Community-based Record of Climate Change), the pupils had graduated from the Institute and the link had been somewhat broken. The scheme was nonetheless continued, mostly in a more independent manner than foreseen.

Unresolved problems The experience has been most stimulating, with higher levels of participation than expected. The project was carried out with first-year high school pupils from the class of 2008 and the class of 2009. There was an interesting flow towards the senior high school among those who had been involved in the project in the last year of basic education (Record for the Community), which the project team endeavoured to support, but was working with another school. Although the team considers that such diversification was positive, it believes that the impact would have been much greater if it could have carried out the initiative at both levels for a longer period.

Perspectives

Conditions for successful replication Pride of place was given to the inventory and enhancement of oral traditions and to intergenerational exchanges in the quest for and safeguarding of collective memories of climate issues. As civilizations developed, folk knowledge continued to subsist locally in sayings and proverbs, which is culturally one of the defining factors (UNESCO).

Why do you consider this a good practice? On the basis of experiences gained from the project and the ensuing activities, the team considers that it has been a valuable and replicable initiative. Owing to the sustained enhancement of local knowledge, young people's creativity, their marvellous keenness to arouse their elder's memories and the vividness of those memories, the team has been heartened to publicize the experiment beyond the bounds of the community.

17. Food security and climate change challenge badge

FAO, Rome

CONTACT Food and Agriculture Organization for the United Nations (FAO)
 NRC, Viale delle Terme di Caracalla,
 00153 Rome, Italy
 Telephone: +39 06 57056519 Fax: +39 06 57053250
 E-mail: YUNGA@fao.org Internet: www.fao.org/climatechange/youth/en/
 Booklet: www.fao.org/climatechange/youth/63380/en/
 Reuben Sessa, Programme Officer, NRC



OBJECTIVES The Food Security and Climate Change Challenge Badge is designed to help educate children and young people about climate change and food security while encouraging them to take action against global warming, environmental degradation and hunger in the world. By carrying out these activities they will identify and take actions to reduce their environmental footprint and learn how to make better consumer and life-style choices.

Relate to national priorities Food Security, sustainable development and climate change are key issue for all countries. Education of young generations is fundamental to achieve effective mitigation and ensure the sustainable use of natural resources. The challenge badge raises environmental and social issues with children and young people, encourages active participation in local communities, provides resources and ideas to take action and helps develop more responsible citizens who can adapt and respond to future challenges.

WHO?

Type of organization managing the initiative International
 Inter-governmental and civil society

Partners/stakeholders involved Schools
 Higher education institutions
 Community organizations
 Intergovernmental, international institutions

The joint partners of the project are the World Association of Girl Guides and Girl Scouts (WAGGGS) and its national associations. They had a key role in the developing the resources, pilot testing in different parts of the world and distributing the resources through their national networks. In addition, the project was supported by other organizations, youth movements and UN agencies.

Persons involved The Challenge Badge covers three different age ranges: 5 to 10; 11 to 15 and 16 to 20. This fits into the three age groups of the members of WAGGGS (10 million members), the World Organization of the Scout Movement (WOSM) (30 million members) and primary and secondary school education.

A multiple choice structure with guidance on the suitability of activities to different age ranges allow teachers and youth leaders to develop the activities to suit their

RESULTS & EVALUATION

Presentation of effects, results or impact of the initiative

<i>Evaluation initiative</i>	<i>of</i>	The badge was pilot tested by numerous groups in different regions of the world before the final product was developed. Groups who use the materials are asked to constantly provide feedback and comments on improvements and new activity areas. Monitoring is also undertaken by the number of hits on certain parts of the Web site and the number of orders of the cloth badges (which the Guides and Scouts are awarded once they have completed the challenge).
<i>Results</i>		Numerous Guide and Scout Groups have adopted the badge. Increasing number of schools has also started using these resources. By now 5000 English, 10 000 Italian, 2 000 French and 1000 Spanish booklets have already been requested and 3000 cloth badges have been ordered by the different groups.

Analysis of success factors

<i>Strengths</i>		The Badge is a tool that can be used by all youth groups with a minimum of resources and can be adapted to different contexts. It motivates youth into taking action so goes beyond just education. In addition the resource is fun and challenging and encouraging peer-peer action on climate change issues.
<i>Weaknesses risks</i>	<i>&</i>	The leader or teacher might not always be a person with a full grasp or knowledge of the issues (especially in regards to climate change). In this regards needs to use the youth guide and resources or can request for additional support from FAO.

Constraints

<i>Problems encountered</i>		The most difficult task, until now, has been public outreach. We are trying to make sure that everyone knows about the existence of this resource. That is why we have started building up a more powerful network trying to get more young people directly involved with us.
<i>Unresolved issues</i>		Youth guide to be completed and additional UN languages need to be developed.

Perspectives

<i>Conditions successful replication</i>	<i>for</i>	The success of the initiative has led to the development of other Challenge badges in biodiversity and eventually oceans, fish, etc.
<i>Why do you consider this a good practice?</i>		Innovative and effective educational tool which can be used by all groups and classes. Provides a good overview of the issues to be considered and encourages individual to further pursue the subject. Visibility created through badges and certificates and pier to pier encouragement is created in developing sustainable lifestyles.

UNESCO has launched the *ESD in Action Good Practices series* to encourage exchange of good practices and experiences among stakeholders from different parts of the world, and assist them in their efforts to implement Education for Sustainable Development (ESD). This series focuses on ESD good practices related to various issues and themes. These are initiatives, projects and policies closely related to ESD that provide examples of practice, generate ideas and contribute to policy development.

To support the growing interest in climate change issues and ESD, UNESCO is publishing this volume containing 17 examples of programmes addressing climate change in ESD settings and practices. These good practices and shared experiences, provided by a range of different stakeholders, are concrete examples of successful implementation of ESD in different fields and sectors, from the political to the school level, and including formal, non-formal and informal learning situations.