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(2005-2014)

## Education for Sustainable Development Good Practices in Addressing Biodiversity



Education for Sustainable Development in Action  
**Good Practices N°6 - 2012**  
UNESCO Education Sector

**Education for Sustainable Development Good Practices in  
Addressing Biodiversity**

**U N E S C O**

**Education for Sustainable Development in Action  
Good Practices N° 6**

2012

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## **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 biodiversity. The increasing number of requests is only one indicator that biodiversity 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 biodiversity issues and ESD, UNESCO is publishing this volume containing 24 examples of programmes addressing biodiversity 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.

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## 1. Empower Namibians to Make Decisions for a Sustainable Future

### *Namib Desert Environmental Education Trust (NaDEET), Namibia*

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#### DESCRIPTION

NaDEET is a small NGO located on NamibRand Nature Reserve in the Namib Desert, aimed at empowering and educating Namibians for a sustainable future. Our main focus is conducting environmental education programmes at NaDEET Centre. Built in a dune valley, NaDEET Centre is a model and experience in sustainable living, as activities and living needs are joined to create a truly environmental education programme. Registered as a non-profit trust in Namibia, it has established the following four major projects:

- Environmental Education at NaDEET Centre: School and Youth
- Environmental Education at NaDEET Centre: Adult
- Environmental Literacy Projects (*The Bush Telegraph*)
- Capacity Building and Tertiary Level Support

Our main focus is conducting environmental education programmes at NaDEET Centre. NaDEET Centre offers a variety of EE programmes tailored to primary and secondary education, as well as community programmes for adults. During a 3-5 day visit, NaDEET Centre engages participants in hands-on, experiential, outdoor learning in a desert environment. By using an innovative design, alternative technology and living techniques the Centre is a model and an experience in sustainable living. Currently, the NaDEET Centre has hosted over 4000 learners in 125 groups since 2003.

The NaDEET Centre experience provides a truly unique opportunity for every Namibian to learn about sustainable living in one of the most beautiful places on Earth. Learners will develop skills and first-hand knowledge in solar technology, waste management, biodiversity and water management by not only learning about these things, but *practicing* them. In effect, learners are active agents in preserving and protecting their environment.

Socially, the NaDEET Centre experience addresses many relevant cultural issues affecting the livelihoods and health of many Namibians. Poverty, unemployment and infectious diseases are all very unfortunate realities in Namibia, and due to several cultural and social factors, many Namibians are not presented with any alternatives. For example, many families cannot afford gas stoves, so they still resort to burning firewood to cook. Collecting firewood is a task typically delegated to women in Namibia, and thus, many women do not have time to gain an education. Likewise, the whole family may experience several health problems, such as frequent back aches and respiratory problems from burning firewood. At the NaDEET Centre, we invite adult community groups to spend 4 days learning about solar technology as an alternative cooking method.

NaDEET currently donates one solar cooker per every two people in the community group. When these adults return to their community with not only new knowledge, but the proper resources, they can become effective teachers in their own community, resulting in a resounding empowerment unlike any other.

Furthermore, in line with government policy, NaDEET aims to build the capacity of Namibians in environmental education. This field is underdeveloped in the country and there is a lack of sufficiently qualified environmental educators. To fulfil this aim, NaDEET has partnered with different organisations to contribute to capacity building on several levels, as well as maintained an on-going focus on NaDEET's own internal capacity building. The core programme is in partnership with the Nature Conservation Department at the Polytechnic of Namibia, providing internships at NaDEET.



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## OBJECTIVES

Nationally, NaDEET's adult and youth programmes will further the development of Namibians' ability to live sustainably and comfortably without adversely affecting the environment. *Namibia Vision 2030* (p.39) outlines several factors that need to be addressed if the country is to achieve sustainable development. To name just a few, NaDEET's adult and youth programmes address the need to:

- Establish domestically determined procedures that integrate environment and development issues into decision-making at all levels.
- Develop or improve mechanisms that facilitate the involvement of all concerned individuals, groups and organizations in decision-making.
- Promote actions that can effectively reverse unwelcome trends and reduce threats to Namibia's natural resource capital.
- Allocate more resources to the previously neglected areas (regions).
- Support household level income-generating, self-help projects (e.g. brick-making, etc.).

Hence, all levels of Namibian society will benefit from NaDEET's programmes since they provide alternative techniques that improve the quality of life and health of Namibians, create new directions for generated capital, establish new domestic trends that directly benefit the environment and improve land sustainability through alternative cooking methods.

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## Who?

*Type of organization managing the initiative*

NaDEET is a non-governmental organization registered as a Namibian non-profit trust. Key stakeholders include local communities, schools and other non-governmental organizations such as ministries. NaDEET keep all of its stakeholders informed through the publishing of its bi-annual newsletter, *The Golden Mole*, and NaDEET's *Annual Newsletter*. NaDEET also supplies any interested schools or individuals with free copies of our mini-magazine, the *Bush Telegraph*.

The NaDEET Centre offers a variety of environmental education programmes tailored to age/grade level groups between 7-20 years/3-12 grades which are based on the Namibian school curriculum. The Centre also offers programmes for adult groups including educators, community members and interested citizens. In 2010, we have launched a new programme specifically for community members in the Hardap and Karas Region.

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## WHAT?

*Educational / learning setting and level*

NaDEET Centre offers a variety of environmental education programmes tailored to age / grade level groups between 7-20 years / 3-12 grade which are based on the Namibian school curriculum. Participants stay at NaDEET Centre for 4-5 days. During this time NaDEET Centre engages participants in hands-on, experiential, outdoor learning in a desert environment. By using an innovative design, alternative technology and living techniques the Centre is a model and an

experience in sustainable living.

NaDEET Centre also offers programmes for adult groups including educators, community members and interested citizens. In 2010, we have launched a new programme specifically for community members in the Hardap and Karas Region. The goal of this project is to improve energy practices and mitigate climate change in southern Namibia. The type of learning is as follows:

- Formal Learning includes solar electricity monitoring, daily water measurements and teacher/learner-based classroom sessions on topics such as climate change, deforestation and waste management.
- Informal Learning includes cooking meals using the parabolic solar cooker and exploring the desert's biodiversity on a dune walk.
- Non-formal Learning includes sleeping, which helps to absorb and retain new information.

### WHY?

*General focus of the initiative*

NaDEET aspires for Namibians to choose to participate in finding viable solutions to their local and national environmental issues to create a healthy and sustainable future for all. NaDEET has set forth the following aims to guide the organisation:

- To provide a non-profit environmental education service for all, especially the underprivileged learners and educators of Namibia, based in the beauty and magic of the Namib Desert.
- To build capacity and know-how at all levels of the environmental education sector, focused on addressing relevant environmental issues, supporting the Namibian school curricula and practicing hands-on, experiential learning and learner-centred educational methods.
- To engage in education, advocacy and awareness of the critical role of sustainable living in a finite semi-arid environment.

*Themes*

Themes explored formally, informally, and non-formally include:

- Environmental concerns, such as climate change, biodiversity loss, deforestation, natural resource management, sustainable production and consumption and responsibility in local and global contexts.
- Social concerns, such as health promotion, gender equality and overcoming poverty. For example, the utilisation of solar cooking techniques saves firewood, leading to more time available for women and less respiratory problems.

### WHEN?

*Starting year and duration*

NaDEET began in 2003, and has currently been teaching learners for 7 years.

### WHERE?

*Geographical setting*

NaDEET is stationed in a remote dune valley in the Namib Desert in the Hardap region of Namibia.

### **METHODOLOGY**

*Methods approaches*

- & A variety of teaching techniques are used in both the youth and adult programmes at NaDEET Centre. To name just a few, four components are focused on in the youth programmes:
- **Water:** Each group of learners share one ablution facility, which contains a bucket shower, washbasin and 150 litre tank of water. They decide how the water is to be used (i.e. how much for drinking, showering etc.). The learners keep a daily journal where they record their water usage and compare it with others.
  - **Energy:** Learners explore alternative energy sources for electricity and cooking through solar experiments, daily monitoring of electricity and solar cooking.

Barring rain, no fossil fuels are used at the Centre.

- **Waste:** Learners explore the three R's: Reduce, Reuse, and Recycle through various activities, such as making recycled paper fire bricks and making waste paper baskets from old plastic bags.
- **Biodiversity:** Learners collect and release small animals using various trapping methods.

As part of NaDEET's environmental literacy programme, youth programme learners receive *It's Time to Identify*, a fully-coloured, identification manual with pictures and descriptions of various species in the Namib Desert (in English), while the adult community programme learners receive *It's Time to Solar Cook*, a solar cooking guide written in Afrikaans and English with various recipes, and *It's Time to be Efficient*, a guide to efficient living practices.

*Budget and funding sources* Funding for all of NaDEET's projects has come from:

- Private individuals, both Namibian and foreign.
- Namibian-based grant making organisations such as the Global Environment Fund – Small Grants Programme, local embassies and UNESCO.
- Overseas grant making and 'Friends of NaDEET' organisations including Marseilles-Namibia in France.
- Contributions from visiting groups at NaDEET Centre.

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## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of Currently, NaDEET is planning its first formal evaluation of last year's adult community groups. Two staff members plan to travel to the Hardap and Karas communities to determine if alternative energy techniques are being utilised. Based on discussions with past participants, though, most report a positive impact and interest within the community. Furthermore, we can determine that schools support NaDEET's teaching environment since many of our bookings are for returning schools.

*Results* Results on the success of NaDEET Centre's initiative are primarily qualitative and naturalistic, that is, our results rely on informal interviews and what anyone can see happening in the classroom. Since learners must actively participate, their success in learning the information is apparent in the job they have done. For instance, if a learner learns how to use a solar cooker and then successfully cooks scrambled eggs for lunch, we can determine that they have successfully learned the material. With the material distribution aspect of the project, NaDEET Centre programme participants will be able to implement energy efficiency and alternative energy indefinitely. The distribution of solar cookers and fuel efficient stoves to community members together with the solar cooking guide and sustainable living handbook will ensure that participants have the material needed to implement the knowledge and skills gained during their time at NaDEET. Through the use of these alternate technologies and improved skills, community members will act as role models to others and create a ripple effect.

### Analysis of success factors

*Strengths* The successful implementation of NaDEET's initiative relies on three factors:

- The initial understanding and practice of the new material.
- The acquisition of new norms and behaviours for the learner.
- The modelling of these new norms and behaviours in the community so others may learn from them.

The strength of these successes is obviously very important. Through a ripple effect, environmentally-friendly practices can be implemented across Namibia without having to bring everyone to the NaDEET Centre. Of course, it is impossible to successfully analyse a ripple effect of new values and behaviours, but it is inherently understood and accepted in the world that whatever one person *does* effects what other people will *do*. Hence, the only 'risk' to providing an environmental education programme at NaDEET to Namibians is that the individual will take their experience for granted.

### Constraints

**Problems encountered**

The most obvious constraint to NaDEET's initiative is to find appropriate amounts of funding, primarily through sponsorship from large grants. Funding includes paying the difference for disadvantaged school groups and adults; food supply; maintenance materials; solar technology to be distributed to the adult communities; the publication and printing of learning materials, etc. However, NaDEET has consistently been capable of finding sponsors every year for school and community groups.

Secondly, maintenance of public structures is a constraint on the time and resources of NaDEET.

Thirdly, language barriers may prevent some learners from gaining the full NaDEET Centre experience. Certain members of the staff are fluent in German, Afrikaans, and Damara languages, but the programme is taught primarily in English.

Fourthly, challenging old behaviours with new ones is the most challenging constraint NaDEET faces. In effect, we can only provide the necessary tools and information required to make giant leaps in sustainable living, but it is ultimately up to the individual to utilise these techniques over time. In response to this challenge, NaDEET has done its best to make each learner's experience fun, exciting and relevant to Namibian culture and social behaviours.

**Perspectives****Why do you consider this a good practice?**

NaDEET's initiative to "empower Namibians to make decisions for a sustainable future" continues to grow and expand as we have recently been funded by the European Union to sponsor four more adult community groups in the next two years. One solar cooker will be distributed per every two people, solar cookers will be auctioned at the end of each programme, each member will receive a copy of *It's Time to Solar Cook* and *It's Time to be Efficient*, and each community member will receive a t-shirt. Furthermore, NaDEET has been funded for two more community groups this year by Namibia's Country Pilot Partnership for Integrated Sustainable Land Management (CPP-ISLM). NaDEET is currently working with potential community groups and developing an effective evaluation plan over the next two years. School groups have also continued to place bookings at NaDEET for next year. These are all very exciting opportunities for NaDEET to leave less impact on the environment, and more impact on the empowerment of Namibians to live sustainably.

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## 2. Water School for a Living Yangtze

*Shangri-la Institute for Sustainable Communities, China*

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### DESCRIPTION

Covering an area of 1.8 million square kilometres the Yangtze River Basin is the life source for much of China's population, as well as an array of flora and fauna, including many rare and endemic species. Population pressure and rapid economic development are causing increased pollution, threatening the ecosystems and communities that depend on the Yangtze for survival. Urgent action is needed, and to ensure that such action results in the sustainable protection of water resources public participation, collective wisdom and collective voices are essential. The Water School for a Living Yangtze project creates opportunities for empowerment and action, and promotes awareness and understanding of :

- o The fundamental importance of the resource water for all life on earth;
- o The ecological, economic, social and cultural problems affecting it locally and globally;
- o Principles of wise and sustainable water management; and
- o Responsible actions by individuals, communities and governments.

The programme emphasises an interactive learning approach, the integration of the programme into the existing curriculum and collaboration with government agencies and education boards in the project areas.

In promoting an integrated approach to education, the project focuses on engaging students and communities in a learning process that develops leadership skills and strengthens organizational capacity to envision, create and successfully implement high quality water education and sustainable water resource management projects. Reconnecting with nature and local culture are key components of the project and local values, indigenous knowledge and traditional practices from the different regions are shared through a linking and learning mechanism.

"Education, in its broadest sense, must be a vital part of all efforts to imagine and create new relations among people and to foster greater respect for the needs of the environment." (Dr Jayakumar, UNESCO Beijing)

"[the project] ensures that our children, the decision-makers of the future, understand that water is a precious and limited resource and needs to be managed in a sustainable manner. We have a responsibility to use it wisely because others also depend on the same life-giving resource. " (Dr Christoph Imboden, Swarovski)

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**OBJECTIVES**

*Relate to national priorities* The initiative seeks to achieve sustainable development by empowering people through education to assume responsibility for creating a sustainable future, which is in line with China's national priorities. Shangri-la Institute worked alongside the China Ministry of Education (MoE) to develop a set of Environmental Education Guidelines which are now used in all schools, reaching some 200 million students. The Water School programme continues to work closely with MoE on national curriculum reform and resource development; resources and educational materials developed through the project will be endorsed by MoE and used by teachers, students and communities throughout China.

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**Who?**

*Type of organization managing the initiative* Non-governmental

*Partners/stakeholders involved* Government (State/provincial/district)  
Local authorities

Schools

Vocational education institutions

Higher education institutions

Research institutions

Non-governmental organizations

Community organizations

Private sector

Media

Intergovernmental, international institutions

Swarovski: Water School for a Living Yangtze is a component of the International Water School programme initiated in Austria by Swarovski – Direct partnership

National Centre for School Curriculum and Textbook Development: China Ministry of Education (MOE-NCCT): SISC and MOE have been partners for over 10 years, working on national curriculum reform at primary and middle school levels – Support for projects (in-kind). Resource Development

Education for a Sustainable China (the National ESD Association): Support for projects (in-kind). National curriculum reform

UNESCO: Support for projects (in-kind). National curriculum reform

Higher learning institutions, schools and communities

*Persons involved* During the first phase of the programme, which lasted from January 2008 until December 2010, eleven teacher training workshops and three regional forums were held in the three project areas of Qinghai, Yunnan (Shangri-La), Sichuan, Chongqing and Shanghai. In all, more than 750 teachers and community educators were trained. Since the start of the project about 60,000 students from 33 pilot schools in Yunnan, Sichuan, Shanghai, Qinghai and Chongqing have been directly involved in the project, carrying out a great variety of water education activities both in and out of the classroom. Through collaboration with the wider community residents the students promoted further community participation in water education and the protection of water resources and agreed to further collaboration in implementing community service projects. The establishment of the 'Water School for a Living Yangtze' Community Learning Centre at Kesong in the Shangri-la region allows for further dissemination of learning as the centre serves the regions' nine Water Schools and the seventeen villages around Napahai, as well as hosting exchanges with national and international schools and communities.

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### **WHAT?**

*Educational / learning setting and level*      **Formal:** Primary education, Secondary education, Professional education, Teacher education, Further and higher education

**Non-formal:** The programme also works to build school-community links and initiates community water and nature protection projects.

### **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  
 Indigenous knowledge

*Themes*      Intercultural understanding  
 Cultural diversity  
 Environment  
 Water  
 Biodiversity  
 Disaster reduction

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### **WHEN?**

*Starting year and duration*      January 2008 – December 2010

### **WHERE?**

*Geographical setting*      Local: Villages, communities, townships and cities within the provinces listed below.

Regional: Qinghai, Yunnan, Sichuan, Chongqing, Shanghai

National: China

International: Part of the Swarovski International Water School programme –so far including Austria, Uganda, India and China

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### **METHODOLOGY**

*Methods approaches*      & The following five components work together to facilitate the short and long-term goals of the programme:

- o Resource Development: A range of teaching materials based around the Project Curriculum and Activity Guide that are hands-on, easy to use, and fun have been published. Localised components and practical investigations were included so that students use their own environments as the basis for learning.
- o Teacher Training: Innovative teacher training is essential for students to learn the skills, knowledge and techniques necessary to fully participate in sustainable water management.
- o School Activities: Activities were individually designed by each school in accordance with local conditions and community needs, but with a common emphasis on active learning and incorporating the following five elements: investigation, communication, analysis, action and evaluation.
- o Community Action: Students have identified and prioritised water issues facing their communities and work with community members to plan and implement community service projects.
- o Linking and Learning: A school community linking and learning project “Children of the Yangtze” has been set up basin-wide to facilitate exchange among communities from different cultural backgrounds in the traditional

practice of sustainable water resource management.

*Working language(s)* Chinese (Mandarin) / English / Tibetan

*Budget and funding sources* Total funding of 1.6 million Euros donated by Swarovski, of which about 400,000 Euros was for earthquake relief in Sichuan.

## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of Experience sharing and discussion workshops between local stakeholders take place regularly, at local, regional and national levels. This open style approach allows for direct dialogue and discussion between the project participants and the regional and national coordinators and ensures that all stakeholders have a say in project management and decision-making. Project coordinators at national and regional centres conduct regular assessments of individual project sites. Not only are the water-related environmental issues in each location unique, but local project management systems differ according to local needs and capacities. Therefore, individual on-site investigation makes it possible to pinpoint solutions to local community development, enhance teaching and learning capacities in unique local contexts, and share best practice between sites. External evaluation and auditing is also carried out annually by Price Waterhouse Coopers.

*Results* The activities involved both physical and intellectual exercises, giving the students a chance to participate in nature conservation whilst simultaneously learning important values. Under the guidance of teachers, students from the 33 Yangtze Water Schools entered the surrounding communities and independently investigated and identified local water resource problems. In collaboration with the community residents the students then promoted further community participation in water education and the protection of water resources and agreed to further collaboration in implementing community service projects.

Teachers have generally expressed that participating in project training and engaging the students in Water School activities has led to a more in-depth knowledge and understanding of ESD. Participation has led to new ideas and approaches being introduced into the curriculum and new pedagogy and teaching styles being implemented with positive results.

A multitude of resources have been developed which are locale specific, including :

- One 'Student Activity Pack', six 'Locality Packs', of which three are for primary school levels and three are for middle school levels, two 'Yangtze River Reading Books'.
- 8 posters (Yangtze River games, Yangtze endangered species, water use and misuse) have been produced and are currently being piloted in schools.
- The 'Blue Planet' textbook has been translated into Chinese and is being used in Water School classrooms.

In 2009, the 'Water School for a Living Yangtze' programme was selected as one of five projects from the Asia-Pacific region to showcase China's practice in ESD at the 'UNESCO World Conference on Education for Sustainable Development.'

SISC has also begun publishing a monthly column about the Water School Programme in the Journal of Geography Teaching, a Chinese-language journal circulated to more than 20,000 teachers around China.

### Analysis of success factors

*Strengths* Phase I of the programme initiated and developed an alternative approach to sustainable water resource management in the Yangtze basin through public empowerment and participation. Through engaging with schools, who in turn engaged their local communities in selected watersheds of the Yangtze River Basin, the knowledge, skills and confidence necessary for effective community participation has been developed and a process of social learning and action has been facilitated that is contributing to the restoration of the ecological integrity of the Yangtze River. The project engages the local community, educational institutions and government

agencies, essentially making it a joint local initiative.

“I grew up in the countryside so I thought I already knew about nature, but after joining in the Water School activities I feel that I know much more, with the teacher’s guidance we learnt about many plants and animals too. Now, I really want to study about biology and geography.” (Student)

*Weaknesses & risks* Effectively reaching conclusions can be difficult when there is interaction taking place between a wide range of diverse perspectives and expertise is contributed by a large number of project partners

The spatial distribution of the pilot schools is significant as each area embodies a distinct natural and cultural diversity. A wider range of resources must thus be developed in order to be locally relevant.

Stakeholders are involved at three levels: at schools, at the regional coordination centres and at the national steering committee. Having stakeholders involved from all levels is a necessity in the Water School programme but can lead to a difficulty in reaching conclusions.

### Constraints

*Problems encountered*

1. Sustainable water education cannot just be added to the curriculum as a new subject, it is a dimension to be emphasized in every aspect of school life and infused into the whole of the school curriculum. The challenges of integrating water issues into the school curricula encompass four main areas:

- o Objectives: What are the personal, academic and community-wide benefits of learning about water?
- o Content: What needs to be taught about water issues?
- o Process : How do we best communicate/teach about water issues?
- o Capacity: What knowledge and skills are required among teachers to be able to create and provide quality and effective learning experiences about water issues for their students.

Solutions : work directly with teachers, students and pre-service teachers to design the objectives and content, inform the process and provide capacity building –so that the project is tailored to local needs and integrated into subject areas or the school curriculum more effectively.

2. Effectively engaging the local government Solutions : Direct partnerships with government bureaus at the national and local levels

3. Exam results as a focus of priority means teachers may find it difficult to defend the programme as the WS programme is not about gaining high exam results but instead about learning values and effective tools for sustainable water management. Solutions : over time teachers, parents and students see that participation in the programme offers valuable learning of different skill sets not covered in the exams.

### Perspectives

*Why do you consider this a good practice?*

The second phase (2011-2013) will build on the achievements made during the first phase and involves expanding the project to include a total of 6 regions (adding Hubei), partnering with 45 schools in those regions. The programme will continue to focus on creating and providing opportunities for schools and communities in a process of learning that empowers them to take action for their environment and communities, but will expand on this by:

- **Increasing awareness, participation and action:** established Water Schools will offer guidance and support to other schools and communities
  - **Deepening knowledge and enhancing skills:** utilising the curriculum and resources developed and by developing more expertise in the scientific and technological side of sustainable water resource management.
  - **Strengthening the learning and action** through extended linking and learning activities, regionally, nationally and internationally to share experiences, ideas, lesson plans, methodologies and research, and by engaging with a more diverse range of partners.
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### 3. ESD at Ramsar Wetlands in Osaki-Tajiri

*RCE (Regional Centre of Expertise on ESD) Greater Sendai, Japan*

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#### DESCRIPTION

In many parts of the world, waterfowl and rice farmers are longstanding competitors for lands that were once wetlands and have now been replaced with rice production. The City of Osaki (Miyagi Prefecture, Japan) made a departure from the old line of thinking that waterfowl and rice farming interests could not be harmonised. Today Osaki-Tajiri may demonstrate a case of an optimal multi-sectoral use of wetlands. The 1997 decision to restore abandoned rice fields to natural wetland contributed to turning Kabukuri-numa, a 150 hectare freshwater lake, into a more stable habitat for wild geese. This further led to winter-flooding of rice fields for the mutual benefit of waterfowl and organic farmers. At the Ninth Conference of the Contracting Parties to the Ramsar Convention (Ramsar COP9) in 2005, Kabukuri-numa and 259 hectares of surrounding rice paddies were designated as a Ramsar site. The case of Kabukuri-numa and surrounding rice paddies offers “good practices” in ESD in two interlinked and distinctive ways. First, it offers an impressive example of **multi-stakeholder social learning** for regional sustainable development based on partnerships between environmentalists and farmers (Mochizuki, 2007). A citizen’s movement to conserve Kabukuri-numa evolved into a participatory programme for engaging with the community for the preservation of biodiversity—both in natural wetlands and rice paddies—and sustainable agriculture. Second, this case provides an informative example of **jointly promoting Ramsar CEPA (Communication, Education and Public Awareness) and ESD** in the framework of the United Nations University’s RCE (Regional Centres of Expertise on ESD) initiative, building on close collaboration between formal and non-formal education.

Initial conservation efforts of Kabukuri-numa started in the 1970s by local teachers. Until the 1990s, however, the value of the Kabukuri-numa as wetlands was not well recognized by local community. Back in 1996, a full-scale dredging plan for Kabukuri-numa threatened to destroy the wetland ecosystem upon which greater white-fronted geese (*Anser albifrons*) and other protected or endangered species depend for survival. Not only was the complete dredging plan successfully halted by the efforts of local NGOs and other stakeholders, a citizen’s movement to conserve Kabukuri-numa led to various awareness-raising and participatory capacity development activities and research and policy work for the preservation of biodiversity in natural wetlands and rice paddies as well as for revitalization of the rural community. Conservation and educational activities in Osaki-Tajiri (then Tajiri Town) came to be endorsed by the UNU under its RCE initiative with the designation of the Greater Sendai Region as an RCE in 2005. Today financial support for conservation, research and formal and non-formal educational activities at Ramsar wetlands in Osaki-Tajiri is provided by several sources, but the main funder has been the local municipality.

**Multi-stakeholder social learning initiative for sustainability:** In 1998, an experimental programme to utilise post-harvest flooded rice fields as feeding and resting grounds for wintering waterfowl (ducks, swans and wild geese) was initiated in the Town of Tajiri (currently the City of Osaki). The innovation of “Winter-Flooded Rice Fields (WFRF)” was born out of synergies created among three groups who engaged in local action arising from different challenges: (1) waterfowl conservationists, (2) local farmers searching for alternative rice farming methods, and (3) nature

restorationists who advocated for the soundness of the rice paddy ecosystem.

**Simultaneous consideration of ecological, economic and socio-cultural aspects of sustainable development:** Osaki-Tajiri offers an illustrative example of addressing the challenges of promoting both environmental and economic agendas of the rural community. WFRF are managed as temporary wetlands sustaining rich biodiversity outside natural wetlands. WFRF replace chemical fertilizers, herbicides and pesticides by nurturing microorganisms that form the basis of food chains in the rice paddy ecosystem. The local government, farmers and environmental NGOs are working together for 'branding' rice harvest from WFRF not simply as a safe and organic produce but also as rice symbolic of harmonious co-existence of nature and humans. While multi-stakeholder social learning has contributed to raising the value of local agriculture and reinventing the identity of Osaki-Tajiri as a sustainable region, ESD at Ramsar wetlands empowers aging rice growers to take pride in their profession and allows their generation and school children (the generation of their grandchildren) alike to appreciate rich biodiversity of the region.

**Mobilization and utilization of combined expertise of professions, community, NGOs and local and national governments:** ESD in this region is supported by a diverse array of actors (as noted in #1 above and section B) which form an alliance for the shared goal of conservation and wise use of Ramsar wetlands and sustainable livelihoods of local farmers.




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**OBJECTIVES**

To equip the local community with competencies to (1) contribute to conservation and wise use of Ramsar wetlands, (2) enhance the conservation value of rice paddies as replacement habitat for wetland flora and fauna, and (3) recover the socio-ecological integrity and enhance human well-being in the region.

*Relate to national priorities*

MAFF (Ministry of Agriculture, Forestry and Fisheries) is encouraging agricultural practices that promote biodiversity, and using the case of Osaki-Tajiri as a good practice of biodiversity education for farmers.

MOE (Ministry of the Environment) allocates a substantial budget to Osaki-Tajiri for wetland conservation. The initiative also resonates with the Japanese government efforts for conservation and restoration for SATOYAMA, socio-ecological production landscape. At the G8 meeting for environmental ministers in Kobe 2008, biodiversity was one of the three elements of the agenda. The need to pay sufficient attention to the linkage between climate change and biodiversity was pointed out. Later, the implementation of the "Kobe Call for Action for Biodiversity" including the SATOYAMA Initiative was proposed by Japan.

MEXT (Ministry of Education, Science, Sports, Culture and Technology) allocates a substantial budget to MUE to promote UNESCO Associated Schools in Japan as key ESD sites in the formal education setting.

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**Who?**

*Type of organization managing the initiative*      Local authority

<i>Partners/stakeholders involved</i>	<p>Local authorities</p> <p>Schools</p> <p>Higher education institutions</p> <p>Non-governmental organizations</p> <p>Community organizations</p> <p>Tajiri Local Office of the City of Osaki: coordination of the initiative</p> <p>Miyagi University of Education (MUE)-Environmental Education Centre: support of local schools, teacher education</p> <p>Farmers' Cooperatives: participants</p> <p>Osaki City Primary and Secondary Schools: beneficiaries/ participants in learning activities that motivate farmers' involvement in the initiative</p> <p>Osaki City Junior High Schools and Miyagi Prefectural High Schools: exchanges of experience with schools outside of the region</p> <p>NGO Rice Paddies (<i>Tambo</i>): organization of learning activities for farmers and students</p> <p>NGO Japanese Association for Wild Geese Protection (JAWGP): organization of learning activities for stakeholders</p> <p>NGO Kabukuri Wetlands Club (<i>Numakko Kurabu</i>): Kabukuri Wetlands Club grew out of the Executive Committee of Kabukuri-numa Expeditions (nature observation tours and flora and fauna surveys started in 1996). The Club makes recommendation and proposals to administrative authorities for conservation and wise use of Kabukuri-numa. It also carries out environmental education programme in cooperation with the Prefecture of Miyagi and MUE.</p>
<i>Persons involved</i>	<p>Annually about 800 persons participate in formal and non-formal ESD programmes organized in Osaki-Tajiri. The rough breakdown is as follows: 400 local farmers (20 participants/flora &amp; fauna survey x 20 times/year = 400), 200-250 school children (50 students/school x 4 -5 schools/year = 200), 40 school teachers, 15 local governmental officials and 100 local citizens.</p>

**WHAT?**

<i>Educational / learning setting and level</i>	<p><b>Formal:</b> Primary education; Teacher education; Secondary education</p> <p><b>Non-formal:</b> adult technical and vocational education and training (TVET) for farmers</p> <p><b>Informal:</b> local events such as festivals</p>
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**WHY?**

<i>General focus of the initiative</i>	Learning for sustainability in formal, non-formal and informal settings
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<i>Themes</i>	<p>Environment</p> <p>Biodiversity</p> <p>Economy</p> <p>Sustainable production and consumption</p> <p>Rural development</p>
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**WHEN?**

<i>Starting year and duration</i>	since 1996 to present
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**WHERE?**

<i>Geographical setting</i>	Local: Ramsar wetlands and rice paddies of the Tajiri district of the City of Osaki
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## METHODOLOGY

<i>Methods approaches</i>	&	<p>1) Flora and fauna surveys in rice paddies: During especially spring and summer, stakeholders including rice farmers, school children and teachers engage in field surveys, identification and inventorying of life forms (the flora and fauna) in the rice paddies designated as part of Ramsar wetlands. These surveys in rice paddies are supported by local environmental NGOs and designed to enhance the participants' knowledge, skills and attitudes about biodiversity conservation in rice paddies as replacement habitat for diverse wetland species.</p> <p>2) Teacher training: MUE offers hands-on workshops to equip teachers with knowledge and skills to conduct flora and fauna surveys in rice paddies, as part of teacher retraining courses it developed in response to a new MEXT scheme for teaching license renewal introduced in 2009. MUE also delivers teacher training courses on rice paddies as learning sites, in collaboration with the Osaki City Board of Education.</p> <p>3) Awareness raising: Awareness raising through fairs, festivals and farm visits is also employed. As part of the awareness program, Osaki City holds annual festivals, including Ramsar Festival and <i>Kodomo Biodaibashiti</i> Festival, during which local junior and high school students and invited students from abroad report on their research about biodiversity in the rice paddy ecosystem and the wise use approaches to wetlands. In winter, schoolchildren go to the wetlands to observe migratory birds that feed and nest there. There are also farm visits where the farmers teach children about the practices of sustainable wet-rice agriculture that assist in the enhancement of biodiversity.</p>
<i>Working language(s)</i>		primarily Japanese
<i>Budget and funding sources</i>		Learning activities at the Ramsar wetlands in Osaki-Tajiri are covered by various sources, but mainly by the City of Osaki, which allocates 60 million yen for wetland rehabilitation. The Ministry of the Environment also allocates 60 million yen for the same purpose. Financial resources have been allocated for the maintenance of environmental learning sites by the City. ESD activities targeted at farmers and school children are supported by in-kind contributions by local NGOs. Three NGOs (about 45 persons) are involved in delivering learning activities in the rice paddies, and at least 100 persons coming from outside of Osaki-Tajiri (about 10 researchers and other guests) participate in these activities as resource persons and observers annually. Higher education institutions also support ESD in Osaki-Tajiri. For example, teacher and farmer training courses for para-taxonomy for rice paddies have been organized by MUE and Hokkaido University Museum.

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## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

<i>Evaluation initiative</i>	of	No, but the case of Kabukuri-numa and the surrounding rice paddies has been described as "good practices" in biodiversity education, ESD, and social learning for sustainable development by the different ministries and UNU.
<i>Results</i>		<p>Both sustainable development (SD) and ESD outcomes are discussed below.</p> <p><u>SD outcomes (Impact of broad-based social learning in the region since the mid 1990s):</u> Overcoming the initial antagonism between those who called for the protection of wild geese and rice farmers who viewed waterfowl primarily as a rice-eating pest, the City of Osaki is aspiring to promote both environmental and economic agendas at the local level. The most obvious result of multi-stakeholder social learning in Osaki-Tajiri is the 2005 designation of Kabukuri-numa and surrounding rice-paddies as a Ramsar site. Another indicator of the impact of social learning is the increasing number of farmers that adopt agricultural practices more sustainable than conventional farming methods heavily dependent upon agrichemicals. Engaging in organic farming now makes not only environmental but also agronomic sense in Osaki-Tajiri. The case also offers and inspiring example of a local voluntary initiative that has successfully mobilized the support of public authorities at different levels (local, national, international).</p> <p><u>Learning outcomes (Impact of ESD activities at Ramsar rice paddies [see section D]):</u> The participants experience a sense of accomplishment for being part of cataloguing the life forms in the rice fields and a sense of co-ownership of natural resources. The initiative enables the participants, particularly the students, to carry out simple</p>

research projects and to act as citizen scientists. The local stakeholders develop a broader awareness of their coexistence with nature (social-ecological system), which in turn gives them a 'sense of place' in the area. Teachers who become part of the learning process later leave the area through job transfer and carry the acquired knowledge and skills to other localities/school districts where such competencies could become useful. Overall, the effort to equip local citizens with both scientific and local knowledge, understanding and skills for conservation could serve as preventative measures against biodiversity loss in the region. Participants also learn about sustainable agricultural practices that enhance biodiversity and help revamp the local economy.

### Analysis of success factors

<i>Strengths</i>	(a) involvement of diverse stakeholders, including farmers, teachers, researchers, NGOs and governments; (b) synergies and trust among organizations working to address differing concrete challenges such as waterfowl conservation and revitalization of the rural community, (c) consideration of economic aspects of sustainable development and livelihoods of local farmers; (d) effective collaboration between formal and non-formal education; and (d) support from the local and national authorities. For example, the City compensates farmers for crop damage caused by waterfowl.
<i>Weaknesses &amp; risks</i>	Due to the large size of the City of Osaki, which was born as a result of the merger of municipalities in 2006, the Osaki City Board of Education's involvement has not been very active. Since the initiative is not currently included in the mainstream curriculum, extra time and logistical arrangement are needed to organize ESD activities at the rice paddies. Also, at times difficulties arise in scheduling field activities since they have lower priority than other regular school activities. There is no mechanism/framework in place to ensure continuity of ESD activities among students outside the local area or when they grow past the current participating age group (primary and secondary school level).

### Constraints

<i>Problems encountered</i>	Given the incompatibility between WFRF and the modern regime of intensive agriculture that has been promoted by agricultural administration and chemical and pharmaceutical agribusinesses for decades, WFRF farmers still constitute a tiny minority of farmers in Osaki-Tajiri.
<i>Unresolved issues</i>	<p><u>Unresolved structural issues:</u> There is antagonism between 'organic' and 'conventional' farmers. Conventional farmers continue to consider the migratory birds as rice-eating pests. Continuous dialogue among the farmers might help solve the problem, but the industrial structure of agriculture must be changed in order to make organic farming a norm in Osaki-Tajiri and beyond. There are also seemingly irreversible problems of youth out-migration from the rural community, the aging of the farming population and a downward spiral of rice prices. Although rice harvest from WFRF sells at a much higher price than rice grown by conventional methods, there are uncertainties about the market development for organic rice production in the long run.</p> <p><u>Technical and institutional problems:</u> The transfer of 'experienced' teachers regarding the initiative from the Osaki-Tajiri area to another obviously creates a void that could hamper the smooth running of the initiative. To solve this issue, the 'experienced' teachers should be granted some concession regarding mandatory transfer if they are deemed key for the continuation of the program among students. A better solution may be to put in place a mechanism to train more teachers for the initiative.</p>

### Perspectives

<i>Conditions for successful replication</i>	The key is to build and maintain an <i>equitable partnership</i> of the <i>combined expertise</i> of professions, community, NGOs and governments.
<i>Why do you consider this a good practice?</i>	The story of ESD in Osaki-Tajiri demonstrates an ideal case where local problems and issues of immediate, visible and tangible concern have been tackled through multi-stakeholder social learning and more organized ESD activities. The case is informative because it simultaneously addresses very concrete regional challenges of wetland conservation and revitalization of the rural community. Formal and non-formal ESD activities currently carried out in Osaki-Tajiri build on the local history of gradually changing people's perceptions and actions with regard to waterfowl protection and

rice farming. The case is encouraging because it is not simply a story of environmental NGOs enlightening 'ignorant' farmers but a story of co-learning and building trust between environmentalists and the local community. It is a moving example of a local voluntary initiative that eventually changed an official vision of the City to a more sustainable one. As ESD activities in Osaki-Tajiri get more formalized and institutionalized, it is important not to forget a local history of communal self-determination and empowerment.

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**References:**

Mochizuki, Yoko (2007). "Partnerships between Environmentalists and Farmers for Sustainable Development: A Case of Kabukur-numa and the Adjacent Rice Fields in the Town of Tajiri in Northern Japan." In Arjen Wals (Ed.), Social Learning towards a Sustainable World. Wageningen Academic Publishers.

#### 4. ESD as a Tool for Creating Development and Sustainability in Project-Work (Case Study: Mongolia)

*Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Mongolia*

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**DESCRIPTION** As part of the GTZ programme Climate Change and Biodiversity in Mongolia, this project has taken a very innovative 3D-approach by engaging in three different systems: the informal/media system, the formal/education system and the decentral/local governance system (Protected Areas) – and linking them while working on three different levels (the institutional level, the organisational level, and the individual level). The project was striving to create and facilitate linkages, synergies and networks between those systems and levels – and thus contribute to common learning processes leading to increased sustainability and development in Mongolia.

Innovative about the project was also the process to select themes onto which the project and stakeholders chose to focus their work. Starting point for this was the concern of the people and their *affectedness* that was evaluated through the question: *What issues are of your greatest concern?*

Five themes were thus evaluated through workshops, interviews, baselines and questionnaire studies: these were *air pollution, water scarcity/pollution, solid waste disposal, forest issues (forest management, illegal logging and poaching) and pasture degradation*.

As a summary, within the media system, the engagement was with media institutions, and in the development of high-quality media products and the training support to media producers. In the formal system, the engagement was with local pilot schools, the elaboration of local ESD curricula, and their linkage with the Mongolian University of Education as well as ongoing processes (curricula development) on a national level. As regards the local governance system, the engagement was on the establishment of information centres, the training of their managers, park staff and rangers in protected areas.

Capacity development, the generation of common resource materials, and the cooperation and coordination among all actors in the field were the tenor.

*Among the innovations of the initiative have been:*

- 1) The application of a 3D-approach: by working in 3 systems (informal/media, formal/education, decentral/local governance) and the facilitation and support to linkages and networks among them, the project had chosen a very innovative approach for the contribution to sustainable development.
- 2) The application of the concept of *Affectedness*: by performing interviews with local people in rural and urban areas of Mongolia of all ages and backgrounds (incl. 1000 participants), the project focused on the core of ESD: *What is the concern of the people?* From this, five themes were selected, to which the stakeholders of all systems and levels were generating materials and resources as well as trainings.
- 3) The application of Capacity WORKS: by using the GTZ management tool including five success factors (strategy, cooperation, steering, processes, learning&innovation) the project had taken an innovative approach in the design and structure of the project.
- 4) The application of LORET (Locally Relevant Themes): by applying the model of LORET, the project facilitated the development of local ESD curricula in 11 pilot schools – those are pilot examples for the curriculum development on the national level.



*Creating Networks through ESD– infocenter managers, park staff and teachers creating networks at the workshop in Tsetserleg, November 2008.*

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## OBJECTIVES

*Relate to national priorities* The overall goal of the project was to *raise environmental awareness and improve environmental behaviour*, thus enhancing the conservation and sustainable management of natural resources in Mongolia. The goal included the following objectives:

Objective 1: Environmental awareness in Mongolia is increased by 2010 and beyond (informal/media system).

Objective 2: Capacity on application of ESD in the Mongolian education system in accordance with national curricula is improved by the end of 2010 (formal/education system).

Objective 3: Environmental communication structures are strengthened in GTZ focus areas by 2010 and beyond (decentral/local governance system).

The project's goal and objectives were in full agreement with the MDGs (GOAL 1 - Eradicate extreme poverty and hunger, GOAL 2 - Achieve universal primary education, GOAL 7 - Ensure environmental sustainability, and GOAL 8 - Develop a global partnership for development), as well as the Decade of ESD, to which the Mongolian government had formally committed. Against the background of the Mongolian Government's engagement in the development of new school curricula and its adaptation from a 10-year to a 12-year school system, the project took the opportunity to contribute to link up the ESD process with the development of new school curricula.

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## Who?

<i>Type of organization managing the initiative</i>	Governmental Implementer: Project Component within GTZ Programme Climate Change and Biodiversity  Governmental Organisations to implement the Component: Ministry of Nature, Environment and Tourism (MNET) and Ministry of Education, Culture and Science (MECS)
<i>Partners/stakeholders involved</i>	Government (State/provincial/district) Local authorities Pre-school institutions Schools Higher education institutions Research institutions

Non-governmental organizations Private sector

Media

Intergovernmental, international institutions

The key stakeholders are from 3 systems and on 3 levels:

System Level	Individual	Organisational	Institutional
Media System (Informal)	<p>-Quiza (Mongolian singer who got engaged in the project for events, including the generation of a biodiversity rap- song)</p> <p>-<u>journalists students</u> from University of Mongolia</p> <p>-journalists from <u>free journalist club</u></p>	<p>-<u>Institute for the Future NGO</u> (production of international TUNZA magazine in Mongolian context, youth peer education at pilot schools, organization of events)</p> <p>-<u>People Centered Conservation NGO</u> (support to production of radio programmes, info events for journalists, support to TV documentaries)</p> <p>-<u>Ecological Education NGO</u> (production of media products like books, posters and brochures)</p> <p>-<u>NAB TV studio</u> (production of TV clips on selected themes)</p> <p>-<u>Education TV</u> (production of TV series programmes on selected themes)</p>	<p>National University of Mongolia: development of journalist text books and trainings for ongoing journalists</p>
Education System (Formal)	<p>-Local pilot school teachers , school managers, and directors of 11 pilot schools: in-service training on the application of ESD</p> <p>-Trainers of the University of Education, Mongolia: pre-service training on the application of ESD</p>	<p>11 pilot schools (5 in rural area and 5 in Ulaanbaatar, incl. 1 kindergarden): production of local curricula based on the principles of ESD and in-service training</p>	<p>-Ministry of Education, Culture and Science (MECS, institutional partner): elaboration of curricula on national level (MECS) – local level (project)</p> <p>-University of Education: pre-service training and development of ESD indicators for 11 departments per teaching subject</p>

			for the elaboration of curricula based on ESD
Local Governance System (Decentral)	Information center managers and protected area park staff of altogether 5 parks	11 information centers in strictly protected areas: establishment of information centers and training of park staff, rangers and information center managers	Ministry of Nature, Environment and Tourism (institutional partner)

*Persons involved*

It is a waterfall system, since there is Capacity Development Trainings of Trainers happening:

*Direct Learners* in the

-Media System: National University of Mongolia (Journalism Department), 3 Environmental NGOs and 2 TV studios (approx. 30 people)

-School System: Teachers from 11 Pilot Schools (approx. 220 people) and University (approx. 30people)

-Local Governance System: Infocenter Managers and Parks Staff from 11 infocenters (approx. 40 people)

*Total: approx. 320 people on first direct learning level*

The number of *indirect learners* is a multiplying figure resulting from the use of products and trainings reaching out by the media, the education and the local governance system: the Mongolian public (total of 2.5 Mio. people with TV access), the school children and their parents of 11 pilot schools and the university students of the Mongolian University of Education (approx. total of 4000 children/students and their parents/families) and the users of the 11 information centers (herders, natural resource user groups, village people, school children, teachers, University students, tourists....)

**WHAT?**

*Educational / learning setting and level*

Formal: Primary education; Teacher education; Secondary education

Non-formal: see table above

Informal: see table above

**WHY?**

*General focus of the initiative*

Learning for sustainability in formal, non-formal and informal settings

Education of educators

Tools and materials

Regional/international cooperation

*Themes*

Overcoming poverty

Cultural diversity

Environment

Climate change

Water

Biodiversity

Natural resource management

Democracy

Governance

Responsibility in local and global contexts

Air Pollution, Solid Waste Reduction

**WHEN?**

Starting year and duration 2008- 2010

**WHERE?**

Geographical setting whole Mongolia and with focus on GTZ pilot regions (Khangai Mountain Range and Khentii Forest Areas) including one urban area (Ulaanbaatar)

**METHODOLOGY**

<i>Methods approaches</i>	&	3 D-approach – for project strategy and structure The concept of affectedness – for project implementation on the activity level Capacity Works - for management structure and design The LORET model – for the development of local school curricula based on ESD
<i>Working language(s)</i>		Mongolian, English, and German
<i>Budget and funding sources</i>		Budget: 1.3 Mio. EURO (0.8 Mio Euro from the Dutch Government, 0.5 Mio Euro BMZ so called 'Sondermittel')  On behalf of: BMZ, Federal Ministry for Economical Cooperation and Development  Co-financing: Dutch Government

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

<i>Evaluation initiative</i>	of	there is one running now; half yearly evaluations  <u>Box – Extract of Study (Comparison between June 2009 and June 2010)</u> Examples of the survey carried out among teachers: a) The percentage of teachers who thought that ESD should be applied in all subject courses has increased from 13% in 2009 to 46% in 2010. b) In 2010, the number of teachers using ESD concept in class became 55% (cf 2009 it was 0%). An additional 42% of teachers were planning to apply ESD based teaching in the future (cf. 2009 it was 40%). c) In 2009, 14% of teachers felt the need to revise the methodology of teaching which has increased to 44% in 2010. This shows greater knowledge and understanding of ESD among teachers and illustrates future needs for improving methodology. d) 65% of teachers replied in 2009 that they had insufficient knowledge and skills of ESD which has reduced to 54% in 2010. e) Almost 50% of teachers developed and used new exercises that include a higher student participation in 2010. Another 50% of teachers added new content in their teaching material related to sustainable development (SD) and local environmental problems. These numbers show that teachers trained by the project acquired sufficient knowledge and skills on ESD to start the integration of ESD concept into their secondary school curricula.  f) The surveys also showed that the teachers also received more support and understanding from their school management in ESD work, which is indicated by the reduction of the number of teachers who viewed this as a problem (40% in 2009 reduced down to less than 20% in 2010).
<i>Results</i>		By applying a holistic 3D-approach (3 systems, 3levels – see above), using the concept of 'affectedness' and 'locally relevant themes', the project has clearly focused on the <i>educational and learning dimensions of sustainable development</i> . The application of the principles of ESD have been introduced in all 3 systems, on all 3 levels – and been integrated and applied in the development of resource materials as well as capacity development trainings. Especially sustainable the project is thought to be by the application of ESD in the formal education system with the development of local pilot school curricula. As one of the ESD experts from Sweden put it:  <i>"If you reach the youngsters below 18 years of age, if you reach their parents and if you reach the teachers of your country you can easily calculate that you reach more</i>

*than half of your population in daily communication. That is a "Battering Ram" to reach the population in your country. It is also the only and a superior way of reaching the coming generation that will hold key positions - herders, drivers, engineers, businessmen, social workers, doctors, politicians in concern of a desirable and sustainable development of Mongolia" (Staffan Swanberg, Ramboll Natura AB).*

The project offers new and creative solutions to solving problems among different stakeholders from different levels and systems - by exchanging information, knowledge, and materials, by sharing lessons learnt, and by learning together – through the networks that were created. We can say that the networks and people that teamed up through common visions and work on commonly defined local relevant themes showed great enthusiasm and motivation for collaboration

*The project made a difference and demonstrated positive and tangible impacts by applying AFFETEDNESS as a starting point- asking people what is their concern and then used that for guiding the process. Tangible results of this are:*

- in the informal/media system: through a total number of 92 media products that were developed based on the principles of ESD and calling for great resonance among the Mongolian public (Products included TV clips, TV documentaries, TV and radio programmes, posters, leaflets, books and a rap landing in the Mongolian hit parade).

-in the formal/education system: through the participatory development of 11 local pilot school curricula including school development plans according to the principles of ESD – that are integrated and models for creating replicability and also influencing national policy levels;

-in the decentral/local governance system: through the establishment of information centers in strictly protected areas, including the training of park staff, information center managers and rangers. The Ministry decided to put aside funding for each of the centers since they have run so well.

*Three years of project time is probably too short to measure what the project contributed to sustained improvement of living conditions, however it is obvious that both teachers from pilot schools and information centre managers have been inspired in their work – which will contribute to sustainable development.*

An extensive awareness-behaviour study that was carried out in the first year of the project, was repeated in the third and last project year – *accounts for the demonstration of innovation and success of the project work.*

### Analysis of success factors

**Strengths**

*Communication of ESD with key stakeholders and decision makers at/before project start - i.e. key stakeholders (project team and key counter parts) should have a thorough understanding of and live ESD in daily practice.*

*Creation and Facilitation of Identification Building - i.e. a figure like Ghengis Khan in Mongolia, a national hero, has a lot of value for project implementation purposes.*

*Facilitation of Network Building – that was almost the most important of the project outcome: common learning by doing, sharing, linking up, synergising, understanding, supporting each other, learning together.*

*The Usage of Diagrams, Charts, Pictures – was a very helpful tool for creating common conceptual backgrounds and visions of all stakeholders. Over time, these charts took shape and were developed into new diagrams and tools for working together.*

*Testing and implementation on local level – anchor ing on national and institutional level :*

What is common knowledge: even if you have a global issue or work at national level, always try to test and implement on the local level. The ESD concept encourages bottom up approach and the implementation on local level. The didactic principle thereby: what is relevant and maybe even visible outside the classroom windows is much easier to understand and build skills from.

*ESD toolbox: a checklist for testing your approach – a tool box that was developed during project time can be very helpful for repetition and the application of ESD in your project : for generating a greater impact through ESD.*

**Weaknesses & risks**

Changing project partners especially on institutional level – but also on organizational and individual level there is risk for losing continuation and momentum, especially if a project duration is only two or three years.

### **Constraints**

If you start an ESD project, it should be integrated from the start into the overall conceptual approach of the programme or project as well as in the institutional setting it is to function. That requires openness and understanding of the ESD concept by the key stakeholders responsible for project implementation. If not enough time and room should can be given to build up a common understanding and common vision for the project team on how ESD can contribute to a greater impact of the overall project, the project is at risk.

At the same level, the project team should not just talk theory but also apply ESD principles in daily practice. That requires a proper and good knowledge of ESD, an open mind, a focus on the target group rather than the target, and patience and time. Fast results are often less sustainable than results that are the outcome of a process based on participation, affectedness and local requirements.

### **Perspectives**

*Why do you consider this a good practice?*

Because of the networks that were created, because people were motivated to continue, because the application of ESD in project work together contributes to sustainability.

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## 5. In Jordan, Biodiversity Concepts Available for all Students

*Royal Society for the Conservation of Nature, Jordan*

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 Mervat Batarseh, Head of Environmental Education Section

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**DESCRIPTION** The initiative has focused on integrating biodiversity concepts including those related to the herbal and medicinal plants HMP in the national curricula<sup>1</sup> in Jordan. These concepts have been integrated in five related subjects. Moreover there have been more other four subjects targeted when implementing a project for integrating HMP concepts focusing on vocational subjects in addition to the scientific ones. These concepts have covered grades 1 to 12. RSCN contributed to developing the content of biodiversity concepts based on previous work on doing a reference matrix for biodiversity concepts implemented by other institutions.

RSCN as a Non-governmental Organization started this initiative by its own because its mission focuses basically on the conservation of biodiversity of Jordan. Furthermore, RSCN's 2004 – 2009 strategy had an operational objective to influence the content of the national curricula and textbooks focusing on biodiversity and key environmental issues through well-educated educators.

Taking the ER/KE<sup>2</sup> project as an opportunity, there has been a partnership with MOE – Curricula and Textbooks Directorate whose members were involved in the development of writing the general and specific learning outcomes. And authors (teachers) were involved in developing the content of the textbooks. As a part of the initiative, integrating biodiversity concepts in the national curricula took place in between 2004 – 2008. On the other hand, there was a project for HMP (2007 – 2010) funded by WB<sup>3</sup> through MOP<sup>4</sup>. As a result, there were more than 30 persons involved in developing the textbooks, around 60.000 teachers who teach these curricula and about 1.500.000 students, in both levels primary and secondary, learning from these curricula. Consequently, RSCN afforded to contribute to the national work of ESD.

Since the initiative had been begun, most of the new added concepts; such as biodiversity as a concept itself and its benefits, as well as herbal and medicinal plants and its values, were new to the curricula and the rest were complementary to the available ones. In addition, considering the local culture through integrating herbal and medicinal plants usage concepts, and considering regional/international cooperation through integrating environmental management and environmental legislations under the umbrella of biodiversity conservation were totally new to the curricula as well. "The national curricula, when dealing with the international conventions related to biodiversity, show some aspects of the regional and international cooperation." said Mr. Saleh Al Omari.<sup>5</sup> Furthermore, the initiative's concepts were integrated in geography subject for the secondary grades for the first time whereby around 70.000 students got benefited every year. And what made the initiative appear new and special was integrating the concepts among grades and subjects from grade 1 to grade 12. Finally this initiative has been considered complementary to RSCN's non-formal educational programs with schools (Nature Conservation Clubs Network and Nature Reserves Educational Programs).

1 The national curricula and school textbooks are studied by all students in all schools all over Jordan

2 Education Reform for Knowledge Economy is a project implemented by the Ministry of Education MOE

3 World Bank

4 Ministry of Planning and International Cooperation

5 Interview with Mr. Saleh Al Omary, Geography Curricula Member – Ministry of Education

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<b>OBJECTIVES</b>	<ol style="list-style-type: none"> <li>1. to raise students' awareness of biodiversity conservation amongst all schools that are located in all inhabited areas reaching all communities, in relation to SD</li> <li>2. to support RSCN's non-formal EE programs with such a formal system of integrating biodiversity concepts in the national curricula</li> <li>3. to respond to the national agenda that listed biodiversity conservation on the environmental priorities</li> <li>4. to achieve the goals of Jordan's National Strategy of Biodiversity Conservation that consists of integrating biodiversity concepts in the formal education, and by the regional and international environmental agreements such as CBD, and UNCCD signed by Jordanian Government in order to contribute to the sustainable development</li> </ol>
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**METHODOLOGY**

<i>Methods approaches</i>	<p>&amp; RSCN in cooperation with the Directorate of Curricula and Textbooks did the following:</p> <ol style="list-style-type: none"> <li>1. Quick revision of the concepts included in the biodiversity reference matrix with members of Curricula and Textbooks Authoring Committees, however, for the HMP project a separate matrix of the concepts was developed by scientific experts in this field</li> <li>2. Encouraging members of Curricula and Textbooks Authoring Committees to turn these concepts into general and specific learning outcomes when developing the framework of all subjects' curricula (taking the scope of concepts within the different subjects in each grade into consideration)</li> <li>3. Developing the content in all its types (lessons, texts, graphs, maps, etc...), and distributing it in different targeted subjects; while the HMP's learning activities were collected in a teacher's guide book and an interactive CD for students</li> <li>4. Conducting training workshops for the subjects' supervisors through the HMP project</li> </ol>
<i>Working language(s)</i>	Arabic

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

<i>Results</i>	<p>RSCN and the Directorate of Curricula and Textbooks scanned biodiversity concepts in the developed curricula and did a special report (to be approved and published soon). After that we came up with the following results:</p> <ol style="list-style-type: none"> <li>1. Learning outcomes are now affected by biodiversity concepts including those related to herbal and medicinal plants</li> <li>2. Around 80% of the concepts included in the reference matrix were integrated in the curricula</li> <li>3. Variety of presenting the concepts and integrating them through student-based leaning-teaching strategies</li> <li>4. Biodiversity concept itself, eco-systems and degradation are obviously shown within textbooks pages</li> <li>5. All biodiversity concepts are gradually integrated in accordance from grade 1 – 9 and doubled for grade 10 and after</li> <li>6. Knowledge domain occupied 50 – 60% of biodiversity concepts, whereas skills and attitude domains varied according to grades and subjects</li> </ol> <p>"Biodiversity concepts according to its levels were integrated in details and obviously in the related subjects through General Science, Biology and Geography." said Ms. Wafa Al Abdallat6</p> <p>"There are a lot of information about animals and plants in Jordan such as Azraq</p>
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Killifish. Curricula offered this bunch of information easily to the students.” Mrs. Laila Freijat<sup>7</sup>

“As I learned from the textbooks, I have to maintain the natural environment because our life is eventually affected.” Haya Nabulsi<sup>8</sup>

<sup>6</sup>Interview with Ms. Wafa Al Abdallat, Curricula Director – Ministry of Education

<sup>7</sup> Interview with Mrs. Laila Freijat, Earth Science and Environment Teacher – Ein Jalut School

<sup>8</sup>Interview with Haya Nabulsi, 1st secondary class student – Ein Jalut School

### Analysis of success factors

- Strengths*
1. MOE’s open-mindedness of developing environmental concepts in the national curricula
  2. Participatory Approach adopted by both RSCN and the MOE working on integrating biodiversity concepts
  3. RSCN’s Experience of environmental management and conservation in the Jordanian context helped in sharing local environmental case studies and issues with students
  4. “One of the success factors is timing as this initiative took advantage of developing the curricula which is the time to integrating of biodiversity concepts in the curricula” Mr. Saleh Al Omary said.
  5. “Methodology adopted in implementing the initiative was practical and it was one of the strengths.” Ms. Wafa Al Abdallat

- Weaknesses & risks*
1. Some aspects of the reference matrix were not integrated in the national curricula as expected such as „biodiversity and community” and some concepts related to the aspect of the Importance of biodiversity
  2. Some concepts were repeated many times
  3. All teachers might not be able to deliver the concepts as expected

### Constraints

*Problems encountered* Financial issue was the biggest challenge when implementing the initiative, but RSCN allocated part of its own budget to cover some expenses in addition to the in kind contribution

Providing each teacher with a copy of Teacher’s Guide was not applicable because of the limited budget. Therefore, each school was provided with a copy of Teacher’s Guide

*Unresolved issues* Biodiversity Concepts Training program of all teachers and Nature Conservation Clubs supervisors was not held for financial reasons

### Perspectives

*Conditions for successful replication* The initiative can be replicable and adopted by an NGO interested in such an initiative and having specialized center for studies and researches considering the local issues as well as having strong relationship with MOE or institutions responsible of developing curricula.

*Why do you consider this a good practice?* Because it shows a good example of cooperative work between an NGO and a governmental body that guarantees sustainability of learning for students, as well as the initiative’s importance to reach all students in the country.

## 6. 2010: the International Year of Biodiversity in School!

*Austrian Educational Competence Centre of Biology, Austria*

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[www.aeccbio.univie.ac.at](http://www.aeccbio.univie.ac.at)  
 Mag. Martin Scheuch

**DESCRIPTION** In the course of the International Year of Biodiversity, teachers and experts post a monthly sequence of topics relevant to the field of biodiversity for use in schools and informal education ([www.aeccbio.univie.ac.at/2010-jahr-der-biodiversitaet/](http://www.aeccbio.univie.ac.at/2010-jahr-der-biodiversitaet/)). The topics should meet following criteria: seasonal relevance, equal presence of the three levels of biodiversity, show examples, present excursion spots throughout Austria, different life forms including plants, animals, humans, whole ecosystems and uses of natural products. Other aspects include local as well as regional issues up to the global dimension of biodiversity and the crisis of biodiversity loss. The structure of the monthly topics consists of a comprehensive text explaining the biological phenomena, which serves as the starting point for the learning sequence to be developed. In addition we offer material for educators including articles, work sheets, links and more possibilities. The realization of inquiry learning for students (K1 to K12) in a broad sense is important.

Our initiative has the format of a phenologically ordered calendar and is published via worldwideweb ([www.aeccbio.univie.ac.at/2010-jahr-der-biodiversitaet/](http://www.aeccbio.univie.ac.at/2010-jahr-der-biodiversitaet/)). Throughout 2010, each month an interesting topic in the field of biodiversity is prepared for the use in school and informal education. What are criteria for these topics? The topics are seasonally structured and follow a phenological cycle – e.g. amphibian acoustic diversity of Austria are presented in spring, at a time, when the frogs are croaking, dandelion is an example for genetic diversity when dandelion is at full bloom. Other criteria are the equal presence of the three levels of biodiversity, examples excursion spots throughout Austria and the different life forms including plants (dandelion), animals (bats, birds) humans (diversity of the human species), whole ecosystems (e.g. sports ground, alpine ecosystems) and even uses of natural products (apples, spices). Another range of aspects included span from local or regional issues up to the global dimension of biodiversity and the crisis of loss of biodiversity. The structure of the monthly topics consists of a comprehensive text explaining the biological phenomena, which serves as the starting point for the learning sequence to be developed. In addition we offer material for educators including articles, work sheets, links and more possibilities. All sequences aim to activate the students to take control of their own learning. This includes field work, preparing and conducting panel discussions, researching etc. Over the year all levels of education from K1 to K12 will be able to find topics for their use.

The screenshot shows the website interface for the '2010 International Year of Biodiversity' project. At the top, it identifies the 'Kompetenzentrum für Didaktik der Biologie (AECC-BIO)' at the University of Vienna. The main content area features a large '2010' graphic with a tree and a globe, and a grid of smaller images representing various biodiversity topics. A sidebar on the right includes a search bar, a 'Suchen' button, and a 'Quelllink' section. The bottom of the page has a grid of 12 small images showing different natural scenes and organisms.

## OBJECTIVES

*Relate to national priorities* The loss of biodiversity is a concern among the Austrian population, but the general opinion is, that this is only a global problem elsewhere and not in Austria. Nevertheless 33% of all vertebrates and 40% of all vascular plants in Austria are endangered. Therefore one topic of the nationwide 2010 campaign [www.vielfaltleben.at](http://www.vielfaltleben.at) is raising the awareness of the native endangered biodiversity. In our opinion an educational aim of biology education should reach even further: firstly, getting to know biodiversity, secondly realizing it as a resource for one's life and finally getting actively involved in taking counter measures in the biodiversity crisis.

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## Who?

*Type of organization managing the initiative* Academia

*Partners/stakeholders involved* Schools  
 Vocational education institutions  
 Higher education institutions  
 Research institutions  
 Non-governmental organizations

For the development of the monthly topics we (biology educators) collaborate with scientists from the Faculty of Life Sciences of the University of Vienna and teachers from different schools. This cooperation is based on the topic; we are looking for the respective expert in this biological field and in the educational preparation e.g. teachers with experience in dealing with this topic at school.

We also provide evaluative support – we are working with the monthly topics in in-service-teacher trainings in order to obtain feedback by the practitioners themselves, so that we can update the topics already online and improve our future work.

*Persons involved* The learners are students from K1 to K12-level. Due to the design of the learning sequences the students have the possibility to actively engage in the learning process and are asked to follow their interests via means of the different inquiry learning aspects.

We consider ourselves as learners too – working together with biologists as well as educators – we refine the topics on a broad basis and get to know our blind spots.

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## WHAT?

*Educational / learning setting and level* Formal: Further and higher education; Primary education; Teacher education; Secondary education; Professional education  
 Non-formal: e.g. rangers of National Parks, self-employed environmental educators, biologists, NGOs

## 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

*Themes* Ethics  
 Citizenship  
 Environment  
 Climate change  
 Water  
 Biodiversity  
 Natural resource management  
 Democracy

Economy  
Sustainable production and consumption  
Rural development  
Responsibility in local and global contexts

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### **WHEN?**

*Starting year and duration* The initiative was started in early 2010 with the aim to continue during the entire International Year of Biodiversity 2010. After this year, the topics will remain online and will be used in teacher professional development courses. Moreover, they will be further developed paying special attention to the feedback gained. A brochure with an accompanying DVD for the materials is planned.

### **WHERE?**

Geographical setting National: The topics are chosen for Austria, but all the time connected from the local dimension to the global dimension of biodiversity.

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### **METHODOLOGY**

*Methods & approaches* The World Wide Web serves as an accessible platform for educators. In developing the topics we applied many criteria to find the best 12 monthly topics out of about 60 ideas resulting from the brainstorming. For each topic the focus was chosen out of the three levels of biodiversity, the different aspects of sustainability, the range from local to global issues etc by the group of developers. Biodiversity presents itself as an ideal postmodern educational topic (Dreyfus, A., Wals, A. E. J. u. Weelie, D. v. 1999). Biodiversity is a Postmodern Theme for Environmental Education (Canadian Journal of Environmental Education, 4.). The methodological approach for the learners is the inquiry learning in all its aspects (from literature research to discovery learning – definitions e.g. NRC 2000: Inquiry and the National Science Education Standards. A Guide for Teaching and Learning: National Research Council). The learners should have the possibility to find individual approaches to the topic in order to explore the variety of exchangeable perspectives on one topic and to ensure that the learning competences themselves can be promoted.

*Working language(s)* German

*Budget and funding sources* Own resources of the AECC-Bio and the faculty, mostly via working time (average of 80-120 hours per monthly topic).

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### **RESULTS & EVALUATION**

#### **Presentation of effects, results or impact of the initiative**

*Evaluation initiative of* As the project is still under way only formative evaluation could be done. So far we have monitored the hits on our website and the subsites each month, had e-mail-contact with interested users, and had discussions within the team of biology educators etc. In addition, there has been feedback from teachers to further develop the already released topics and the integration of their ideas of the topics to come.

*Results* Our Website <http://aeccbio.univie.ac.at/2010-jahr-der-biodiversitaet/> has been online since January 2010 and has received nearly 1500 hits and will remain online after 2010. This year we also offered two in-service teacher training courses, where we worked with some of the monthly topics to encourage teachers to use them in their classes and to get feedback for evaluation.

#### **Analysis of success factors**

*Strengths* Due to the fact that this publication is online it is freely accessible. All feedback we receive can be used to improve the topics, the materials, better pictures can be added etc. The material is presented in .doc-format for the educators and teachers, so that they can adapt it to their local needs and to their school surroundings. Two quotes – one from a teacher: “*there should be much more initiatives like this!*” and another one: “*the approach to reflect the seasons in the topics is new and great, I can connect the*

*everyday surrounding into my class". One scientist said:" this is a great possibility to reach the schools with my latest findings – via school books it would take many years!"*

*Weaknesses &* At the moment the work load is critical, the coordination is made by one person, and it's difficult to set meetings where the scientists, the teachers and the biology educators can work together. The delay of publishing the monthly topics is one result of these time constraints.  
*risks*

### **Perspectives**

*Conditions for* We have got the idea that this format – releasing one topic a month via World Wide Web – could be applicable to other issues as well. In German speaking countries for example it is common to nominate a "spider of the year" a "tree of the year" etc. These "organisms" of the year could also be starting points for continuing this calendar format. The challenge will be the better planning of the workload.  
*successful replication*

*Why do you* Good practice in our view involves many perspectives (scientists, teachers, biology educators), is freely available (via www), is reflected and further developed (via evaluation and feedback) and promotes flexible material for different learning environments. Moreover in our department "Austrian Educational Competence Centre of Biology" research and development are closely linked.  
*consider this a good practice?*

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## 7. A Day for Biodiversity

*Hochschule für Agrar- und Umweltpädagogik, Austria*

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 Mag. Wilhelm Linder

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**DESCRIPTION** **A Day for Biodiversity**

**Students of an academia present biodiversity to primary school children**

The inspiration of children for the variety of the alive world was the main aim of this project. Concepts of biodiversity and its protection were topics.

Children up to the age of ten became opportunities to involve themselves with biodiversity in an appropriate way – On the other hand students of the academia learned methods and concepts of environmental education in this project. They exercised, how an abstract concept like biodiversity presented suitable for children.

A stage play called « Our Biodiversity Band », created by the students, formed the framework for a project day on June 1th, (on occasion of Worlds Environment Day). After a starting session on stage the pupils visited a number of various stations, including research, creative urges and exercising. The program was created by 25 students (environmental education) 170 pupils participated. The concluding presentation took place in presence of the Austrian Federal Minister of Agriculture, Forestry, Environment and Water Management, Nikolaus Berlakovich.




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**OBJECTIVES**

The project had three goals

1. It should enable students to work with pupils on biodiversity
2. It should inspire pupils of elementary schools for bio diversity and
3. It should strengthen the position of the academia as a competence centre for environmental education
  1. Enabling students : The students were very successful in working with new and creative methods. When starting the project, cognitive aspects played a leading part, during the project, a number of new methods was integrated. The motivation of learners, the awaking of enthusiasm for biodiversity became a main focus – in particular the work on the play was new and provocative for the students.
  2. Inspire pupils: The pupils participated with great enthusiasm in the program. They also dealt with social and political dimensions of the protection of nature. They discussed the rolls of political representatives, compiled

questions about nature protection and presented these questions to the Federal Minister of Agriculture, Forestry, Environment and Water Management. The pupils had the opportunity to take something along with them. Herbs planted by the pupils were given to them in order to remember the day and to continue working for biodiversity. Thus the transfer of what they learned into the everyday life should be facilitated.

3. Competence Centre : The academia invited elementary schools for cooperation. The response was enormous, due to the limited place only about 160 children could participate, more than 500 children asked for participation. The academia will intensify cooperations with schools especially in the field of Education for Sustainable Development.

*Relate to national priorities* This project day was dedicated to biodiversity, its value and importance for human beings.

Primary school pupils should learn the relevance of natural variety, above all they should connect positive experiences and feelings with biodiversity. According to the educational principles and guidelines of the UN-Decade „Education for Sustainable Development“ a focus was set on methodical variety (creative methods, research learning), in working groups learning by problem solving was exercised. A special focus was set on cultural variety since many Viennese pupils have an intercultural background.

The Austrian national strategy „Education for Sustainable Development in Austria (2008) refers especially to the meaning of the networks for education as well as the impact of teacher training (1.6) The cooperation of an academia with elementary schools was a special focus for this day. Students of environmental pedagogy became familiar with methods working with young pupils and acquired competences in new fields, e.g. method authority also in new ranges like theatre based education. Furthermore the Austrian strategy asks for learning, how to handle nature respectfully (5.4.3) The entire project was mainly assigned to this goal.

**WHO?**

*Type of organization managing the initiative* Academia

*Partners/stakeholders involved* Schools  
Primary Schools in Vienna and Lower Austria

*Persons involved* 25 Students, 170 primary school children

**WHAT?**

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

**WHY?**

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

*Themes* Biodiversity

**WHEN?**

*Starting year and duration* 2010; 3 Months Preparation, 1 Day (1<sup>th</sup> June 2010)

**WHERE?**

*Geographical setting* Regional: Primary Schools from Vienna and Lower Austria were participating.

## METHODOLOGY

<i>Methods approaches</i>	&	<p>The project is characterised by a variety of methods. Exspecially research learning was combined with creative, experimental learning. The students involved created a play: animals and plants living on a meadow reported from their life in order to wake interest for biodiversity : only if variety is sufficient, animals and plants of a habitat are able to live in harmony: on stage they are able to play the biodiversity song just if they meet all together. And at the end the pupils were asked to participate in this play.</p> <p>At learing stations pupils had the opportunity to seach (e.g. specify paw prints), to do gardening (planting herbs) or design nature art works</p> <p>The Students exposed and disputed methods of environmental education, they developed the stage play, the stations and worked with the pupils. For them this was a great opportunity to make use of what they learned.</p>
<i>Working language(s)</i>		German
<i>Budget and funding sources</i>		no special fundings; preparation during lectures; materials for the children (plants, experimental kits) were provided by the academia for agricultural and environmental paedagogy

## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

<i>Evaluation initiative</i>	of	<p>The project was just evaluated in the context of lectures at the academia. Students were asked for feedback, this feedback was discussed.</p> <p>Evaluation at schools did not take place, nor was an external evaluation available.</p>
<i>Results</i>		<p>On stage a bird, a mosquito, a snail, and a flower talk about their life, their mutual dependence: they all need each other. And they have a common goal: they want to create a music band. But since there are still many living creatures missing, their music sounds terrible. This is the scene at the beginning of the biodiversity project day for about 170 primary school pupils.</p> <p>During the day the pupils should become familiar with the concept of biodiversity. At stations the children learn in very different ways : playful, when they guess, which sound belongs to a special bird, creatively, when they design masks, made of natural materials, searching, when they track paw prints and practically when they composite muesli mixtures.</p> <p>At the end another stage performance forms the conclusion of the day: all living beings of the meadow meet: together with the children the biodiversity song is performed. Since all of them participate, it becomes a stirring song.</p> <p>The entire program was developed and performed by students. The play was written, composed and set in scene by them.</p>

### Analysis of success factors

<i>Strengths</i>		<p>The headmaster of the academia supported this project and thus made it possible.</p> <p>A main aim of this project was the preparation of students for their future tasks. Therefore students were highly motivated to participate actively in this project. Their engagement and cooperation was far beyond usual partizipation in the context of academia lectures. for the play were autonomly organized and accomplished, costumes provided in spare time</p> <p>Primary school teachers prepared the children well for this day.</p> <p>There was room for initiatives from students the planning of this project day was not made by teachers of the academia, on the contrary there were lots of possibilities for students to form the project day. The idea, to present a play on stage came exclusively from students.</p>
<i>Weaknesses risks</i>	&	<p>Due to the very challanging schedule the organisational aspects of this project were very challanging. The evaluation of the project revealed, that students wished more participation in organisatorical questions. A challange for the future is to determine a clear frame for such a project, a better integration into existing lectures and a better planning for this day.</p> <p>Problems with rainy wheater were taken into consideration. However on this day the</p>

wheater was extremely bad, rainy and cold, therefore outdoor activities with pupils were impossible. Also in this area planning should be improved.

The primary school teachers were integrated in the program, but this integration should be improved. Preparing meetings and follow up meetings for evaluation would be meaningful and should be offered.

The integration of a larger number of teachers from the academia would be absolutely desirable.

### Constraints

*Problems encountered* Due to short-term planning evaluation and quality assurance was accomplished for students only. An evaluation for teachers and pupils will be planned for future projects.

### Perspectives

*Conditions for successful replication* Topics like biodiversity, climate change or cultural diversity are core subjects for education for sustainable development – but they are also abstract and difficult to understand. It is a challenge for education for sustainable development to work with these themes, to awake enthusiasm and to help to understand these concepts.

*Why do you consider this a good practice?* New ways of learning and teaching are necessary. These new ways have to be developed, checked out and implemented. Students have to learn to work with these topics as early as possible. Networks between schools and academies are necessary, it also calls for scope for development. Within a narrow schedule it is difficult to develop new teaching and learning methods. The biodiversity project day was such place to experience with new approaches like playing on stage. Improvisation is part of this learning.

The primary school pupils did not just learn facts about biodiversity, they also got a feeling for the value of diversity, for respect for nature.

Co-operation of academies and schools is necessary, in order to develop and test a new concept, and to prepare students for their job as environmental educators.

This project was a step towards forming a network as a laboratory for testing learning methods.

## 8. Promoting Biodiversity through Environmental Education Centers

*Cyprus Pedagogical Institute, Cyprus*

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Dr Aravella Zachariou, Coordinator of Environmental Education Unit

**DESCRIPTION** The particular innovation offers the opportunity to students', teachers and also parents to investigate biodiversity issues through experiential learning and learning by doing. Environmental Education programs are organised through the network of Environmental Education Centres, which specifically examine biodiversity issues to various environmental fields (rural and urban areas). The programs' aims are closely related to the thematic unit biodiversity which is included in the Curriculum for Environmental Education/Education for Sustainable Development. Through these programs students have the opportunity not only to learn, feel and sensitize about the biodiversity of a place, but they also have the opportunity to interact with the local populations and collect information which is connected to the social and cultural aspect of the biodiversity of a place, instead of the ecological dimensions.

This initiative is funded by the Ministry of Education and Culture of Cyprus and is included in the educational reform of which fundamental objective is the protection of biodiversity of our place and the development of students' and teachers' conscience concerning their role and responsibility towards its protection and conservation, through experiential and direct involvement in fields, communities and important places related to the particular issue. This action is developed through the network of Environmental Education Centres of the Pedagogical Institute of Cyprus. Experiential learning activities are developed in various fields in rural and urban areas such as the forest ecosystem, the botanical garden, the river and lake ecosystem, Nature Trails, the suburban forest. Students, at the same interact with the local people, their way of life, their customs and traditions in order to examine the social, cultural and ecological dimensions of biodiversity issues.

The innovative aspects of this initiative are synthesized to the conjunction of the formal and non formal education and to the application of the main principles of the ESD. Particularly, the intergenerational communication amongst the various groups (students, teachers, parents etc) with the local populations, the experiential and interactive learning with the place, the experimentation and the interdisciplinary investigation are some of the innovative aspects of the initiative.



### OBJECTIVES

*Relate to national priorities* This initiative was based on the educational reform of the country based on the actions for the Environment and Sustainable Development. Through this initiative, the various actions of ESD related to biodiversity issues are included as central actions

regarding the social, cultural and ecological dimensions of biodiversity. The expansion of the program from the Environmental Education Centres to the school aim at the internalization of issues concerning the biodiversity of the country, sensitization and actions towards its protection and conservation, which reflect the national priorities. The involvement of the local community seeks to promote cooperation and interaction amongst students, teachers and the local populations during the implementation of the program. In addition, it is important the schools through the program to have the opportunity of networking with various target groups dealing with biodiversity issues and its social, cultural and ecological dimensions.

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**Who?**

*Type of organization managing the initiative* Governmental

*Partners/stakeholders involved* Government (State/provincial/district)  
Local authorities  
Schools  
Higher education institutions  
Research institutions  
Non-governmental organizations  
Community organizations

The Cyprus Pedagogical Institute is the coordinating body of the Ministry of Education and Culture of Cyprus, which is responsible for the organization of the network of the Environmental Education Centres and the implementation of its aims and objectives. Therefore, the programs that examine biodiversity issues are prepared, designed and organized by the staff of the Pedagogical Institute and forwarded to the network of E.E.Cs. It also has the responsibility for designing, applying and organizing educational or in-training courses for teachers and students related to biodiversity.

Schools from Primary, Secondary and Vocational Education are involved in applying and implementing programs related to biodiversity issues. Students and teachers work interactively in the programs of the network of E.E.Cs, to examine biodiversity issues through experiential learning activities in fields of investigation and local communities.

The local authorities and community organisations are involved through their support and cooperation with the schools, the students and teachers who needed to use the local communities as fields of investigation and the local populations as primary sources related to biodiversity issues and their social, cultural and ecological dimensions.

Non-Governmental Organizations and other Services from public sector are in close cooperation with the pedagogical team of CPI in order to design and implement effectively the projects of biodiversity.

Research Institutions and Higher Education Institutions involved in various research issues of biodiversity.

*Persons involved* The students and teachers can learn through their active and experiential involvement could be considered to be the learners in this initiative. The students and teachers come from Primary, Secondary and Vocational Education. Also, the trainers/instructors of the training programs who have the opportunity to enrich their knowledge related to biodiversity issues and the local population who can become primary sources of information concerning biodiversity and its social and cultural dimension could learn from this initiative. It is estimated that more than 6.000 students, teachers, parents and other professional groups are participating every year in this initiative.

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**WHAT?**

*Educational / learning setting and level* Formal: Primary education; Teacher education; Secondary education

**WHY?**

<i>General focus of the initiative</i>	Learning for sustainability in formal, non-formal and informal settings Education of educators Tools and materials Research and development Indigenous knowledge
<i>Themes</i>	Health promotion Cultural diversity Environment Biodiversity Natural resource management Sustainable production and consumption Rural development Responsibility in local and global contexts

**WHEN?**

*Starting year and duration* 2004 was the launching year of the initiative. It is continued.

**WHERE?**

*Geographical setting* Local: The program examines issues of biodiversity in rural and urban communities.  
National: The program is nationwide and applied to all the regions of the island.

**METHODOLOGY**

<i>Methods approaches</i>	& The initiative is developed every year through the network of Environmental Education Centres of the country in three phases. <b>Phase one</b> includes the introduction of students in biodiversity issues and their various dimensions in school through proper pedagogical procedures and methods in the classroom. <b>Phase two</b> includes the participation of schools in programs offered by the network of Environmental Education Centres in relation to biodiversity and the direct involvement of students in fieldwork activities regarding issues of biodiversity, as well as their direct involvement with local people and communities to investigate the social and cultural dimensions of biodiversity. During this phase, field studies are carried out, outdoor activities take place, along with observations and interviews. Participants visit particular places, where they could make observations and collect information about the issue that they are working on (e.g. visits to botanical gardens, forests, areas that suffer from desertification etc). <b>Phase three</b> focuses on the production of the end products and the evaluation of program. Each school prepares materials and actions towards the protection and conservation of the biodiversity of the country. To be more specific, schools present biodiversity issues through photos, prepare reports or articles for the local newspapers discussing the issue and its impact to the local communities and the country, as well as suggestions for alleviating the issues.
<i>Working language(s)</i>	Greek
<i>Budget and funding sources</i>	The program, the means and materials are funded by the Ministry of Education and Culture with 140.000 euro per year.

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

*Evaluation initiative* of A nationwide examination of the project hasn't been applied yet. It is in process a research design for initiative evaluation with the use of qualitative and quantitative research tools.

*Results* The results of the program are included to the end product, which every school and participating team is submitting at the end of the year to the data bank that has been created for enhancing activities and good practices for biodiversity amongst schools. Also, the continuation of the initiative with the participation of more than 6.000 students, teachers and other groups is an important key-evidence for program effectiveness.

### **Analysis of success factors**

*Strengths* The strength of the initiative is the deliberate character in which biodiversity issues are confronted outside of the school. Also, the holistic examination of the biodiversity issues and the involvement of local populations in the framework of intergenerational communication are crucial factors for strengthening the initiative.

*Weaknesses & risks* Working in the field and communities to connect in a more concrete way with the school activities, as an expansion of the initiative to the school life.

### **Constraints**

*Problems encountered* The need for introducing officially the outdoor learning and non-formal education in the curriculum.

### **Perspectives**

*Why do you consider this a good practice?* This program is considered as a good practice for ESD and biodiversity issues, in particular, which are directly connected to Sustainable Development issues evidenced in Cyprus reality. Outdoor activities and direct involvement of the students and teachers with the local communities and population are attempts to educate, inform and enlighten students, teachers and the local societies about the ecological, social and cultural dimension of biodiversity. Students' active participation and cooperation with their teachers and the local populations contributed to their active involvement in specific issues concerning biodiversity in their country, approaching these issues through different perspectives, sensitizing them and enabling them to take action concerning the environment of our country, through communication and interaction.

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## 9. “Chrysoprasino fyllo”: trans-national cooperation for networking schools, local communities and environment

*Ministry of Education and Culture, Cyprus*

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### DESCRIPTION

The innovative program Chyroprasino Fyllo (Gold-green Leaf) is a transnational project between Cyprus and Greece. In Chrysoprasino Fyllo, 24 secondary and other elementary schools, associated with each other in dyads (one from each country) and studying an environmental issue related to their local environment, which in most cases is similar and is associated with biodiversity. The program has been successful in creating knowledge and value requirements for students to have positive attitudes and participatory behaviors for the protection of biodiversity and ecological balance, quality of life and sustainable development and has helped to develop pedagogical reflection among teachers involved. Through the examination of local, but similar in most cases, environmental issues, the cultural links between the two countries have been enhanced and friendly relations and cooperation between pupils, teachers, schools and local communities have been achieved.

Each program lasts two years. Schools, teachers and students in each country come in contact with the local community and begin their investigation. Moreover, they come in contact with their peers of the other country, informing them about environmental issues and discussing ways of action. This ensures communication and collaboration between students, teachers, schools and local communities. Exchange visits of students and teachers and presentations of their work are taking place as open events in the community. The program in each country is funded by the Ministry of Education.

Investigation of similar aspects of local environment, in both countries, related mainly to biodiversity such as nearby natural areas, forest fires, national forest parks etc. / Networking students, teachers, schools and local communities. / Fostering links with the community using the local knowledge and culture. / Aims to find new and creative sustainable solutions to common problems between the two countries. / Motivation for active citizenship in both countries. / Innovates and acts for the formation of environmental aware citizens, who have the ecological knowledge and realize the seriousness of environmental issues but mainly they have the ability and willingness to act as change agents in helping to solve environmental problems of our time. / Promotion of education for sustainable development principles on the territories of the two participated countries.



**OBJECTIVES** The main objectives of the Chrysoprasino fyllo project are: to foster environmental aspects and sustainable development in education. / to study environment not only in ecological aspect but also within the social economical and cultural dimension. / to enhance environmental awareness of citizens, not only by enhancing ecological knowledge but mainly by developing competence and willingness to act as change agents in helping to solve environmental issues of our era. / to train a number of teachers in both countries. / to network students, teachers, schools and local communities for local environment investigation and transnational action. / to unite people from two different countries to work for the common goal of more sustainable future.

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**Who?**

*Type of organization managing the initiative* Governmental

*Partners/stakeholders involved* Government (State/provincial/district)  
Local authorities  
Schools  
Non-governmental organizations  
Ministry of Education And Culture, Cyprus / Ministry of Education, Greece / many local communities in both countries / NGOs / Environmental Centres

*Persons involved* 500 students and 80 teachers every year in the two countries

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**WHAT?**

*Educational / learning setting and level* **Formal:** Primary education; Teacher education; Secondary education  
**Non-formal:** Outdoor education, investigations of local environment  
**Informal:** investigations in cooperation with local communities, environmental centers, presentations to the general public

**WHY?**

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

*Themes* Environment  
Biodiversity  
Natural resource management

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**WHEN?**

*Starting year and duration* Started 18 years ago and updated the last years in order to meet the objectives and goals of Education for Sustainable Development.

**WHERE?**

*Geographical setting* National: Cyprus  
Regional: Greece

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**METHODOLOGY**

*Methods approaches* & The pedagogy is in accordance with the principles and the philosophy of the Environmental Education and the Education for Sustainable Development as well as the principles of the inquiry learning used in the framework of the Natural Sciences. The main idea is to give emphasis on the local environment and to see it in a transnational level: act locally - think globally. In the first year, the dyads of partnerships select the environmental subject and the student groups in every school

in each country. They come in contact with the local community and they begin to explore the subject together in both countries. Communicate with peers in the other country and they inform them about environmental issues that face and discuss possible ways of action. Exchange visits of students and teachers and presentation of their work in open events in the community are made.

*Working language(s)*

Greek

*Budget and funding sources*

Government, Ministry of Education, Cyprus and Greece

## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of Initial evaluation of the program confirmed the positive results expected.

*Results* Thousands of students and hundreds of teachers have participated in the Chrysoprasino Fylo program. This demonstrates the wide acceptance and success of the program in both countries. Moreover, the great interest shown by students, teachers and schools to participate in the program enhances the program's success. Strong links between schools, teachers and citizens in both countries were created. Participants were familiarized for the local environment of the other country.

### Analysis of success factors

*Strengths* The main strength of the programme is the excellent relation between partners allowing a long-term partnership. / The project takes into consideration the particularities and needs of each school and each community. / Cooperation with local communities. / Increasing interest of local communities. / Raising awareness about the aims and tasks of ESD. / Preparedness of teachers to accept the concept. / Stable funding from the Ministry of Education and Culture, Cyprus. / Good cooperation and exchange of experience and ideas between schools. / New diversified possibilities for teachers' training. / Transnational experience-exchange.

*Weaknesses & risks* Possibility of teacher change at school. / Dependence in teacher effectiveness in the related concepts

### Constraints

*Problems encountered* Time limitations for outdoor education

### Perspectives

*Conditions for successful replication* Stability of well trained teachers. At least one in each school.

*Why do you consider this a good practice?* The fact that the Chrysoprasino Fylo Programme has been implemented for 18 years already and has been the last years adapted for the Education for Sustainable Development, confirms mutual advantageousness of this initiative. Chrysoprasino Fylo does not work only at schools but together with local community and parents; include them as a part of the learning process. This approach is innovative in Cyprus Educational System. Students and the whole school community get practical experience in environmental protection and sustainable development activities and are involved in decision making process and active citizenship. The program helps to act both in local and transnational level: act locally - think globally (Cyprus and Greece). Networking of students, teachers, schools and local communities could be a powerful approach for promoting Education for Sustainable Development in every country.

## 10. Free Guided Tours for the Public to the Nature Reserves

*Estonian Environmental Protection Agency, Estonia*

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 Maris Kivistik, Head of Department of Environmental Education

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**DESCRIPTION** Nature and nature conservation issues became more important and well educated and aware citizens can be active members of the society. Most effective way to learn nature is in the nature. The main aim of this initiative is to educate ordinary people in the field of nature conservation - principles, restrictions, legislation, protected species during guided tours in different protected areas and to involve them more in community participation in the future.

Number of ordinary people are interested to increase their knowledge in nature conservation issues but do not have possibilities to visit protected areas in different reasons – lack of money, knowledge, car, no suitable public transportation etc. Specialists of Environmental Board are offering once a year – end of May – free guided tours to different protected areas from all centres of 15 Estonian counties. The interest in two years has been remarkable. The other aim of the initiative is to rise people awareness - how to participate in decision process, make proposals etc. Tour-buses are paid by Environmental Board and the initiative is supported by Environmental Investment Centre.

One task of nature reserves and protected landscapes is to preserve and introduce the local culture and its peculiarities. This topic was handled during all trips. Usually people have forgotten how deeply nature and man are related for example how far from waterline is wise to build a house etc.

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### OBJECTIVES

*Relate to national priorities* Estonian nature is known as relatively wild and diverse. May is celebrated as the Over-Estonian month of Nature Conservation since 1980. Different activities (lectures, excursions, competitions, campaigns etc.) for all age groups are organized all over the country. This event is dedicated to the International Day of Protected Areas. One of the main tasks of Environmental Board is to educate people in all fields of environmental issues.

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### Who?

*Type of organization managing the initiative* Governmental

*Partners/stakeholders involved* One of the main tasks of Environmental Board is to educate people, so ordinary people are the key stakeholders. The main aim is to offer free professionally guided tour to nature reserve or protected landscape for ordinary people all over Estonia.

*Persons involved* About 460 persons participated.

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### WHAT?

*Educational / learning setting and level* **Non-formal**

### WHY?

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

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<i>initiative</i>	Indigenous knowledge
<i>Themes</i>	Biodiversity Natural resource management Democracy Sustainable tourism

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**WHEN?**

*Starting year and duration* Campaign started in 2009 and there is no duration limit at the moment. It will be organized once a year in May every year.

**WHERE?**

*Geographical setting* National: in all Estonian Counties

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**METHODOLOGY**

*Methods & approaches* Outdoor lecture + practical works (plant, animal studies, bird-watching), using different senses.

*Working language(s)* Estonian

*Budget and funding sources* State Budget

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

*Evaluation initiative of* Number of participants mentioned importance of new knowledge and asked when will be the next tour. Some have promised to come back with friends or to recommend them.

*Results* More than 460 persons participated in 17 tours in spring 2010. The number might see small but our aim is teach people look, see, hear and this can be done well in small groups.

**Analysis of success factors**

*Strengths* The initiative – guided tour- will take place almost in the same time and people can plan their participation in advance. Destinations will be new every year so there will be always something exciting. Probably the weather is the only risk.

**Perspectives**

*Why do you consider this a good practice?* It is said that you cannot jump in the same river twice, nature is always full of wonders. You have to catch them.

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## 11. Falkenstein Wilderness Camp

*Bavarian Forest National Park, Germany*

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Lukas Laux

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**DESCRIPTION** The Falkenstein Wilderness Camp is an international meeting place for people who want to tackle thoroughly with nature and wilderness, and in doing so they want to find out about themselves. The Camp provides huts and cabins, which serve as a place to stay and to sleep, allow to gain knowledge by experience and own action.

### Topic Huts and Country Cabins

The area of the Bavarian Forest inspired the Topic Huts. Listening to the huts' names, like Forest Tent, Water Hut, and Meadow Bed, the visitor already develops a feeling for the habitats in the area. The Country Cabins come from the indigenous inhabitants of 8 national parks throughout the world. These accommodations and the regions where they come from provide starting points for the *Education for Sustainable Development* on topics like climate change and biodiversity. Everyday life in the Camp means living together, experiencing and recognising life cycles, taking on responsibility for recycling, reflecting actions, adventures and experience and transferring it into everyday life.

The Wilderness Camp is an educational institution of the Bavarian Forest National Park Administration, which is an authority of the Bavarian Environmental Ministry. The buildings as well as the development of the pedagogical concepts were funded by the "Deutsche Bundesstiftung Umwelt", DBU, by the European Union and by the Bavarian State, as the owner. The daily business is driven by the National Park Administration.

Besides working with schools is the topic of local integration an important aspect in the country huts. Youth groups from the region took over sponsorship of the huts and also use contacts to other protected areas for their own projects. Thus, for example, a youth group from the Bavarian Forest organized an exchange with a Venezuelan group.

In addition, importance is attached to the lives of the students: a global issue, with an example from another reserve region is discussed and reflected against the background of their lives.

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**OBJECTIVES**

- Relate to national priorities* The project is based on the objectives of the National Action Plan for the Global Decade of Education for Sustainability, in particular ..
- Forge stronger links between individual players and stakeholders in education for sustainable development
  - Global networking with international partner reserves, and the local anchoring through the sponsoring groups are the umbrella of this intensively cross-linked project.

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**Who?**

*Type of organization managing the initiative* Governmental

*Partners/stakeholders involved* Government (State/provincial/district)  
Higher education institutions  
Non-governmental organizations  
Intergovernmental, international institutions

There are several organisations, which support the work within the Wilderness camp:

- the NGO "WaldZeit" which attends people during weekends and in school holiday times,
- the GTZ (Gesellschaft für technische Zusammenarbeit), the German organisation for foreign aid,
- several other National Park authorities which are partners of the country cabins,
- local youth organisations which take care for the country cabins and the international partnerships,
- Universities, who evaluate the programs. .

*Persons involved* During the week, there are mainly pupils who visit the camp and participate in the programs (4<sup>th</sup> grade upwards). On weekends and in school holidays the Camp is open for all kind of groups (families, companies, youth organizations ...). The stay always is combined with an educational program. Every year, over 1.500 persons visit the Camp and take courses of several days' duration.

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**WHAT?**

*Educational / learning setting and level* Non-formal: program for all age; groups; special programs for students from the 4<sup>th</sup> grade onward

A "Wilderness Week" (Wildniswoche) is marked by a highly self-determined and self-motivated project work. Small groups, inspired by the natural environment and the stay in the theme huts, work on self-selected projects. A stay opens even many natural science fields of learning, but social skills are also encouraged. This program is aimed at students from grade 4 upwards.

The programs are designed for students from grade 7. Working in small groups is important, however, the weekly program is more structured and there is a fixed weekly theme, which is developed from the perspective of the country the participants live in during their stay, and is then compiled with the other small groups. There are programs on cultural and biological diversity, global climate change, the ecological footprint, as well as lifestyle issues.

In addition, the focus is on international cooperation. Thus, in 2008 met 50 teenagers and young adults inside a wilderness camp in preparation for the UN biodiversity conference in Bonn. Protected areas represented all partners which participated, supplemented by other countries such as China. The teenagers and young adults have prepared common activities and developed an own resolution, which was presented to policy makers at the conference in Bonn. This Youth Summit Go4BioDiv will be continued at the biodiversity conference in Nagoya, Japan 2010.

**WHY?**

<i>General focus of the initiative</i>	Learning for sustainability in formal, non-formal and informal settings Regional/international cooperation Indigenous knowledge
<i>Themes</i>	Intercultural understanding Cultural diversity Environment Biodiversity Natural resource management Responsibility in local and global contexts

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**WHEN?**

<i>Starting year and duration</i>	The wilderness camp was opened in 2002, first with the theme huts only, the country huts were added in 2007. The Wilderness Camp is an educational institution of the National Park Service and planned for the long run.
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**WHERE?**

Geographical setting	Local: Bavarian Forest National Park
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**METHODOLOGY**

<i>Methods approaches</i>	& Adventures and experience made in nature while working on projects - inspired by the accommodation in their topic hut pupils concentrate on working for 2 days on a topic related with nature and they do so almost self-employed.
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This means that small groups are expected to work out themselves objectives, methods and ways of presentation of the respective project. Encouraging processes where decisions are taken within small groups is an important element of our pedagogic conception as a whole. The groups are accompanied and supported by trained forest guides and educationalists of the National Park. Permanent reflections within the small groups as well as within the whole class make a deep involvement into the own topic possible. On a hike through the National Park's wilderness, nature is discovered and experienced. The experience, gained this way, renders possible to perceive nature as well as the Wilderness Camp in its overall context.

<i>Working language(s)</i>	German, English
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<i>Budget and funding sources</i>	While the construction has been funded by means of Deutsche Bundesstiftung Umwelt, European Union and the Free State of Bavaria, is the operation entirely in the hands of the responsible body, the Free State of Bavaria. Special projects like youth exchange programs or special events are covered to a large extent by external funding.
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**RESULTS & EVALUATION**

**Presentation of effects, results or impact of the initiative**

<i>Evaluation initiative</i>	of There were evaluations of the theme hut programs that emphasized the importance of primary experience of nature. An evaluation of programs in the country huts will be carried out immediately with available results at the end of the year. Feedback from the groups and their supervising tutors show that it is a very stimulating learning environment in which many ideas arise, but which can also vary from group to group and individual to individual.
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**Analysis of success factors**

<i>Strengths</i>	The success of the wilderness camp is: an architecture based on the concept – that means that the free project work is encouraged by the different theme huts. The grounds are extensive and the groups have a lot of rest and leisure - even for to find themselves. It is a concept that incorporates the everyday with living, sleeping, eating
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– and offers ideas in many ways. The country cottage offers programs especially for young people with subjects that are part of their own living environment. Global issues such as the threat to biodiversity become tangible and concrete in this learning environment.

*Weaknesses & risks*      The programs with the country huts are quite complex and therefore only suitable for older students. The intensive program needs sufficient staff. The care of the buildings must be planned.

**Perspectives**

*Conditions for successful replication*      The most important addition to a positive teaching approach were especially the partnerships and the integration into a comprehensive network. A project such as that of the country huts can only be implemented successfully if it is embedded in a large network. The initial financial costs were manageable but many partners were needed to implement this project and to keep it vivid.

*Why do you consider this a good practice?*      In the wilderness camp environmental education and global learning find each other. It is a very comprehensive approach and the strength lies in its networking at different levels: locally, regionally and internationally. Especially for a national park as part of a worldwide system of protected areas, the simple country huts are a starting point for very different educational programs which break down global issues to the own world and make them a tangible experience.

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## 12. Student and Youth Competition “Entdecke die Vielfalt!” (“Discover Diversity!”)

*German Environmental Foundation, Germany*

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Dr. Alexander Bittner

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**DESCRIPTION** With the student and youth competition “Entdecke die Vielfalt!” (“Discover Diversity!”) the DBU addresses young people between 9 and 16 who commit themselves for the protection of biodiversity, who think globally and act fairly and sustainably.

The online competition is based on ESD and wants to be source of inspiration both in school and educational institutions. The combination of different perspectives on the subject promotes the interdisciplinary work. Participants can compete in three categories: „Discover nature”, “act globally” and “interact creatively”. From a natural recreational sports event over a play to a campaign on Fair Trade: Creativity is unlimited!

Participants are invited to start their own actions to protect biodiversity and to present their own ideas – even by means of their own website – to the public and to motivate others to action. The “prize of the participants” gives young people their own vote in the evaluation of projects and invites to look into the projects of others, regardless of the jury voting.

On the occasion of the 9th Conference of the Parties to the Convention on Biological Diversity in 2008, the DBU called for the first time young people to act for the protection of biological diversity. The competition is funded by the DBU and conducted by the Center for Environmental Communication (ZUK) – in 2010 for the third time, and currently under the auspices of Federal Environment Minister Dr. Norbert Roettgen.

“Discover Diversity!” is an online competition that uses the opportunities of new media. Young people can present their commitment to the protection of biological diversity by means of text, pictures, films, radio plays, or PowerPoint presentations. The “prize of the participants”, which is awarded after the application deadline, invites to a serious look into the projects of other participants. With the categories “discover nature”, “act globally, and “interact creatively”, the competition wants to advance interdisciplinary work and to introduce biodiversity issues into new areas of education (e.g., church, culture and sports). The aspects of cultural diversity and global responsibility are considered particularly. This is achieved primarily through the materials (website, brochures, flyers) that give various examples and background information, but also through a nationwide network of educational organizations from different areas that support the children and young people in their work. The young participants are motivated to become active and to start shaping their future.

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### OBJECTIVES

*Relate to national priorities* The project is based on the objectives of the National Action Plan for the Decade of Education for Sustainable Development, in particular

- To forge stronger links between individual players and stakeholders in education for sustainable development,
- To increase public visibility of education for sustainable development.

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### Who?

*Type of organization managing the initiative* Non-governmental

<i>Partners/stakeholders involved</i>	Government (State/provincial/district) Non-governmental organizations
<i>Persons involved</i>	In 2010, the German association for technical cooperation (Gesellschaft für technische Zusammenarbeit, GTZ) and the German Youth Hostel Association (Deutsches Jugendherbergswerk, DJH) supported the competition as partners. The DJH awards a special prize for all groups that apply in cooperation with a youth hostel. The GTZ supported the category of “act globally” in public relations and awarding. The competition has established a network of over 90 supporters – educational institutions in the field of environment and nature protection, from development education and the fields of culture and sports. Children and young people aged 9 to 16 from the German-speaking countries can participate in the competition. They can apply as individuals or as groups. The competition appeals to both young people from school (all schools) and from the institutional education work (environment, development, sports and culture).

**WHAT?**

<i>Educational / learning setting and level</i>	Formal: Primary education; Secondary education Non-formal: In addition to projects from school, children and young people can submit their self-organized activities or projects from association and organizational work. Here, projects on biological diversity from all disciplines are required: environment and conservation, development education, church youth work, sports, culture, youth fire brigade.
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**WHY?**

<i>General focus of the initiative</i>	Learning for sustainability in formal, non-formal and informal settings
<i>Themes</i>	Environment Biodiversity Natural resource management Sustainable production and consumption Responsibility in local and global contexts

**WHEN?**

<i>Starting year and duration</i>	Starting year: 2008; The competition is announced annually.
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**WHERE?**

<i>Geographical setting</i>	National: Projects and actions from the German speaking countries can be submitted.
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**METHODOLOGY**

<i>Methods approaches</i>	& The evaluation of the competition entries focuses on the personal initiative and involvement of children and young people. The contributions range from different educational sectors and cover diverse methodological approaches. Notable examples are sustainable student companies, interdisciplinary school garden projects or media and art projects.  The competition team supports the candidates with a booklet with tips and tricks for a self-responsible implementation of their projects and of public relations, with links and background information on the website <a href="http://www.entdecke-die-vielfalt.de">www.entdecke-die-vielfalt.de</a> .
<i>Working language(s)</i>	German
<i>Budget and funding sources</i>	The project is funded by the DBU.

## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of The project has been evaluated internally every year. Currently, an evaluation as part of a student research project and a bachelor's thesis in communication sciences is planned. Since this is an online competition, especially the aspect of the use of new media is an important factor.

*Results* Since the competition started in 2008, more than 200 applications, with over 2,500 participating children and young people from the whole of Germany have been submitted.

2008: 89 applications from about 1,000 children and young people (including 38 schools)

2009: 86 applications from over 1380 children and young people (including 42 schools)

2010: 36 applications so far from 614 children and young people (including 14 schools)

The applications come from both the traditional natural and environmental protection work, and from the development education and cultural youth work. In 2009, the three categories "discover nature", "act globally" and "interact creatively" have been introduced. The strongest participation with 43 candidates were in the category "discover nature" ("interact creatively": 25 groups, "act globally": 18 groups).

### Analysis of success factors

*Strengths*

- Increasing numbers of participants and increased press response.
- The categories and the relatively free choice of topics provide a high variety of topics with a high multiplication and widespread impact effect: In the meantime the competition team has built up with the previously submitted projects a collection of over 200 different ideas for sustainable action. All ideas are available online.
- Growing interest in the schools.
- The shape of the online contest provides its media-savvy target group new ways of commitment and application.

*Weaknesses & risks*

- Final target groups are children and young people who often can be addressed only by the target group of teachers and youth group leader. There is a risk that the adults get involved more than the children and youth in the competition.
- Freedom in the choice of topics leads to confusion or the risk of missing the point.
- The use of new media discouraged partly and may exclude some applications of groups.
- The variety / size of the target group (all types of schools and youth groups in the fields of environment / sports / arts / culture) makes it difficult to promote the competition accordingly.

### Constraints

*Problems encountered* Experience has shown that children and young people from the classical field of environmental education can be easily addressed through a DBU project. The competition, however, would like to appeal to other target groups, which deal with the interdisciplinary subject of biological diversity. Projects from the fields of development education and the arts and cultural education are much more difficult to address. In accordance with diverse information material (brochure, website) and a diverse network of support groups, however, it is increasingly possible to win more and more projects that are competitive on an interdisciplinary approach and focus, i. e. on cultural diversity and ethical aspects.

*Unresolved issues* The competition reaches children and young people via the indirect target group of adults. Again and again, the problem is that the adults are mainly responsible for both the activities and the application. Only few applications are carried out completely independently through the children and young people. The competition team tries to increase the actual participation of children and young people by using materials, a simply designed online access and repeated notes, so that young people themselves take responsibility for their participation and presentation of their ideas. Nevertheless, so far at least 50 percent of the applications are made by the adults.

**Perspectives**

*Conditions for successful replication* Basically, the competition is transferable to other countries and regions, provided the financial framework and infrastructure (system for online application) are given for the implementing organization.

*Why do you consider this a good practice?* The competition has a high multiplier effect: it creates a pool of varied ideas for the protection of biological diversity. With the awarding of the "prize of the participants", children and young people are invited to look into the projects of others and this way discover new opportunities for a sustainable commitment. Participation in the competition increases the motivation to commit to sustainable development. Through the use of new media the competition offers more space and a multitude of opportunities to get involved and to present own ideas in public.

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### 13. OroVerde-poster contest "Ich bin doch nicht blöd" (I'm not stupid)

*OroVerde - The Tropical Forest Foundation, Germany*

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#### CONTACT

OroVerde - The Tropical Forest Foundation  
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Birthe Hesebeck, Environmental Communication

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#### DESCRIPTION

Advertising for a good cause: It's not about designer jeans or the latest mobile phone model, but the rain forest. The Oro Verde-poster contest "Ich bin doch nicht blöd" (I'm not that stupid) calls on pupils from ten years to deal with the issues advertising and nature and to design their own ad campaign to protect the rain forests. Knowledge, imagination and creativity are needed to implement their ideas together into clear messages and powerful images. The best designs are printed in large numbers as a postcard or poster, and make them public.

Advertising is ubiquitous. It accompanies us wherever we go. It surprises us no longer when reading newspapers, is a "usual" break when listening to radio and television broadcasts. And it shapes us: our inner images, desires and values, our (consumer) behavior.

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#### OBJECTIVES

The aim of the project is:

1. To prepare the theme "Advertising and Mass Media" at the example of "biodiversity and rain forest" well-adjusted to the target groups in order to provide children and young people how to deal with the advertising tricks and become used to the respective backgrounds.
2. To encourage children and young people in the poster competition to deal intensively with the theme of "rain forest / biodiversity" and its link to the topic of "advertising" and to develop their own design skills.
3. To motivate teachers through ancillary products for the classroom and support to address the issue of advertising in the context of sustainable development in the classroom.
4. To show that sustainable development can be communicated ("Sustainability makes you happy!") in order to generate new momentum for the communication of sustainable development.

*Relate to national priorities*

The project is based on the objectives of the National Action Plan for the Decade of Education for Global Sustainability, in particular to increase public visibility of education for sustainable development.

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#### Who?

*Type of organization* Non-governmental

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*managing the initiative*

*Partners/stakeholders involved*

Schools  
Higher education institutions  
Media

Children, adolescents and young adults (10-25 years): Target group of the competition are children and young people aged 10+. Specifically addressed here are both secondary schools 1 and 2 as well as adolescents and young adults who already attend advertising schools or relevant vocational training.

Schools & Teachers: Teachers of subjects social studies, religion/ethics, biology and geography and art/design are an important group of mediators to bring the issue of advertising and nature to the children and young people. The developed educational material on the subject addresses particularly to them.

Media: Other intermediary groups are various magazines from the youth and education sector. However, also ad agencies are addressed in order to motivate their students to participate in the competition.

*Persons involved*

The competition attracted in 2009 nearly 1,000 participants. Different ages, from pupils of grade 5 to students, developed in groups or individually a total of 475 concepts. The 21 best works were printed as postcards and distributed by City-cards in 16 cities (circulation 120,000), and were displayed for up to 4 weeks in postcard stand in cafes, bars and other public places.

The best 55 works were prepared as posters for an exhibition and printed. They were shown in a special exhibition for 2 months in the chocolate museum in Cologne, and attracted more than 100,000 visitors.

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#### **WHAT?**

*Educational / learning setting and level*

Formal: Further and higher education; Secondary education; Teacher education

#### **WHY?**

*General focus of the initiative*

Learning for sustainability in formal, non-formal and informal settings  
Tools and materials  
Regional/international cooperation

*Themes*

Environment  
Biodiversity  
Sustainable production and consumption  
Climate change

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#### **WHEN?**

*Starting year and duration*

Starting in 2008/2009. The competition is announced annually.

#### **WHERE?**

Geographical setting

National: Germany, Switzerland, Austria

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#### **METHODOLOGY**

*Methods approaches*

& Introduction of a competition on "advertising and nature." In the competition, the participating children and adolescents deal with questions of consumer behavior, with their guiding principles and the effectiveness of advertising.

At the same time it is shown how advertising appears in the context of nature and communication for sustainable development. The target group develops own advertising ideas and implements them in the form of posters, ads and postcards. Project components were:

1. Target group-oriented treatment of the topic „Advertising & Nature“ / teaching

- materials as ancillary products for the contest
- 2. Implementation of pilot projects with students and pupils
- 3. Announcement of the student poster competition
- 4. Care of the participants, website „Die Dschungelforscher“ (The Jungle Researchers)
- 5. Postcard promotion with the competition-winning ideas, special exhibition, printed ads.

*Working language(s)*

German

*Budget and funding sources*

Seed money to start the project and the development of ancillary products: € 249,669.65.

Project continuation (including reproduction of teacher materials): 3,000 € per year

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## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of In addition to a quantitative evaluation the submitted posters were analyzed with the SINUS Sociovision. Key issues were:

- The extent to which submissions provide information on the understanding of young people for nature and of environmental destruction in a global context.
- The extent to which young people feel responsible for nature conservation and environmental protection, or how they delegate responsibility to parents, politics and business.

The identified trends are presented in a 24-page project documentation. Here there are also more pictures which have been submitted by the participants.

*Results*

In the first year about 1,000 students participated in the poster competition and submitted a total of 475 commercial motives. The 21 jury-selected best works were printed as postcards (120,000 copies), distributed through a professional provider in 16 cities in cafes, bars and other public places. 55 drafts were prepared as a poster and displayed in a special exhibition for several months in various museums.

Teaching materials (intensively demanded): The extensive educational booklet „Geist ist geil“ (“Intellect/spirit is cool”) with 35 worksheets shows how advertising works and the tricks the communications professionals work with. Humorous and constructively rather than gloomy and hopeless - that’s the motto of creating advertising motifs.

### Analysis of success factors

*Strengths* Besides the quality of teaching materials the advertising of the project was a critical success factor.

The teaching materials and the poster competition were advertised by means of

- Supplements and ads in 4 magazines for teachers
- Mailings (by mail or e-mail) to teachers and students
- Infopost Mailing with a leaflet of the competition for students
- Press relations

The supplements in teacher magazines led to an immediate strong demand for the material package „Geist ist geil“ (“Intellect/Spirit is cool“). The inserts were placed in different media to address a variety of disciplines. The greatest interest came from the field of geography. Additionally, a printed ad in a superior teacher magazine with a circulation of 240,000 copies, aimed to spread the project even more effectively. It showed, however, that supplements experienced in their effectiveness of addressing a higher resonance, because the amount of request was lower despite the high circulation than for the supplement.

### Constraints

*Problems encountered*

The subject of advertising is for teachers first and foremost a topic to which they have made so far only limited experience. The more important were detailed teacher materials that allowed a quick and practical introduction to the topic. The briefings for

the poster competition were praised by the teachers as they get started in the project work with the classes and greatly facilitated the students motivation to implement what they have learned.

To gear the worksheets and teaching materials to young people, school classes were also involved in the design of the materials. This led in parts to the revision of texts, for example to a simplification of the milieu descriptions.

### **Perspectives**

*Why do you consider this a good practice?*

The poster competition has now been established as annual and international competition. It has continued to offer children, adolescents and young adults a chance to get in touch with the issues of "rain forest" and "advertising" - and leads, according to feedback from the participating schools, to a strong motivation in the corresponding classes.

Every year's best of emerging ideas will be implemented continuously as postcards and printed. Moreover, the motifs are treated as advertisements and printed in various magazines.

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## 14. "Sustainability has many faces"

*Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ), Germany*

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 Internet: [www.gtz.de](http://www.gtz.de), [www.gtz.de/biodiversity](http://www.gtz.de/biodiversity), [www.conservation-development.net](http://www.conservation-development.net)  
 Dr. Thora Amend / Dr. Rolf Mack Senior Advisor "Implementing the Biodiversity Convention" Section 4702 – Biodiversity, Forests, Natural Resources Governance Division 47 – Environment and Climate Change

**DESCRIPTION** **Sustainability Has Many Faces** is a brochure series with multimedia materials on biodiversity conservation and sustainability in development cooperation – a contribution towards the UN Decade on ESD.

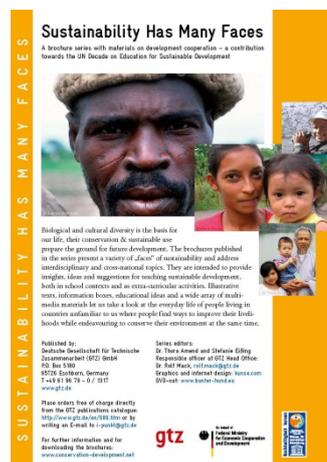
Biological and cultural diversity is the basis for our life. The conservation of these prepares the ground for future development. The brochures published in the series present a variety of „faces“ of sustainability and address interdisciplinary and cross-national topics. They provide insights, suggestions and teaching ideas for sustainable development, for specific topics, or for global studies, both in school contexts and as extra-curricular activities. Easy-to-read texts, additional information boxes, educational ideas and a wide array of multimedia materials let us take a look at the everyday life of people living in countries rather unfamiliar to us, where people find ways to improve their livelihoods while endeavouring to conserve their environment at the same time.

„To my knowledge, this is the one and only series, that truly aims at changing the perspectives: it presents solutions for nature conservation from us in the South to the first-world readers in the North – we are not always the “developing countries” – we sometimes can contribute valuable ideas and inspirations to the rest of the world” (*Ricardo Icaza, Peru*)

“What I like is the unique mix of journalistic elements, good thematic information and up-to-date links, as well as educational suggestions. This helps me with the preparation of my classes and nature youth groups” (*Birgit Eschenlohe, Germany*)

“It is interesting to see, how you people in Europe see our challenging process of land restitution and reconciliation in South Africa. There is still a long way to go – but by presenting our Kruger National Park and the Makuleke case as a win-win scenario for nature and man you have given us hope for similar situations.” (*Hlami Ngwenya, South Africa*)

In the International Wilderness Camp in Germany’s oldest National Park we need publications like the ones of the series – competent people write about interesting topics and even offer good ideas for practical activities and discussions with our young visitors – simply great, thanks!” (*Lukas Laux, Germany*)



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**OBJECTIVES**

*Relate to national priorities* Germany is signatory state of the Convention on Biological Diversity and thus strives for the conservation of nature, the sustainable use of natural resources and the fair and equitable sharing of costs and benefits derived there from. The Convention calls for technical, financial, scientific and educational support for the developing countries. The CEPA Programme (Communication, Education and Public Awareness) of the Convention stimulates the development of innovative educational material and events. This multimedia series and the diverse actions and active north-south or south-south partnerships related to some of the brochures are an important contribution of Germany (and were recently presented as such in COP 10 in Nagoya, Japan).

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**Who?**

*Type of organization managing the initiative* Governmental  
International  
Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH (German Technical Cooperation)

*Partners/stakeholders involved* Government (State/provincial/district)  
Schools  
Vocational education institutions  
Higher education institutions  
Research institutions  
Non-governmental organizations  
Media  
Intergovernmental, international institutions

In each brochure of the series different stakeholders are involved in different ways, for instance:

The Bavarian Forest National Park: an intensive educational / joint learning partnership between GTZ and the national park lead to the cooperation with various brochures, i.e. "Nature and Mankind facing Climate Change"

Extensive discussions of concepts with Global Footprint Network lead to the publication of the brochure "A Big Foot on a Small Planet" about the Ecological Footprint. Later, the Portuguese organization CESTRAS thoroughly reviewed and adapted the Spanish, Portuguese and French versions.

Together with Oro Verde the Brochure on Brazil (Who conserves what for whom?) was elaborated. All of the publications are planned and published in close cooperation with partner institutions in the different focal countries.

*Persons involved* Partners in development cooperation in Germany and abroad, students, the general public.

An estimate of the numbers of people reached is very difficult since the mere amount of printed copies (between 2500 and 7000 per volume) does not reflect the "learners", since most copies go to "multipliers", like teachers and group leaders. In addition, many brochures and material are downloaded from our webpage [www.conservation-development.net](http://www.conservation-development.net)

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**WHAT?**

*Educational / learning setting and level* Formal: Further and higher education; Teacher education; Secondary education; Professional education

Non-formal: educators in the field of environmental and development studies, group leaders of extracurricular activities on global learning for sustainable development, institutions for environmental education (e.g. in protected areas)

Informal: politicians, journalists, employees of development cooperation 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 Regional/international cooperation
<i>Themes</i>	Overcoming poverty Ethics Intercultural understanding Cultural diversity Environment Climate change Biodiversity Natural resource management Governance Corporate responsibility Sustainable production and consumption Rural development Responsibility in local and global contexts Other ( <i>Energy, Ecological Footprint, Agrobiodiversity</i> )

**WHEN?**

*Starting year and duration* first publication in 2007, ongoing

**WHERE?**

Geographical setting	there are brochures about specific countries (with various local and regional examples) and also about international, overall items  Local: different local examples in each brochure from all over the world, for instance environmental communication in the national park Cerro Hoya/Panama  Regional: e.g. governance in nature conservation in the Amazon region  International: e.g. brochures on overall topics such as CBD, Climate Change, Ecological Footprint  National: Panama, Benin, South Africa, Madagascar, Mauritania, Brazilian Amazon region, Bolivia, China (in preparation)
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**METHODOLOGY**

<i>Methods approaches</i>	& The aim: to present complex topics in an illustrative and (in parts) journalistic way, i.e. by using reportages, portraits, interviews; this also includes the description of multimedia material that helps to deepen one's knowledge about the respective topic, offer suggestions for further work and further documents on the topic,
<i>Working language(s)</i>	German, translation into other languages (according to the countries involved and / or interested, up to now: English, French, Spanish, Portuguese, Chinese, Mongolian, Vietnamese)
<i>Budget and funding sources</i>	The concept as well as the first four brochures of the series was developed within the framework of a self-financed project of GTZ. All further brochures (up to now 10 brochures have been published) were financed mainly by different German development cooperation projects all over the world (and therefore by the German Federal Ministry for Economic Cooperation and Development). Some brochures were co-financed by different stakeholders such as UNDP and the Chinese Ministry of Agriculture (in case of China-brochure, which is still work in progress), WWF (in case of the brochure about the Ecological Footprint), Bavarian Forest National Park (in case of the brochure about climate change)

Budget for the initial concept and the first four brochures: 100.000,- EUR. Budget for each further brochure: between 30 and 50 thousand Euros (depending on: need of research trip, printing quantity, translation etc.)

## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of Evaluation is ongoing at the moment (online questionnaires, qualitative interviews, carried out by independent evaluators and University of Frankfurt)

*Results* The series seems to have greatly contributed (evaluation is underway) to a broader understanding of the term “sustainability”, with a specific focus on biodiversity conservation. Formerly very abstract terms and concepts have gained “a face” of a person in a specific context or a distant developing country. By relating the life stories or situations, sometimes testimonies of people in different countries, global problems become tangible. Via educational suggestions, teachers and other group leaders get an idea of how to approach complex topics and connect them in a meaningful way to our life in Europe.

### Analysis of success factors

*Strengths* Via the direct link to projects of development cooperation, the series draws on up-to-date, first-hand information, many of which are submitted directly by the national partners or local authorities / groups. This collaboration also fosters the dialogue (how do you want to present your initiative? what else is important for you? What do you want people in Germany to know about you and your project / initiative / activity?)

*Weaknesses & risks* Participation, long coordination processes with partners and very marked team work in the elaboration of materials and texts requires resources: time, money, as well as nerves. This can be very demanding – and some people tend to get frustrated or even give up. Frequent modifications of already layout versions pull hard on our free lance designer and authors -- sometimes to such a degree that they can no longer afford to accompany a project until it is finished.

### Constraints

*Problems encountered* Teaching and learning concepts vary greatly in different cultures. At present we are in an extended discussion process with the upcoming Chinese brochure on Agrobiodiversity – how do we learn? What do we value? And why? These are some main topics that merit intense analysis to reach a consensus with our partners.

*Unresolved issues* In top-down societies the stimulus of the series of free questioning, individual or group analysis of concepts and discussions of topics, in order to better grasp the respective values and form an individual opinion / approach to conservation, are not readily shared. This still is seen as a very “Western” approach of teaching – but due to our very extensive discussion process we are close to compromises.

Not yet solved: free internet access in controlled / censored societies. Links and downloads are extremely difficult, as is the free use of maps, audio files with interviews and other frequently used materials in the educational context of our series.

### Perspectives

*Conditions for successful replication* A good and dedicated team of authors (each volume requires aprox. a year of research, writing, discussion with partners, review and adaption – since funding is generally low, it is not easy to find knowledgeable people that understand the topic, are able to write in an easy-to-understand but correct way, and like to incorporate educational incentives.

*Why do you consider this a good practice?* Development Cooperation is an investment in the future of our Planet – if we want to succeed as humankind, we need to respect each other, value our cultural differences and our natural assets. This requires understanding of the most diverse aspects. This series, which has been conceptualized in close cooperation with our partners, aims at fostering this broad understanding of sustainability and biodiversity conservation, including individual statements, collective needs, societal challenges and global perspectives. Building bridges – trans-cultural, trans-generational, and trans-sectoral is the ambitious aim of the series.

## 15. Initiative “Place a Stone in a Stream”

*North Vidzeme Biosphere reserve, Latvia*

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### CONTACT

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Andris Urtans, Deputy Director of North Vidzeme Biosphere Reserve

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### DESCRIPTION

Community involvement in water quality and aquatic biodiversity improvement, as well as Climate Change effect mitigation through innovative low cost method

Each of us at least once have thrown a stone in water. The given human “psychological custom” is used to reach practical multisided ecological goals. Small streams have unique capacity through their morphological features (i.e. mechanically saturate oxygen through its laminar flow and rough surface) and biological settings to mineralise organic compounds with antropogenic origin.

Increased biological diversity and purification capacity is achieved through the man installed stable stones, acting as surfaces for naturally developed Biofilms. “Biofilms” generally consists of the layer of bacteria and algae serving not only as an water treatment factor, but as well as a food pool. The most active mineralisation processes are observed within riffle areas or even single standing stone or stone assemblages. In the same time such mechanically oxygen enriched microhabitats with supporting food pool (“Biofilms” on stone surfaces) serves as excellent microhabitats or shelters for oxygen sensitive aquatic species, which are among most endangered aquatic species allround the Europe.

“Biofilm” phenomenon is used in general Biological wastewater treatment plant concept with calculation of needed 10 square meter biofilm (!) to utilise organic emission per one person

Locally undertaken river and its biodiversity supporting activities according to specific interests of each involved group (Environmental NGOs, fishermen club, water sport - canoeing groups, students, house owners) reaches visible results for each of them, in the same time adding input as well to all related segments like biodiversity, water quality, fish as game resource, riverside and general landscape.

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### OBJECTIVES

*Relate to national priorities*

Undertaken Initiative are in line with both Latvian National Programm for Biodiversity (point 3.3.4. “Involve society in water quality monitoring as well in aquatic recultivation activities”) as well in line with EC Strategy for the Baltic Sea

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**WHO?**

<i>Type of organization managing the initiative</i>	Governmental
<i>Partners/stakeholders involved</i>	Local authorities Schools Non-governmental organizations Community organizations Valka, Liepupe, Salacgriva Secondary schools (regular cooperation in environmental issues and stream management), NGO Environmental Club of Latvia (longterm relations in voluntary involvement) Salacgriva parish authority fishing club "Salackrasti" (fish resource enhancement), North Vidzeme Biosphere reserve administration (organizer)
<i>Persons involved</i>	about 500 students and adults in 2010 with foreseen increasing numbers in next years

**WHAT?**

<i>Educational / learning setting and level</i>	Informal: Embraces different age and interest groups
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**WHY?**

<i>General focus of the initiative</i>	Learning for sustainability in formal, non-formal and informal settings
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<i>Themes</i>	Environment Climate change Water Biodiversity Natural resource management
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**WHEN?**

<i>Starting year and duration</i>	Started in 2010. Duration at least 2 – 3 coming years
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**WHERE?**

<i>Geographical setting</i>	Subnational: voluntary activities under the given title have taken place in different parts of Latvia, but have not reached national scale yet
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**METHODOLOGY**

<i>Methods approaches</i>	<ul style="list-style-type: none"> <li>▪ Preliminary "River stretch survey matrix" elaborated and spread to potential actors. "Guidelines for stone placement in a stream and creation of riffle areas" elaborated and published. The given leaflet is intended as a tool in a step by step mood to clarify involved stakeholders ( single people, farmers, activity groups, volunteers ) how to use river as a purification phenomenon as well biodiversity pool, adding, repairing or improving their morphological features and biological capacity.).</li> <li>▪ Initial training and joint activities in rivers with volunteers.</li> <li>▪ Monitoring of achieved results through low cost „Biological Water Quality Measurement Scheme”, elaborated in Latvia and adapted for people with initial skills.</li> </ul>
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## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

<i>Evaluation initiative</i>	of	Allready in 2009 in 5 improved river stretches electrical fish monitoring previous to activity as well after finishing river cleaning activities were undertaken, showing evident increase of oxyphylluous fish species.
<i>Results</i>		In approximately 30 areas improvement of stream habitats undertaken. New stone microhabitats installed and biodiversity of aquatic invertebrates as well fish stocks increased. Excess weeds and wooden debris removed. In separate areas terrestrial river belt managed and local landscape improved. Improved River stretches acts as natural water purification systems. Theoretically locally improved and oxygen enriched waters finally can diminish total load to the Baltic sea thus lessening adverse effects of foreseen Climate Change induced raise of temperature and following increase of eutrophication processes.

### Analysis of success factors

<i>Strengths</i>		Proposed activity is low cost activity with practical viable results in short term
<i>Weaknesses risks</i>	&	Without initial training or thorough Guideline studies somewhere it is possible to induce coastal erosion

### Constraints

<i>Problems encountered</i>		Sometimes degraded stream stretches belongs to private landowners . Not always it is easy to achieve agreement with them. Landowners are afraid of negative publicity (like, why they haven't maintained river stretch before themselves). Ignorance/Misunderstanding of the coastal belt functioning and river-terrestrial zone interaction ecological aspects sometimes creates problems from the local authorities, like "leave as it is – Nature itself knows the best solution".
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### Perspectives

<i>Conditions successful replication</i>	for	Continuing suport from UNESCO Latvian National Commission is looked as a good promoting umbrella for the next years in Latvia. Interest raised and support for the next season activities received from the Latvian Nature Conservation Agency.
<i>Why do you consider this a good practice?</i>		First of all results are achieved through personal involvement and practical activities with viable results. Positive starting point – instead of "fight against" initiative is promoted as "help and improve the stream (and even yourself)". Raise of self confidence and awareness. Learning by doing. Applicable for all streams/river stretches where water speed exceeds 0,2 m/sec

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## 16. Ambassador species for Biodiversity

*NovioConsult, the Netherlands*

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 Ir. H. Ten Holt

### DESCRIPTION

The modern biodiversity concept (including ecosystem services) is an abstract umbrella concept that is difficult to communicate to the public. The essence of the concept lies in the focus on the value of biodiversity vs. ecosystem services for people. This communication project aims at getting municipalities and their inhabitants involved in biodiversity by choosing and using one or more local species as an ambassador for biodiversity in communication and actions. Ideally the ambassador species represents the unique identity of the municipality and its characteristic natural qualities. By making use of the inhabitants' identification with 'their' ambassador species, municipalities can also communicate on broader biodiversity and sustainable development related issues and bring these closer to home. The process of choosing an ambassador species can be internal, but it can also be designed as a community participation process. An ambassador species can be used for several goals: creating public awareness and education for biodiversity and sustainability, city marketing and ecological action.

The central instrument of the project is the website [www.ambassadeursoorten.nl](http://www.ambassadeursoorten.nl). The website offers advice on how to choose and use ambassador species and where expertise is available. Municipalities that join the initiative can make their own page on the website where they can present themselves and their ambassador species. The progress of the project is monitored and presented in a map of the Netherlands.

The initiative is primarily developed by NovioConsult, a small consulting firm active in the area of sustainable development. Through the whole process NovioConsult has sought cooperation with all kinds of partners to build a communication coalition around the project. This has been quite successful, especially many non-governmental organizations have joined the coalition. Coalition partners are expected to take their part in the project publicity aimed at getting the project under the attention of all Dutch municipalities. They benefit by being able to communicate their expertise in this area to these municipalities. The project has been (partly) funded by the Dutch national Government on behalf of the Dutch Coalition Biodiversity 2010.

Biodiversity is important for people. The Dutch Taskforce on Biodiversity and National Recourses uses the motto: Biodiversity opens the door to the backyard and to the refrigerator. Our economic, physical, mental and cultural health depends on the health of ecosystems. For citizens this is not always so natural anymore. By choosing local ambassadors (plants or animals) biodiversity are brought close to home.



### OBJECTIVES

*Relate to national priorities*

Dutch government has signed the Treaty on Biological Diversity and has been developing biodiversity policies for a long period of time. One of the main goals of this policy is to stimulate the sub national and local governmental level to engage into biodiversity policy. Our project contributes to this aim.

**Who?**

<i>Type of organization managing the initiative</i>	Local authority Private sector
<i>Partners/stakeholders involved</i>	Government (State) Local authorities Non-governmental organizations Community organizations Private sector Intergovernmental, international institutions Key stakeholders are Dutch government (on all levels), non-governmental organizations and (consulting) businesses.
<i>Persons involved</i>	There are many kinds of learners involved. The project partners form the first shell. Then the coalition for Biodiversity partners and then the final target group (municipalities and their inhabitants). The number of persons involved at this moment is estimated between 100 and 500. This will grow further once the project is picked up by more municipalities. In the end it could reach millions.

**WHAT?**

<i>Educational / learning setting and level</i>	Non-formal: Children and families who visit local environmental education centers and city farms in the area Informal: Municipalities and their inhabitants, so that is all Dutch Citizens
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**WHY?**

<i>General focus of the initiative</i>	Learning for sustainability in formal, non-formal and informal settings Tools and materials
<i>Themes</i>	Health promotion Citizenship Environment Climate change Biodiversity Sustainable tourism

**WHEN?**

<i>Starting year and duration</i>	The project started in June 2010 and was funded until November 2010. By then the municipalities that are involved are going to develop there own communication activities and materials involving the ambassador species. The website will be hosted until the end of 2011. The Dutch Coalition for Biodiversity (coordinated by IUCN the Netherlands) will be monitoring the results in 2011 and further.
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**WHERE?**

<i>Geographical setting</i>	Regional: Especially in the province of Noord-Brabant there are many municipalities involved. They bundle their activities regionally. National: The Netherlands
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**METHODOLOGY**

<i>Methods approaches</i>	& Online communication where stakeholders can contribute. Network building (online as well as in real life is stimulated. This project is mend to be a initiator, after this first stage the municipalities are developing their own communication strategies.
<i>Working language(s)</i>	Dutch

*Budget and funding sources* 25.000 Euros. Funded by The Dutch National Government (Agentschap NL) and through contributions of participants

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## RESULTS & EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of Not yet

*Results* At this moment 15 municipalities are involved in the website. Since there are over 400 municipalities in the Netherlands there is still work to do. The municipalities that are involved are enthusiastic and see Biodiversity as an integrating topic, to bring together several policy-topics. Usually the involvement in taking part in the ambassador species program is the starting point for a bigger action plan on biodiversity for the municipality or the region.

### Analysis of success factors

*Strengths* Open cooperative approach, coalition building, large investments in project publicity. The participatory process to elect a species is interesting and can involve the local civil society. Also a strongpoint is the possibility for different sectors within the government (f.e. recreational/tourist sector) to benefit.

*Weaknesses & risks* Since it is a decision of the whole municipality it can be difficult to find an "owner".

### Constraints

*Problems encountered* The process and initiator role takes more time than expected (mainly because of expected cutbacks in the national and local government). Therefore the initiating project period is too short to really get this project into a flying start.

*Unresolved issues* Continuity after the biodiversity-year 2010 is unsure, the process does need a coordinator, to help more municipalities get started.

### Perspectives

*Conditions for successful replication* Use a "close to home" and positive approach to biodiversity communication, in order to get people involved. Let participants make there own activities and invest in a network-structure to stimulate exchange of results and best-practices.

Organize inspirational moments and find supporters in local NGO's. Municipalities want to be helped and want to cooperate with other governments and local NGO's or businesses.

*Why do you consider this a good practice?* It is relatively cheap, motivating and effective in informing large numbers of people about the value of biodiversity.

Also the possibility for municipalities to involve there citizens in policymaking is a strong benefit, while at this moment in time it is necessary to get people involved in the governance process and into valuing there own place of living.

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## 17. Portugal and Cape Vert united for the preservation of Biodiversity

*Escola Secundaria Dr. Ginestal Machado, Escola Secundaria Latino Coelho,  
Escola Secundaria Pedro Gomes, Portugal & Cape Verde*

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Maria Alexandra Neves Forte, Coordinator SEA UNESCO Escola Secundária Dr. Ginestal Machado; Coordinator of the Projects of Escola Secundária Dr. Ginestal Machado, Teacher of Chemistry and Physics

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### DESCRIPTION

One of the major issues of this initiative was to promote the awareness of the need to preserve biodiversity around the world. The main focus was for Portugal and the Cape Vert Islands Biodiversity. These islands were colonized by Portugal in the 16<sup>th</sup> Century and in 1976 was established a peace agreement between these two countries. Now, Cape Vert is an independent nation with a peaceful relationship with Portugal. So it was very important to do a joint project with both countries to promote the respect for the different cultures among both countries and lead to stronger bonds between the people of Portugal and Cape Vert. This Project had an impact on both school communities and on the people of Cape Vert and Portugal, because the media (National television of Cape Vert) made a cover story about this initiative and the regional media of Portugal (newspapers of Santarem) published a report about this project. This project made students realize the differences between the African and Mediterranean Biodiversity and also promote the awareness towards the preservation of Biodiversity. As they learned that Portuguese people brought different species of animals and plants to the Cape Vert Islands during the colonization process, modifying forever their biodiversity. Students were aware about this situation and they realised that they must preserve biodiversity and never take action to modify nature. As for the culture, students realized that they must accept both cultures and people as equal.

This project related science with culture, because it was a scientific project involving knowledge of: Biology – students had to research and learn about the species of plants and animals of Cape Vert islands and Portugal; Geography – both countries were located geographically by the students in each continent; Chemistry – the problem of water pollution, led students to research about its cause, the main chemical products involved and how this pollution affects the biodiversity of both countries; History – those scientific aspects were combined with the historical facts, because the biodiversity was affected by humankind. All these scientific aspects combined with the culture aspects of both countries, made students aware, that they will be able to make a better world for live in. This joint project offer the amazing opportunity for students to do team work between both countries and establish communication by using ITC tools. Students became familiar with each other cultures. The key stakeholders got involved by sponsoring the project with money, goods, boarding, meals, local transportation and contacts. We were received by the Portuguese Ambassador in Cape Vert and by the Minister of Higher Education.

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## OBJECTIVES

*Relate to national priorities* It is essential to both countries to maintain a good relationship with each other, after the independence of Cape Verde it is crucial to show that we all are equal and have the same opportunities; it is crucial to preserve the biodiversity and not damage nature or modify it. The main objectives are:

- To learn and practice the concept of Biodiversity through “Learning by doing”.
- To promote the peace and goodwill among the people from both countries.
- To establish stronger ties between countries.
- To promote awareness about the need of preservation of Biodiversity.
- To stimulate creative thinking and problem-solving among students.

## Who?

There are 10 Teachers directly committed to this project. Three teachers from Portugal make their contribution and from Cape Verde there are 7 teachers involved. Students’ age ranges between 17 and 18, and there are 8 Portuguese students working directly together with 10 colleagues from Cape Verde. All school community (teachers and students more than 200 people) participated in the first presentation of this Project in Cape Verde (April 2010). The town halls from Santarem and Lamego sponsored this project, together with both, Portuguese embassy in Cape Verde and Cape Verde’s ministerial of higher education. Funds were donated by several companies of Cape Verde.

For this project we have the support of the Principals of the three schools and the members of the school Board.

We have the support of the representative local governmental office of education of Santarem and Lamego. The National Coordinators of Aspnet (Portugal and Cape Verde) were always informed about the several steps of this *project*.

*Type of organization managing the initiative*

Academic

*Partners/stakeholders involved*

Government (State/provincial/district)

Local authorities

Media

Schools

The Portuguese Embassy in Cape Verde, the ministerial of higher education of Cape Verde, the townhalls of Santarem and Lamego, Principals of the three schools and local office of education in Santarem and Lamego. All of them showed their support by sponsoring this project.

*Persons involved*

The learners of this initiative are in firsthand the students and teachers of the three schools involved, more than 200 people, and in secondhand the families of

students, because students will bring with themselves the knowledge to their home.

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**WHAT?**

*Educational / learning setting and level*      Formal: Secondary education

**WHY?**

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

*Themes*      Environment  
Biodiversity  
Intercultural understanding  
Cultural diversity

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**WHEN?**

*Starting year and duration*      2009 to 2012

**WHERE?**

*Geographical setting*      Local : Santarém; Lamego; Praia  
National: Portugal  
International: Cape Vert

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**METHODOLOGY**

*Methods approaches*      & There were two main phases of the Project:1) Students had to establish internet contact with each other (Portuguese and Cape Vert) to decide what aspects they would work in the theme Biodiversity. After they established contact they began to do a research about the biodiversity of each country and continent, and of how they could help to preserve this biodiversity. In Additional work, they did a research about the geographic localisation of each country and their common history. They learned facts about transatlantic slave trade, routes and one of the most important slave markets in Cape Vert. They learn how to respect human rights. It was implemented the skills for using ITC resources to do this project. 2) At the end of the project students from Portugal went to Cape Vert (Santiago island – from 12<sup>th</sup> April to 17<sup>th</sup> April 2010) to see *in loco* the species of animals and plants they researched back in Portugal. Also, Portuguese students presented the Cape Vert students the biodiversity from Portugal and Cape Vert students presented their own research. Software was used such as power point and production of text in word to present the Project by the three schools. The new subject called “Project Area” enable the achievement of this project, because most of the work was done in these classes, and in Cape Vert it was made in extracurricular time. With this project students have learn how the colonization affected the animals and plants of the islands of Cape Vert, because the people who discover the land, brought to the island other species that changed forever the several ecosystems that existed in the islands. The interchange opens new horizons to all students, because they establish relationships of friendship with each other. *In loco* they learned the Cape Vert culture, food, dances and songs.

*Working language(s)*      Portuguese

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**RESULTS & EVALUATION**

**Presentation of effects, results or impact of the initiative**

*Results*      Learning outcome - The students have learned:

- To respect the human rights.

- To be a junior ambassador of peace and goodwill.
- To respect other cultures as equal.
- To respect the biodiversity of the world and particularly of the countries involved in the project.
- To learn by doing.
- To enable pupils to make a personal commitment and to take concrete actions to help protect the Biodiversity
- To extend this initiative to adults and to other schools and institutions

Intercultural issues are now being taught at several subjects, because these topics are now became part of our society.

By becoming aware of the history, consequences and “scars” left by transatlantic slave trade, students recognised the importance of the human rights and how they are protected from such an evil. They saw in loco (Cape Vert) a different culture and language (crioulo), and they learn to respect the difference without prejudice. The most important change of their attitude was to see that basically we are all equal, only living conditions made culture different. Peace can exist among us.

**Analysis of success factors**

*Strengths* Intercultural Dialogue was established; strengthening of the bonds between both countries; smoothing the pain of the colonization process, and working the same aims towards the goals on equal basis; Preservation of biodiversity.

**Constraints**

*Problems encountered* raising all the money for the project

**Perspectives**

*Conditions for successful replication* the project had a great impact in Cape Vert and it encourage the involvement of new schools to join Aspnet schools and awaken other ASPnet schools wich saw the amazing results of this project.

*Why do you consider this a good practice?* This Project will have a second part, namely students from Cape Vert school will come to Portugal this scholl year to present a new joint project with the theme “Heritage” and probably this project will continue.

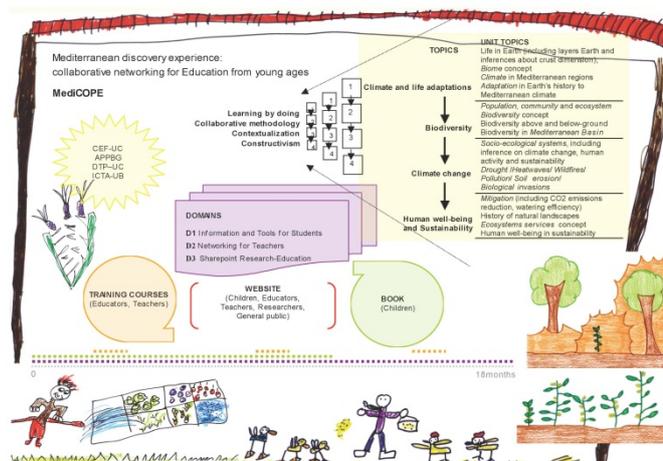
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## 18. MEDiterranean disCOvery exPerience: collaborative networking for Education from young ages

Centre for Functional Ecology (CEF), Portugal

### CONTACT

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### OBJECTIVES

The overall goal of MediCOPE is to advance innovative collaborative methodologies and strategies in teaching and learning to address climate change, biodiversity and effective environmental awareness in Mediterranean Basin from young ages (pre-school, primary school and 5-6<sup>th</sup> grade, including special education). The initiative is focusing in three key domains: –Information and tools for students. –Networking and training for teachers. –Sharepoint Research-Education. To progress this, the main objectives are: (1) to disseminate the actions in a web-site and in a book for children; (2) to identify valuable indicators with which to improve the training activities with professionals; (3) to create a framework to monitor and examine the information content in terms of the goals of the initiative, the academic point of view, and the ESD vision; (4) to create a web-based dialogue platform for general public, which will enable to connect and facilitate the cooperation initiatives already existing.

Relate to national priorities

(1) Ministers Resolution n.º 119/2004 31st July, National Programme for Climate Change (PNAC 2004) MRf1 – Programme for Portuguese Forest Sustainable Development (IIIQCA); (2) Ministers Resolution n.º 83/2005 : Programme for Mitigation Drought Effects. (3) 'Mediterranean Programme' (European Territorial Cooperation under the Cohesion Policy for 2007-2013).

### Who?

Type of organization managing the initiative

Academia

Partners/stakeholders involved

Pre-school institutions  
 Schools

Research institutions

The stakeholders involved in MediCOPE initiative represent the collective views of

professionals of education (Biology and Geology Portuguese Teachers Association –APPBG–, Division Technical-Pedagogic, DTP–UC) and research (Centre for Functional Ecology, CEF–UC; Institut de Ciència i Tecnologia Ambiental, Universitat Autònoma de Barcelona, Spain, ICTA-UB). CFE, APPBG and ICTA-UB will provide a sharepoint with educators, teachers and researchers (networking, discussing groups and training courses). CFE, APPBG and DTP-UC will be involved in producing information and tools to be delivered in a website and in a children's book.

*Persons involved* The learners are: i) the participants involved in MediCope, which include the 460 children (54 pre-scholars, 298 scholars and 108 students from 5-6<sup>th</sup> grades) and 20 teachers (4 educators, 12 teachers from primary school and 4 teachers from 5-6<sup>th</sup> grades); ii) the participants in the training courses (45 educators and teachers); (iii) the participants in the networking and discussing groups (ca. 250 educators, teachers and researches); iv) the children that use the information and tools from the website (ca. 1million: Portugal, Spain, Europe, Mediterranean regions); v) the professionals from education that use the web-based sharepoint (ca. 5 thousands: Portugal, Spain, Europe, Mediterranean regions); vi) the general public (ca. 10 millions: Portugal, Spain, Europe, Mediterranean regions). Several pages of the MediCOPE website will be on the main social networks (Twitter, Facebook).

## WHAT?

*Educational / learning setting and level*

**Formal:** Early childhood; Primary education; Teacher education

Addressing climate change, biodiversity and effective environmental awareness topics from young ages is multidimensional. Teaching and learning domains in pre-scholars, primary school and 5-6<sup>th</sup> grades are highly interrelated. MediCOPE propose to publish a book for children and create an innovative and creative website to improve information and tools, including special education. MediCOPE also intend to be a sharepoint for educators, teachers and researches, including networking, discussing groups and training. The information for book and website, as well as the training courses for educators and teachers, are already conceptualized; it resulted from a framework developed in a previous participatory project “Experiencing and Discovering Mediterranean” (EDM-project). Multiple methods were used in EDM-project to attain various data sources and perspectives of children, teachers and researchers in gathering knowledge. EDM-project was implemented in three distinct schools spectrums, rural and urban, from Portugal and Spain. In total, 30 actions were collectively constructed and evaluated.

## WHY?

*General focus of the initiative*

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

Regional/international cooperation

*Themes*

### **Climate change**

Water

Biodiversity

Natural resource management

Disaster reduction

Corporate responsibility

Sustainable production and consumption

Responsibility in local and global contexts

## WHEN?

*Starting year and duration*

Starting on January of 2011 and ending on June 2012



policy, corporate strategy and public awareness. The long-term impacts will be the available protocols in schools and training courses in research institutions and schools to guide their ESD strategies.

### Analysis of success factors

*Strengths* Project participants achieved important developing teaching and learning actions. Listed below are a few examples: (i) deep knowledge and expertise gained from EDM-project via training; (ii) definition of a programme planning to improve teaching and learning of biological issues and thus a deeper understanding of complex social-ecological processes to/in Mediterranean regions; (iii) valuable data to enable discussions towards effective environmental awareness from young ages, including special education; (iii) intensification of local-multilateral relations Education-Research and international networks; (iv) actions which are used to promote and continue the project. The information and tools gathered will be available to distinct public (children, educators, teachers, researchers, general public) in the website and book. Both website and book design will focus on the results obtained by the children: drawings/videos/photos

### Perspectives

*Why do you consider this a good practice?* MediCOPE focus on the educational and learning dimensions for address climate change, biodiversity and effective environmental awareness in Mediterranean Basin from young ages. MediCOPE makes a difference and demonstrate a positive and tangible impact by enclosing three key domains: i) information and tools for children, ii) networking and training for educators and teachers, and iii) sharepoint between academic institutions and schools. MediCOPE represents also a successful opportunity to disseminate other initiatives already existing (1, 2, 3, 4, 5, 6, 7). Finally, we truly believe that information and tools gathered will offered new and creative solutions for teaching and learning biological issues from young ages and with that a deep understanding of social-ecological processes occurring in Mediterranean Basin.

#### Websites

- 1 [2006] <http://www1.ci.uc.pt/sementeaofruto/>
- 2 [2009] <http://fazerpouco-mudarmuito.bot.uc.pt/>
- 3 [2009] <http://biotic.bot.uc.pt/>

#### Books

- 4 [2007] Semente ao Fruto: À Descoberta do Mundo das Plantas [<http://www1.ci.uc.pt/sementeaofruto/> ]
- 5 [2007] Ciência a Brincar: Descubre as plantas [<http://www.editorial-bizancio.pt/colecoes.php?col=19&id=370> ]

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6 [2009] Vamos cuidar da Terra: fazer pouco pode mudar muito  
[http://books.google.com/books?id=kqnQOqW4\\_4C&printsec=frontcover&dq=vamos+cuidar+da+terra&source=bl&ots=KOIsOwku0v&sig=RkIEeU7FBABYHvqbNi55BCbpz0&hl=en&ei=StXcTJj2CMq1hAe9zMzQA&sa=X&oi=book\\_result&ct=result&resnum=6&ved=0CD0Q6AEwBTgK#v=onepage&q&f=false](http://books.google.com/books?id=kqnQOqW4_4C&printsec=frontcover&dq=vamos+cuidar+da+terra&source=bl&ots=KOIsOwku0v&sig=RkIEeU7FBABYHvqbNi55BCbpz0&hl=en&ei=StXcTJj2CMq1hAe9zMzQA&sa=X&oi=book_result&ct=result&resnum=6&ved=0CD0Q6AEwBTgK#v=onepage&q&f=false)  
 7 [2009, 2010] Cogumelos do Paul da Madriz [[http://www.uc.pt/imprensa\\_uc/catalogo/outros/cogumelos/](http://www.uc.pt/imprensa_uc/catalogo/outros/cogumelos/) ]

## 19. Calera de tango, life reserve. Education for Conservation

### *Calera de Tango Municipality, Chile*

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Makarena Roa Cornejo. Environment Department Manager

#### DESCRIPTION

The Municipality of Calera de Tango Works from 5 years ago in environmental education for the protection of local biodiversity. In this context, we have developed a non-formal education program, theoretical and practical, named "Calera de Tango, life reserve. Education for Conservation", whose objective is to create knowledge about the wild flora and fauna present in our community, to raise awareness in children, youth and adults, for them to be respectful of the local surroundings, and diminish the impact of our community in the biodiversity caused by hunting and the recollection of native species.

The program consists in diverse annual activities in the 4 local public schools, the 6 private schools, and the childhood protection network and community organisations.

Activities undertaken are: 1) Biodiversity workshop: for a public of children from public and private schools conducted by environmental educators. 2) Lectures: for children, youth and adults of the municipality conducted by environmental educators. 3) Field trips: visits to natural spaces, zoos and fauna rehabilitation centres. 4) Creation of awareness and teaching material, like flyers, booklets and interactive CDs in the frame of project co-conducted with local organisations. 5) Creation of the book "Calera de tango, life reserve" sponsored by the private sector and distributed for free in the community, and 6) Environmental Leadership Contest for municipal public schools.

This initiative is innovative because it consists of an integrative proposal of Education for Biodiversity with the following characteristics:

1. It is sponsored by the local authorities based on the local environmental reality which is clearly defined, particularly with the presence of 2 island hills (Cerros Chena y Lonquén), both representing the Mediterranean eco region and key sites for the conservation of biodiversity (sites 23 and 18). They have an important biological value for the region and the country because of their endemic nature and great fragility due to degradation.
2. Additionally, this environmental reality includes the identification of the threats that exist for these sites, amongst which we highlight the degree of unawareness of the population of the value of the natural resources in the hills and their impact on activities in general (human, commercial and agricultural). Therefore, this initiative will face problems from a local perspective and in line with the reality of our municipality and our province.
3. It is supported by the public sector (central) and private (ONGs and private sector) showing how different actors in our society are involved in this challenge.
4. Moreover, the public is very diverse, including children, youth and adults, and each activity is organised according to the group and they are in the form of presentations, field trips and creating high quality source material for the community.
5. This initiative works with 2 sites that are located in 2 different communes. Nevertheless, administration is integrated as one entity, due to the importance of preserving the site as a whole.



## OBJECTIVES

### *Relate to national priorities*

This initiative is inscribed in national priorities because management of natural resources and biodiversity are central priorities for the Ministry of the Environment. This is shown in the new environmental institutionalization, which began in October 2010 with the creation of the Service for Biodiversity and Protected Sites, to create effective protection of wild areas where responsibilities are shared between the different actors involved both public and private. The role of the ministry of the environment is to propose policies and concrete actions that can establish criteria and preventive measures to favour the recovery and preservation of ecosystems and natural areas specially those most affected or fragile. Also, to create and execute studies and research programs, protection and preservation of the biodiversity, and to manage and update a database on biodiversity.

Also, one of the main goals of the National Strategy for Biodiversity is to preserve at least 10% of the surface of each and every one of the ecosystems of the country considering establishing on 2015 a network of preservation of main sites with permanent action to guarantee its effective preservation. This again helps to understand how the sites this initiative is working on, are a priority.

## WHO?

*Type of organization managing the initiative* Local authorities

*Partners/stakeholders* Government  
Local Authorities  
Schools  
Community Organisations  
Private Sector

Local authorities, represented mostly by the Maire of the Municipality of Calera de Tango and Director of the Corporation of Education and Health of the commune, allow and foster the development of educational initiatives to protect the natural resources of the area, emphasizing the importance of adding this activities in schooling institutions of the commune, as key actors to develop the department initiatives.

Schools, through their directors and teachers, support directly the execution of programmes, allowing pedagogic times to teachers and students for the execution of all the activities.

The support received from the central government is shown for the free Access to parks, reserves, and institutions linked to the environment and through the transfer of financial resources to communitarian organisations (FPA fund). These complement the execution of the programme of environmental education along with the creation of material to diffuse and build awareness that will be delivered to the community.

The private sector also plays a key role through the financial support for project implementation on scientific research, where other than those research related activities, they include education at the school and the production of the book "Calera de Tango. Life reservoir" that has become an important contribution for advocacy of ecosystem of the community.

- Persons involved*
- 10 schools of the commune of Calera de Tango, with workshops and conferences with a total of approximately 500 students a year.
  - 200 adults a year, including teachers, members of social network, neighbours, and authorities from the municipality of Calera de Tango.

### **WHAT?**

*Educational/learning setting and level*

**Schools:** Primary education, teacher education, higher education.  
**Non formal:** members of social networks, authorities and leaders of the commune of Calera de Tango.

### **WHY?**

*General focus of the initiative* Learning of sustainable development in a formal, non-formal and informal network.  
 Tools and materials  
 Research / development

*Themes* Environment  
 Biodiversity  
 Natural Resource Management  
 Sustainable urbanisation

### **WHEN?**

*Starting year and duration* Annual program started in 2005, this being the 5th year of implementation.

### **WHERE?**

*Geographical setting* Local: Municipality of Calera de Tango

### **METHODOLOGY**

*Methods and approaches* Curricular framework of Chile's basic education and basic fundamental objectives of education where knowledge in the subsectors of learning on "comprehension of the natural, social and cultural environment" and "study and comprehension of nature" related with the value of biodiversity, the human footprint in ecological equilibria and appreciation of the biological species in the improvement of the human quality of life. (Mineduc, 2002)

*Working language(s)* Spanish

*Budget and funding sources*

- (1) Biodiversity workshop: \$ 1.400.000. – Financed by the municipality
- (2) Conferences: \$ 600.000. - Financed by the municipality
- (3) Field work trips: \$ 2.000.000. - Financed by the municipality  
 \$ 200.000. . Financed by TRANSELEC
- (4) Creation of learning and awareness material such as booklets, flyers and interactive CDs.
  - \$ 600.000 flyers (4.000 copies, 2.000 of each). Financed by FPA 2009 and 2010
  - \$ 1.600.000 interactive CD (1.000 copies). Financed by FPA 2010
  - \$ 426.000 biodiversity booklet (2.000 copies). Financed by FPA 2009
  - \$ 250.000 wall calendar (1.000 pieces). Financed by FPA 2009
  - \$ 1.050.000 desk calendar (600 pieces). Financed FPA 2009 and 2010
  - \$ 190.000 posters (500 copies). Financed by FPA 2009
  - \$ 298.000 stickers for cars (2.000 ejemplares). Financed by FPA 2009

- \$ 2.600.000 guide of birds of prey (2.000 copies) . Financed by TRANSELEC
- (5) Creation of the book “Calera de Tango, Life Reserve”  
\$ 6.500.000, 1.000 copies. Financed by TRANSELEC
- (6) Environmental leadership contest for municipal schools.  
\$ 1.000.000, environmental Project for teachers. Financed by the municipality  
\$ 1.000.000, 2010 best environmental management practices for a school, parents center. Financed by the municipality

## RESULTS AND EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of There is no formal assessment of the initiative

*Results* There is no formal assessment for the initiative. However, the effects are seen in the high demand from schools to implement the program. A clear example of this is 2009 when 5 workshops were done in schools of the municipality, and in 2010 coverage doubled to 10 schools.

Another effect is that from our work, members of the childhood protection network implemented in early 2010 an annual delivery of environmental commitments with focus on biodiversity in the light of the engagement of several community organisations (schools, neighbours associations, elderly clubs). For this initiative the municipality had the role of advisor for the network.

### Analysis of success factors

*Strengths* Transversal initiative including multiple stakeholders from all groups of age.  
Creation of different educational material of long life and products to support teachers that will stay in schools.  
Part of a 5-year action plan to preserve biodiversity approved by the regional environment commission, which gives full support in terms of legality, management and sustainability.

*Weaknesses and risks* There is no stable budget, so, each year funds should be won or found or create projects to be financed. This represents a risk in terms of sustainability of the initiative.

So far, formal education is not incorporating in a serious and consolidated way the problematic of education for biodiversity conservation in our country. Therefore, even if there are hours dedicated to the learning of science and the environment, the content are not involving a clear focus on the value of local biodiversity, and should be inserted within more global contents. This makes their inclusion more difficult.

### Constraints

*Problems encountered* Lack of school hours to include content.  
Lack of interest from teachers due to ignorance of the thematic.  
Inconstant budget.

*Solutions adopted* Incorporation of the program within the formal curriculum.  
Enhance of the environmental certification of schools (SNCAE), because it promotes and boost strongly the inclusion of environmental education in different fields and sectors.  
Teacher education and support with educational material.  
Inclusion of the program in plan and project of institutional relevance to insure minimum budget to manage external funding.

*Unresolved problems* Inconstant Budget

## Perspectives

*Conditions for successful replication* Interest from local authorities, social participation, funding, transversal action.

*Why do you consider this a good practice?* Because it takes action in a local situation like the presence of 2 priority sites, it analyses the importance of both and present threats and afterwards develops a program of education for the whole community. This demands each year more information and management for the protection of sites and to include relevant actor in the public and private sector to support the management and funding and that have committed with the program supported by different initiatives through time.

All of this shows that this is a transversal, integrative initiative with high social participation where every actor assumes his responsibility in the protection of the sites and provides from its experience and competence that have created more conscience in people established in the surrounding areas, and therefore, greater protection.

## 20. Environmental Symposium for Students– S.A.E.

*Livio Reginaldo Fischione Educational Institution, Colombia*

### CONTACT

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Raúl Eduardo Henríquez Soleno - Professor

### DESCRIPTION

The Livio Reginaldo Fischione Educational Institution and its Ecologic Department are engaged in prevention and preservation of the environment and invite every year the youth from the institutions of the La Guajira Department (Col.) interested in research and discussion about environmental problems at the local, regional and global level, to participate in the Environmental Symposium for Students (Simposio Ambiental Estudiantil) where solution alternatives are presented.

Promoters of the event are by teachers in the area of natural sciences and environmental education. Beneficiaries are every student and teacher who has participated directly in the event or indirectly through its divulgation. The pedagogical project SAE is based in the General Education Law (Law 115/1994), the Law 99 (Ministry of the Environment), Decree 1743 (scholar environmental project –PRAE), the Political Constitution of Colombia, and the National Program of Environmental Education.

The budget for implementation of the project is institutional (aprox \$1,500,000.00) one million five hundred Colombian pesos a year.

Innovative aspects: to apply the symposium technique at a basic education level. In general, symposiums are organized at the professional education level. Taking as reference points the environmental topics-issues priorities established as the global authorities (ONU/PNUMA) to be developed by youth and teachers. In the same way, we discuss global problems at the local level.



### OBJECTIVES

*Relate to national priorities* To strengthen the environmental/ecological profile of the fishionist educational community.

To promote in other educational institutions the pro-environmental actions developed in the institution.

To create a space for student participation that will allow to bring closer the youth and the environmental issues and the creation of solutions.

To exchange proposals of knowledge, preservation and care of the natural resources.

To write a document with the memories of the symposium to be given to the

authorities in charge of taking care of the environment.

### **WHO?**

*Type of organization managing the initiative* Governmental

*Partners/stakeholders involved* Local Authorities  
Schools  
Higher Education Institutions  
NGOs

Key stakeholders are students from the educational institutions of Riohacha, joined by their teachers, to participate in the event after the call is announced. Other stakeholders but not less important are the environmental authorities (CORPOGUAJIRA), who are responsible for the adequate management of natural resources in La Guajira Department. In addition, NGOs with environmental action are involved.

*Persons involved* The Project takes place in the city of Riohacha, the capital of the La Guajira department in the north of Colombia. Participants are approximately 200 students and 25 teachers (as expositors) annually.

### **WHAT?**

*Educational/ learning setting and level* School: Basic Education; Secondary Education

### **WHY?**

*General focus of the initiative* Learning about sustainable development in a formal, non-formal, and informal settings .

*Themes* Environment  
Climate Change  
Water  
Biodiversity  
Disaster Reduction

### **WHEN?**

*Starting year and duration* 2003 (8 years)

### **WHERE?**

*Geographical setting* Local: Municipal (Interschools)

### **METHODOLOGY**

*Methods and approaches* Exposure Technique:

We use the symposium as a formal exposition group technique (a maximum of 5 panellists per group) where every presenter develops a different aspect of the same subject, with a maximum time of 20 minutes and the use of technological support for the presentation of the chosen subtheme.

Poster presentation:

Posters will have the following format: 1m long for 70cm height, vertical orientation. The content most correspond to the subtheme assigned by the organization of the Symposium and it must include the following elements: title, text, photographs and figures, authors and institution.

*Working language(s)* Spanish

*Budget and funding sources* \$1.500.000.00 (one million five hundred Colombian pesos a year), provided by the school and some environmental NGOs with cash donations.

## RESULTS AND EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of At the end of the symposium, we conduct a survey to participants to know their degree of satisfaction and interest from several points of view (academic, logistic, environmental).

*Results* In 2003, we organized the first Environmental Symposium for Students with the theme "Environmental Problems: Causes, Consequences and Solutions", with the subthemes, among others: residual waters, acid rain and pollution of watersheds.

In 2004, International Water Year proposed by PNUMA, the second Environmental Symposium for Students called "Water: knowledge, management and conservation" with subthemes such as: inland water recovery, watersheds, pollution and preservation, and prevention of the pollution of aquatic ecosystems.

In 2005 the theme selected was "Waste: sources, management and importance" for the third Environmental Symposium for Students with subthemes such as: industrial waste, residual waters, marine debris, among others.

"Global Warming: Causes, Effects and Possible Control" was the central theme of the fourth Environment Symposium for Students in 2007, which included topics such as: forest fires, thaws and avalanches, heat waves, human health, droughts and famine, among others.

As 2008 was the United Nations International Year of the Planet, we selected the central theme of the fifth Environment Symposium for Students to be "Planet Earth: a healthy, safe and pleasant place today and tomorrow". In this occasion we presented subthemes like: landmines, among others.

2009 was marked by the sixth Symposium on "The Ocean as a natural resource for la Guajira".

In 2010, International Year of Biodiversity, we proposed the seventh Symposium on "Biodiversity and Climate Change".

We managed to engage both private and public educational institutions from our town and other municipalities close to Riohacha; the participation of science clubs (Saturn V, Alfa-Science, Saurios), parents, government actors like Corpoguajira and the University of la Guajira, NGOs, environmentalist like the Casa Ecologica Foundation, Itaca Foundation, Ecosfera Foundation and the LeadershipInternational Faculty Foundation.

At the international level, the SAE was accepted as speaker in the V World Environmental Education Conference (Canada, 2009)

### Analysis of success factors

*Strengths* The level of engagement of youth on their presentations.

*Weaknesses and risks* We need a national or international body to sponsor the event in the future, otherwise it might just stop.

### Constraints

*Problems encountered* We need a national or international body to sponsor the event in the future, otherwise it might just stop.

*Solutions used* Request for support to governmental organizations.

*Unresolved problems* The attainment of economic support to advocate for this initiative at the international level.

### Perspectives

We want to present this initiative at a international level in academic events of environmental an pedagogic nature.

Through the symposiums we have achieved:

- To strengthen the ecological/environmental profile of the community.
- Active and permanent participation of approximately 20 educational institutions, both rural and urban.
- To propose from school, alternatives to the solution of environmental issues coming from participant students.
- To exchange and know proposals about knowledge, care and preservation of natural resources.
- To change and improve youth's attitude towards environmental issues.

*Conditions for successful replication*

One important aspect to reproduce the initiative with good results is to attract the youth of the basic schooling levels and transform them in value multipliers. .

*Why do you consider this a good practice?*

We consider this as an exemplary initiative because:

- We work with Young students from the basic level
  - Subject treated are of local, regional and global importance.
  - We work for the environment.
  - We propose to enhance environmental values.
-

## 21. Agro ecological Schools of High Mountain, an opportunity to continue the use of the land

*Alexander von Humboldt Biological Resources Research Institute, Colombia*

### CONTACT

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Adriana Vásquez Cerón. Investigadora Proyecto Paramo Andino

### DESCRIPTION

#### Agro ecological schools of High Mountain

Agro ecological schools have as prime objective to improve agricultural practices on the rural communities of high mountain that have installed production patterns with high impact (monoculture of potatoes, extensive livestock) and that create unsustainable conditions in the social and environmental sphere. They are also detrimental for the living environment of those communities.

They are oriented to strengthen the communitarian networks and to create social participation culture and self-sufficiency through a methodology of training from farmer to farmer. There, we value traditional knowledge and the construction of concrete knowledge directed to the preservation of traditional cultural practices that preserve the agro biodiversity.

From the political point of view of the Agro ecology, schools point out the importance of fostering the training of critical and independent farmers against the forces of the market. They promote food sovereignty, and the creation of farmers' fair markets.

In the project GEF – Paramo Andino, the Humboldt Institute and the CARs, they created the buffer zone of the Paramo del Duende, the Agro ecological schools of Monteloro and Playa Alta, with the ONG Fundavi and the Paramo of Belimra, the Agro ecological school, promoters network, with RECAB.

Since 2007, the call and creation of schools with the objective of joining the local communities in the process of preservation and sustainable use of the Paramos as strategic ecosystem for the country and as the territory of culture and knowledge.

Participants called are small farm owners who join in a process of horizontal training and take over responsibilities of planning and implementation of agricultural practices in their locals, which become a centre for practice and research in their community.

Even if Agro ecological Schools have been developing in Colombia since a couple of decades, in the case of the High Mountain Schools, some important adjustments have been done to the methodology and culture of the communities from Paramo and the management needs on the reference eco systems. This has allowed to start a process of interaction of the different elements of restoration and landscape management at the local level, and the communitarian level, a real contribution to the collective pathways.

Another interesting innovation has been the development of communitarian research concerning the use of local species for the production of properties and tools. In the social participation level, we are about to begin a third phase that will allow promoters to create messages and media management for social awareness and replication of the experience in other municipalities.



Members of the ECA Union participation on work to prepare concentrated animal based food. 2008

## OBJECTIVES

*Relate to national priorities*

The high plateaux are defined as strategic ecosystems to provide environmental services such as hydraulic regulation. This lands are a source of water for a great part of the urban and rural population of the country and are considered unique because of their biodiversity and its high vulnerability to the effects linked with climate change. The high plateaux have a long history of indigenous and rural population due mostly to processes related to conflict and displacement. Communities settled there have developed work patterns adapted to environmental conditions and their knowledge of the soil, farming and treatment of diverse species through the Andes, which has developed a high agrio biodiversity represented in the variety of tubers and medicinal plants. The arrival of new technologies and the imposition of monoculture, has created a broader agricultural frontier has begun in the plateaux, changing traditional practices without improving the well-being of the inhabitants and in detriment of the environmental services provided by this ecosystems.

## WHO?

*Type of organization managing the initiative*

*Partners/stakeholders*

NGOs

In the Cauca Valley, the NGO FUNDAVI (Fundacion para la defensa de la vida), is in charge of creating and guiding the work of the ECAs, the Agro ecological schools, through an agreement with the Humboldt Institute, including efforts, resources and technical capacities. FUNDAVI is formed by local farmers that have been training in technical aspects on agro ecology, sustainable management of soil and preservation, with the support of institutions like the CVC (Autonomous Regional Corporation from the Cauca Valley) and the Alexander Von Humboldt Biological Resources Research Institute. FUNDAVI has been in charge of creating and consolidating Agro ecological Schools of Monteloro and Playa Alta, in the Trujillo Municipality, in the Cauca Valley. In 2007, work with 10 families started to plan the programme on the area and to design better agricultural practices for each. By 2010, work has reached a total of 20 families.

In Antioquia, Belmira High plateau, the RECAB, Colombian Network of biological Agriculture, started its work in 2008 with approximately 70 farmers in the area of the District for Integral Management of Forests and High Plateaux of the middle northwest of Antioquia. RECAB is a NGO from the department of Antioquia which promotes development and promotion of alternative and sustainable agriculture, socially fair, environmentally healthy and providing a better quality of life in the farmer's communities. In the system of High Plateaux and forests in the high andes of the middle northwest of Antioquia, in the creation of the agro ecological school of the high mountain of Belmira. The work is done through a process of training of facilitators who will replicate applied knowledge in their own properties to other members of the communities. RECAB emphasizes agro ecology, alimentary sovereignty and

gender equality.

*Persons involved* The buffer zone of the Regional Natural Parc of del Duende High Plateau, Monteloro lane, Trujillo Municipality, Valley of the Cauca, 20 families, 20 properties.

System of high plateaux and forests in the high andes of the middle northwest of Antioquia. Entrerrios municipality, Belmira, San Jose de la Montaña: 17 promoters.

### **WHAT?**

*Educational/learning setting and level* Formal: Primary Education

Non-formal: non formal education for adults. Process of participative construction of practical knowledge and implementation between technical knowledge and traditional knowledge.

### **WHY?**

*General focus of the initiative* Training of Trainers  
Research and Development  
Indigenous knowledge

*Temas* Ethics  
Multicultural understanding  
Citizenship  
Environment  
Biodiversity  
Sustainable production and consumption

### **WHEN?**

*Starting year and duration* 2007-2011

### **WHERE?**

*Geographical setting* Local: working at the community/municipal level

### **METHODOLOGY**

*Methods and approaches* Agro ecological schools establish as their primary guide the horizontal communication and construction of technical and communitarian knowledge. In the examples presented here, we have used farmer-to-farmer training with slight variations between the case of Belmira and el Duende.

Belmira: Recab started its project with the training of farmer promoters with workshops (agro ecology, natural medicine for animals, sustainable village, among others) and tours of the farms with a theoretical-practical methodology and participation building with analysis and follow-up indicators. This methodology promotes that farmers lead and develop a process of development in their communities based in the rational use of natural resources, the value of indigenous knowledge in the management of their environment and the improvement of the quality of life. This methodology is based in principles like starting slow and small, use simple technologies, the importance of success (that needs to be fast and clear) and to work with people and not for people.

Agro ecological schools of Monteloro and Playa Alta (ECA): the methodology is also theoretical and practical, with a special component surrounding indigenous culture and for the acknowledgement of popular tradition. We have selected jobs with a high symbolic charge and functional who are represented by each of the families of the school members. We select them in a participative matter, the waterboy, the seeds guard, the "Pacho" who is in charge of research and study on soil management, the "yerbatera", the storyteller and historian, the curious or research, and the "chavarri" or partner.

*Working language(s)* Spanish

*Budget and funding sources* Budget is provided for the GEF Project on Andean high mountains and with funding of the regional autonomous corporation of Antioquia for the case of Belmira.

Until now, an investment of approximately 320 million has been made. This includes the budget from 2007 and in both pilot sites mentioned.

## RESULTS AND EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation initiative* of There is a constant adaptation and adjustment of the implementation activities and the insertion of new subjects to the qualification. For example, political training for participation

*Results* Agro ecological School of Belmira:

- 17 promoters trained in topics of agro ecology, better agricultural practices and animal care.
- 17 promoters trained in replication of knowledge to other members of the community and to participate in processes of regional and municipal planning.
- 17 farms with better agricultural practices.
- 17 families have improved their food habits and income through their gardens for self-consumption and therefore become less dependent on the market.

Agro ecological Schools of Monteloro and Playa Alta:

- 20 families apply better agricultural practices.
- 20 farms produce food in gardens for self-consumption, without toxic substances.
- 20 farms apply practices for the preservation of the agro biodiversity (preservation of seeds, multi-culture and use of organic fertilizers).
- 20 families have decreased their expenditure and improved their quality of life.

Two countryside communities, with knowledge of their land, value their culture and knowledge and apply them to improve their quality of life and make sustainable the natural resources they rely on for their economy and culture.

### Analysis of success factors

*Strengths*

- Value of local knowledge and farmer's traditions.
- Vision of the community as an organised body capable of planning their future in their own way, according to their culture, needs and expectations.
- Local empowerment from how-to and farmer-to-farmer communication.
- Building practical knowledge, substantial and with fast results, like the planting of vegetable gardens for household supply and cost reduction, the preparation of agricultural inputs to reduce costs and market dependency.
- Distribution of tasks between members of the community to promote commitment and teamwork.
- At the scholar level, the replication from farmer-to-farmer must allow in the future to observe regional results.

*Weaknesses and risks*

- Being communitarian projects, they require long times to respect the rhythm of the communities.
- The public conditions on areas marked by conflict tend to complicate and create mistrust in the implementation from the community.
- Without the institutional support and the budget to continue the support and implementation of the best practices, interest and participation might diminish.
- If the family initiatives are not binding with the rest of the community, the main risk is not reaching a broader regional impact on the landscape.

### Perspectives

*Why do you consider this a good practice?* Adaptation of the farms for new practices is done in a collective way by all members of the ECA.

## 22. Leading Education with Environmental Responsibility

### *Tupac Amaru Educational Institution, Peru*

<b>CONTACT</b>	<p>Tupac Amaru Educational Institution          Postcode: 051          Peru          Telephone: 51-063-287530                      Fax: 51-063-287738</p> <p>Mr Wilfredo Laura Contreras – Director;          Ms Yari Cusis de Egg – Coordinator General of the Environment Committee</p>
<b>DESCRIPTION</b>	<p>The promoters of this good practice are pupils of the “Tupac Amaru” Educational Institution in the Pozuzo District, in the Pasco Region of Peru, who have developed their multiple capacities and skills for the protection and conservation of the planet. They are aware that, as citizens and future parents, they must act with environmental responsibility, since the Earth is the place where the future generations will grow and develop. They also know that the Earth offers great opportunities to improve the quality of life. They have therefore developed community outreach activities, raising awareness and teaching by example to respect the natural laws of their environment and cultural diversity. For example, pupils of both genders participated in reforestation, cleaning up riverbanks, conserving biodiversity, practising eco-business, developing productive and enterprising research projects based on natural and cultural resources, cleaning the district’s streets, properly managing solid waste, promoting ecotourism, and so forth. To achieve all this – through the development of multidisciplinary projects – teachers, pupils and parents have been trained to become environmental leaders, working for the past 10 years in conjunction with the District Municipality of Pozuzo, since they believe that strategic alliances can help to develop environmental responsibility: people become more proactive, less selfish and spontaneously lean towards environmental conservation. The effects of this are shown by heightened environmental awareness in the community and respect for cultural diversity, reflecting the fact that words have been turned into deeds. The direct beneficiaries of this good practice are the 2,000 inhabitants of the urban area of Pozuzo, although the whole population of 7,643 inhabitants of the district are indirect beneficiaries.</p>
<b>OBJECTIVES</b>	<p>To strengthen inhabitants’ environmental culture, hinged on a new relationship between humanity and habitat, reflected in multidisciplinary activities with a productive, enterprising, inclusive, ethical and eco-efficient vision.</p> <p>INNOVATIVE ASPECT: Developing the project through the coordination of all areas of knowledge. A new way of perceiving nature and appreciating the opportunities it offers in order to improve the quality of life. Developing multiple skills. Strengthening the concept of the “person” and developing social skills in the community.</p>
<i>Relate to national priorities</i>	<p>The practice is developed by applying the cross-cutting themes and goals of Education for Sustainable Development (2005-2014). It is therefore viable for any national reality. On the whole, young people develop their capacities to meet the challenges of life in the era of knowledge and globalization.</p>
<b><u>WHO?</u></b>	
<i>Type of organization managing the initiative</i>	Governmental
<i>Partners/stakeholders involved</i>	Government (State/provincial/district) Local authorities
	Those interested in supporting the practice are a group of professionals including agronomists, doctors, nurses and teachers, among other

professionals. They regularly visit the Educational Institution to establish an environmental action plan to be developed annually. They also closely monitor the work done.

*Persons involved*

Pozuzo Urban Area.

Direct beneficiaries: 2,000 people / Indirect beneficiaries: 7,643 inhabitants of Pozuzo.

Participants: 240 pupils, 12 teachers, 3 administrative staff and 140 parents.

**WHAT?**

*Educational/learning setting and level*

Schools: Secondary education

**WHY?**

*General focus of the initiative*

Policy, regulation and good governance

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

Training of trainers

Research and development

Indigenous knowledge

*Themes*

Poverty reduction

Gender equality

Health promotion

HIV/AIDS

Intercultural understanding

Cultural diversity

Citizenship

Peace, human rights and security

Environment

Climate change

Water

Biodiversity

Natural resources management

Disaster reduction

Democracy

Corporate responsibility

Economics

Sustainable production and consumption

Sustainable tourism

Rural development

Local and global responsibility

**WHEN?**

*Starting year and duration*

Starting in 2009 and lasting five years.

**WHERE?**

*Geographical setting*

Local: Centro La Colonia – Pozuzo – Pasco – Peru

**METHODOLOGY**

*Methods and approaches*

Development of a multidisciplinary or inter-area project to develop various skills in pupils. The project content is thus included in all the administrative and educational management documents: Institutional Educational Project, Annual Work Plan, Units and Learning Sessions. All of the latter required the teachers and pupils to announce the results of the sub-projects or activities to the community in person during an event or by using

communication media. This strengthened the team work, valuing individual skills in all of the activities scheduled.

*Working language(s)* Spanish

*Budget and funding sources* The budget is 4,000 Peruvian Nuevo Sol, with partial economic support from the Pozuzo District Municipality. The parents' association also assumes its financial obligation.

## RESULTS AND EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation of initiative* The initiative is assessed annually with the Indicator Matrix for the Assessment of Educational Institutions for Sustainable Development developed jointly by the Ministry of Education, the Ministry of Health and the Ministry of the Environment. The Matrix comprises five components: institutional management, educational management, education in eco-efficiency, health education and education in risk management, and consists of 32 indicators.

<i>Results</i>	N°	Activities	Goals per year	Success rate (%)	Effect
	1	Strengthening institutional and educational management	1 programme	100	Image strengthened
	2	Strengthening community relations	1 programme	100	Strategic alliances developed
	3	Cleaning and smartening up the district	5 programmes	100	Community health strengthened
	4	Running research projects on the flora and fauna of Pozuzo	4 projects	100	Science Club strengthened
	5	Training of local ecotourism mentors (training of tour guides, both male and female, who promote the value of natural heritage and the recently created "Oxapampa Yanasha Ashaninka" Biosphere Reserve)	20 mentors	100	Young people generate their own income while spreading knowledge on the cultural and natural heritage of Pozuzo
	6	"Adopt a tree" reforestation campaign	50 saplings	100	Watersheds protected and reforested
	7	Sound management of solid waste	1 programme	100	Clean and healthy district
	8	Productive and enterprising projects (juices, jams, sorbets, biscuits, bread, etc.)	4 projects	100	Young people generate their own income and wish to create family businesses

9	Developing an eco-business programme	3 proposals	100	People aware of protecting resources
10	Intellectual production on natural and cultural heritage	3 proposals	100	People know the value of their natural and cultural heritage
11	Recovering traditional knowledge in agriculture, food and natural medicine	2 proposals	100	Spreading traditional knowledge
12	Promoting healthy lifestyles (saving water and energy)	1 programme	100	Healthier people
13	Creating radio programmes with cultural and environmental content	1 programme	100	People environmentally aware
14	Developing the talents of both genders (dance, theatre, singing, poetry, exhibitions, etc.)	1 programme	100	Enthusiastic and healthy young participants
15	Risk management	1 programme	100	People aware of managing risk

### Analysis of success factors

#### *Strengths*

Existence of young leaders who have developed environmental values since childhood. Strategic alliances with the Municipality of Pozuzo, the Ministry of Health and the Missouri Botanical Garden. Financial support from the Municipality of Pozuzo. Heightened environmental awareness in teachers. The community is conscious of valuing and taking care of the environment in which they live.

The Minister of the Environment, Dr Antonio Brack Egg, has remarked over the past five years the level of environmental responsibility of the pupils at "Tupac Amaru" Educational Institution of Pozuzo.

#### *Weaknesses and risks*

The low level of education of some inhabitants prevents them from understanding the need to protect the environment. The presence of newcomers lacking heightened environmental awareness.

### Constraints

#### *Problems encountered*

Initially, the local people were unwilling to care for the environment. Inhabitants lacking environmental awareness who do not understand the concept of sustainability. Over-exploitation of natural resources.

#### *Solutions adopted*

Strong awareness-raising campaigns in the community, such as environmental and cultural events with community outreach. Use of communication media to convey the conservation message.

#### *Unresolved problems*

A low percentage of illiterate inhabitants lacking environmental awareness.

### Perspectives

The implementation of good practice is a major issue for education today, as young people must be prepared for "life" and the new challenges of today's world. Each institution must therefore identify its problems and propose viable actions to resolve them in an eco-friendly manner, with all groups of people and with the desire to improve the quality of life for future generations.

#### *Conditions for*

This good practice requires management with a productive and enterprising

<i>successful replication</i>	vision, motivated teachers, youthful enthusiasm, strategic alliances and the programming of viable activities that value people's natural and cultural potential.
<i>Why do you consider this a good practice?</i>	This is a good practice because it has shown that citizenship and environmental responsibility may be conferred at an early age, provided mentors promote the development of environmental values at home and at school, and because young people have been the agents of change and are an integral part of the solution to the community's problems.

## 23. Promoting an Environmental Culture of Eco-Efficiency and Education for Sustainable Development in Aucará

### *Secondary Technical Agricultural Educational Institute of Aucará, Peru*

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<b>DESCRIPTION</b>	<p>“Promoting an environmental culture of eco-efficiency and education for sustainable development in Aucará” is a practical institutional and educational initiative undertaken in the context of the development of environmental management and education, which also shapes institutional and educational management. Its purpose is to resolve and prevent environmental problems and, essentially, to help achieve education for sustainable development, thus facilitating the biological, psychological, social and cultural educational development of the community, the practice of values and a change in attitudes providing for a good quality of life and relationship with the environment. This innovative educational and institutional initiative is materialized by the adoption of an environmental approach, a culture of eco-efficiency and environmental management in the Institutional Educational Project (PEI). It is linked to the Educational Institution Curriculum Project (PCIE) through the cross-cutting theme, which fosters the development of abilities, attitudes and values related to life skills, healthy lifestyles, a culture of environmental responsibility and health, productivity and entrepreneurship, upon which each teacher draws in their respective subject areas, through sub-projects and projects such as small livestock and cattle breeding, vegetable cultivation in <i>fitotoldos</i> [Andean-style greenhouses], greenhouses and open fields, worm farming, environmentally responsible production projects, partridge farming, nursery cultivation, afforestation, pasture and fodder cultivation, cultivation of aromatic plants, floriculture, the promotion of a culture of environmental responsibility and health, the adoption of parks, rivers, lakes, forests and roads, and supplying water for Aucará. These skills, attitudes and values are diversified in the PCIE and are integrated into Annual Curriculum Planning (PCA) and developed in each teaching unit. In addition, the initiative is linked to the Annual Work Plan (PAT), the Annual Tutoring Plan, the Environmental Action Plan, the Manual of Responsibilities, internal rules and regulations and all institutional and educational management documents. In conclusion, it is a participatory, results-based educational and institutional initiative. Accordingly, our institute is a practical training centre focusing on a culture of eco-efficiency, materialized by a healthy institute and community. The results thus achieved have been facilitated by the internalization of environmental education.</p>
<b>OBJECTIVES</b>	<p><b>GENERAL:</b> To promote a culture of eco-efficiency and education for local sustainable development drawing on participatory principles, fostering healthy habits and lifestyles and developing environmental abilities, attitudes and values promoting life in harmony with the environment and a good quality of life in the context of environmental management.</p> <p><b>SPECIFIC:</b> To foster a culture of eco-efficiency and education for local sustainable development, develop strategic alliances and inter-institutional cooperation agreements promoting social and environmental responsibility and eco-efficiency, and to develop abilities, attitudes and values promoting ethical environmental citizenship and positive environmental management.</p>
<i>Relate to national priorities</i>	<p>The initiative is consistent with national priorities through its practical link with the Ministry of Education, as the educational proposals have been fully endorsed by Education International (EI), developed following the model of closely linked projects and monitored by the Department of Community and Environmental Education (DIECA).</p>

**WHO?**

<i>Type of organization managing the initiative</i>	Governmental
<i>Partners/stakeholders involved</i>	Local authorities Schools The media Participants in the educational community initiative include pupils and students, the parish, the general population and authorities – the latter three being our strategic allies.
<i>Persons involved</i>	Direct beneficiaries: Pupils and students: 293 (early education, primary, secondary, higher education institutions and technical and productive education centres [Centro de Educación Técnico Productiva] (CETPRO); population: 1,020. Total: 1,197. Participants: 93 pupils and students and 9 teachers.

**WHAT?**

<i>Educational/ learning setting and level</i>	School: Secondary education
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**WHY?**

<i>General focus of the initiative</i>	Learning about sustainable development in formal, non-formal and informal settings.
<i>Themes</i>	Health promotion Citizenship Environment Climate change Water Biodiversity Management of natural resources Disaster reduction

**WHEN?**

<i>Starting year and duration</i>	From 2008 to 2015
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**WHERE?**

<i>Geographical setting</i>	Local: Aucará District, Lucanas Province, Ayacucho Department
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**METHODOLOGY**

<i>Methods and approaches</i>	To ensure the sustainability of the initiative, first, the process of good practices in education for sustainable development was integrated into our institutional educational project. Subsequently the focus was on developing abilities, attitudes and values through the diversified curriculum project and annual curriculum planning by subject. The process has been linked to activities and projects in all the institutional management documents.
<i>Working language(s)</i>	It should be noted that emphasis is placed, in general, on using the native language of pupils, students and the community – Quechua.
<i>Budget and funding sources</i>	The budget considered for the implementation of the innovative project “Promoting a culture of eco-efficiency and education for sustainable development in Aucará” is 42,355 Peruvian Nuevo Sol It is an umbrella

project embracing several sub-projects that are dependent on that budget and can certainly not be fully implemented. Every effort is made to promote the culture and knowledge of Aucará, so that we try to overcome the budget problem by minimizing costs and maximizing efforts. The Municipal District of Aucará, a strategic partner of EI, has nonetheless provided us with funding, to the extent possible, by allocating 8,000 Peruvian Nuevo Sol to the implementation of the sub-projects “The adoption of parks, rivers, lakes, forests and roads” and “Supplying water for Aucará”. This will facilitate the full implementation and coordination of activities among all the local institutions.

## RESULTS AND EVALUATION

### Presentation of effects, results or impact of the initiative

*Evaluation of initiative* The ongoing provision of education for sustainable development in our school has been assessed by DIECA at the Ministry of Education, and the school has been awarded a national prize for the optimized implementation of all components and indicators set out in the “*Indicator Matrix for the Assessment of Educational Institutions for Sustainable Development*”.

*Results* As it combines educational processes or practices with institutional management, it has raised awareness and has changed pupils’ and the general population’s attitude towards their environment, by heralding in healthy lifestyle practices institutionally and locally, encouraging a health-promoting school and community and enhancing the quality of life. The provision of education for sustainable development is therefore having positive effects.

Today, the school is seen to be health-promoting and the city clean. This implies linkage between sustainable development and environmental issues.

There is now an eco-efficient environmental culture.

Education for sustainable development, as currently provided, is also reflected within the general population.

Each project for the sustainability of such education has its own budget.

It is expected that all of the goals set will be achieved in full by 2015, owing to the long-term approach.

No.	Projects	Outcomes	Year
1	Establishment of health-promoting schools	<ul style="list-style-type: none"> <li>• First post established locally and in the Sondondo Valley.</li> <li>• First provincial post</li> <li>• First regional post</li> <li>• Second macro-regional post (Ayacucho, Apurímac and Huancavelica)</li> <li>• First national post (second National EPS Meeting)</li> </ul>	2005
2	Implementation of the environmental approach and promotion of education for sustainable development	<ul style="list-style-type: none"> <li>• National acknowledgement of the first national “Institutional Management” post (Meeting of schools providing education for sustainable development)</li> </ul>	2009
3	Capacity- and skills-building for life and for sustainable development	<ul style="list-style-type: none"> <li>• Admission of three pupils to the Colegio Mayor Presidente del Perú</li> </ul>	2009
4	Establishment of production and business schools	<ul style="list-style-type: none"> <li>• First national post (1 national meeting of production and business schools)</li> </ul>	2010

	(various production projects)		
5	Adoption of parks, gardens, rivers, lakes and woodland in Aucará District	<ul style="list-style-type: none"> <li>Budget – 8,000 Peruvian Nuevo Sol provided by the Aucará Municipal District</li> </ul>	2010
6	Promotion of eco-efficient environmental culture for sustainable development.	<ul style="list-style-type: none"> <li>First provincial and regional post (as health-promoting schools and communities under the “Wari-Aucará Growth” programme)</li> </ul>	2010
7	Promotion of results-based participatory management	<ul style="list-style-type: none"> <li>Construction of a new three-block facility</li> <li>First invitations to tender for capacity-building in the Sondondo Valley</li> <li>Fitting and operation of the facility</li> <li>Sports competitions in the valley and in the region.</li> </ul>	2006 to 2010

### Analysis of success factors

*Strengths* Success begins with the will to work; each member of the education community and of the population therefore responsibly assumes these good practices.

*Weaknesses and risks* Teachers’ resistance to practical education work (implementation stage); few know of the provision of education for sustainable development, environmental knowledge and eco-efficient environmental (planning stage); practices discontinued by parents and authorities (execution); financial constraints on the implementation and development of the practice (execution stage); little interest among pupils in learning about and implementing the practice (execution stage); compliance with lessons learnt (execution); failure to provide the requisite training (planning stage); the general population’s resistance to change (execution stage).

### Constraints

*Problems encountered* The prevalence of cultural poverty in our area has long been the cause and effect of local environmental deterioration and the poor quality of life in addition to being the major social issue to be resolved. The basic strategy for achieving sustainable development consists in eradicating extreme poverty. Many decades ago, the real dimension of education for sustainable development was not perceived in educational practices in schools. In the cross-cutting curriculum, environmental education was not linked to quality education, let alone environmental management; besides, the principle of eco-efficiency was unknown. As a result, a low level of eco-efficient environmental culture and sustainable development prevailed within the general population. In other words, there were no issues of cultural relevance or ecological-cultural complementarity, apart from the exercise of citizenship and environmental ethics, to change people’s lifestyles and build their decision-making capacities in matters of concern to their quality of life.

*Solutions used* Publicity of the good practice in education for sustainable development through awareness-raising campaigns, workshops and open analytical dialogues. Eco-efficiency as a means of linking education for sustainable development to the issue of institutional and local environmental deterioration. Empowerment of eco-efficient environmental culture and education for sustainable development.

*Unresolved problems* Exercise of citizenship and environmental culture of visitors.

*Perspectives* All proposals made by a school on its own initiative are taken up whatever the difficulties. Owing to mechanisms for participation in the practice, work is organized accountably. The conduct of project-based institutional and educational management yields good learning and development lessons.

Results-based participatory management measures capacity-building, capacity attainment, attitudes, values and genuine entrepreneurship for sustainable development. It was a mistake to set out to achieve short-term results at the cost of ever greater pressure for a change of attitude and sustainable development.

*Conditions for successful replication*

We are in a position to share good-practice results and to continue working to develop good practice in full.

*Why do you consider this a good practice?*

The practice, combined with specific suggestions, does indeed promote sustainable development institutionally, even more so if it is extended to the community, as in our case.

## 24. Fans of the Planet. Biodiversity

*Environment and Natural Resources Secretariat, Mexico City, Mexico.*

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Ms María Luisa López Gómez, Director of Environmental Culture and Educational Communication at the Centre for Education and Training for Sustainable Development

### DESCRIPTION

Fans of the Planet is an educational communication strategy on environmental education for eight-to-ten-year-olds. It involves the dissemination of and initiation in educational processes, drawing on universally accessible information technology such as the Internet. It therefore requires constant content and information renewal in order to maintain the interest of the target public, especially in the case of children.

In developing the relevant subject matter, specific objectives are sought in order to trigger some thought or action by the child or to bring to light a variety of new topics, as the case may be, especially in regard to key environmental issues such as climate change and biodiversity.

Site personnel publish useful information on the premise that children love the planet and wish to share information. The goal is to give children insights into complex issues such as climate change, water management, forest preservation and biodiversity simply, clearly and truthfully.

The goals of the Fans of Animals section are to raise children's awareness of the care required by their pets, explain to them which animals are suitable as pets, give news on animals at risk or endangered and make suggestions about remedial action that they can take.

The goal of the Fans of Greening is to enable children to grasp the "greening" concept, which prompts them to reflect on their consumption and the effects of their activities on caring for the planet.

Fans of Aventure is designed to encourage children to learn about various places in the Republic, nearly all of which have been classified as national parks or reserves, by following the adventures of Rox (one of the main characters relates his adventures in various places and makes recommendations) and the adventurer's guide.

### OBJECTIVES

*Relate to national priorities*

Drawing on the interests of the target public, on a study and on educational suggestions, the goal is to attract children in this age group by linking their daily activities to care and respect for the environment. This entails using series of suggestions and children's taste for games, animals and technology to arouse their committed interest in topics such as climate change, soil, air and water pollution, the greenhouse effect and other general environmental issues. For that purpose, the various objectives set include, most outstandingly, continued operation of the Fans of the Planet webpage as a source of environmental information for children in primary Years 4 to 6. Communication and ongoing inclusion of content are therefore necessary to keep children's interest alive, as are confidence in resolving and the discussion of doubts about school activities. Information on the performance of environmental educational activities is also included for use by teachers and parents, whether within or outside the school environment, such as cleaning days, cultural pursuits and scheduled organized reforestation activities. Fans of the Planet aims to include tools for communication with the school community on environment issues, as a platform for exchanges of experience, materials, activities, concerns and thoughts on topics of interest such as animals, solid waste, energy and technology with environmental implications.

Under each activity, the educational suggestions made and carried out include competitions, games, videos, fact sheets, downloads on environmental education, an open discussion forum on environmental education and a register for the exchange of information.

**WHO?**

*Type of organization managing the initiative*

Governmental

*Partners/ stakeholders involved*

Government (State/provincial/district)

Local authorities

Schools

Through local governments and environmental and education officials, the schools and other organizations are those in charge of forming alliances and applying this educational and communication strategy in participating schools.

**WHAT?**

*Educational/learning setting and level*

School: Primary education

Extracurricular: Proposal for basic education from primary Years 4 to 6

**WHY?**

*General focus of the initiative*

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

Tools and materials

*Themes*

Environment

Climate change

Water

Biological diversity

Sustainable production and consumption

**WHEN?**

*Starting year and duration*

The webpage was opened in September 2008 and, within one year, there were more than 100,000 visits and nearly 3,000 emails were received requesting and suggesting content on very specific environmental subjects that could be included.

**WHERE?**

*Geographical setting*

National

**METHODOLOGY**

*Working language(s)*

Spanish

*Budget and funding sources*

MEX \$350,000 (three hundred and fifty thousand Mexican pesos per year) provided by the federal Government

**RESULTS AND EVALUATION**

**Presentation of effects, results or impact of the initiative**

*Evaluation of initiative*

To evaluate any content or activity, focus groups are convened to collate information and make the necessary amendments or changes. Each new update is submitted to these groups before publication. Similarly, groups of pupils in Years 4 to 6 are interviewed and their replies are analysed. The emails, too, are analysed and used as bases for the inclusion of new content. These assessments are disclosed to the pupils. Furthermore, various groups such as teachers, communication, education and environmental professionals and parents are also consulted.

*Results*

There have been more than 125,000 visits to the Fans of the Planet webpage,

with fans spending an average of 5.30 minutes per visit. Some 71.12% of all visits were made by new users, while the remainder were by returning users.

### **Analysis of success factors**

*Strengths* For more than two and a half years there has been a well-constituted environmental education webpage. The page has been updated constantly and has been a reference point for children and teachers. It contains creative activities and provides food for thought on leading environmental issues, drawing on a captivating approach, involving games, surprising data and technology, to attract children. Information technology is used widely in the project, which makes it easier for children to obtain technically valid information in the various fields of the environmental sector.

### **Constraints**

*Problems encountered* This kind of distance education project must be widely disseminated and promoted if it is to become a lifelong communication and education tool for the public at large. A standing group must be established for updating purposes and for ongoing communication with pupils and teachers so that major doubts can be dispelled and a basis established for all updating.

*Solutions used* Online dissemination strategies. Webpage promotional activities such as competitions, workshops and courses.

### **Perspectives**

This webpage has reached maturity in terms of the content and structure that would enable a database to become an environmental education tool for basic education Years 4 to 6. Under this approach, other groups of children, teachers and parents are brought together in an endeavour to adopt attitudes and lifestyles consistent with sustainability. Accordingly, it would be desirable to implement a strategy and establish alliances with various institutions and organizations engaged in environmental education so that it can be used as a tool in the formal setting of environmental education.

*Why do you consider this a good practice?* This initiative draws on information technology to provide updated information to the population at large. It therefore addresses the right of human beings to a healthy environment specifically and promotes directly principles and values such as accountability, respect for all life forms and the common good as the basis for achieving sustainability.





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 biodiversity issues and ESD, UNESCO is publishing this volume containing 24 examples of programmes addressing biodiversity 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.