



ENVIRONMENT & INNOVATION:

Theme 2007/2009

Climate Change:

Let's save energy!

Final Project Report

Environment and Innovation

1. Delegation Identification

Country:	Portugal
Organisation:	Eco-escolas - "Clube Floresta e Companhia" do Agrupamento de Escolas de Celeirós
Project Name:	Environment & Innovation - A project to promote schools innovative environmental problem-solving By International Eco-Schools Programme (FEE) in partnership with Toyota Motor Europe
Activity Name:	"Alterações Climáticas: vamos poupar energia"
Date:	15-05-2009

2. School Identification

School Name / Group of Schools Name:	Escola EB 2,3 de Celeiros
Address:	Avenida Senhor da Paciência 4705-448 Celeirós Braga
Region:	Braga
Telephone:	253304270
Fax:	253674740
E-mail:	info@eb23-celeiros.rcts.pt
Contact person for this project:	Sara Pitães Gonçalves
- Position in school	Geography teacher
- Direct email	sarapitães@sapo.pt
- Direct telephone	965843414

Type of school (kindergarten, primary, secondary, etc..) :	Secondary school (from 5th to 9th grade)
Age of students involved in the project:	Between twelve and fourteen years old
Number of students directly involved in the project:	Seven students
Total of students in the	1338 students

School:	
Number of staff/teachers directly involved in the Project:	Four teachers
Total of staff/teachers in the School:	85 teachers
Other participants involved (individuals and/or organizations) and the number of them:	<p>Within the school: School council; teachers involved in Eco-schools Project, teachers working at this school (Ana Silva, Graça Pereira, Paula Almeida and Sara Pitães Gonçalves)</p> <p>Outside the school: Plumbing firm Florbela da Cunha Moreira and a "ELANOTec";</p>
The other participants role:	<ul style="list-style-type: none"> • Installation of taps with temporizer; • Installation of water stream reducing taps in the canteen; • And installation of rain water reservoirs.
Rural / Urban setting:	<input type="checkbox"/> This school is situated in a semi-urban setting, since it is in the outskirts of Braga a country town.
Other relevant information: (maximum 100 words)	<p>Initially our Project was far more ambitious. Municipal firms "Agere" and "Tub" were contacted and agreed on supporting part of the expenses to make this project possible. However, as it was being carried out, these firms alleged financial reasons for not being able of participating anymore; as we will clarify later on in this report.</p> <p>With the money we had available we could only buy the rain water reservoirs, improve part of the plumbing equipment and install some new one. We haven't, installed showers with temporizer in the gym and in some WCs in school yet.</p>

3. Project Identification

Project Title: "Climate changes. Let's save energy."	
Project keywords	Saving water through the improvement of the plumbing equipment at school. Reuse of the rain water Sustainable mobility
Project Summary (maximum 100 words)	<p>A study carried out through a survey made to everyone working or going daily to our school, pointed out two main problems that urged to be addressed to: - the high consumption of water an the old busses that bring students to school, which aren't yet adapted to the use of alternative energies as well as a circulation net that doesn't serve the needs of most people coming daily to school, forcing teachers and school workers to use their own cars.</p> <p>The eco schools' administration decided to address these two problems by restructuring and improving the plumbing equipment at school such as toilets, taps and showers; as well as installing a rain water capturing system on the school's roof. The water is filtered and kept in a reservoir in order to be reused in the toilets flushing, cleaning of school's floor and pavements, watering the biological green house and garden and to fill the existing fire reservoirs.</p> <p>The second problem urging to be addressed to is the conception of an efficient busses circulation net along with a well adapted timetable that could serve the mobility needs of everyone coming daily to school. These measures would obviously reduce pollution in as much as it would lead teachers and other school workers to leave their own cars at home and use collective means of transport.</p>
	<p>The Escola E.B. 2,3 de Celeirós faced two problems urging to be solved. On one hand, there was the high consumption of water and on the other the old busses bringing students to school, are highly polluting since they aren't adapted to alternative energies and their circulation net and timetables don't serve the mobility needs of other school attendants like teachers, clerks and workers. This leads to a high rate of pollution emission once these people are forced to come to work by car.</p> <p>Excepting the problem related with means of transport, it is perhaps a bit early to talk about evident results at this point. A project with these characteristics is always an important step for the school and the community and its economic as well as its environmental gains will surely be clear, long term.</p>

4. Project Description

Project description	Teachers and the school administration contacted governmental and non governmental institutions, and the students involved in this project delivered, collected and worked upon the results of the survey in order to identify the main environmental problems affecting our school. They also helped to build up the application form for the Project "Environment and innovation".
Please include also the following points: . Phases of the project; . Calendar/timing of the school project;	The aims of this project are solving as far as possible the problems

<p>. Financial information / budget needed.</p> <p>(maximum 2 pages)</p>	<p>previously referred to. The high consumptions of water will be reduced as a part of it is supplied by the rain water captured on the school's roof and as the improvement or installation of new equipment with temporizer/ stream reducing taps will diminish the consumption or waste of water.</p> <p>Simultaneously, the creation of a bus circulation net covering a wider area having in mind the necessity of school attendants, is a way of reducing the use of private cars and therefore reducing emission of carbon dioxide to the atmosphere. As a result acid rain is less likely to happen.</p> <p>The phases of the project from its elaboration to its execution were the following:</p> <ul style="list-style-type: none"> - First phase from September to December 2007 <p>Identifying the existing problems. This was done through a survey based on inquiring teachers. School workers, students and students' parents. The delivery of the inquiries, its collecting and the study of results obtained were carried out by the 8 students involved in this project.</p> <p>The teachers in charge of the project analysed and presented the statistic results to the school community in an Eco schools' meeting so that the need of possible solution to these problems were urgent and everyone should think about coming up with a good idea to solve the identified problems;</p> <ul style="list-style-type: none"> - Second phase from February 2008 <p>after having heard the school community and all the students by the classes' representatives, their suggestions were communicated in the Eco schools' meeting;</p> <ul style="list-style-type: none"> - Third phase March/April 2008 <p>Research work in the net about institutions/firms related to alternative energies done by the eight students involved in the project. Contacts were established with governmental organizations or firms by the teachers and school administration which, direct or indirectly, interfere in the project by establishing a compromise/ financial support to help solve the identified problems. Therefore we contacted the following institutions:</p> <ul style="list-style-type: none"> - The local council and "AGERE" were asked to support financially this project; <p>The "TUB" was asked if it would be possible to replace the old school busses as well as enlarge itineraries and remake timetables to satisfy the needs of school teachers and workers in order to diminish the use of cars;</p> <ul style="list-style-type: none"> - The plumbing firm Pichelaria Florbela da Cunha Moreira, was contacted to ask about budgets of installation of toilets, taps and showers with water saving device; - The firm "ELANOTEC" was also asked for budgets referring to installation; maintenance and energy cost implied in the installation of a rain water capturing system. <ul style="list-style-type: none"> - Forth phase May 2008 <p>Elaboration of the project by the teachers and students, after having asked for budgets and financial support to the firms/institutions referred in the previous phase.</p>
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	<p>- Fifth phase At the end of the school year 2007/08</p> <p>Implementation of the project and of the following environmental aims:</p> <p>Reducing gasses' emission by replacing and restructuring the old school busses, presenting the "TUB" the results of the mobility needs of school attendants, such as bus stops, timetables and area covered. This restructuring could lead to a strong reduction of car use.</p> <p>Reduction of water consumption by replacing and improving the plumbing equipment at school as well as the installation of the rain water capturing system and reservoirs;</p> <p>- Sixth phase (school year 2008/09 and the following years)</p> <p>Implementation of the project: - installation of taps with temporizer and stream reducer as well as the installation of rain water reservoirs.</p> <p>Along with these initiatives, the project was made visible to the community through the school newspaper "O celeirinho", in the school's site in the net and through the other means mentioned further on in this report.</p> <p>Long term, the maintenance and workability of the project will be carried out by the school's administration and the firm "Elanotec" which is responsible for the new equipments.</p> <p>The initial budget was distributed in this way:</p> <p>ELANOTEC- between 700 and 2000 Euros, this included water reservoirs, time and work spent in the installation; PLUMBING - 5700 Euros, including price of the taps, toilets, time and work spend in the installation.</p> <p>However, the financial support previously agreed with "AGERE", didn't actually happen, (they haven't even answered our attempts to get an explanation). This forced us to cut expenses and use only the money won in this project.</p> <p>Having this in mind, we can report the following expenses (which can be proved in the invoices enclosed.)</p> <p>Correspondent invoices (see document 1 annexed): ELANOTEC: Water reservoirs, correspondent filters and transport expenses: - 1488 Euros</p> <p>PICHELARIA FLORBELA DA CUNHA MOREIRA Taps with temporizer and water stream reducer, work and time spend in the installation: - 1796,80 Euros</p> <p>Total expenses: - 3284,80 Euros</p>
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5. Project Implementation

<p>Project Implementation:</p> <p>Please include also the following points:</p> <p>Innovation: How was your project innovative and unique in solving the problem or challenge mentioned?</p> <p>. Implementation outcome- Which were the results obtained? What are the major differences between before and after implementation of your project?</p> <p>Teamwork Did your project involve a wide range of stakeholders? Who/what organisations were involved in what? Did your project create or improve teamwork? .</p> <p>Effectiveness – How effectively was your project implemented? Was your project implemented within the planned budget? If not, how did you compensate? Please attach a financial report (expense breakdown) Was your project implemented according to the planned time schedule? If delayed, why?</p> <p>.Environmental and societal impact - Which were the benefits to the environment, or the local community?</p>	<p>As teachers we have the ability and the responsibility to make decisions and change habits, so this task can start at school.</p> <p>This project lead teachers, students and everyone involved with school to be part of an awareness campaign and "sign" an individual and collective contract which consists of reducing their emission of CO2 to the atmosphere. This can be achieved just by changing daily habits like using collective means of transport rather than their cars. Another important aspect is to pay more attention to the water consumption; try not to waist water and reuse it if possible.</p> <p>Innovation in this project can be regarded in two perspectives: - I t is innovating because school community learns to act collectively by choosing integrated ways to benefit the environment, such as having the same mean of transport. Students, also learn that the capturing, filtering and keeping water in reservoirs is environmentally speaking a right choice, it saves water and money and attenuates the harmful effects of floods or lack of water. Besides all that, they will convey the message at home and spread it in their community. It is still to soon to know about the impact of this project in the local community in as much as conscience and behaviours don't change that fast. But on thing is certain, the school's water consumption is falling and students have already noticed that the changes in the WC equipment is saving water.</p> <p>The water reservoirs were installed outside, so that everybody coming to school could see them and they usually ask what they are for. Although the information has already been spread by students to the community, this is always a good opportunity to explain how important this water capturing system is for the environment and how it can save money.</p> <p>As far as the involvement of other organizations is concerned, the team work hasn't come to terms. The municipal firms that were supposed to join the Project alleged financial reasons for not participating anymore. Further more, the municipal firm that is responsible for the supply of water, "AGERE", has never actually answered our insisting attempts to establish conversation about the subject.</p> <p>There was no delay in the implementation of the project, at least not having to do with the work done by the teachers, by the plumbing firm Pichelaria Florbela da Cunha Moreira and the firm "ELANOTEC". This way taps were installed, the toilets water reservoirs were fixed so that less water is used and the rain water reservoirs were put next to the gate of the schools' main building(see document 2 annexed).</p> <p>However, as we were supposed to have some extra financial support from the "AGERE", which never happened, we were forced to change our strategy for obvious budget reasons. Consequently, we could not use rain water in toilets nor for the fire reservoir as this demanded a rebuilding work and other connecting system that would be much more expensive. Besides that it was not possible to replace all the taps in the w.c.s, and not all showers in the gym have a temporizer or a waterfall reducing device. The toilet water reservoirs that couldn't be replaced were fixed in order to use less water.</p> <p>The itinerary that was supposed to be carried out by the "TUB", wasn't implemented. The "TUB" alleged that the circulation net serving the school workers wouldn't be economically affordable since it would imply</p>
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<p>. How can this project be used by other Eco-Schools? Any advise to schools which would be interested in implementing a similar project?</p> <p>. How sustainable is the solution found? How will it be maintained in the future?</p> <p>. What were the main difficulties found during the implementation process?</p> <p>You may annex illustrations, maps, charts, etc.. (maximum 4 pages)</p>	<p>many different destinations and timetables.</p> <p>Despite these typical constrains of Portuguese rulers, we think this project should be enlarged to other schools, specially the ones with biological green houses and gardens.</p> <p>The main difficulties found were the lack of a professional attitude, of answers, of collaboration and the obstacles put by the municipal firms "AGERE" and "TUB" that showed interest and will to collaborate when we first told them about the project. This is evident in the document sent to us after the presentation of the project. (see document 3 annexed)</p>
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6. Dissemination Strategy

<p>Dissemination Strategy:</p> <p>Please include also the following points:</p> <ul style="list-style-type: none">. How was the project communicated to the wider community?. Which means of communication did you use?. What was the communication /disseminations plan?. Were there any training actions? <p>(maximum 1 page)</p>	<p>The project's communication plan was fully carried out as established in the initial project. It was communicated through the school's journal, local radios and newspapers, in meetings and presentation of the project to the school's community e.g. in eco-schools' meetings, through the elaboration of leaflets with what changes to start making, on the school's radio and of course in the school's web site.</p>
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Signature/name of the project responsible: Sara Manuela Pitães de Azevedo Gonçalves

Place: Agrupamento de Escolas de Celeirós - Braga /Portugal

Date: 15/05/2009