



ACTING RECOMMENDATIONS

in Implementing the CLIMES Management



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Climate change represents one of the greatest environmental, social and economic threats facing the planet. Today's teenagers are likely to experience the effects of climate change much more than we do today – and they will be forced to address the issue and need to learn to live sustainably in order to counteract climate change and subsequent environmental problems. Schools can play a central role in providing young people with information and knowledge to help them understand climate change as early as possible. So this is exactly where CLIMES (Climate-friendly Management in European Schools) comes in. The 2-year European project CLIMES (2011-2012) developed a systematic approach to introduce the topic of climate change in European schools by implementing a climate-friendly management system based on the Deming circle (Plan-Do-Check-Act). Besides a general increase of awareness related to aspects of climate change the intentions of implementing and maintaining a climate management system in schools are:

- 👉 Students learn and act in a real context with real data and real consequences. They are involved in practical development processes with corresponding effects on learning motivation and learning efficiency.
- 👉 Students acquire competences in acting climate-friendly and in applying professional management systems and instruments.
- 👉 The institution school is organised in a way that it acts climate friendly and adapts to climate change not only ad hoc but permanently. Its “climate footprint” will be reduced and measures to adapt to climate change will be taken.

CLIMES management is now ready to be transferred to new schools that are interested in becoming climate-friendly, raising awareness on climate change, promoting a healthy life style and saving money on energy consumption. How to implement CLIMES in a successful, effective and sustainable way? This overall experience report is a collection of lessons learnt and best practices derived from the piloting of the CLIMES project and presents clear acting recommendations in implementing the CLIMES management.

TIME AND RESOURCES

Time constraint and extra workload is always an issue, especially for teachers. How to deal with time and resources deficiency?

- 🐟 Make a realistic estimation of time and resources needed to carry out the project. Before starting the project it has to be made very clear how much work and time will be necessary for implementing the management cycle and the management system. Consequently time required for preparation as well as implementation together with the students should be estimated in advance. Otherwise it cannot be estimated realistically if sufficient resources are available for complete and successful dealing with the project.
- 🐟 Create sustainable structures, such as working groups of students based on self government.
- 🐟 Set priorities and focus on main objectives. Do not carry out many tasks at the same time (e.g. when calculating the school's carbon footprint choose one or two types of consumption and give priority to data accuracy).
- 🐟 When gathering data for calculating the carbon footprint some calculation may be time consuming or students may not be allowed to collect data during their free time. Make good use of web tools, for instance, you can use Google maps to measure distances.
- 🐟 Divide the management into parts. For instance, the management team could be composed by three persons: one coordinator and two sub-coordinators. One person could be in charge of all financial documentation.
- 🐟 Set clear roles and duties, organise regular meetings.
- 🐟 Pay attention to persons chosen among the staff, if possible they should have experience in project implementation, environmental protection, education and information technology.
- 🐟 Raise the number of staff involved so members do not have to work constantly on the project
- 🐟 Also involve employees from cafeteria, administration and caretakers.

COMMUNICATION AND VISIBILITY

In implementing CLIMES management, especially in the first phase of the project, you can face perplexity, scepticism, cultural opposition and lack of interest both from staff and students. How to properly communicate and give visibility to the project?

- 🐟 Keep the topic alive! Discuss the project progress and results during staff meetings, write articles or invite students to write articles on the school/local newspaper.
- 🐟 Communicate the aim of the project to all staff, including caretakers in order to raise their awareness. It is important that awareness is raised by all: teachers, principal, pupils.
- 🐟 Keep communication line open between teachers.
- 🐟 Make results widely public: explain clear objectives and added value.
- 🐟 Present all activities organised and developed on school's website in order to be accessible for all interested. Mention/link the project on the homepage of the school.
- 🐟 Write newsletters to families and other schools.
- 🐟 Make the entire school population accountable for their deeds: deliver informative bulletin boards and small messages. Send reminder messages.
- 🐟 Become climate-friendly should start at home: encourage students to raise awareness among their families and friends.
- 🐟 Involve as many teachers as possible, the topic of climate change can be dealt in different subjects (see chart in the implementation section).
- 🐟 Give students competences to raise awareness. They may need to be facilitated to build certain basic personal and organisational competences.
- 🐟 Valorise your activities during school fairs and events.
- 🐟 Commemorate climate related days (day of earth, day of water, day of birds and trees, day without vehicles).
- 🐟 Set an award involving different schools or establish an internal competition, makes school more appealing.

IMPLEMENTATION

The aim of CLIMES project is to raise consciousness and give technical knowledge on climate related issues. How to practically embed CLIMES related activities or topics in your lessons or in extracurricular activities? Here some suggestions and lessons learnt.

CLIMES partners have adopted a variety of solutions to include climate related topics in the didactical plan, such as:

- ✚ Extra-curriculum hours/activities, also with positive effects on marks (e.g. the patent of a pliable portable garden made of recycled material and compost substrate).
- ✚ School club (recycling club, gardening club, environment club,...). The experience gives the students the opportunity to act as managers. A rewarding system with certificates for those students who showed commitment to their school can also be envisaged.
- ✚ Learning units inside curricula. Advantage: inform all students, give all a first introduction. Disadvantage: sustainable implementation of management system is more difficult compared to the set up of an extra-curriculum work team and only the teachers are responsible for the continuation of the management system.

During the CLIMES project, curricular and extracurricular activities around climate change issues were discussed in:

- ✚ Biology
- ✚ Chemistry
- ✚ Physics
- ✚ Information Technology for Business Purposes
- ✚ Accountancy
- ✚ Business Studies
- ✚ Geography
- ✚ English
- ✚ German
- ✚ Physical Education

The following grid shows the relevance of the mentioned school subjects where important topics are discussed at school and strengthened the climate change topics during the CLIMES project:

Relevance between school subjects and CLIMES		
School subject	Topics	Tasks
Physics	<ul style="list-style-type: none"> - energy - work and power referring to electricity consumption heating etc. 	<ul style="list-style-type: none"> - examples of the use of energy were analysed - data collection of all electrical devices in the whole building were analysed etc.
Chemistry	<ul style="list-style-type: none"> - combustion of hydrocarbons (e.g. natural gas, heating oil, petrol, diesel, lighter fluid) etc. 	<ul style="list-style-type: none"> - discussion about minimising CO₂-emissions as an important part of greenhouse gases and influencing climate change positively
Biology, Environmental and Commodity Studies	<ul style="list-style-type: none"> - ecology and environmental factors 	<ul style="list-style-type: none"> - provide understanding for basic life processes such as photosynthesis and respiration which take place in the chloroplasts respectively in the mitochondria - acid precipitations and their impacts etc.
Interdisciplinary subjects	<ul style="list-style-type: none"> - data collection - electrical devices - present graphs, charts and tables - prepare documentation 	<ul style="list-style-type: none"> - insert data into several calculators: - school carbon and ecological footprint calculator http://www.fussabdrucksrechner.at

Also, teachers can deal with important topics such as:

- 👉 Open your eyes if you buy clothes
- 👉 Change energy forms that have negative impact on the environment
- 👉 Biodiversity in danger
- 👉 Proper isolation is good for the environment
- 👉 Sustainable infrastructure
- 👉 National seal of approval for the environment
- 👉 Climate change in industrialised countries

- 🐟 Jewellery and environment
- 🐟 Organisations for environmental protection
- 🐟 Live healthier
- 🐟 Throw-away mentality
- 🐟 Rain forests in danger
- 🐟 Harmful substances
- 🐟 Drinking water

Moreover,

- 🐟 Give homework, foster group discussions and ask to write essays on the topic.
- 🐟 Show documentary films on climate change in class (e.g. “An inconvenient truth”, “Plastic Planet”, “We feed the world”, “Let’s make money”).
- 🐟 It is helpful to visualise figures, compare and contrast threats.
- 🐟 Do not consider just pupils and teachers, but also involve parents, janitors, caretakers and others.
- 🐟 Foster interconnection between subjects (ex. Science and English).
- 🐟 Include gas emission figures into curricula
- 🐟 Stimulate an intensive exchange of ideas and experiences among European students (through the CLIMES platform and social networks)

ACTIVE CITIZENSHIP

The success of a project lies in the emotional and active involvement of its participants. The objective of the project is to empower students to make a real change. In fact, climate change is often perceived as a distant problem which solution is out of our reach, while the philosophy underlying CLIMES should be that each individual can be part in a positive development. Furthermore, the project aims at developing competences that enable students becoming active citizens. Here some tips:

- 🐟 Do not focus just on the cognitive level, but also on the affective and activity levels to help developing and internalising competences.

- 🐟 Motivate students to prepare their own projects and management/activity plans, even for the school itself. In such way students become the main stakeholders of the school, conduct action plans and suggest strategies.
- 🐟 Practical activities motivate students to take responsibility of making a change in their school and environment. In particular, extra curriculum activities are essential in helping students become active citizens.
- 🐟 Variety and richness of activities provide a different scope from formal learning, if it is about their surroundings students will find learning much more meaningful.
- 🐟 Provide authentic global, national, local examples.
- 🐟 Increase hands-on practice, students enjoy being active, helping each other and working together.
- 🐟 Foster brainstorm activities: students learn to listen to in order to be listened to.
- 🐟 Give guidance on how to properly conduct a scientific research, research skills are essential!
- 🐟 Help students develop decision making competences.
- 🐟 Foster students to present the results to externals (also in English with the support of an English teacher)
- 🐟 Support activities with an action research. Invite experts and researchers for seminars and workshops.
- 🐟 Use it as an activity generator.
- 🐟 Students also help civil and social organisations (e.g. gardening and tree planting), PR work towards local residents

PRE-KNOWLEDGE AND SKILLS OF STAFF

What kind of pre-knowledge should the staff have? What are the skills needed to manage the CLIMES project? What are the best ways to share information and improve your skills and knowledge on the issue? Here some good hints.

- 🐟 The pre-condition is an active commitment of the teaching staff that is willing to give good examples (approaches of everyday life, small techniques and best practices in the areas of transportation, energy saving, recycling). In-service trainings and workshops should include such aspects.

- 🐟 It is imperative that teachers have an overview of the entire project and a sound knowledge of the management system.
- 🐟 Be prepared to meet resistance from colleagues and students.
- 🐟 Teachers may need to be trained to provide non-formal learning and non-formal/informal learning validation systems, such as LEVEL 5, to assess competence development. In particular, during the CLIMES pilots, students have developed the following competences, which have proved to be key:
 - Team work
 - Communication/Intercultural communication
 - Cooperation
 - Negotiation/Conflict management
 - Decision-making
 - Leadership
 - Self-confidence
- 🐟 Use the e-learning platform that was set up in CLIMES (access through the project website – ask for an account at award@climes.eu) to deepen your knowledge on the topic and its didactical methodologies. However, it is useful to have alternative ways of material supply in addition to the e-learning platform since teachers often have to use many different platforms and it can create confusion, making it difficult to understand what material can be useful and applicable. Also, the English language can represent a barrier for some teachers. One alternative is to appoint an external stakeholder responsible of choosing and sending the material to the teachers. This solution has both positive and negative aspects: it allows teachers to save time but make them unaware of all material available.
- 🐟 Conduct surveys (e.g. how many students come by bike?)
- 🐟 Use creativity to include climate approach in other subjects.
- 🐟 Reduce printing and save paper (e.g. digital class register).
- 🐟 Incorporate climate change not just in teaching processes but also into examination sessions.
- 🐟 Teachers should be prepared to guide students to search for info, organise knowledge, raise awareness and participate in decision making processes
- 🐟 Exchange best practices among schools on the territory and European partners.

TRANSFERABILITY AND PERSPECTIVES

CLIMES project brings several added values to the school management and helps building an appealing reputation.

- ✦ CLIMES data and results can be used for procurement applications. The carbon footprint calculator helps highlighting the aspects of energy consumption in the procurement procedures.
- ✦ The carbon footprint calculator highlights aggregate energy consumption by categories and it can be used as basis of information on school management.
- ✦ Incorporate rules into existing school documents.
- ✦ Ensure the proper application of the eco calculator as results are the basis of the action plan.
- ✦ Maintain relations with project partners by sharing experiences through the platform and search for new networks.
- ✦ Look for other climate related call of proposals.
- ✦ Be sensitive to local and national initiatives.
- ✦ Include climate related topics in the in-service training for teachers.
- ✦ Stimulate students to use the CLIMES online platform and social networks to exchange ideas, initiatives and information.
- ✦ Ensure the sustainability of the groups/teams of teachers and students (keep organising events and gathering). Foster the foundation of environment clubs. Create a student body organisation (also through Project work group, other groups that are formed can be Internal and external propaganda groups, calculation group)
- ✦ Set up business-related initiatives, such as a students company to sell recycled school material (e.g. put together “starter kits” for new students and sell them to parents for sale, include exercise books, pads and files from recycled material)
- ✦ Cost analysis on the topic can be an added advantage at business schools.
- ✦ Design small projects that students can deal with responsibility.
- ✦ Keep alive the topic through students assemblies
- ✦ Cafeteria: try some progress also there (e.g. food according to seasons)
- ✦ Create a responsible environment among staff members.
- ✦ Increase bike racks, buy some bicycles to go on school trips (also saves money)
- ✦ Increase dissemination activities and look for new partner, for instance Universities.

- 🐟 Set up an award on the topic, it would make other schools and partners interested.

OVERALL RECOMMENDATIONS

- 🐟 **Climate friendly school management requires time and budget.** Make a realistic estimation of time and resources needed, have a sound management system with clear tasks and responsibilities and set up an action plan. Clarify how hours spent on the project will be financed.
- 🐟 **The project is about making a difference, not just in theory.** Pure rules are not attractive, stress tangible outputs, incorporate results and recommendation in the school management.
- 🐟 **Make it accountable.** Guarantee that someone will listen to what is found out and recommended actions are really considered. Incorporate the rules in the school charter. Establish a referral person/organisation (such as the student environment group) for the school environment project. Integrate the school management into the project, they will have to approve activities, can make resources available.
- 🐟 **Keep the project alive.** Give importance to dissemination activities. Send reminder messages to the teachers, project CLIMES PR movie to main school events, use webpage to disseminate material. Create a climate protection award.
- 🐟 **Plan a schedule of activities,** the project can be explained fast and easily, also to outsiders
- 🐟 **Make the project transparent.** Deliver information on progress and new activities.
- 🐟 **Develop partnership actions** (also to transfer part of saved funds to pay school staff). Establish collaboration with multiple stakeholders: researchers, school administrators, principal, policy makers, experts, curriculum developers, parents and others. Involve the school building institutions owners/runners (e.g. municipalities, provincial government). Communicate to all stakeholders in an organised way.
- 🐟 **Ensure that students receive guidance** in understanding the tools and developing the necessary competences. Let students do the work: they are your greatest resource.
- 🐟 **Make it attractive,** why students should stay after school? Ensure that the technical knowledge is completed by practice. Include the topic alongside other academic topics. Use creativity.

- 🐟 **Use a validation system** to evaluate competence development in non-formal and informal learning (LEVEL5).
- 🐟 **Use it as a door opener** for greater communication at European level; foster the use of networks and know-how exchange.