# EduCamp: Enabling Multi-Stakeholder Learning through Multi-Level Cooperation of RCEs

*Application of RCE Cairo for the first RCE Award on Education for Sustainable Development Initiatives*
*by*
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## 1. EduCamp

EduCamp is an international project initiated by RCE Cairo in Egypt and RWTH Aachen University in Germany. The project is funded by the European Commission under the TEMPUS programme and is entitled "Education for Sustainable Development beyond the Campus". The wider objective of the project is to enable Egyptian multi-stakeholder (Schools, Universities, NGOs and Ministries) to collaborate to realise ESD in Egypt nationwide. It is also the first project in Egypt that brings together schools and universities in a structured mechanism and makes use of multi-level international cooperation.

EduCamp has started in 2010 with the challenge to achieve five specific objectives in three years:

- Establishing seven Centres of Excellence to be hosted and operated by the Egyptian universities to promote ESD in Egypt and provide training and consultation services for the Egyptian teachers and schools.
- Developing Teaching ESD resource kits for schools to provide activities for students and teachers that link the existing curricula to the surrounding community and focus on ESD and SCP.
- Developing innovative ESD teaching methodologies and enable implementing them in the schools. The teaching methods follow the concept "I hear and I forget. I see and I believe. I do and I understand. "
- Developing School Teachers' Training Programme (STTP) to enable teachers to use the developed materials, kits and methods. This has been achieved through a TOT programme as well as teachers' pilot implementation phase.
- Developing an EU-EG Web-based Virtual Environment to enable schools and universities to share knowledge and exchange experience on ESD and SCP.

Based on the governmental school curricula, the consortium developed about 250 activities, which focus on agriculture, biodiversity, energy, water and general sustainability issues. The activities consist of experiments, debates, field trips and games which are easy to implement with low-cost materials. Given that the materials are building directly on the official school curricula and the fact that they can be easily implemented makes them directly applicable even in poor governmental schools.

## 2. The Context

Egypt suffers severely from overpopulation. With a population of 85 million today that is expected to rise to more than 100 million by 2020, the countries challenges are manifold and interrelated. Egypt's economies are based on resource-intensive consumption and production patterns as well as unsustainable development. As a result, Egypt is now facing a number of key environmental challenges, including air and water pollution, waste management, coastal pollution, and desertification. Air quality is deteriorating in Egypt, particularly in Cairo and Alexandria, where more than 80 percent of the country's industrial activity takes place. Water quantity and quality are both negatively impacted. There is acute water scarcity whereby per capita water share is expected to decline from a current level of $900m^3$ to about $670m^3$ by 2017. Egypt is currently categorized by the World Bank as being under "water stress". An average of 15.3 million tonnes of municipal solid waste is generated each year, out of which almost 2.5 million tonnes remain uncollected and lack appropriate sanitary landfills for their final disposal.

Meeting the Millennium Development Goals in Egypt requires production and consumption of more goods and services to meet basic needs. But building a more sustainable society requires more sustainable consumption and production (SCP) systems – not only in terms of market growth and resilience, but also in terms of productive non-market relations, ecosystem health, quality of life and the well-being of all involved (UNU-IAS, 2012). SCP aims at "doing more and better with less", by reducing resource use, degradation and pollution along the whole life cycle of goods and services, while at the same time increasing quality of life for all (UNDESA, 2010).

Achieving SCP in Egypt requires a significant paradigm shift throughout the whole society, and across-the-board cooperation and engagement by businesses, consumers, workers, policymakers, researchers, scientists, retailers, media, and development cooperation agencies. SCP can offer Egypt and other countries opportunities such as the creation of new markets, green and decent jobs (e.g. markets for organic food, fair trade, sustainable housing, renewable energy, sustainable transport and tourism) as well as more efficient, equitable, and welfare-generating natural resource management (UNDESA, 2010). RCE Cairo and its stakeholders, including universities, NGOs, schools and government bodies, are helping meet these Egyptian challenges mainly through SCP and education for sustainable development (ESD). Although Egyptian experts in SCP and ESD are available and aware of local circumstances, the partnership and engagement of international experts would allow a diverse array of actors to take joint action towards the shared goals of sustainable development (SD) and meet the challenges of Egypt. The global network of Regional Centres of Expertise on Education for Sustainable Development (RCEs) offers individual RCEs access to specific knowledge and know-how through the network.

## 3. Main Partners and Roles

EduCamp involves 20 partners representing different national and international stakeholders. The consortium includes four RCEs from Egypt (RCE Cairo), Austria (RCE Graz-Styria), Ireland (RCE Ireland/Limerick University) and Portugal (RCE Creias-Oeste). It includes also the RWTH Aachen University from Germany, the Egyptian Ministries of Education and Higher Education, seven Egyptian universities from seven governorates, Bibliotheca Alexandrina, three NGOs and two international organizations (AMIDEAST & UNESCO-IHP).

The project is clearly a multi-stakeholder initiative that presents a multi-level model for cooperation among the RCEs:

- ***local level*** represented mainly though RCE Cairo and the Egyptian consortium members,
- ***the European-Egyptian level,*** represented through the cooperation of the four involved RCEs, and
- ***the global level*** through the global RCE Network.

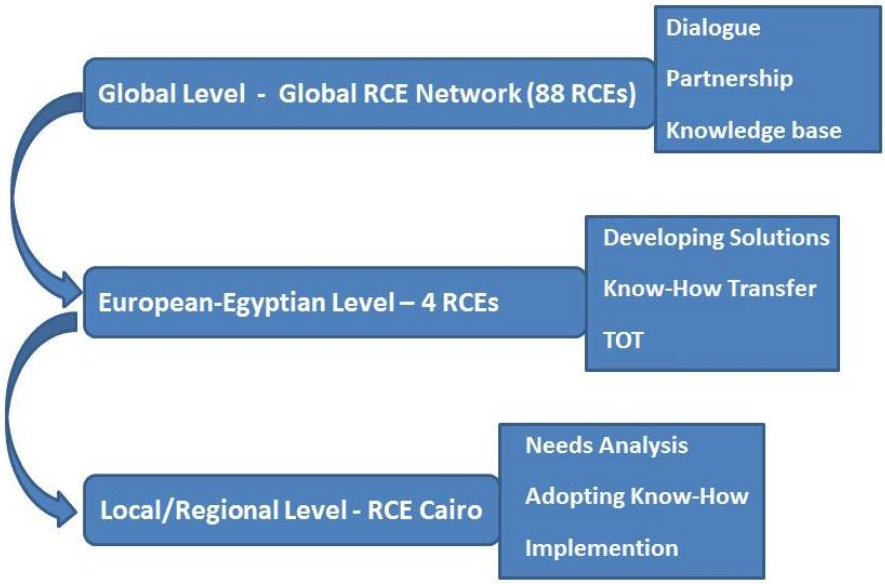


Figure 1: The Multi-Level Model of RCEs Cooperation

In the following the roles and contributions of the partners on the three levels are presented in detail.

### 3.1 RCE Cairo & Local Activities

RCE Cairo as the sub-national consortium in this partnership was responsible for analysing local sustainability needs and for communicating them with the European RCEs and other consortium members to find appropriate solutions. The Egyptian partners then adopt and modify the available know-how to meet the local ESD challenges. For example in order to prepare the resource ESD teaching kits, European and global best practices such as school activities and materials have been collected by the European partners and made available to the Egyptian partners. RCE Cairo, together with Alexandria University and Suez Canal University, has modified the content to match local problems and culture before implementing them locally.

To ensure the successful promotion of ESD in an Egyptian setting on issues such as water, energy, biodiversity and agriculture, RCE Cairo had to carry out a needs analysis to answer:

- To what extent do the national school curricula in Egypt tackle ESD topics?
- What are the needed improvements in order for the curricula to become an instrument for ESD?
- What skills needed to deliver ESD-related content are teachers currently lacking? And,
- What type of teaching methodologies and equipment are necessary to facilitate the ESD process?

RCE Cairo has carried out this analysis in collaboration with its local partners in six government schools in six different Egyptian governorates nationwide. It focused on the curricula of Grade 5 to Grade 9. The three main issues investigated were curricula, teaching methods, and facilities and environment. The analysis helped identify the strengths and weaknesses of the school curricula with respect to sustainable development topics. It also crystallised what would be necessary to enhance teaching methodologies, teaching skills, and the surrounding environment.

### 3.2 Euro-Egyptian RCEs and Sharing ESD Knowledge

To overcome the identified problems in Egypt, the European RCEs, RCE Cairo and local universities worked to find innovative solutions, develop necessary materials and transfer knowledge through training programmes.

RCE Creias-Oeste coordinated the European RCEs and other project partners to develop five learning and teaching ESD Kits to enable the schools to incorporate SCP into their curricula. The kits were developed for students aged 10 to 14 years and were based on the needs analysis carried out by RCE Cairo. In all five kits, there are more than 250 interdisciplinary activities linking the existing curricula to the surrounding community. Each activity includes a full description of the implementation (i.e. a teaching methodology). The activities are various, ranging from innovative group work, field trips, discussions, experiments, games, and research work to assignments that belong to sustainable development, water, energy, agriculture and biodiversity.

In order to enable Egyptian teachers to teach the developed kits and implement them in their schools, the partner RCEs had to share and participate not only in the development of the kits but also in training the teachers on teaching them. RCE Graz-Styria coordinated the process of developing and implementing a Training of Trainers (TOT) programme on ESD that prepares Egyptian trainers to transfer the European ESD/SCP knowledge to a wide number of local teachers in Egypt. The idea is to train Egyptian trainers in Austria, Germany, Portugal and Ireland during the project lifetime. All the involved RCEs and involved universities have contributed in designing and developing the training programme and its contents based on the available experience. The training programme includes topics covering ESD, water, agriculture, energy and biodiversity. Specific knowledge as well as innovative teaching methodologies will also be imparted. Several training courses have been organised for almost 100 trainers on general ESD knowledge, topics relating to sustainable development, agriculture, Energy and bio-diversity. The trainees are preparing to transfer this knowledge by organising trainings in Egypt for school teachers. The first implementation training, where they will work out their own training programs as they will be delivered to the teachers will be held in October 2012.

The Training of Trainers Modules that have been organised already support Egyptian teachers – especially in public schools - who teach students from age 10 to 14 years. The contents of the training modules are aligned to the Egyptian school curriculum and hence can easily be applied during school lessons. Furthermore, during the training, innovative teaching and learning methodologies have been presented and applied so that teachers get to know a variety of methods which foster interactive and participatory teaching. In total, nine training modules should take place in this project, which are divided under three aspects: two training modules on ESD; five thematic training modules on sustainable development, agriculture, biodiversity, energy and water; and two pilot projects implementing this training. This work is expected train 150 Egyptian trainees by the end of 2013.

### 3.3 The Role of the Global RCE Network

There are currently more than 100 RCEs operating around the world promoting ESD in their countries. At the global level, RCEs create dialogue, partnerships and a knowledge base around sustainable development based on local priorities and issues. The consortium of the EduCamp Project made use of the best practices available at the global level and followed the model of RCEs to establish seven new centres of excellence on ESD that would apply to the United Nations University to be acknowledged as new RCEs in Egypt. The new centres have been established at seven different Egyptian universities across Egypt. The main aim of these centres is to sustain the activities of EduCamp and continue offering consultation and training services to Egyptian teachers and ensure further promotion of ESD. The main principles of the Global RCE Network were considered while establishing these centres:

***Geographical Scope***: Each of the established centres is located in a different governorate and is focused on a specific region (Giza, New Cairo, Alexandria, Fayoum, Zagazig, and Ismailia).

***Regional Challenges***: Each of the centres focuses on the threats that the region faces and challenges to sustainable development: the Giza Centre focuses on air pollution; the one in

New Cairo focuses on energy efficiency and renewable energy; in Alexandria the focus of the centre is on biodiversity; in Ismailia water will be the core of the activities; and agriculture will be the core of the centre in Fayoum.

***Regional Partnership***: Each of the centres will be affiliated with surrounding schools and other stakeholders who will support the realisation of its mission and vision.

The centres are in the process of being accredited by the Egyptian Ministry of Education to be official training bodies of Egyptian teachers nationwide. The centres will act as nodal points for networking among various education stakeholders, such as universities, schools, NGOs, and companies, as well as local and regional governments and ministries. Each centre is planning to have the capacity to serve about 30 schools in its respective region. Furthermore the Centres of Excellence should become role models for other universities. All the centres are acknowledged bodies inside the local universities and have their own bylaws.

## 4. Contribution of the Project

Although EduCamp is running during a very critical phase of the Egyptian revolution and a very difficult political situation, the project is known in Egypt as one of the most significant initiatives for improving the Egyptian education system and linking school curricula to the country's needs for sustainable development and sustainable consumption and production.

### 4.1 Innovation in EduCamp

The most innovative aspects of EduCamp are:

- The "Multi-level cooperation of Muli-stakeholder" that bridges different gaps and enables different institutions to share knowledge and transfer know-how in a very structured and organised way. For example, this model bridges the gap between the Egyptian educational institutions and brings schools together with universities in one initiative that is for the first time supported from both the Egyptian ministry of Education and Ministry of Higher Education. EduCamp also enables cooperation between Egyptian, European and global partners supported by the four involved RCEs and making use of the power of the Global RCE Network to share knowledge and exchange ESD related experiences.
- Training the Egyptian university professors in Europe by the ESD experts (TOT) to enable them to train the teachers in Egypt was the solution for the language barrier that restricted the Egyptian teachers always to learn from international experiences and transfer the know-how to their students. The partnership of the professors and teachers has reduced the barriers and aligns them to go as partners and pave the way for a more sustainable future.

### 4.2 Main Contributions of EduCamp

EduCamp has contributed directly to the training and enhancement of the skills of more than 100 Egyptian professors who have been trained on ESD. The Egyptian professors are transferring this knowledge to the Egyptian school teachers in at least seven governorates distributed all over the country.

EduCamp has contributed indirectly into enhancing the future the next generation of our kids through introducing the concept of sustainable development in the Egyptian curricula which will have enormous positive impact on the sustainable lifestyle, development of green skills, better integration of production and consumption. This is achieved through the new dimensions that have been injected in the schools' curricula through the 250 activates that will be implemented in the schools nationwide.

### 4.3 Sustainability

EduCamp has twofold sustainability plan:

a. Institutional sustainability is ensured through the establishment of the seven Centers of Excellence on ESD to continue enhancement of the Egyptian school curricula and further inject the concepts of sustainable development in the school curricula, provide teachers' training service and continue support the schools to follow the ESD principles. The seven centers are already integrated in the structure of the seven universities. They have their own bylaw and ensured their operation budget.

b. Financial Sustainability is ensured through an agreement with the Ministry of Education to cover the training cost of the Egyptian teachers. The training fees will be used to sustain operating of the centers and continue playing their role effectively.

### 4.4 Success Factors

The factors that made EduCamp a story of success are:

- The involvement of several RCEs and partners who believe in SD and ESD.
- Having several partners with all needed experiences and know-how
- Developing a concept that enables multi-level cooperation
- Being able to secure funding for the big consortium

### 4.5 Management

The management of the project is a key success element of the whole initiative. The grant applicant in Germany (RWTH Aachen University) and the close cooperation with the RCE Cairo as local coordinator have played a central role in having a great environment and effective cooperation among the consortium members. The communication level through web-based platform and regular management meetings were also important success factors.

### 4.6 Challenges

The time of revolution in Egypt and the political change have been real challenges for this project. During the phase of insecurity, the consortium focused on the individual activities due to the limitation of mobility for the European partners to visit Egypt. Video conference facilities were intensively used during this phase. The environment of the changes in Egypt

and motivation for new initiatives were used in the best way to promote this project at the government level.

### 4.7 Institutional Barriers

Lack of the culture of cooperation was the main challenge to bring the ministry of Higher Education and the ministry of Education to agree on the concept of this project. Every ministry wants to have its own initiative and have the ownership of the results. The revolution and the Egyptian media were used to put pressure on the government officials to accept sharing the ownership with other partners. The ministry of Education had also to accept that the Ministry of Higher Education can play a central role in enhancing the capacity of the teachers and level of education in the schools.

## 5. Upscaling EduCamp

The Egyptian Ministry of Higher Education has formed a technical committee to review the developed school activities and decide on modifying the school curricula nationwide. Once the committee approves the proposed modifications and new activities, they will be first implemented in the Egyptian experimental schools distributed all over the country.

In the next phase of EduCamp, the European RCEs, in collaboration with the Egyptian experts, will continue the implementation of the ToT program by organising trainings in Austria, Germany, Ireland and Portugal. It is expected to train 150 professors from the seven Egyptian universities involved in the project. The trainers will be offering the same training program for Egyptian teachers by the second half of 2013. Each of the newly established centres will cover its region with at least 30 schools. The established centres will join the global RCE network once acknowledged by the United Nations University.

EduCamp is a real demonstration of the significant impact of the Global RCE Network in achieving local objectives in line with the Millennium Development Goals and the UN Decade Programme on Education for Sustainable Development.

## 6. Acknowledgement

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## Annex I - Developed School Kits on SCP and ESD

Five Teaching and Learning Kits on Education for Sustainable were developed to enable schools to incorporate SCP into school curricula. There are more than 200 various interdisciplinary activities linking the existing curricula to the surrounding community. The activities are various ranging from innovative group work, field trips, discussions, experiments, games, and research work to assignments that belong to at least one of the following clusters:

***Sustainable Development:***

This cluster of school activities introduces students to the concept of unsustainable and sustainable behaviours and encourages them to explore the main ideas of SCP and how to become more sustainable within their own lives, homes, communities and countries. The clusters add to student knowledge relating to sustainable development and key scientific principles and cycles that are instrumental in a sustainable world, but also encourage them to challenge their own consumption behaviours and that of their community.

***Agriculture:***

The agriculture cluster deals with agriculture in Egypt, farming and agricultural production, and food consumption such as healthy food, and local/seasonal products. Organic waste and composting are addressed as well as impacts of climate change on agriculture, exports, imports and food supply in Egypt.

***Biodiversity:***

This cluster deals with biodiversity, ecosystems and their types, food chains, the interconnectedness of plants and animals as well as the concept and importance of protected areas are introduced. Additionally the links between biodiversity and culture, health and society are mentioned. Population growth, pollution and its linkages to environmental sustainability are addressed as well as the DNA of biodiversity and the genome project.

***Energy:***

This cluster focuses on renewable and non-renewable sources of energy, its worldwide distribution and impact. The increased worldwide demand on energy is mentioned and how it could be managed, forecasts of oil availability as well as scenarios of a life without oil are furthermore introduced.

***Water:***

This cluster addresses the water cycle and regional influences, drought and flood, evaporation, sea level rise and the melting of glaciers. Water scarcity, pollution of water and water rights are explored, the distribution of water around the world as well as the individual consumption of water is highlighted. Additionally the clusters deal with the case of the Nile and the general situation of water availability in Africa.