

"ESD IN ADDRESSING ENERGY PRODUCTION AND CONSUMPTION"
Informal panel discussion (Sixth Ministerial Conference "Environment for Europe"
(Belgrade, 2007)).¹

Proposal by Armenia

1. Project title: "Information Posters on Renewable Energy for schools in Armenia"

Donors: SolarEn, LLC, United Nations Development Programme, Alliance to Save Energy, Armenia Tree Project, Ministry of Education and Science

Project aim and objectives

- **Aim:** To enhance the awareness of young generation for renewable energy and benefits it could offer
- **Objectives:** To prepare and provide Renewable Energy Posters and "Renewable Energy Methodological Manual" to schools and teachers

Project Implementation/Realization- Presentation of the project in schools by the Ministry of Education and SolarEn, LLC

For how many years the project is implemented in Armenia- For four months period (2004-2005)

Targets Groups/beneficiary: State Schools

Project Results: Delivery of Posters and Manuals to about 1400 schools of Armenia through Ministry of Education and Science

2. Project title: School Project for Application of Resources and Energy ("SPARE"² – International)

Donor: Norwegian Society for the Conservation of Nature (NSCN - www.naturvern.no).

Project aim and objectives

- **Aim: To reach energy sustainable development by** raising the awareness of the children on energy question, in link to environmental, economical and social questions. To help the children to increase their knowledge about energy, as it is the children of today, who will make the decisions in the future.
- **Objectives:**

¹ This document was not formally edited

² SPARE is a Joint NGO project focused on ESD and energy, coordinated by the Norwegian Society for Nature Conservation and Children of Baltics (Russian Federation), involving a number of Baltic, Caucasus and Central Asian countries.

- To attract youth to energy efficiency activities and promote sustainable, renewable energy, to transform a global concern into practical school activities.
- To join theory, scientific investigation, practical measures on energy saving and new renewable energy.
- Participants to look for potential for energy saving and accessible renewable energy sources at school and at home, to spread information on SPARE and their findings among friends, parents, neighbors and local authorities.
- SPARE pupils to become a part of International SPARE movement and international network.
- SPARE pupils to understand their rights, and possible participation in decision making processes.

Project Implementation/Realization

- Organizing SPARE groups of the minimum 15 pupils in each school
- Teachers are working as volunteers; mostly teachers of natural sciences are involved
- Pupils of different ages are involved, most desirable age 10-12 years old
- Review, translation and publication of "SPARE Text-book", making and publication of Armenian language "National additions" and "Teachers' manual" and etc.
- Teachers are getting "SPARE Text-books", "National addition - Armenia", Methodical manual, Teachers' manual, out of charge.
- All the pupils are getting "Pupils copybook for tasks" out of charge.
- SPARE groups in 9 regions (marzes) of Armenia
- 6 and more seminars/trainings for teachers annually. Trainings are carried out by project coordinators and invited specialist.
- Lessons (lectures) at schools- 1 lesson per week, 34 hours annually for out of class/facultative courses for SPARE groups
- Pupils don't study material at home, no homework, everything is done in class, only practical exercises are done at home
- Children getting practical knowledge on Energy and resources consumption and saving.
- Pupils getting knowledge on renewable energy resources and their possible implementation in Armenia and abroad.
- Practical activities: excursions, mainly to Energetically structures and Natural monuments, museums
- Pupils practical work: making energy saving/renewable energy using equipment's (Solar energy box, etc), studying their school environmental, mainly energy problems, finding solutions, making suggestions.
- Meetings, discussions, round tables for SPARE groups

- Organization of practical seminar-meetings in schools, inviting experts from abroad for energy saving by isolation of windows and doors and energy and resources saving. (Experience exchange with "Energobrigades" International movement).
- Pupils' and teachers'/school team participation in windows repairing and isolation in their classes. These skills to be spread to public by the pupils and teachers.
- Teachers and pupils participation in Trans-caucasus regional SPARE meetings.
- Teachers studying each others practice, making conclusions, giving suggestions for SPARE methodology. Final methodology to be created.
- Pupils and teachers participation in International Conference UNG AGENDA 21 for Sustainable Development (Norway, 2005).
- Pupils and teachers participation in the annual International Competition "SPARE-Energy Saving".
- School teachers and pupils grants for Energy saving activities, sent to Norway.
- Purchasing and delivering energy saving and renewable energy equipment to schools.

For how many years the project is implemented in Armenia

- 6 years, since February 2001

How many schools are involved (since starting and in 2006-2007 school year)

More than 80 schools in 9 marzes of Armenia, and 46 schools in 8 marzes in 2006-2007.

How many pupils and teachers are involved (since starting and in 2006-2007 school year)

More than 3000 pupils and 100 teachers, and 49 teachers and 1000 pupils in 2006-2007.

Project Results

- Armenian language "SPARE Text-books" for teachers (is translated from Russian original), "National addition - Armenia" for "SPARE Text-books", Pupils copybook for tasks, Methodical manual for the teachers, Teachers' manual, CDs and other material's.
- Trained teachers, informed and educated pupils. The teachers and the pupils of the SPARE groups are well represents kinds and ways of the production of energy, necessity both problems of conservation of energy and resources. The changes of mentality and thinking of the pupils in a problem of power consumption and resources are scheduled.
- Obtained/purchased and delivered material
- SPARE test-books filled by pupils.
- Pupils hand –works, mainly made of wastes
- Pupils paintings, compositions, poetry
- Participation in regional and International meetings, seminars, conferences.
- Planting at school areas

- Repaired and isolated windows of one class at 8 schools
- “Biodiversity Conservation Centers” in 8 schools (small library and acting pupils’ groups)
- Attempt to install windmill (Ministry of Energy RA, NSCN and NGO Eco-club “Tapan”)
- Energy saving lamps, agricultural tools and electrical equipment in schools
- Solar Collectors: in "Mkhitar Sebastaci" College (Yerevan), in school in a village Muchni (Aragacotn marz) and “Armenian National Scouts Movement” Byurakan center.

Proposal by Norway

- A strong policy framework exists in Norway calling for interdisciplinary, values- and action-oriented ESD including the question about energy production and consumption. Given this official framework of legitimacy for ESD, the central policy question then becomes how to mainstream and implement this kind of education for all children in all schools.
- We have good evidence through more than 20 years of experience, that schools and teachers in the forefront – “lighthouse schools” - can construct excellent projects embodying the principles of ESD. A much greater challenge is to develop and evaluate various kinds of instruments and policies that will effectively support and enable *all* schools and teachers to build their competence and to actually provide this kind of learning opportunity.
- ESD is embedded in Norwegian national curriculum guideline The curriculum is based on and endorses the principles of sustainable development as set forth by the World Commission on Environment and Development and the Rio and Johannesburg conferences, as well as Norway’s own official Strategy for Sustainable Development, launched in spring 2004. The curriculum is also based on the concepts of ESD as defined by the UN Decade for Education for Sustainable Development, the European strategy for ESD by the United Nations Economic Commission for Europe. Principles such as pupil participation in forming their own learning processes, an inquiry approach, global perspectives and education for citizenry are well-integrated into the curriculum.
- To support the curriculum guideline and subject curricula, the Norwegian education authorities ratified in autumn 2006 a policy document entitled “Education for sustainable development.” The document clarifies the thematic contents of education for sustainable development, describes the current situation and challenges in the field and formulates a set of four prioritized areas: 1) development of teaching plans and teaching resources, 2) network-building and communication, 3) evaluation and reporting and 4) international cooperation in ESD.
- Norway has been viewed as a global leader in environment and development, but more recent debate has focused on the serious challenges Norway faces in

terms of its role as a supplier of fossil fuels and a high rate of per capita consumption of energy and materials. Our responsibility to protect biological diversity is also receiving increasing attention. Questions of global and regional climate, and how Norway and Norwegians can act responsibly in terms of energy consumption and emissions, will be an issue in coming years. Many Norwegians are now asking themselves whether they lead a responsible lifestyle and what they can do to reduce their ecological footprint and climate impact.

- We have learnt that the school needs support and guidance, if they are to create high quality education in the field of ESD. We think that the challenge is to establish structures and resources that can provide schools with continuous support matching their development needs. A networking resource www.miljolare.no has been established. Using this website, pupils find information about themes related to sustainable development and enter the results of their work.
- Through the network, pupils and schools can present their work to the public, exchange ideas and cooperate with other schools, and confer with researchers. Cooperating partners include the Ministry of Environment, Ministry of Children and Equality, Ministry of Agriculture and Food, Norwegian Consumer Council, the Ideas Bank, Green Lifestyle and the biological diversity consortium SABIMA.

Proposal by FYR of Macedonia

Title: "Complex approach as a unique response of the Education to the Energy production and consumption".

Major issues to be addressed: We are planning to address the educational policy and practice from the energy aspect, respecting ESD aims and principles. The formal education will be our targeted area.

Which aspect of the energy-related content would be covered: We will address not just the educational context. Our purpose will be educational transformed energy issues, energy as integral part of the natural and social environment.

How the issue would be addressed by ESD: The whole theme will be dedicated to educational, didactic and methodological approach to the energy issue. Our aim will be to present our ideas only with the global ESD approach respecting that we can realized effective educational policy and praxis from the aspect of the energy. All other partial approaches are just starting as good intentions, but without any sustainable ESD effects.

Proposal by the European ECO-Forum

The theme of the presentation³: "Energy education as motivating factor for implementation of practical energy saving measures at schools and homes in EECCA region. Based on experience from SPARE project."

³ The title could be made more attractive and short

The Content: How to use educational work/projects in order to do real energy savings/develop alternative supply at the schools and in local society.

Speakers: will be nominated at a later stage taken into consideration sub-regional representation and other relevant circumstances. The proposal is as follow:

- from EECCA: Mr. Timur Idrisov (For the Earth, Tajikistan) or Ms. Anna Kirilenko (BIOM, Kyrgyzstan)
- from Norway (Ms. Yngvild Lorentzen or Mr. Dag Hoystad, Norwegian Society for the Conservation of Nature)

Proposal by Toyota

Title of the presentation: Sustainability challenges for business AND consumers: ESD as a tool for joint action

Major issues to be addressed

- Sustainability challenges
- Toyota's response based on corporate culture
- Toyota's strategy for partnerships with NGOs
- Challenge: setting up governmental-NGO-business partnerships for ESD

Which aspect of the energy-related content would be covered

Energy consumption - sustainable mobility

How the issue would be addressed by ESD

- Eco-schools
- Schools for Sustainable Development
- Green Pack