



Practical Workshop for Educators: *Education and Awareness for a Sustainable Energy Future*
Santo Domingo, Dominican Republic
August 4-6, 2015

Background

OAS gives special priority to the issue of education to understand that vocational education and training is key to strengthening democratic institutions, promoting the development of human potential, reduce and alleviate poverty, and fostering greater understanding among peoples, as noted by the Inter-American Democratic Charter. In the specific context of sustainability, contents are incorporated environmental education and sustainable development, skills necessary for the conservation and sustainable use of natural resources through the various themes that work in the Executive Secretariat for Integral Development (SEDI).

From 2008-2013, the OAS implemented the Caribbean Sustainable Energy Program (CSEP) Vincent and the Grenadines. Between 2011-2012, OAS/CSEP conducted the delivery of two regional workshops, (i) to review with science curriculum officers from the beneficiary countries the approach with the financial support from the European Union. The beneficiary countries were Antigua and Barbuda, Dominica, The Bahamas, Grenada, Saint Kitts and Nevis, Saint Lucia, and Saint (ii) launched the Caribbean Energy Education and Awareness Programme (CEEAP) and its communication campaign *Learn and Save*.

The program targeted policymakers and the education community in order to:

1. Build Sustainable Energy within National Education Strategies
2. Strengthen Pedagogy with regards to Energy in Formal and Non-Formal Education,
3. Raise energy awareness among Primary and Secondary school students by our “Learn and Save” campaign.

The Energy and Climate Partnership of the Americas (ECPA) aims at the achievement of specific regional and national energy goals for the advancement of energy sustainability by fostering partnership and collaborative mechanisms across the region.

In 2014, the Department of Sustainable Development (OAS / DSD), with funding from the United States Permanent Mission to the OAS, is implementing the Sustainable Energy Capacity Building Initiative (SECBI). SECBI comprises training to educators on sustainable energy and awareness, including the provision of the OAS’ *Learn and Save* educational materials to teachers in the Dominican Republic.

Main Objective

To train educators on integrating sustainable energy curriculum, and improve the quality of education through pedagogical innovation in the classroom

Specific Objectives

- To bring together science technicians from the Ministry of Education, science teachers and key educators on the *Learn and Save* educational resources
- To expose educators to the experience from other countries that are implementing energy literacy programs in schools
- To strengthen in educators the confidence to explain the science behind energy efficiency and renewable energy

Workshop with Science Technician Officers and relevant actors (August 4, 2015)

Mrs. Araceli Azuara, OAS Representative in the Dominican Republic and Mr. Jose Amado Rodriguez, Director of Environmental Education at the Ministry of Education. They both stated the need and crucial role that teachers and educators play in the development of renewable energy resources.

The aim was to present and revise with the science technician officers and relevant actors the educational materials: (a) “Learn and Save” educational materials developed by OAS/DSD to strengthen the energy literacy in schools in the English-speaking Caribbean countries, (b) Energy efficiency educational program developed by the Government of Chile, (c) Inquiry-based model for science education developed by "Program Adopt a Talent" in Mexico

Jessica Miranda, the head of Education at the Chilean Agency on Energy Efficiency (AChEE) shared the educational program developed together with the Ministry of Energy and the Ministry of Education of Chile for early childhood, primary and secondary education. The government of Chile created these programs to promote a more efficient use of energy by creating awareness of the economic benefits, environmental impacts and potential use for sustainable development. The AChEE’ program is based on the premise that children are the best agents of change to generate a cultural change.

Montserrat Williams, national coordinator of teacher training and Carmen Leon, responsible for teaching curricula of the Michoacán State, shared the model of science education through the inquiry-based of the *Program Adopt a Talent* (PAUTA). PAUTA is an educational institution associated with UNAM (Universidad Nacional Autónoma de Mexico) who fosters the development of scientific skills and talent in all children. PAUTA works in several Mexican States and has successfully been a key deliverer of SEP (Secretaría de Educación Pública de Mexico) Programs. This program works with a teaching methodology that promotes critical thinking through the development of scientific, social, communicative, creative and social entrepreneurship skills. Its objective is to provide long term support to children and young scientific talent. Currently, PAUTA works with 1,640 children and young adults throughout 47 schools and providing direct assistance to four Mexican states.

Workshop with Science Teachers (August 5-6, 2015)

Mrs. Araceli Azuara, OAS Representative in the Dominican Republic and Mr. Jose Amado Rodriguez, Director of Environmental Education at the Ministry of Education. They both reinforced the need and crucial role that teachers and educators play in the development of renewable energy resources.

Ms. Carolina Peña, Manager of the Energy and Climate Partnership of the Americas (ECPA) Sustainable Energy Capacity Building Initiative (SECBI) provided welcoming remarks and the OAS efforts and the transfer of knowledge across the Americas on energy literacy and sustainable development were described to the audience.

The workshop was co-led by representatives from the *Chilean Agency on Energy Efficiency (AChEE)* and the *Program Adopt a Talent (PAUTA)*. Both AChEE and PAUTA shared with science teachers the use of scientific inquiry methods applied to the topic of energy. Science teachers were exposed to basic and intermediate level knowledge on energy, electricity and efficiency; wind power and solar-PV sources of energy. They participated in interactive lectures, experiments and hands-on lessons and activities. They experimented with electrical wind turbines, and made solar photovoltaic experiments.

Among the most active activity was to compare which renewable energy source was more efficient, the comparison was made between a wind turbine and a solar photovoltaic panel. The teachers received a variety of supplies and instructing them to turn on the light bulb. This was a great inquiry-based exercise, allowing for teachers to test hypotheses and try out different variables. After that activity, teachers were able to come up with their own conclusions that solar photovoltaic are most efficient than wind turbines.

PAUTA shared with science teachers the links between formal and informal education bringing together formal curriculum teaching to extra curriculum activities such as Science Clubs and Scientific Camps. AChEE shared with the participants their educational materials that could learn in a fun way how to reduce their energy consumption and engage with energy efficiency practices.

Science teachers were also exposed to the *Learn and Save* campaign and its educational materials for teachers and students that were developed for the OECS countries. These materials will be tailored to the Dominican Republic context, in coordination with SurFuturo and INAFOCAM. It is expected the completion of the materials by October 2015. The Ministry of Education will coordinate with the OAS the material distribution among selected schools.

Results

- Strengthening the capabilities and skills of 39 technicians (train-the-trainers) from the Ministry of Education. In that sense, those technicians could train at least 2 teachers per school, in average the benefits will be: 671 schools, 7871 teachers and a 171.478 students.
- 2 coordinators (train-the-trainers) from Community Technology Centers, belonging to the project implemented by the Vice presidency in 31 provinces.

- 34 science teachers from primary and secondary schools, corresponding from 34 educational centers, sensitized and committed to integrate into their lesson plans on sustainable energy actions involving school and close to this community.
- Establishment of an inter-agency task force to enhance the sustainability and expansion of the project, among:
 1. Ministry of Education (MINERD)
 2. Ministry of Energy and Mining
 3. Ministry of Environment and Natural Resources
 4. National Teacher Training Institute of the Ministry of Education (INAFOCAM)
 5. National Institute of Water Resources (INDHRI).
 6. SurFuturo Foundation
 7. Trampoline Museum,
 8. Council for Climate Change
 9. Foundation Propagas.

The general response of technicians and the science teachers was that the workshops had been informative, useful, and relevant to address energy use in meaningful ways in their classrooms. The facilitators employed methodological strategies that strengthen inquiry-based concepts, creativity, and participation, according to the curricular educational system of the Dominican Republic. It was also fruitful to learn the experience that Chile and Mexico are implementing to incorporate energy literacy in the schools in those countries.

The teachers reported that they have either, never taught about renewable energy and energy efficiency, or made up their own lessons and activities about the subject. After the workshop, the majority of teachers reported an increase in their knowledge and understanding about sustainable energy and expressed being more prepared to teach about energy, its forms and sources in the classroom.

The workshop strengthened the capabilities and skills of teachers on energy literacy including hands-on exercises to motivate today's youth to become tomorrow's clean energy leaders.

Next Steps

1. Establish a Memorandum of Understanding between the Ministry of Energy and Mines and the Ministry of Education.
2. Present a concept note for a project to the Office of Social Cabinet of the Vice-president to expand the education program among the Community Technology Centers.
3. Present a concept note for a project to SurFuturo Foundation to expand the education program among schools and centers that they work with.

