United Nations
Educational, Scientific and
Cultural Organization

UNESCO Office, Jakarta Flagship Programme

UHJAK/09/Flag3

COMprehensive Program to Enhance Technology, Engineering and ScieNCE Education (COMPETENCE) in Asia

Region:

Asia and the Pacific

Partners:

National and local governments; inter-governmental agencies; universities and research institutions; NGOs; educational and professional networks

General Objective:

To use science education as a fundamental basis for sustainable development, and to engage youth, educational institutions, and governments to develop and use science education as a fundamental basis for sustainable development in Asia and the Pacific

Duration:

3+ years starting 2009

Estimated budget:

5,000,000 USD

For more information, please contact:

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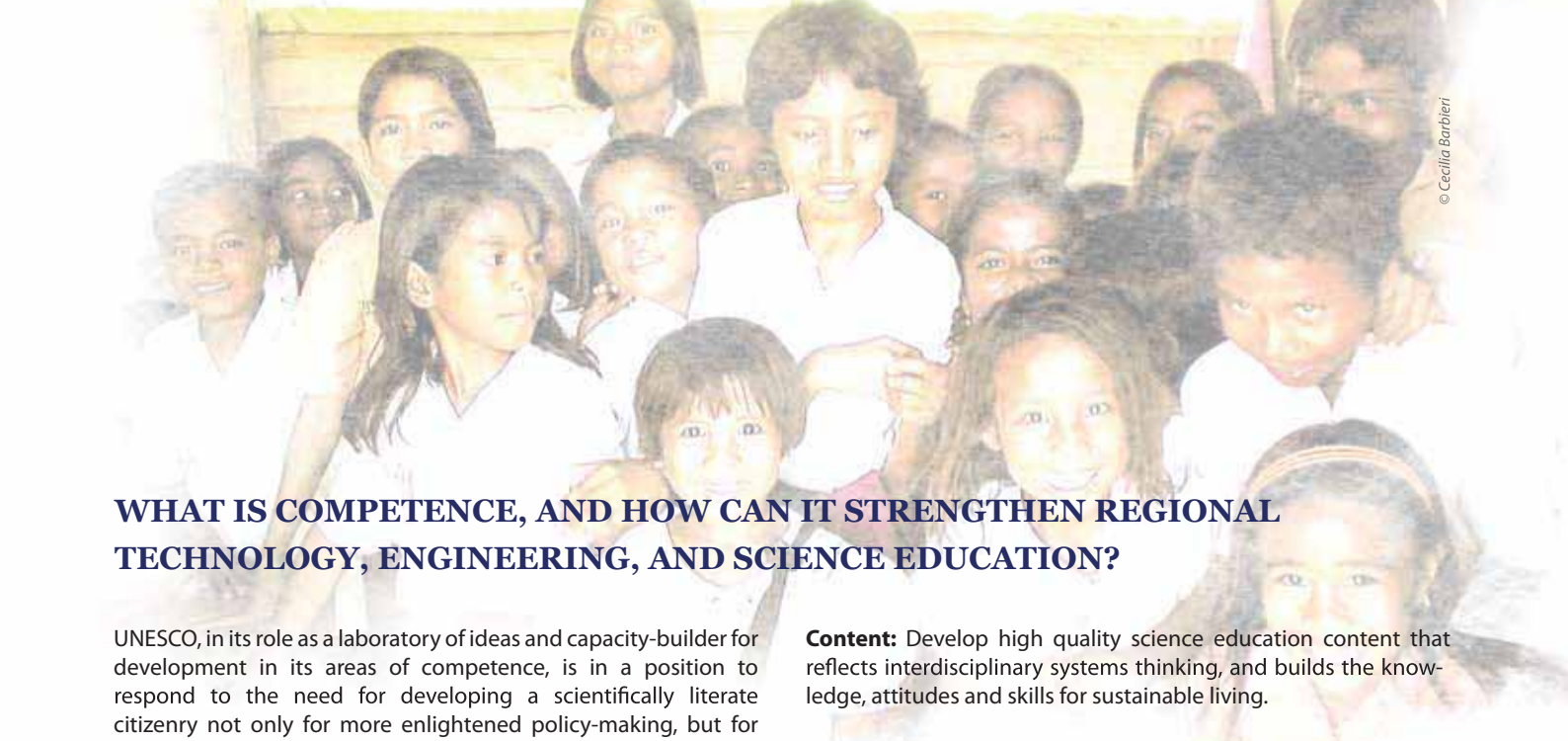
BACKGROUND

Science and technology have brought rapid changes to the world, and such changes have deeply affected every facet of society – the economy, culture, environment, and communication. Today, the nearly instantaneous transmission of data and services across the globe has changed the way commerce is done. Similarly, but to a lesser extent, these technological advances have changed the way that education is delivered and acquired. To function effectively as citizens of an increasingly technological society, the public needs to engage with and respond to science and technology and its products in an informed way. As such, science and technology can assist greatly in addressing existing and emerging societal challenges such as the Millennium Development Goals (MDG), climate change, natural resource management, disaster preparedness, and pandemics. Therefore, science and technology advances, based on a strong science education foundation, must be the vehicle by which countries can begin to solve development challenges.

In recent years, however, we have witnessed a troubling trend - a diminishing interest by Asian and Pacific students in pursuing science-related careers, and a general interest in science and technology. As a result, we have seen low quality science education, limited resources devoted to science and technology development among some countries, deterioration of scientific and technological literacy in the region, and loss of competitiveness globally in the field of science and technology. Our aim through this program is to engage students, educational institutions, and governments to focus on and become more interested in science and technology through the education system so that the region becomes better equipped to better address regional challenges that lie ahead.



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WHAT IS COMPETENCE, AND HOW CAN IT STRENGTHEN REGIONAL TECHNOLOGY, ENGINEERING, AND SCIENCE EDUCATION?

UNESCO, in its role as a laboratory of ideas and capacity-builder for development in its areas of competence, is in a position to respond to the need for developing a scientifically literate citizenry not only for more enlightened policy-making, but for learning sustainable living, through a science education program. The program will consist of:

Context: Make sustainable development the framework for science education, so that the teaching and learning of SD principles, values and ethics is woven seamlessly into science courses, rather than an isolated stand-alone course or special module in science programs.

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Content: Develop high quality science education content that reflects interdisciplinary systems thinking, and builds the knowledge, attitudes and skills for sustainable living.

Process: Encourage educational institutions to deliver its education content through a mutual learning-oriented engagement with civil society and the community at local, national, regional and global levels oriented to demonstrate integrated systems thinking and collaborative action.

COMPETENCE has components that will develop context (develop regional framework and action agenda), pursue content development, validation testing and training (development and piloting of model courses in sustainability science and training for course delivery, course materials development in energy policy and other related topics) and introduce innovative teaching process (multidisciplinary topics, such as renewable energy, offered as e-learning courses to a broad spectrum of target audience of policy-makers, faculty, researchers, students).

COMPETENCE continues from previous successful efforts, "Comprehensive Approach to Strengthening Science and Technology Literacy in Asia", "Creation of Regional Flagship Programme for Strengthening Scientific and Technological Literacy (Science Camp for Children)" and "Mobilizing Science Knowledge for Sustainable Development in Asia and the Pacific through Information and Communication Technologies." This new program will build on the successes from these efforts but also from insights, skills, and knowledge from UNESCO's other sectors such as education, culture, communication and information, and environmental and hydrological sciences.

POTENTIAL IMPACTS

Long-term positive impacts:

- Development of a science culture, especially among the youth, to enable them to function more effectively as citizens of a knowledge-based society, through innovative approaches in science education, that would make learning science a living and exciting endeavour.

Short-term positive impacts:

- Established principles and framework for regional collaboration on an innovative, large-scale, interdisciplinary programme on science, technology and engineering education in the context of education for sustainable development (ESD) and generate concerted local, national and regional action to validate the framework through pilot activities.
- Raised awareness on the concepts of the concepts of sustainability science.
- Improved access to quality education tools and resources through the use of information and communication technology networks to deliver science and engineering education to a wider audience, beyond those directly participating in the project.
- Heightened public awareness on the scientific and technological issues involved in sustainable development.
- Improved role of higher education institutions in promoting sustainability.
- Improved inter-university regional cooperation to mobilize university expertise and knowledge for the development of new content and methodologies for a model course in sustainability science, and their validation, to effectively teach about science for sustainable development.
- Raised interest of youth in Science, Technology and Engineering.