

# A PILOT STUDY ON EDUCATION FOR SUSTAINABLE DEVELOPMENT (ESD) IN SCHOOL SCIENCE EDUCATION AT GRADES 6 – 11

**A.Nithlavarnan**

*Department of Education, Faculty of Arts, University of Jaffna*

**Key Words:** *School Education, Sustainable Development, School Curriculum*

## **Introduction**

Education considered as an essential tool for achieving sustainable development. For science and technology to be able successfully to achieve the goals of sustainable development, countries need the capacity to engage creatively in science education, scientific research, the development of new technologies, and their application to economic, social and human needs.

In most of the developed and developing countries in the world implementing national strategies for integrating the concepts and principles of education for sustainability into formal educational programs from early grade school through the university level.

Sri Lanka's national science and technology policy is "Prosperous Nation of Scientifically Literate and Innovative People, with a Strong and Stable Economy, based on Highly Developed Scientific and Technological Capabilities." But Amanthi Perera, (2009) states that "Sustainability is not well incorporated in Sri Lanka's school curriculum".

Objectives of the study are as follows:

- To find out the coverage of ESD in the Science curriculum (Grades 6 - 11) is satisfactory.
- To find out whether ESD is sufficiently integrated in the Secondary Science curriculum.
- To find out whether the teaching methods of science are complementary to ESD.
- To find out Issues and Barriers in the implementation process.

## **Methodology**

The study used multiple methods of inquiry, such as surveys (Questionnaire for teachers), document perusal including content analysis of curriculum material, direct observation of classroom teaching-learning process and school environment. 23 schools randomly selected from the three districts, Jaffna, Vavunia and Mullaitivu.

## **Discussion and Conclusion**

<b>Social Sector</b>	<b>Environmental Sector</b>	<b>Economic Sector</b>
Sustainable village/city	Natural resources	Prevention and reduction of disasters.
Health Education	Education for Renewable Energy	Sustainable transportation
Learning for local and indigenous knowledge.	Climate change education	Sustainable Urbanization
Integrating traditional and modern technologies.	Biodiversity conservation	Sustainable production and consumption
Sustainable food production	Waste reclamation	Poverty reduction

*The coverage of ESD in the Science curriculum (Grades 6 - 11) – based on the analysis of science curriculum:* The following ESD aspects found in the science curriculum of the 6-9

Grades under the following three sectors of sustainable development. But it can be improved and further integrated in to the curriculum.

*Good ESD practices in the schools related to science:* There are some good ESD practices followed by the schools. Such as;

- Established school gardens and herbal gardens
- Celebrating important Days in schools, such as World environmental day, world AIDS day and World tobacco day.
- Biogas production in school by using garbage.
- Conducting awareness programmes to public regarding Prevention from Dengu, Control of Tobacco and alcohol usage.
- Encourage students to find new inventions.

*Problems in Teaching – Learning Process of Science:* Numerous problems faced by school community to successful implementation of teaching-learning process of Science, which affect sustainable development of the country.

- Lack of Laboratory Facility for Teaching-Learning science at School level, such as laboratory building, Furniture, Water supply, Electricity, Tools and apparatus, Chemicals, Specimens, and Lab Assistant.
- Lack of adequate support from the personals, such as Science Assistant Director, In-service Advisor of Science, Principal, Peer Science Teachers, Students, and Community.
- There is no favourable learning environment in school and home.
- There is no proper usage of Quality Inputs
- Shortage of well trained science teachers in the School
- Shortage & unavailability of modern teaching aids such as OHP and multimedia projector.
- Allocated time for teaching science not enough
- Lack or fewer corporations from the principal and other teachers in the School.
- Over strict or more flexible of school management.
- Teachers' negative attitude

*Awareness about ESD among science teachers:* Most of the science teachers have not adequate knowledge about Education for Sustainable Development (ESD).

We should improve ESD opportunities in science under the aspects of Curriculum, Pedagogy, Implementation process in school Resources and Community Participation.

## References

- Gregory Manning, (2009) ESD Initiatives in Australia, ESD currents, UNESCO, .
- Isao Kiso, (2009) ESD implementation and Promotion in Japan, ESD currents, UNESCO, 2009.
- Amanthi Perera (2009), The Eco Go Beyond Schools Sustainable Development Programme of Mas Holding in Srilanka, ESD currents, UNESCO, 2009.
- Prasanna Chandith, (2009) ASP-ESD Clubs in Sri Lanka, ESD currents, UNESCO, ESD in the UK in (2008); A Survey of Action, UK National Commission for UNESCO, 2008, London.
- Education for Sustainable Development in the United States of America. National Science & Technology Policy of Sri Lanka, National Science and Technology Commission, (2008)