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UNESCO Office, Jakarta

COUNTRY REPORTS ON EDUCATION FOR SUSTAINABLE DEVELOPMENT: Centred on the Five Cluster Countries of UNESCO Office, Jakarta

BRUNEI DARUSSALAM, INDONESIA, MALAYSIA, PHILIPPINES AND TIMOR-LESTE

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Preface

UNESCO Office, Jakarta has initiated the "Sub-regional Country Report Meeting on Education for Sustainable Development (ESD) in South East Asia: Centred on the Five Cluster Countries" to further the understanding and effective implementation of the United Nations Decade of Education for Sustainable Development (DESD). As the lead agency and coordinator for the UN initiatives in ESD, UNESCO's position is that a clearer understanding of the linkages between these initiatives is crucial to establish synergies in programme implementation at the country level.

This meeting is important and timely. Our societies face unprecedented global challenges: more than one billion people live in extreme poverty, growing inequality prevails within and between countries, and rapid technological advances require the capacity to constantly adapt. This is why building a more sustainable future now is vital for the well-being of present and future generations.

Education plays a fundamental role in addressing these global challenges. It gives individuals the knowledge and skills to make informed choices and participate in social and economic development. To a large extent, the type of education we envision will have a determining impact on the type of society we construct.

The 1st Sub-Regional Country Report Meeting on ESD provided a chance to exchange experiences, views and best practice on ESD regional strategies and relevant issues between the national ESD coordinators and focal points from the five cluster countries of UNESCO Office, Jakarta (Brunei Darussalam, Indonesia, Malaysia, Philippines and Timor Leste), ESD experts and representatives from the government officials, academics, non-governmental organizations (NGOs) and other relevant institutions, which have been implementing ESD projects. The meeting reached rich ESD policy dialogues along with participants' agreements on the development of a Sub-regional ESD Cooperation Strategy and initiation of ESD Experts' Working Groups.

As one of the results of the meeting, this ESD Country Report is a compilation of country status reports presented by the national ESD coordinators of the five cluster countries. The report provides the latest information and situation of each country, as well as its achievements, challenges, priorities and future directions in ESD.

I wish to extend my heartfelt gratitude to all the people who have contributed to and worked on this Country Report: Dr. Mee Young Choi, ESD Team Leader/Programme Specialist in Education, UNESCO Jakarta Office, Dr. Robert J. Didham, Education Policy Specialist of Institute for Global Environmental Strategies, Japan, as the co-writer of this report; Nor Erawadi bin Hj. Ibrahim, Sarimah Abu Bakar and

Hajah Noridah binti Abdullah from National Commission of Brunei Darussalam; Prof. Dr. Retno S. Sudibyo and Hendarman, PhD. from National Commission of Indonesia; Dr. Naimah Ishak and Dr. Isham Ishak from National Commission of Malaysia; Jeannette D. Tuason and Marie Antoinette N. Reyes from National Commission of the Philippines; and Apolinario Magno and Antonio de Jesus from National Commission of Timor Leste. I would also like to express my sincere appreciation to ESD Co-Assistants: Sarah Brikké, Nuzulia Latifah Untoro and Enis Widjanarti of ESD team members at Education Unit of UNESCO Office Jakarta. The meeting and its report would not have been possible without your support and cooperation.

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Abbreviations & Acronyms

BEST	Brunei Environment, Science and Technology
BMBF	*Bundesministerium für Bildung und Forschung* (German: Federal Ministry of Education and Research)
CCC	Climate Change Commission
CHED	Commission on Higher Education
CPS	Community Problem Solving
EFA	Education for All
EMB	Environmental Management Bureau
EPA 21	Enhanced Philippine Agenda 21
ESD	Education for Sustainable Development
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DEPR	Department of Environment, Parks and Recreation of the Ministry of Development
DESD	Decade of Education for Sustainable Development
GDP	Gross Domestic Product
GNI	Gross National Income
IEC	Information, Education, and Communication
IMF	International Monetary Fund
KKG	*Kelompok Kerja Guru* (Teacher Working Group)
MOE	Ministry of Education
MONE	Ministry of National Education

MDGs	Millennium Development Goals
NDP	National Development Plan
NEEAP	National Environmental Education Action Plan Framework
OPP	Outline Perspective Plan
PA 21	Philippine Agenda 21
PCSD	Philippine Council for Sustainable Development
PSSD	Philippine Strategy for Sustainable Development
RCE	Regional Centres of Expertise
SEA-CLLSD	South East Asian Center for Lifelong Learning for Sustainable Development
SIAD	Sustainable Integrated Area Development
SIGA	School inside a Garden
SPN 21	*Sistem Pendidikan Negara Abad ke-21* (The National Education System for the 21st Century)
STEP	Science, Technology and Environment Partnership
TESDA	Technical Education and Skills Development Authority
UNDP	United Nations Development Programme
UNESCAP	United Nations Economic and Social Commission for Asia and the Pacific
UNESCO	United Nations Educational, Scientific and Cultural Organization
WWF	World Wildlife Fund
YCELP	Yale Center for Environmental Law and Policy

1. Introduction

Education for Sustainable Development is globally identified as a key driver for society's achievement of sustainable development. The promotion of sustainable development requires more than mere awareness raising and information provision. ESD is important because it goes beyond the provision of information and addresses the cultural values and ethics that underpin sustainable development. It has the capacity to bring a rights-based and global justice perspective to development issues for inclusive societies. ESD also offers a larger vision of the purpose of education, encourages interdisciplinary and critical thinking, and helps to improve the quality of education.

1.1 Decade of Education for Sustainable Development (DESD)

United Nations declared the period of 2005-2014 as the Decade of Education for Sustainable Development (DESD) at the 57th session of the UN General Assembly in 2002, and UNESCO was mandated as the lead agency. The purpose of DESD is to integrate the principles, values and practices of sustainable development into all aspects of education and learning.

The objectives for the DESD are to:

- facilitate networking, linkages, exchange and interaction among stakeholders in ESD;
- foster an increased quality of teaching and learning in education for sustainable development;
- help countries make progress to attain the millennium development goals through ESD efforts;
- provide countries with new opportunities to incorporate ESD into education reform efforts (UNESCO, 2005).

1.2 Bonn Declaration

The UNESCO World Conference on Education for Sustainable Development was held from the 31 March to 2 April 2009; organized by UNESCO, the German Federal Ministry of Education and the German Commission for UNESCO. As a mid-term review of the DESD, the conference brought together a diversity of stakeholders to discuss key priorities and strategies for the second half of the DESD. The outcome of the conference was a consensus declaration and call for action. The Bonn Declaration details actions that need to be taken both at the policy level and the practical level for better implementation of ESD, including:

- Promote ESD's contribution to all of education and to achieving quality education.
- Increase public awareness and understanding about sustainable development and ESD.
- Reorient education curriculums and teacher training systems to address sustainability concerns through coherent policies at national and local levels.
- Promote evidence-informed policy dialogue on ESD, drawing upon relevant research, monitoring and evaluation strategies, and the sharing and recognition of good practice.

- Develop national ESD indicators that inform the effective implementation and review of ESD outcomes and processes (UNESCO/BMBF/German Commission for UNESCO. Proceedings – World Conference on Education for Sustainable Development, 2009).

1.3 The Role of UNESCO

UNESCO was designated as the lead agency in the promotion of the DESD, which is fully in line with UNESCO's function as laboratory of ideas, standard setter, capacity builder and promoter of international cooperation. UNESCO Office, Jakarta serves as both the Regional Science Bureau for Asia and as the cluster office for Brunei Darussalam, Indonesia, Malaysia, Philippines and Timor-Leste (see Figure 1.1 below). As the cluster office, UNESCO Office, Jakarta covers the implementation of all major programmes and mandates by UNESCO in these five countries as well as disseminates and shares information and knowledge in the fields of education, science, culture and communication in the Asia and Pacific region. For activities on ESD, the cluster office also cooperates directly with the Bangkok Regional Bureau for Education. The cluster office also coordinates activities with the UNESCO National Commissions (NatComs) in these five countries. The mission of the UNESCO Office, Jakarta is to contribute to peace and human development in an era of globalization through the education, sciences, culture and communication.

Figure 1.1: The map of Five Cluster Countries of UNESCO Office, Jakarta

The UNESCO Office, Jakarta is currently working on a project to improve the implementation of ESD in the cluster countries. Through the program, they hope to cooperate closely with each country to develop their capacity for implementing ESD, and they also aim to provide better coordination between the five countries for cooperative actions on ESD. A common objective for ESD in these five countries has been identified for the development of a strong climate change education component within the national ESD context of each country. The Jakarta office will work in partnership with all five countries to develop such a component.

2. Country Reports

2.1 BRUNEI DARUSSALAM

The country of Brunei Darussalam is a small nation on the island of Borneo. Brunei Darussalam accounts for about 1% of the total land mass of Borneo. The country's population, as of 2008, was 392,000; of which 27.3% are children (aged between 0-14) (UNESCAP, 2010).

Brunei Darussalam benefits from a prosperous economy and has one of the highest per capita incomes in Asia. Due to the government's investments of oil and gas revenues into the country's infrastructure and improvements for social welfare, the country has achieved the vast majority of the targets defined under the Millennium Development Goals (MDGs). Education and health are two of the key areas where the government has achieved high standards. Participation in both primary and secondary education is above ninety percent of school age children. The education system also benefits from some of lowest pupil-teacher ratios in all of Asia. The adult literacy rate in the country is at 95% (UNESCAP, 2010).

Brunei Darussalam officially joined UNESCO in 2005. It was at this point that the concept of Education for Sustainable Development gained strong interest from education officials in the country. The Brunei Darussalam National Commission for UNESCO has furthered the awareness of ESD through international collaboration in conferences and workshops and through domestic promotion in meetings and seminars. In September 2008, officers of the Ministry of Education and the Environment Department participated in an ESD-mapping and capacity building workshop facilitated by UNESCO in Manila, Philippines. The recommendations submitted in the report from this workshop provided a stimulus to move the agenda on ESD forward in Brunei Darussalam.

The Ministry of Education formed a special task force on Education for Sustainable Development. Following the investigations of this task force, it was acknowledged that ESD is already well positioned in the existing education system and is further supported by both governmental and non-governmental agencies. To develop a more cohesive strategy on ESD, three priority areas were identified for educational development: 1) health, 2) energy, and 3) environment. In November 2009, an extensive series of lectures were held to disseminate the concept of ESD and the focus priorities to the Heads of Departments within the Ministry of Education and to school principals and leaders.

In April 2010, the Ministry of Education organized a four day ESD capacity building workshop that was facilitated by UNESCO and officiated by the ministry's Deputy Permanent Secretary. Forty officers from

the Ministry of Education and other relevant government agencies participated in this workshop. Several follow-up meetings were also held to promote wider dissemination of the recommendations from this workshop. The Ministry of Education is now focusing on developing and implementing ESD activities in several schools to demonstrate best practice opportunities for the education sector.

2.1.1 Education System in Brunei Darussalam

Brunei Darussalam's educational strategy is promoted as *Sistem Pendidikan Negara Abad Ke-21 (SPN 21)* – the National Education System for the 21st Century. This new system promotes extensive reforms to the educational system in Brunei Darussalam to be fully implemented by 2012. SPN 21 aims to achieve four major objectives:

- Prepare students to meet the social and economic challenges of the 21st Century.
- Equip students with the skills needed as 21st Century skills.
- Realize the Ministry of Education's vision and mission.
- Fulfill the Strategic Themes outlined in the Ministry of Education's Strategic Plan (2007-2011).

SPN 21 structures the ongoing educational reform towards student-centered learning and places a strong emphasis on character building. The new education strategy also promotes the development of diverse skill sets for students that will allow them to be valuable assets in careers that will promote the country's long-term sustainable development.

The Wawasan 2035 – the Vision Brunei for 2035 – envisions a country that is recognized for its high quality of life, sustainable economy, and well-educated citizens. Education for Sustainable Development provides the opportunity to simultaneously achieve the goals of Wawasan 2035 and SPN 21. To achieve this, it is important to establish a focused ESD strategy that incorporates the priorities of both the national vision and the SPN 21. This strategy could provide the opportunity to link all concerned parties and promote best practices in sustainable development from within the country and across the region.

2.1.2 ESD in Brunei Darussalam

The national agenda for sustainable development in Brunei Darussalam is to be implemented by the individual ministries in relation to the specific social, economic and environmental issues and activities they deal with. The ministries are also responsible for the promotion of their sustainable development activities as a form of education for sustainable development. Efforts should also be made to promote inter-ministerial cooperation, networking, and private-public partnerships to strengthen sustainable development activities.

The Ministry of Education has not developed a specific ESD framework, and though the Department of Curriculum Development has not established environmental education as a single subject, attempts are

made to integrate environmental issues across multiple subjects. The national government of Brunei Darussalam has identified the environment, education and poverty as its three main priorities to be addressed through ESD.

Higher education institutions in Brunei Darussalam have also been implementing ESD activities. The Universiti Brunei Darussalam has initiated several environmental education initiatives including climate change mitigation, action research and community problem solving (CPS). As part of the CPS programme, the university has initiated an elective course at the undergraduate level, a core course at the post-graduate level for the masters in environmental management, and an optional course at the post-graduate level for the masters of education. The Institut Teknologi Brunei began a project on rainwater harvesting for domestic dwellings to create awareness amongst students on the importance of water conservation.

Working plans currently exist for the further promotion of ESD in Brunei Darussalam. The Ministry of Education, as the country's National Commission for UNESCO, is committed to take action on ESD by:

- Establishing a task force on ESD and the proper administrative structure for national ESD management.
- Developing a database on ESD activities and projects.
- Utilize the database to identify good practice on ESD to contribute to Brunei Darussalam's sustainability.
- Formulate policy on ESD based on consultations with key stakeholders.
- Develop guidelines (or a national policy) on ESD for Brunei Darussalam.

2.1.3 Climate Change as priority for ESD

Brunei Darussalam is taking serious efforts to address the increasing threats from climate change. The country has experienced natural disasters from forest fires, haze, flooding and landslides. The country has adopted the United Nations' International Strategy for Disaster Reduction – Hyogo Framework for Actions 2005-2015. The Disaster Management Order was passed by the government in 2006 to focus on disaster risk reduction and rapid response. The National Disaster Council and National Disaster Management Centre were set up to manage the impact of natural disasters.

The education system has already integrated issues on environment and health into science and geography subjects as part of the development of an ESD focus. Students are currently receiving teaching on natural resources, global warming, pollution, deforestation, water conservation, and personal health. These topics are addressed in the formal curriculum through two approaches. First, specific issues on ESD are now taught as parts of traditional subject such as science, social studies, geography and agriculture. Second, a values-based approach to teaching and learning attempts to integrate lessons across multiple subjects. This values-based approach aims to create awareness, raise concern, and promote caring for the environment in an effort to address and mitigate climate change.

Educational reform directed by the concept of ESD provides the opportunity to bring the teaching and learning processes in touch with the issues and challenges of the 21st Century. ESD reforms should focus on developing practical, meaningful lessons that will help students to formulate solutions and actions to deal with the challenges of climate change and sustainable development. ESD also offers a pathway to align the pedagogies of SPN 21 and the Vision Brunei 2035 to clearly achieve the goals of a nation grounded in a high quality of life, a sustainable economy, and well educated citizens.

2.1.4 Current Achievements in Sustainable Development

- The ASEAN+3 Youth Environment Forum was held in Brunei Darussalam in April 2010 in cooperation between the Department of Environment, Parks and Recreation of the Ministry of Development (DEPR), the Science, Technology and Environment Partnership (STEP) Centre of the Ministry of Education and the ASEAN Secretariat. The purpose of the forum is to promote and enhance the participation and cooperation of youths in Southeast Asia in the field of long term environmental care, protection and management. The theme of the forum was "Creating a Climate for Change". This forum is one of the five priority activities determined by ASEAN member countries during a workshop on the implementation of ASEAN Environmental Education Action Plan 2008-2012 held in Thailand in July 2009.
- Many schools in Brunei Darussalam have established environmental clubs as part of the schools' co-curricular activities. The STEP Centre and DEPR organize events for members of these clubs and have cooperated with other governmental departments and non-government agencies. Examples of activities conducted by the clubs include environmental clean-up campaigns, tree planting, practicing 3Rs (reduce, reuse, recycle), poster drawing and visits. Activities have also been held to celebrate various world days such as Environment Day and Earth Day.
- In conjunction with national Energy Day in 2009, schools in Brunei Darussalam launched Energy Clubs. The Energy Clubs promote a culture of saving energy from excessive usage of electricity as well as fossil fuels. This is a cooperative initiative of the Energy Division of the Prime Minister's Office and the STEP Centre. Currently, twenty-seven secondary schools have energy clubs and have outlined various activities for energy efficiency, conservation and education.
- The STEP centre collaborates with other agencies to initiate further activities aimed at raising environmental awareness. One of the main projects is called Brunei Environment, Technology and Science (BEST) Awards and is conducted in partnership with the Brunei Shell Petroleum Company.

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2.2 INDONESIA

The country of Indonesia consists of over 17,000 islands in the Malay Archipelago. Indonesia has the fourth largest national population in the world with a total number of 227,345,000 (in 2008). Children (aged between 0-14) account for 27.4% of the population (UNESCAP, 2010).

Indonesia has the largest economy in Southeast Asia and is a member of the G-20. However, the Indonesian economy was extremely impacted by the Asian financial crisis in 1997-1998. Economic recovery has been slow and is still incomplete. Over 38 million people in the country, 17% of the population, still live below the poverty line (UNESCAP, 2010).

There is high enrolment (95%) in primary education in Indonesia. In secondary education, the enrolment rate is 67%. The government spends around 17% of their total expenditure on education (UNESCAP, 2010).

The Government of Indonesia is committed to implementing the Decade of Education for Sustainable Development and implementing the actions under the Bonn Declaration. This commitment is highlighted in the government's strategy for educational development from 2010-2014. The Strategic Plan of the Ministry of National Education for 2010 mandates that education should foster an understanding of the importance of sustainability and ecosystem balance and an awareness of humans as members of the wider ecosystem. Education should also promote the values of social and natural responsibility in order to impart the conception that their commitment as citizens should extend to their fellow citizens and to the natural environment of their country. The strategic plan sets out a policy for educational development based on a paradigm of Education for Sustainable Development (labelled PuP3B) in order to invite people to think about the sustainability of our planet and the importance of investing in the environment.

Education for Sustainable Development is being implemented to realize the function of national education to develop the ability to form character and civilization of a dignified and educated nation as mandated by Law No. 20 of 2003. ESD also provides the opportunity to achieve the National Education vision for 2025 which is for the formation of comprehensive and competitive intelligence of the Indonesian population including being spiritually intelligent, emotionally intelligent, socially intelligent, kinaesthetically intelligent and intellectually smart. The implementation of ESD is operationally characterized by a joint agreement between the Ministry of Environment and Ministry of National Education (*Keputusan Bersama MenLH dan Mendiknas,* 2010). Under this recent agreement, the Ministry of National Education has taken a much greater role in the implementation of ESD, prior to which it had mainly been managed by the Ministry of Environment. All units of the Ministry of National Education are expected to implement the national policies in relation to ESD.

2.2.1 Center of Policy Research and Educational Innovation (Puslitjaknov), Office for Educational Research and Development (Balitbang), Ministry of National Education

The Center of Policy Research and Educational Innovation is tasked with implementing policies, programs and activities of Education for Sustainable Development in accordance with the tasks and functions detailed in the Bonn Declaration (see Table 2.1 for details). As part of its tasks, the center conducts research, development and research network development. ESD became a research and development focus for Puslitjaknov in 2008.

Research on Education for Sustainable Development in Indonesia found:

- The Indonesian government has announced policies and various educational programs that integrate the principles, values and practice of sustainable development into education and learning aspects. However, ESD policies have not been designed in a clear manner that covers all ESD perspectives and components.
- The values of ESD have been integrated through the learning activities undertaken in the formal, non-formal, and informal education.
- School principles, heads of programs and teachers in formal education do not understand the ESD concept, objectives, policies, and programs, as well as the integration method of ESD into the subject learning. This is in part due to the fact that the socialization of ESD at the education unit is not maximized as most educational professionals have never received any formal dissemination or training on the concept of ESD. There is also currently limited availability of learning resources, and of funds for dissemination and implementation of ESD learning.

Recommendations on Education for Sustainable Development in Indonesia:

- The Strategic Plan (2010-2014) of the Ministry of National Education (MONE) needs to establish policy on ESD in a clear and measurable manner to cover socio-cultural, economic and environmental perspectives in every channel, type and level of education (ie., through in-class learning activities, extracurricular, and environmental activities). In an environmental perspective, policies need to be based on joint agreements between the Minister of Environment and the Minister of National Education on the development of environmental education.
- Education for Sustainable Development policies and programs needs more intensive dissemination and coordination to the provincial, city and district education officials prior to promoting to school principals and teachers. ESD dissemination needs to express three core issues: its concept and purpose, relevant policies and programs, and the method of integration into subject learning. It should also outline ESD's practice in extracurricular activities and Wiyata Mandala programs of education units. The Ministry of National Education, other relevant agencies (Ministry of Environment, Ministry of Health, Ministry of Religious Affairs, etc.), and provincial, city, and district education offices need to coordinate and work together to synergize the realization of activities and ensure the necessary resources/support.

- It is necessary to hold a briefing on the integration of ESD values into each relevant subject. Appropriate learning materials and instructional media are also required. The Ministry of National Education and Ministry of Religious Affairs needs to establish learning guidelines that for ESD conception in intra-curricular, extra-curricular, and environmental activities.

Table 2.1. Tasks and Functions of Balitbang on ESD

Basic Tasks and Functions of Balitbang (Minister Decree No. 40 , 2006)	Policies, programs and activities on ESD (in accordance with 2009 Bonn Declaration)
Carrying out educational research and development accordingly Balitbang performs its functions: ◆ Formulating of educational research and development policy; ◆ Planning and programming educational research and development; ◆ Conducting educational research and development; ◆ Executing coordination in educational research and development; ◆ Conducting evaluation and report writing ◆ Executing administration affairs of Balitbang, MONE	1. Developing ESD implementation models and proposing policy recommendation to chief executive of the Ministry about : (1) national strategy on the implementation of ESD, (2) strategy on monitoring and evaluation of ESD implementation, (3) reorientation of the educational system that emphasizes lifelong learning, (4) improvement of the relationship between formal, non-formal, and informal education through ESD, (5) reorientation of education and training system for sustainable development, particularly through the integration of ESD values into school learning subjects. 2. Implementing and utilizing the results of relevant research in policy making, developing strategies of monitoring and evaluation, and disseminating information on the implementation of ESD. 3. Promoting and discussing policies on ESD with the relevant parties and stakeholders. Promoting research results related to ESD, including those implemented through UNESCO program. 4. Identifying and providing support to research institutions that can become the center of expertise and innovation in disseminating knowledge and ESD resource development. 5. Encouraging and enhancing the development of scientific excellence, research, and new knowledge for ESD through an ESD research network involvement. 6. Developing national ESD indicators that can indicate the progress of ESD values implementation and enabling the implementation of review to the process and analysis of the achievement of ESD. Developing ESD monitoring and evaluation systems at national and regional levels, as well as taking the initiative to develop strategies and implementation of ESD that can provide guidance for the UN in providing the conclusions in the real and concrete implementation of DESD. Developing incentive structures to support research and development of ESD.

2.2.2 Activities on ESD in 2009

A. Development of concept model on comprehensive and competitive Intelligence of Indonesian character building through implementation of ESD

- National strategy for ESD implementation which includes information on: the foundation and nature of ESD; the policies, programs and activities to be led by the government (Ministry of National Education and related institutions); actions for local governments to implement ESD; implications and principles of the model; and follow up activities.
- Implementation of ESD through intra-curricular activities outlines: the foundation and nature of ESD; the vision and mission of intra-curricular ESD activities; competence and learning objectives; approach for education personnel, facilities and infrastructure; classroom management; financing; assessment, monitoring and evaluation; implications and principles of the model; and follow up activities.
- Implementation of ESD through extracurricular activities outlines: the foundation and nature of ESD; the vision, mission and objectives of extracurricular ESD activities; learning implications and principles of model; and follow up activities.

B. Initiating testing of the National Strategy for ESD Implementation:

- Gives a clear reference to stakeholders, especially the Education Ministry, local authorities and schools on ESD to have the same perception, understanding, and commitment, as a step of ESD socialization.
- Synchronization and coordination of policies, strategies, programs and activities of ESD from the central, local level to the education units level.
- Each party carries out ESD in accordance with its duties and functions refer to the Bonn Declaration in 2009.
- Creates a forum of communication between interested parties in planning, implementing, monitoring, evaluating, and reporting ESD activities, to facilitate Indonesia DESD reports on international forum.

C. Initiating testing of ESD implementation in intra and extracurricular activities in order to:

- Provide clarity to subject teachers and classroom teachers and supervisors of extracurricular activities about understanding and the basics of implementing ESD through intra curricular and extracurricular activities.
- Provide a basic reference for the school principals, Teacher Working Group *(KKG)* forums at the elementary level, and the curriculum divisions in the city/district education offices regarding planning and cost allocation in the implementation of ESD.
- Create a forum for communication between interested parties in planning, implementing, monitoring, evaluating, and reporting activities of ESD.

- Completing the model for ESD with detailed and operational guidelines including ESD learning material, Guidelines of *KTSP* translation with a concept of ESD, and Guidelines for Evaluation and Monitoring of ESD.

The model for Education for Sustainable Development should be developed to include an implementation strategy for both in school curriculums and extracurricular activities in elementary, junior and senior high schools. Currently, this model is limited and needs to be developed further.

2.2.3 Activities on ESD in 2010

A. The development of an education model for the comprehensive and competitive intelligence of Indonesian character building through the implementation of Education for Sustainable Development (activities in process) :

- Model of ESD implementation through intra-curricular that is applicable in learning.
- Guidance on ESD materials for teachers that can be used for learning.
- Guidance on how to integrate the values of ESD into the intra-curricular, particularly to the standard of competence *(SK)* and Basic Competency.

2.2.4 Follow up

In accordance with duties and functions, the Center of Policy Research and Educational Innovation at MoNE will continue and support the implementation of ESD in Indonesia based on the available resources and in accordance with the agreements that have been proclaimed by UNESCO in Bonn, among others in the field of research, development, and other aspects, as already formulated in the agreement.

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2.3 MALAYSIA

The country of Malaysia consists of distinct regions, the southern portion of the Malay peninsula and territory on the island of Borneo. Malaysia has a population of 27,014,000 (in 2008). Children (aged between 0-14) comprise 30.0% of the country's population (UNESCAP, 2010).

Based on the exportation of natural resources, Malaysia has enjoyed a very strong economic record. This has supported the country's achievement of a high human development level and a very low poverty rate with only 2% of the population below the poverty line (UNESCAP, 2010).

The government of Malaysia spends around 25% of its public expenditure on education which is one of the highest in Southeast Asia. Malaysia has nearly full enrolment in primary education, and there is around 70% enrolment ratio in secondary education. The country also has a high enrolment ration in tertiary education for Southeast Asia at around 30% (UNESCAP, 2010).

2.3.1 ESD in Malaysia

The Government of Malaysia through the Ministry of Education (MoE) has taken the necessary measures to ensure that the educational development plans are practical, realistic and action-oriented, besides being responsive to the needs of the nation. The Malaysian education system has advanced in line with its national development. The advancement covers the periods of: Pre-Independence (prior to 1957); Post-Independence (1957-1970); New Economic Policy (1971-1990); National Development Policy (1991-2000); and National Vision Policy (2001-2010). Throughout these periods, education plays a critical role and is crucial to the nation's overall sustainability. The educational reforms in Malaysia have always been influenced by various internal demands and the challenges brought about by the advancement in science and technology, new communication technologies, and the global development of politics and economy.

Education for Sustainable Development is a holistic programme that should be given continuous emphasis to ensure that the goals are achieved. It is important that ESD be defined according to the needs of a nation. The MoE believes that the term sustainable development is evolving. It has progress from the economic growth to social and cultural development. The working definition for ESD in the Malaysian context encompasses the aspects of sustaining future generations with what we have today, for tomorrow's generation. ESD is a vision of education that seeks to empower people to assume responsibility for creating a sustainable future. Sustainable development refers to improving the quality of life for both current and future generations. In order to improve the nation's quality of life, education is a fundamental means for achieving sustainable development. MoE is adopting a holistic approach to human capital development,

comprising knowledge, skills and ethical values to establish a progressive mindset and cultural, social and environmental awareness.

2.3.2 National Framework on ESD

The Ministry of Education recognises that knowledge, skills and competencies are the new wealth to create the value for the society and nation. The progress of the nation is attributed to the systematic planning process put in place since the first five-year national development plan (1956-1960) was formulated. The five year development plan is a medium term plan within a three-tiered cascading planning framework for development in Malaysia. The Outline Perspective Plan (OPP) is a long term plan which guides the nation in setting the national agenda for implementing the five-year national development plan. The OPP has always identified education as one of the main mechanism for moving the nation ahead. All the developmental plans place the development of human resources as a major thrust in ensuring a sustainable socio-economic growth.

Like other countries, Malaysia is faced with many challenges such as globalisation and liberalisation, internationalisation, rapid development in science and technology, environmental disasters, erosion of culture and so forth. In responding to these challenges, the MoE has produced education development plans (blueprints) aimed at developing humans who are knowledgeable, literate in new media and information technologies, highly skilled and possess good moral values. Further policy improvements were made and education legislation was strengthened to provide a learning environment that ensures education for all.

In 2001, the Ministry of Education launched the Education Development Plan (or blueprint) for 2001 to 2010 which takes into account the goals and aspiration of the National Vision Policy, the OPP3 and the Malaysia Development Plan aiming to build Malaysia into a developed nation that maintains its unique nature. The blueprint is now the driving force in the planning of ESD programmes. The planning and implementation of educational development is based on the four main thrusts: to increase access to education; to increase equity in education, to improve the quality of education and to improve efficiency and effectiveness of educational management.

2.3.3 Strategy on Education for Sustainable Development

In promoting Education for Sustainable Development, there are several strategies which the Ministry of Education implements across all levels of the education system in Malaysia :

- Expanding the supply of highly skilled and knowledgeable workforce;
- Increasing accessibility to quality education and training;
- Improving the quality of education and training delivery systems;

- Promoting lifelong learning;
- Increasing the supply of science and technology manpower; and
- Reinforcing positive values.

Malaysia has set up the Regional Centres of Expertise (RCE) – a network of formal, non-formal and informal education organisations, mobilised to deliver education for sustainable development to local and regional communities. The RCE strategies include establishing leadership for sustainable development, developing and promoting compelling images of sustainable regional development, developing an ESD strategy guide for local authorities and establishing one stop information centre on ESD good practices in the region.

2.3.4 Current challenges towards implementing ESD

Education is confronted with challenging future which requires comprehensive, systematic and holistic planning. Providing a high quality education system will strengthen human capital development in a comprehensive and continuous manner so that the output caters to national and international demands. Current economic, social, cultural and political contexts can be major constraints to sustainable development. Other challenges include eradication of poverty, gender equality and rural urban inequalities. In education, the challenges include providing quality and holistic education, continuously addressing socio-economic imbalances through bridging the education gap and inculcating research culture to help solve educational issues.

2.3.5 Achievements in Education

By the year 2020, Malaysia aspires to become a developed nation that has achieved balanced economic, political, social, spiritual and cultural development. Malaysia aims to be a nation with a united and highly confident society, infused by strong religious, moral and ethical values. The country aims to promote a society that is democratic, liberal and tolerant, economically just and equitable, progressive and with an economy that is competitive, dynamic, robust and resilient.

Malaysia has achieved high levels of participation in primary and secondary schooling and relative parity of participation and outcomes between girls and boys. As of 2010, preschool enrolment was 697,469 (72.04%) of children 4-5 years old and the target for preschool enrolment by 2012 is 87 percent. About 65 percent of Primary 1 students (6+ years old) have acquired basic literacy and 74 percent acquired basic numeracy skills. The targets for both literacy and numeracy achievements are 90 percent in 2012. Youth (15-24 years old) literacy rate is 98 percent as compared to adult literacy rate which is above 92 percent.

In 2005, about 70,000 students were enrolled in Technical Secondary School and 100,000 youth participated in various skills and entrepreneur programmes provided by Ministry of Entrepreneur and Cooperative Development and another 10,000 attended community colleges. 12,000 were trained by Ministry of

Human Resources and 130,000 were enrolled in public and private higher education institutions.

At the university level, there have been several programmes and activities concerning ESD. These include community projects such as the National Research and Innovation Competition's "Empowering Sustainability through Innovation" and Creative Link's "Museum to the Village". The University of Science Malaysia has invented a Rapid Diagnostic Test for Typhoid and an Eco-Sorbent which is a natural sorbent made from rice husk ash for industrial gas cleaning technology. The university is also directly involved in organizing conferences, seminars and workshops on ESD such as the International Conference on Environment in 2008. Research has been conducted on ESD in the educational system of Malaysia for ESD and also how entrepreneurship can help women achieve sustainable development.

2.3.6 Priorities on ESD

The government of Malaysia is committed to achieving sustainable development over the long term and taking effort for future generations to continue to enjoy a high quality of life. The priorities for ESD in Malaysia are divided into three categories: environment, education and poverty reduction. In focussing on environmental issues, Malaysia will continue to strive for a "zero waste" society. The government also aims to preserve the environment and to create strong relationships between governments, NGOs, international organizations and academia.

In education, the Ministry of Education will continue to strengthen the implementation of environmental education in Malaysian schools. Sustainable development will be integrated into the curriculum of preschool, primary, secondary and tertiary education. ESD should also be addressed in lifelong learning, teacher training and reinforcing school culture (a culture of excellence and a healthy learning environment). The ministry will also promote collaboration with international experts on sustainable development.

The priority on poverty aims to establish hostels for low income families, students who live far way from school, and students with special needs. The Ministry of Education will continue to provide support systems for students which include text book loan schemes, scholarships and education loans, Integrated School Health Programme, School Nutrition Programme and Poor Students' Trust Fund.

Planned future activities on ESD aim:

- To encourage the active engagement of stakeholders through relevant programmes;
- To develop ESD partnerships focusing on the priority themes such as waste management, tourism and cultural heritage;
- To cultivate ESD partnerships that addresses social equity issues through education that addresses the social, environmental and economic dimensions of ESD simultaneously;
- To foster ESD partnerships that addresses the efficient use of natural resources;

- To developing partnerships that test the potentials of using the Internet to develop innovative and effective online ESD learning communities, and;
- To promote the professional development of teachers.

2.3.7 Climate Change as a priority of ESD

Climate change is a new priority that the Ministry of Education is preparing to address through ESD. The ministry has taken steps to prepare school personnel and students to cope with natural disasters. Schools in Malaysia must cope with flooding during monsoon periods, landslides, haze due to open burning, draughts, earthquakes and tsunamis. The ministry has released a manual on school preparations and readiness to cope with natural disaster. The manual helps to instill awareness and provide knowledge concerning natural disasters so that all schools in Malaysia ready to face these phenomena. This manual helps schools plan and implement programmes to face natural disasters.

2.3.8 Conclusion

There is a high level of concern and awareness among the people of Malaysia on environmental, social and economic issues and various programmes and activities are implemented to address these issues. Even though the awareness programmes are prominent, a more comprehensive education-based approach is still needed. The very concept of ESD challenges the way people think about the world today. ESD itself aims to challenge the socio-economic development by encouraging the people to imagine a different future and be able to reflect on how our values, beliefs and current behaviour affect the ability to change the future into a better living condition. In order for this change to happen, education plays a crucial role in developing awareness, understanding and responsibility towards sustainable development.

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2.4. THE PHILIPPINES

The country of the Philippines consists of an archipelago of 7,000 islands in the western Pacific Ocean. The Philippines has a population of 90,348,000 and 34.3% are children (aged between 0-14). Of the population in the Philippines, 22% are living below the poverty line, and they have achieved a medium human development ranking (UNDP, 2010). The country has achieved the highest environmental performance index of the five countries represented by the Jakarta cluster office (YCELP, 2010).

The enrolment ratio in primary education in the Philippines is 92%. In secondary education, the enrolment rate is 61%, and in tertiary education it is 28.5%. However, the enrolment ratio in primary education has actually declined since the early 1990s by 4%, and it has also declined slightly in tertiary education. The student to teacher ratio in both primary education and secondary education have been declining steadily but still remain high at 33.7 in primary and 35.1 in secondary education. The Philippine government's expenditure on education is 16% of their entire expenditure (UNESCAP, 2010).

2.4.1 ESD in the Philippines

The history of Education for Sustainable Development in the Philippines is closely linked with the government's advocacy for sustainable development. The sustainable development paradigm in the Philippines is not new. As early as the 1950s, non-government organizations in the Philippines began a movement for an alternative form of development. Established in 1952, the mission of the Philippine Rural Reconstruction Movement (PRRM) is to enhance the capacity of rural communities in planning and implementing sustainable development by providing an integrated program of education, livelihood, health, habitat, environment and self-governance. PRRM established the Conrado Benitez Institute for Sustainability to work towards "education for sustainability – a kind of education that enables us to question the fundamental assumptions, values and institutions of the present order of things and to assist us to see the pathways to sustainable future."

The Philippine Government has established institutional structures to work towards sustainable development. The Department of Environment and Natural Resources (DENR) was reorganized in 1987 guided by its mission to "be the driving force in the pursuit of sustainable development, enabling stakeholders' participation in the protection, conservation and management of the environment and natural resources for the present and future generations." It undertook the formulation of a Philippine Strategy for Sustainable Development (PSSD) which was officially adopted by the country in 1989. The goal of the PSSD is "to achieve and maintain economic growth without depleting the stock of natural resources and degrading environmental quality." The Environmental Management Bureau of the DENR developed

a National Strategy on Environmental Education in 1989. This document defined the goal, strategies and programs on environmental education for the country. The National Environmental Education Action Plan Framework (NEEAP) for 1992 to 2002 provided further promotion for environmental education.

Following the historic adoption of Agenda 21 at the Rio Earth Summit in 1992, the Philippine Government created the inter-agency Philippine Council for Sustainable Development (PCSD) to provide the mechanism for attaining the principles of sustainable development and thus assure its integration in the Philippine national policies, plans and programs that will involve all sectors of the society. In 1996, the Philippine Agenda 21 (PA 21), the nation's blueprint for sustainable development, was adopted. In 2009, the document was updated and refined as the Enhanced Philippine Agenda 21 (EPA 21), with a more focused thematic program thrusts on eradicating poverty, managing globalization, achieving social equity, securing peace and solidarity, maintaining ecological integrity and promoting empowerment and good governance.

The National Environmental Awareness and Education Act was adopted by the Philippine Government in 2008. This law mandates all relevant agencies to integrate environmental education in its school curricula at all levels, (including in day care, preschool, non-formal, technical vocational, professional level, indigenous learning and out-of-school youth courses). Consequently, the NEEAP was updated to account for the goals of the Decade of Education for Sustainable Development and to cover the same timeframe (2005-14). The updated NEEAP envisions an environmentally-literate and proactive citizenry instilled with a sense of responsibility to care, protect and enhance environmental quality that is conducive to their well-being, supportive of the nation's economic development, and unified in its pursuit of peace, social justice and equity in the use of its natural resources.

In 2009, the Philippine-based Southeast Asian Center for Lifelong Learning for Sustainable Development (SEA-CLLSD) was approved by the 35th session of the UNESCO General Conference as a Category 2 Centre. Its mission is to be a service provider of lifelong learning for sustainable development, to establish standards for ESD, to conduct research and to serve as resource management center for Southeast Asia. The Center shares UNESCO's view that ESD is for everyone, at all stages of life and in all possible learning contexts.

The UNESCO National Commission of the Philippines (NatCom) changed its administration on 30 June 2010. Following this, a thorough review of the country's approach on implementing Education for Sustainable Development has been initiated. Consultations were conducted with the PCSD, EMB-DENR and the Department of Education (DepEd) to ensure harmonization and collaboration on ESD.

2.4.2 Definition of ESD in the Philippines

In the spirit of harmonization, the UNESCO National Commission of the Philippines has defined ESD for the Philippines in the context of the Enhanced Philippine Agenda 21, as follows:

ESD is a learning process in all levels and types of education that envisions a better quality of life for all Filipinos through the development of a just, moral, creative, spiritual, economically vibrant, caring, diverse yet cohesive society characterized by appropriate productivity, participatory and democratic processes and living in harmony within the limits of the carrying capacity of nature and the integrity of creation.

This definition highlights the vision for sustainable development set out in the EPA 21 to be achieved through all forms of learning, formal, non-formal and informal, for all levels and all ages.

2.4.3 ESD Framework at the National Level

The previous ESD National Coordinator and the National Focal Point adopted the UNESCO Asia Pacific ESD Strategy (2005-2014). The Strategy was also presented to the National Education For All Committee. However, there was no formal adoption at the national level.

In consultation with the PCSD, DepEd and EMB-DENR, the UNESCO National Commission deems that the EPA 21 should be the overarching framework in the implementation of ESD in the Philippines. The overall direction shall be the promotion of sustainable lifestyles and responsible citizenship among Filipinos with the following specific manifestations:

- Ensure that education is geared towards developing full human potential. The goal of education should not only be aimed at securing future employment for Filipinos but also to provide them with the opportunities to be productive and of service to the Philippine society and humanity as a whole;
- Direct curriculum development at all levels towards developing well-rounded skills and knowledge on multiple disciplines and promoting systems thinking, such that each course will provide an understanding of links among environmental, economic, political and social dimensions. Conduct a comprehensive review of all curricula to determine entry points for mainstreaming sustainable development principles;
- Develop and integrate sustainable development modules in curricula at all levels and fields of specialization to reorient value systems towards recognition of individual responsibilities for sustainable development;
- Create and implement innovative and non-traditional learning methods (e.g. artistic expression, community based and experiential learning) that will enhance hands-on exposure on sustainable development issues and integrate them with formal methods;
- Popularize and develop preference for sustainable lifestyles by increasing access to information on sustainable practices at the home, office, academic institutions, community and other settings through the power of media and other creative forms of communication;
- Create innovative reward and compensation systems for environmental services performed by individuals, households and communities; and

- Launch a government "saturation" campaign that will bring advocacy for sustainable development across all agencies and across all levels and branches of government. This will involve the mandatory inclusion of SD in all programs of government training institutions, regularizing the budget for SD trainings, integration of SD criteria in competency evaluations of prospective civil service employees, Career Executive Service Officers and Cabinet appointees.

The ESD Programme should also be guided by the NEEAP 2005-2014. The three-fold objectives of the NEEAP are as follows:

- To initiate mass-based action on environmental conservation through information, education, and communication (IEC) campaign;
- Improve the delivery systems for environmental education at the formal and non-formal levels; and
- To produce the environmental human power needed for the next two decades.

The major strategies that shall be adopted by the Department of Environment and Natural Resources, in tandem with the major education departments (the Department of Education, the Technical Education and Skills Development Authority and the Commission on Higher Education), in attaining these objectives are as follows:

- Help in the establishment of centers of excellence in environmental education in the different regions of the country;
- Provide an incentive support to deserving professionals who would wish to pursue specialization in the fields of environmental science and management;
- Strengthen the environmental education role and advocacy work of NGOs;
- Improve the technical capability of the DENR and the education departments, in the delivery of environmental education to the general public and other concerned agencies;
- Mobilize the youth in environmental enhancement projects; and
- Promote an integrated approach in educating the local communities on environmental conservation.

2.4.4 Achievements and Challenges in Implementing ESD

In reviewing the achievements and challenges on implementing the ESD Programme at the national level, the UNESCO National Commission took into consideration the UNESCO Asia Pacific ESD Strategy (2005-2014).

Awareness Raising

The NatCom organized the National Conference “UNESCO-Philippine Millennium Development Goals and its Partners in Re-engineering ESD” on 20-21 January 2005 in Manila. Stakeholders were engaged in discussions on establishing partnerships, legislating for the promotion of ESD and conquering poverty through DESD. The NatCom also organized the National Symposium on ESD on 23 February 2007 in Manila.

Participants were made aware of the different modalities on ESD and best practices as well as discussed a collaborative framework for setting up a Regional Center for Lifelong Learning. Efforts must be sustained for the awareness drive particularly at the local level.

Developing national monitoring systems

The national priorities for sustainable development are enshrined in the Philippine Agenda 21 and the Enhance Philippine Agenda 21. PCSD's Sustainable Integrated Area Development (SIAD) localized the PA 21. However, it is still necessary to identify national ESD goals, targets and indicators as well as a regional indicator framework. The previous ESD Coordinator and Focal Point had limited the goal to teacher training.

Reorienting Education Curricula

Several actions have been taken in the Philippines to support the reorientation of the curriculum and the integration of education for sustainable development. The NatCom funded the "Curriculum Mapping and Integration of Lifelong Learning for Sustainable Development in the Preschool Level" project of the SEA-CLLSD. One of the study's recommendations is to pilot the newly designed preschool curriculum which integrated the principles of sustainable development. The Department of Education has also developed modules, lesson exemplars and resource materials on disaster risk reduction and climate change. The NEEAP provides an action plan for environmental education in all learning levels. Remaining a challenge to the implementation of ESD though is the lack of funds for printing modules, lesson exemplars and resource materials, teacher training and monitoring.

2.4.5 Priorities in ESD

The priority to move forward the ESD Programme in the Philippines is to immediately convene a steering group on ESD either through the PCSD Sub-Committee on Information and Education or an interagency consultative group composed of the NatCom, PCSD, DENR, DepEd, Climate Change Commission and a civil society representative. The steering group shall then plan out the national ESD framework, goals, targets and indicators for approval of and support from high-level officials of relevant line ministries, civil society and the private sector. Ongoing initiatives of the DepEd and EMB will likewise be supported particularly on the implementation of NEEAP and reorienting the education curricula and teacher education towards ESD.

2.4.6 Climate Change as a priority of ESD

In 1989, a multi-sector workshop organized by the Environmental Management Bureau (EMB) of the Department of Environment and Natural Resources drew up a National Strategy on Environmental Education. It defined the goal of environmental education in the Philippines and identified key strategies and programs for the formal and non-formal sectors. In 1992, the National Environmental Action Plan Framework for 1992 to 2002 was formulated to underpin economic and environmental priorities. This document was later updated as NEEAP for Sustainable Development 2005-2014 in support of the UN Decade

of Education for Sustainable Development. The EMB has consistently conducted information, education and communication activities for the general public's awareness and appreciation of environmental issues as well as organized workshops to assess and improve the implementation of NEEAP.

Environmental education programs and activities were adopted by the national and local authorities to bring about crucial changes in knowledge, values, behaviors and lifestyles towards preventing and reducing the adverse impacts of climate change. The Department of Education established the School Inside a Garden (SIGA) Program in 1995 to nurture students in a school environment which provides them the opportunity to care for the environment. Public schools were directed to set aside adequate land space for the cultivation of a school garden. Vegetables produced were used to supplement school feeding programs or sold to generate additional school income. Schools with very limited land were encouraged to adopt alternative gardening methods using pots or wooden boxes. The SIGA Program incorporated lessons in solid waste management in science classes.

In 2007, Department of Education mandated the "Mainstreaming of Disaster Risk Reduction Management in the School System" Program in response to the Hyogo Framework for Action's objective to build schools, nations and communities resilient to disaster. Dubbed as the "Safe Schools" Program, it undertook the preparation of the Disaster Risk Reduction Resource Manual which will serve as a source of information to be used by school administrators, principals, supervisors and teachers. Other components of the programs are: mainstreaming DRR concepts in the elementary and secondary school curricula; school mapping exercise; schools water and electrical facilities assessment; preparation of disaster preparedness modules through multimedia; quarterly conduct of earthquake and fire drills; road safety education for children, and; construction of hazards resilient school buildings. The Program also incorporated an information dissemination campaign for energy and water conservation.

In 2008, HSBC and WWF Philippines partnered with Department of Education in launching Project Eco-Kids to educate public elementary school students about climate change and practical solutions they can adopt in their daily lives to help address it. It consisted of four modules: Climate Change, Energy Conservation and Renewable Energy, Waste Management and Lessons Learned as the culmination of the first three modules. It was implemented in fifteen public schools in urban Manila and targeted 10,000 students.

The third week of November every year is officially declared as "Global Warming and Climate Change Consciousness Week" by Presidential Proclamation to create awareness on global warming and climate change by pursuing intensive information and education campaigns to inform the general public the consequences of this phenomenon and to secure the collective cooperation of the citizens, as well as the collective action of public and private sectors at all levels in finding solutions to this worldwide concern.

The annual National Schools Press Conference organized by the Department of Education in 2009 focused on the theme "Climate Change: A Call for Responsible Campus Journalism." It aimed to promote awareness

and understanding of climate change through varied journalistic approaches; demonstrate commitment to support programs and advocate for community initiatives to ward off the negative effects of climate change through responsible journalism; and enhance journalistic competencies through friendly individual and group competitions. As a result, public school papers featured more write-ups on climate change issues.

On 23 October 2009, Republic Act No. 9729 entitled "An Act Mainstreaming Climate Change into Government Policy Formulations, Establishing the Framework Strategy and Program on Climate Change, Creating for this Purpose the Climate Change Commission," otherwise known as the Climate Change Act of 2009 was passed into law. It created the Climate Change Commission (CCC) mandated as the sole policy-making body of the government which shall be tasked to coordinate, monitor and evaluate the programs and action plans of the government relating to climate change. The said law further gave a directive to the Department of Education to integrate climate change into the primary and secondary education curricula and subjects.

Further, on 27 May 2010, Republic Act No. 10121 entitled "An Act Strengthening the Philippine Disaster Risk Reduction and Management System Providing for the National Disaster Risk Reduction and Management Framework and Institutionalizing the National Disaster Risk Reduction and Management Plan," otherwise known as the Philippine Disaster Risk Reduction and Management Act of 2010, was passed into law. The tri-focalized education agencies (Department of Education, Commission on Higher Education (CHED) and the Technical Education and Skills Development Authority (TESDA)) and other relevant agencies were mandated to integrate disaster risk reduction and management education in the school curricula of secondary and tertiary level of education, including the National Service Training Program, whether private or public, including formal and non-formal, technical-vocational, indigenous learning and out-of-school youth courses and programs.

Practice of Climate Change Education

After more than two years of research and development, the Department of Education launched the following materials for the "Mainstreaming Disaster Risk Reduction in the Secondary Curriculum":

- Lesson Exemplars for Science I
- Teacher/Student Modules for Science I
- Lesson Exemplars for Social Studies I
- Teacher/Student Modules for Social Studies I

The modules serve as reference materials for students and teachers while the lesson exemplars serve as guides for teachers in the delivery of their lessons. Lesson exemplars included in Science I are: climate change, heat wave, fire, landslide, tsunami, flooding, tropical cyclone and tornado. Intended for First Year High School Students and Teachers, it has been piloted in 110 disaster-prone public schools. Two thousand copies of these instructional materials are now being distributed nationwide.

To complement these materials, the DRR Resource Manual was also developed. It is intended for school administrators, supervisors and school teachers to provide them with information needed to reduce risk and make schools safer. Training for this Manual is in the planning stage. This year, the Department of Education also revised the 2007 Handbook into an updated Educational Facilities Manual integrating DRR in School Construction. It incorporates guidelines on how to make schools safe and greening new schools. Two thousand copies of this manual are currently being distributed to school authorities nationwide.

Future Action on Climate Change Education

In a recent national survey, it was found that only 52% of Filipinos know what the term "climate change" actually means. Clearly, awareness of this critical issue is the first step towards positive action.

The Department of Education has proposed a project for the second phase of the Climate Change Adaptation Program and Disaster Risk Reduction Initiative in the School System which aims to print additional copies of the lesson exemplars, modules and resource manuals for distribution to 18,000 secondary schools nationwide. The project further plans to train and orient focal persons from the 17 regions and 199 school divisions on the use of the materials as well as on monitoring and evaluating the implementation on the ground. The budget proposal amounts to PHP 18 million, and the Department of Education is currently sourcing funds for the implementation of the project. It has further prepared a proposal for a comprehensive project intended both for elementary and secondary schools.

In 2009, a national search was launched as a joint activity of the DENR, the Department of Education, CHED and Smart Communications. The 2011 National Search for Sustainable and Eco-Friendly Schools themed "Sustainable and Eco-Friendly Initiatives" is open to all elementary, high school and tertiary school levels, both public and private. The activity aims to encourage schools and academic institutions to become more actively involved in environmental issues at a practical and local level, and to develop skills and understanding among students, faculty and school administrators to initiate active responses and increase community awareness and involvement on environmental concerns.

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2.5 TIMOR LESTE

The country of Timor-Leste comprises of the eastern half of the island of Timor, an enclave in Indonesian West Timor, and a few small adjacent islands. Timor-Leste is a relatively new country which gained independence on 20th May 2002. The country has a population of 1,098,000. Timor-Leste has a young population with children (aged between 0-14) accounting for 45.2% of the population, and 55% are less than 19 (UNESCAP, 2010).

Timor-Leste has improved significantly in aspects of human development and has recently achieved a medium human development level (UNDP, 2010). The per capita GDP of the country is one of the lowest in Asia, and the country's total national GDP was 246 Million USD (UNESCAP, 2010). The government of Timor-Leste is taking significant strides to improve the country's infrastructure, but the crisis of 1999 led to such a large destruction of infrastructure that the recovery period has been lengthy.

The education system, as many of the public systems in Timor-Leste, is undergoing a steady process of reform as this new nation works to that these systems meet the direct needs of its citizens. The education system still follows several similar aspects of that which was established by the Indonesian government, but major changes and adaptations have been occurring since independence. The country is also working to address the fact that the crisis of 1999 left the education system greatly under-resourced in terms of both physical and human resources. The government highlights education as a key priority for the country, and the abolishment of fees for education has resulted in a significant increase in enrolment (Nicolai, 2004). Significant improvements have also been made in lowering the student to teacher ratios with the ratio for primary education lowering by 20 students per teacher, from 50.8 to 30.8, between 2002 to 2007 (UNESCAP, 2010).

2.5.1 Education System in Timor-Leste

As a recently-formed nation, the history of the education system in Timor-Leste is less than a decade old. However, the current education system still carries over much of what was developed under the Indonesian system, and some influence also remains from the Portuguese colonial education system. Since independence, reforming and improving the educational system of the country has been made a high priority. Originally under the UN-supported transition government, the country developed the National Development Plan (NDP) and the NDP Vision 2020 aim to improve health, education and the general well-being of every Timorese; to promote gender equity in Timor-Leste; and to improve social and economic opportunities for all Timorese.

The Timor-Leste Ministry of Education and Culture identifies eight key objectives as the focus of educational reform and development:

- expand access to education and improve internal efficiency of the school system;
- improve the quality of education;
- build management capacity and improve service delivery;
- promote non-formal education and adult literacy;
- promote Timor-Leste's culture and arts;
- promote physical education and school sports;
- promote youth welfare; and
- develop tertiary education.

Significant improvements were made over the past decade to improve the educational system that had been ravaged by the crisis in 1999 during which 95% of the schools in East Timor were destroyed or severely damaged (Nicolai, 2004). Timor-Leste has been challenged with both developing the existing infrastructure of a basic education system and also reforming the system to meet the national objectives and priorities. Efforts to rebuild the basic infrastructure began in 2000 under the UN-supported transition government, but it was in 2002 with the recognition of independence and the formation of the Ministry of Education, Culture, Youth and Sports (MECYS) that the reform of the educational system began. The country's constitution calls for universal education (Article 59), but taking into regard the recovery from the emergency period and the majority percentage of the population being under 19 it remains difficult to achieve this due to a lack of both financial and human resources.

The demand for reopening schools spread relatively quickly during the transition period and received direct support from local communities in rebuilding the schools, but most of the teachers who were taken on were not properly qualified with minimum skills of teaching. Multi-Grade teaching was identified as an important opportunity at this early stage although there was no real understanding of the specific techniques it required. The situation continues to be challenging while the country is left with the legacy of under-qualified teachers. Although this is an area where enormous progress is being made, teacher training and qualification is of course a multiple year process.

A new school management system is being established with 250 basic schools (grades 1-9) arranged in clusters that starts from cycle one that covers grade one to four, cycle two that cover grades five to six and cycle three that covers grades seven to nine. The cluster will also include some satellite schools. While a number of schools are well-resourced, the condition of many rural schools is still not favorable to the teaching process due to the lack of materials and resources. Teachers are understandably reluctant to teach in such uninspiring conditions and in isolated locations.

In total, Timor-Leste now has 1280 schools. They consist of 1037 (81.01%) primary schools, 169 (13.20%) pre-secondary schools and 74 (5.78%) secondary schools. However, there remains a wide disparity in the conditions of these schools with some schools still lacking permanent buildings, and adequate materials. The languages of instructions are Portuguese and Tetum and this in itself is a barrier when most children speak a local mother tongue and teaching is supposed to take place in Portuguese.

2.5.2 Availability of Teachers

The total number of teachers employed during 2008-2009 in Timor-Leste was 11,274 teachers. The majority of those teachers, 7,358 (65.26%), were teaching in primary school. The male primary school teachers were 4502, and the female primary school teachers were 2856. For pre-secondary school, there were 2309 (20.48%) teachers composed of 1,640 male teachers and 669 female teachers. The male teachers in secondary schools were 1190 while the female teachers were 417; combining for a total of 1607 (14.25%) secondary school teachers.

In Timor-Lester, only 38% of teachers have completed higher education, with 31% graduating from college and 9% from university. The largest cohort of teachers (42%) has a secondary school qualification. This leaves 18% of teachers in Timor-Leste having not completed secondary school themselves. However, most of the school directors are college graduate (68%), followed by secondary level qualification (15%) and university graduate (10%).

The distribution of teachers is still uneven with some schools overstaffed while others are understaffed. The government and Ministry of Education are planning to organize a census for 2010 to get accurate data and be able to deploy teachers more equitably. In rural areas, this will inevitably mean combining age grades (see also Figure 2.1 below).

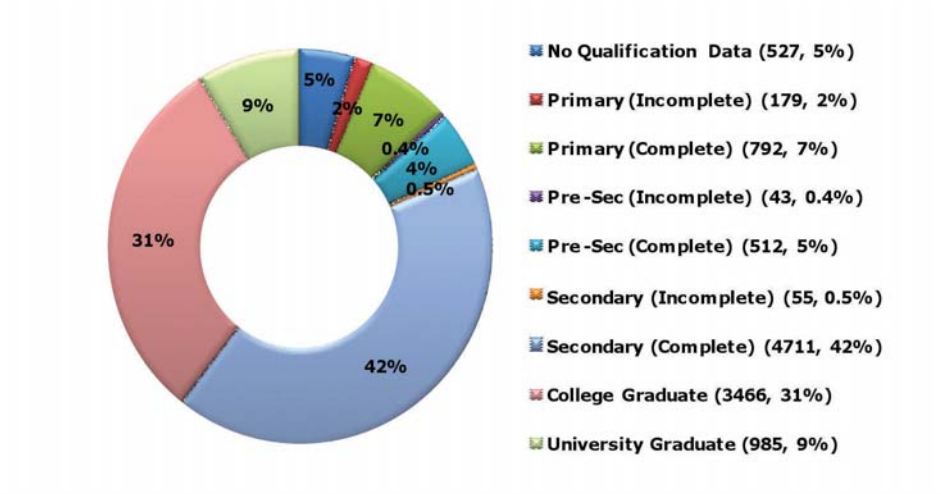
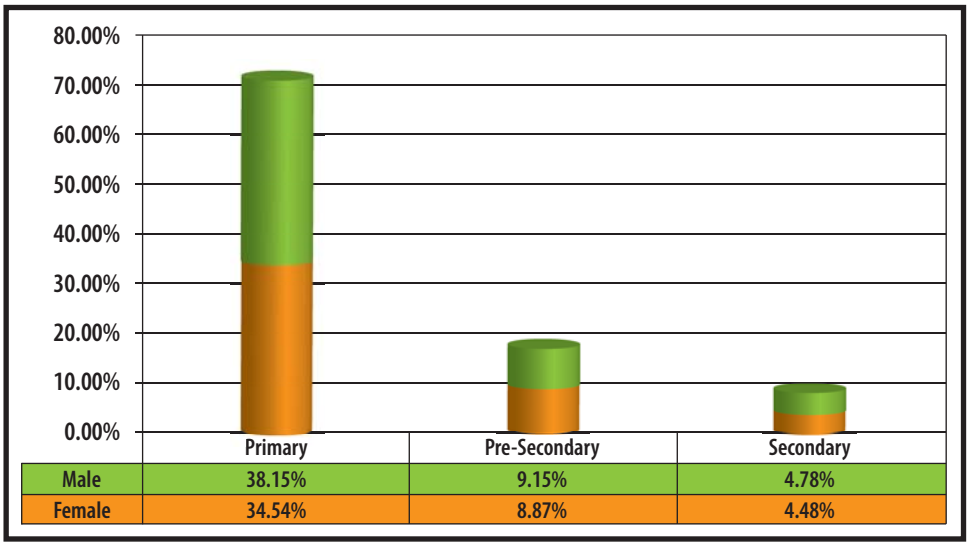


Figure 2.1: Teachers by Level of Qualification, 2009

2.5.3 Student Enrolment

The total students' enrolment in 2008-2009 for non-higher education is 294,073 students. The majority of students, 213,782 (73%), are enrolled in primary school with a male to female ration of 52.5/47.5. The enrolment in pre-secondary schools is 53,030 (18.03%), and the enrolment in secondary schools is 27,261 (9.27%) students (see Figure 2.2 below).



	Primary	Pre-Secondary	Secondary
Male	38.15%	9.15%	4.78%
Female	34.54%	8.87%	4.48%

Figure 2.2: Student Enrolment in Timor-Leste in 2008-2009

A number of enrolment and retention challenges exist related in the current educational context of the country. There is a significant drop in enrolment between primary and pre-secondary students. This means that there are issues of concern regarding drop-out and repetition rates. Recent data also indicates that only 49% of school-aged children are actually enrolled in the system. An additional identified challenge is that the student-to-teacher ratio, especially in lower primary school, is very high.

Furthermore, there is a standard policy of repetition when students fail, thus it can take a long time to complete the first two cycles. Drop-out rates are high and only half of students starting will fully complete their studies. In regards to this issue, implementation of multi-grade teaching could be beneficial in schools throughout Timor-Leste particularly in rural areas. There are also indications that the multi-grade system may help to address these issues particularly with early grade children who are abandoning or dropping out of school.

2.5.4 Multi-grade teaching in Timor-Leste

There are currently 135 primary schools which are implementing multi-grade teaching, mainly in rural areas and in ill-equipped schools. Timor-Leste is at a very early stage in the implementation of multi-grade teaching in a systematic way, but there is a growing realization that it can provide a significant forward

for reforming the country's education system. A major initiative currently under way is the creation of a teacher career regime based on the creation of a staffing formula. The draft formula stipulates a teacher to student ratio of 1 to 32 in Cycle 1; 1 to 34 in Cycle 2; 1 to 30 in Cycle 3; and 1 to 27 in Cycle 4. It is envisaged that a school will be required to have at least two teachers. This inevitably will mean that many schools with less than a hundred children will have to utilize multi-grade teaching. This initiative still requires the development of a systematized program for teacher training.

Despite the fact that there has been little official training for multi-grade teaching, there is such a history of this type of teaching in Timor, called mutiseriado. However, only a few primary school teachers in Timor-Leste have formal training in multi-grade teaching methods. This training occurred during the Portuguese era. In 2005, UNICEF supported the Ministry of Education (MECYS) in carrying out a study into teacher skills and knowledge in the area of multi-grade teaching aiming to provide a snapshot of current practices.

The development of multi-grade teaching and multi-grade schools in Timor-Leste conforms with a number of current policy goals of the government and the MECYS. Multi-grade schooling is one means of contributing to the county's priorities for universal primary education and equitable access to education for girls and underserved groups. This is especially important in remote areas or areas with small school age populations where otherwise the allocation of limited resources can be difficult.

2.5.5 Escuela Nueva

In 2010, the Ministry of Education (MECYS) started to implement the Escuela Nueva program with the assistance of UNICEF as a pilot process to some schools in remote or isolated areas. These new schools utilize a children-centered learning approach and a participatory action learning pedagogy. The flexibility of this approach means that teachers can teach different age groups at the same time while the students are able to continue working at their own level, thus the Escuela Nueva pedagogy directly benefits a multi-grade teaching system. The focus in Escuela Nueva is on providing teachers with the skills to be able to teach students as individuals and to encourage children to help one another.

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3. Country Comparison

The five countries represented by the Jakarta cluster office share commonalities based in the Malay culture. There are different levels of development and economic status among the five countries. Brunei Darussalam and Malaysia stand out for the higher levels of development that the two countries have achieved (based in part due to the wise utilization of revenues from oil and natural gas sales). Poverty remains a persistent challenge for Indonesia, Philippines and Timor-Leste (see Table 3.1 below for details).

The education systems in these five countries have all experienced improvements over the past several decades. With the exception of Timor-Leste that has been coping with the recent recovery from the 1999 crisis, the other countries do have well established education systems that perform to a high-quality for their given economic and development statuses. Education for sustainable development is being implemented to different levels in each country. Strong efforts have been made in both Indonesia and Malaysia to incorporate ESD into the national curriculums. In Timor-Leste and Brunei Darussalam, educational reform has been a major priority and ESD is recognized as an opportunity for enhancing the overall quality of education.

All five countries recognize that climate change presents serious challenges for them, and that they are prone to a high risk from climate-related natural disasters such as typhoons and droughts. Efforts are being made to incorporate disaster risk reduction into development planning in these countries. Climate change has also been identified as a topic that should be addressed in the educational curriculums of these countries.

Table 3.1: Comparison of Five Countries' Development Characteristics

	Income Group[1]	GDP (Nominal)[2] Amount | Global Rank (in Millions of USD)	GDP (PPP) per capita[3] Amount | Global Rank in USD	Human Development Index[4] Group | Global Rank	Environmental Performance Index[5] Score | Global Rank
Brunei Darussalam	High Income	10,405 | 118th	47,930 | 4th	Very High | 37th	60.8 | 72nd
Indonesia	Lower Middle	539,377 | 18th	4,151 | 121st	Medium | 108th	44.6 | 134th
Malaysia	Upper Middle	192,955 | 40th	13,800 | 58th	High | 57th	65.0 | 54th
Philippines	Lower Middle	161,196 | 48th	3,516 | 124th	Medium | 97th	65.7 | 50th
Timor-Leste	Lower Middle	556 | 176th	2,522 | 134th	Medium | 120th	n/a

[1] source: World Bank list of economies (Sep. 2010); classifications for country Income Group based on GNI per capita from 2009 (calculated from WB Atlas method).
[2] source: IMF; Data and Statistics online (2010).
[3] source: IMF; Data and Statistics online (2010).
[4] source: UNDP; Human Develop Report (2010).
[5] Potential Score is out of 100. Source: developed by Yale Center for Environmental Law and Policy (YCELP, 2010: 10).

4. Conclusion

Education for Sustainable Development is promoted as both an important way to establish the social and cultural foundations of a transition to a low-carbon, sustainable society and also a method of reforming the education system as a whole to provide students with the skills they need for the challenges of the 21st century. During the first half of the Decade of Education for Sustainable Development, many significant achievements have been made in implementing ESD. However, this remains an ongoing process of educational reform and many areas in which continued improvement is needed have already been identified for the second half of the DESD process and by the Bonn Declaration.

There are clear needs for further teacher training on ESD and teaching material development. There are also opportunities for pedagogical improvements by developing interdisciplinary teaching curriculums for ESD. This requires not only commitment to the continued implementation of ESD, but it demands that efforts are taken in research and development to strengthen the overall framework for ESD. Furthermore, there are clear opportunities for linking activities on ESD with efforts to achieve education for all (EFA), poverty reduction and the Millennium Development Goals (MDGs).

The UNESCO Office, Jakarta is dedicated to supporting these important efforts on ESD and their linkage to realizing other development goals. The Jakarta Cluster Office will maintain its direct support for the implementation of ESD in Brunei Darussalam, Indonesia, Malaysia, Philippines and Timor-Leste. The five countries have made important steps in educational reform and the implementation of ESD. Better cooperation and sharing of good practices between the five countries provides a clear way to strengthen the capacity of the individual countries to effectively implement ESD (See UNESCO, 2011; This regional Cooperation Strategy on ESD in South East Asia centred on the five cluster countries of UNESCO Jakarta Office is provided based on expert and governmental officers' dialogues from The 1st Sub-regional Country Report Meeting on ESD and each country's status and challenges reported from this ESD Country Report). Working together, the Jakarta Office and the UNESCO National Commissions can bring a strong synergy to the efforts for ESD implementation in these countries.

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