EE/ESD in China

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Abstract

This paper is a brief introduction to China’s strategy for sustainable development and the important marks of China’s sustainable development, such as building of ecological provinces, Green GDP, etc. The educational reform and the education and training for EE/ESD are discussed at length to show that Chinese Government is active to respond to sustainable development in view of environmental education. Also, the Environmental Education Center at East China Normal University and the work it has undertaken in the education and training for EE/ESD is presented.

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1. Important Marks of China’s Sustainable Development

1.1 The Strategy for China’s Sustainable Development

After UN’s Conference of Environment and Development in June 1992, “China’s Agenda in the 21st Century” was passed on March 25, 1994. It formulated China’s sustainable development strategy, policies and action framework concerning population, economy, society, resources and environment. Also, it marked the commencement of implementation of China’s strategy for sustainable development.

The government of China submitted a “State Report on the Sustainable Development of the People’s Republic of China” respectively to the United Nations General Assembly in 1997 and to the World Summit on Sustainable Development held in Johannesburg in 2002, which manifested the importance China’s government has attached to sustainable development.

There is a group in Chinese Academy of Sciences making research and compiling reports on sustainable development. An annual report on China’s strategy for sustainable development is issued by this group every year. These reports were publicized in the name of an academic research group, yet to a certain degree, they represented governmental point of view and mirrored the major problems China encountered in its sustainable development and the phasic critical ones demanding prompt solution. According to viewpoint of this group, the overall target of China’s sustainable development may be designed as taking 50 years to make it totally reach the level of the moderately developed countries in the world and become one of the first 20 countries which are most capable to carry on sustainable development. The key points of each year’s report were as follows:

- “2000 Report on China’s Strategy for Sustainable Development”: to take the first step of sustainable development successfully, priority must be given to the implementation of the strategy of population.

- “2003 Report on China’s Strategy for Sustainable Development”: trying to follow the courses of development taken by the main countries in the world and tell their tendencies, presented some materials for deliberation upon the strategy for the development of comprehensive national strength.

- “2004 Report on China’s Strategy for Sustainable Development”: making in-depth research on the strategic core, strategic essentials, strategic targets and strategic tasks of building a well-off society in China in an all-round way, proposed thirteen general goals and staged plans of implementation, and set a new criterion for judging an official’s achievements in the new era.

- “2005 Report on China’s Strategy for Sustainable Development”: taking the strategy for urban sustainable development in China as the theme, specially discussed the strategic background, strategic targets, strategic tasks and strategic design of the current urban development in China; put forward a series of research results in the fields of putting scientific view of development into effect, carrying out coordinated urban and rural development as a whole, promoting urban repayment for agriculture and industrial support to agriculture, narrowing the gap between city and country,
realizing social fairness, and fulfilling the sustainable development of urban and rural economic integration.

- “2006 Report on China’s Strategy for Sustainable Development----Building a Resources-Saving and Environment-Friendly Society”: aiming the main target of building an economizing and environment-friendly society, expounded the strategic significance an economizing society meant to China’s future development, summarized the experience and lessons drawn from building economizing society and developing circular economy at home and abroad, put forth the “Saving Index” for the first time and introduced its ranking and trends in different provinces.

- “2007 Report on China’s Strategy for Sustainable Development----Water, Harness and Creation”: taking water as the theme, set forth the status quo, existing problems, developmental tendency and way of solution concerning water resources, water environment, water ecology and flood disaster; predicted the multiple water crisis which is likely to threaten China’s future safety and development, especially attached importance and priority to eliminating water pollution; and forecasted that by 2030 China would have a population of 1.6 billion and the per capita possession of water would be only a quarter of that in the world.

1.2 Building Ecological Provinces

Since 2000 China has initiated a series of ecological construction projects of building ecological provinces, demonstration ecological areas, ecological cities and townships.

Up to now fourteen provinces have launched the project of building ecological province or are preparing for it, the ecological province construction will be a long tern process, up to now, no a province is approved as ecological province.

“Ecological Province” is defined as an upgraded administrative region where society, economy and ecoenvironment develop coordinately; and where the requirements for sustainable development are met in the main in all fields. Its concrete content can be described as: making use of the theory of sustainable development and the principles of ecology and ecoconomy; taking promotion of changing the form of economic growth and improvement of environmental quality as essential prerequisites; laying stress on the regulation of industrial structure as grasping the key link; giving full play to regional ecological and resources advantages; planning and carrying out environmental protection, social development and economic construction as a whole; and eventually attaining sustainable development in regional society and economies.

The basic requirements of an ecological province:

a) A “Programme for Planning the Building of Ecological Province” is formulated.

b) 80% cities and prefectures in the province meet the requirements for building ecological cities/prefectures.
c) All the governments at county level and above have set up a separate institution of environmental protection.

d) Laws, regulations and rules for environmental protection constituted by the state and the departments of governments at different levels are implemented effectively.

e) Prevention against pollution, ecological protection and building of ecosphere are all effectively undertaken; no serious events of environmental pollution and ecological violation occurred in last three years.

The indicators of an ecological province are divided into three categories: social development, environmental protection and social progresses. Each province can add new, but never below the national standards, indicators in accordance with its own characteristics.

1.3 Green GDP

Gross Domestic Product (GDP) has been an important indicator for Chinese Government to judge the level of China’s economic development, though such practice has neglected environmental and ecological violation affected by economic development. Many countries are trying to develop a statistical methodology for examining and calculating “Green GDP”, but so far no country has ever officially announced its Green GDP.

Starting from 2004 China has been making technical preparations for Green GDP accounting. Our general goal for adoption of Green GDP is establishing a fundamental framework of Green GDP System which conforms to China’s actual conditions within a period of three to six years.

The introduction and application of Green GDP was an important step China has taken while carrying out the strategy for sustainable development.

In the coming five years an important environmental indicator of China’s sustainable development will be energy saving and deduction of pollutes emissions. It is required that taking the quantity of pollutes emissions in 2005 as reference data, the percentage of annual decrease should amount to 4%. It is certainly not easy to fulfill this target while keeping GDP going up 9-10% every year. Actually, according to the statistics of the State Environmental Protection Administration, some pollutes emissions in 2006 failed to be up to the stipulated standard of decrease.

2. Educational Reform---- Education for Sustainable Development (ESD)

2.1 Background

Educational Reform is always a debate-provoking issue and a difficult problem in China. China has a large population among which, a great number of students, so that it is very hard for students to enter higher schools and the result of educational reform will influence the next, even the next few, generations.
One of the major problems in China’s education is the contradiction between examination-oriented education and quality-oriented education. As a result, both the entrance examination questions and the knowledge taught in school are becoming more and more difficult. It is not unusual that students do not finish doing homework until ten o’clock in the evening.

In order to relieve students from hard study of textbooks, to return “time to play” and “healthy growth of body and mind” to students, and to extricate them from examination-oriented education, educational reform has been carried out all over the country. Thus, the idea of sustainable development can be realized in primary and middle schools.

2.2 Steps of Educational Reform

Educational reform is a long proceeding with a purpose of establishing a democratic, open and scientific operating mechanism of curriculum. It is under the direct auspices of the Ministry of Education and centers for curriculum reform have been set up in some teacher’s universities such as East China Normal University to specially embark in this undertaking.

The steps of new educational reform are as follows:

- In 2001 set up national experimental regions where new curricula are popularized in about 0.5-1.0% schools in the country with a view to summarizing experience and finding problems;
- In 2002 set up provincial experimental areas where new curricula are spread in 18-20% schools in the country;
- In 2003 the percentage of experimental schools amounted to 35%;
- In 2004 and 2005 new curricula were put into effect all over the country.

2.3 Achievements in Curriculum Reform

One of the key features of educational reform is that about two thirds of the classes, such as Chinese, mathematics, foreign language, history and geography, have nationally unified requirements while the rest one third of classes are defined by each province or local educational authorities and are excluded from the range of entrance examination. Such practice has given spaces to curriculum to have environmental education (EE) and ESD (?) inserted into other classes or even offered separately.

The main achievements in the new educational reform are as follows:

a) The function and target of education is student-oriented rather than being merely for entering higher schools. Students’ demands of various kinds of knowledge are fully taken into consideration.
b) Substantial and significant regulations have been made in the structure of curriculum to strengthen comprehensive education and local knowledge.
c) Variety has been given to the methodology of learning to let students have more time and space to maximize their potentials.
d) The one-level central administrative mechanism has become a central-provincial-local three-level one.
3 Education and Training for EE/ESD

3.1 Chinese Government’s Response to Sustainable Development in View of Environmental Education

Since mid 1980s environmental education has win some initial success in primary and middle schools, but environmental education for sustainability has been overlooked for long time and the comprehensiveness and practicality of EE/ESD have not been fully realized, so that instruction of environmental knowledge was overemphasized while cultivating environmental values, strengthening environmental awareness and fostering techniques of environmental protection were neglected. As a result, instilling concepts of environmental ethics and sense of social responsibility into future citizens’ mind, as well as developing their ability to solve concrete problems, has become a weak link. Therefore, as a step of curriculum reform, EE/ESD is formally included in the curricula of elementary and secondary schools to provide organizational and mechanistic guarantee for undertaking EE/ESD. Educational reform has produced spaces for EE/ESD and reversely, EE/ESD has propelled educational reform forward.

In 1979 the content of environmental protection was added to the state-compiled textbooks for primary and middle schools. The Ministry of Education promulgated “Teaching Programme of Environmental Education in Elementary and Secondary Schools” and “National Guidelines of Environmental Education in Elementary and Secondary Schools” in 2003. EE in China has gone through a twenty-year course and has made great progress in both content and form. Now there are many institutions, including the Ministry of Education, the State Environmental Protection Administration, universities, and non-governmental and foreign organizations (e.g. UN and its related agencies), participating in EE in China.

3.2 Creating Green Schools

3.2.1 Green Schools in China

“Green School” denotes a school which, oriented by the theory of sustainable development and committing itself to basic educational function, is adopting concepts of sustainable development in its daily routine. In such a school, regulations for environmental management are laid down, effective activities of environmental education are held, and a cultural atmosphere for environmental protection is developed. As all teachers, experts, students and their parents are encouraged to participate in practical actions for promoting environmental protection and sustainable development, their environmental attainment is enhanced and they are jointly making contributions to social sustainable development.

Creating Green Schools was a project put forward by the State Environmental Protection Administration, the Publicity Department of CCCPC and the Ministry of Education in the “Programme of Action for National Environmental Publicity and Education (1996—2010)” in the purpose of pushing forward the education of sustainable development (ESD) in schools of all kinds all over the country. Up to
now more than 20,000 green schools of at different levels have been created in China, among which, more than 400 have been awarded as advanced ones by the State Environmental Protection Administration and the Ministry of Education. Creating Green Schools has become a “handle” and a “platform” for carrying out environmental education in schools. It is also a foundation stone or a forerunner of a series of national projects of creating “Green Unit”. It has been taken as a token for evaluation of major projects of environmental engineering such as “Model City of Environmental Protection”, “Ecological Province/City”, “Garden City”, etc. Since many local governments have included it in local administrative tasks and in the system of political achievement assessment, “Creating Green Schools” has made much headway in China.

3.2.2 Principles for Creating “Green Schools”

(1) Principle of Developing as a Whole

Based on current managerial system, a school maintains existing undertaking of EE and keeps improving it to further integrating thoughts of environmental protection and sustainable development with school administration.

(2) Principle of Mutual Participation

Creating “Green School” is a proceeding requiring mutual participation. The headmaster, all members of teaching and administrative staff, and all students are required to take part in it. Also, the effective participation of students’ parents, out-of-school experts, and people from communities, media and governmental institutions are encouraged.

(3) Principle of Proceeding Step by Step

While creating “Green School”, it is necessary to formulate practically workable measures in accordance with local real conditions and basis to keep it proceeding and improving step by step.

(4) Principle of Suiting Measures to Local Conditions

Since there are evident differences of natural surroundings, economic conditions and cultural backgrounds among different places, creating “Green School” ought to be done by means of suitting one’s measures to different conditions and features in term of locality.

3.2.3 Indicators and Criteria for Judging a “Green School”

According to the Principle of Suiting Measures to Local conditions, the indicators and criteria for judging a “Green School” vary in different places. Taking those in Shanghai as an example, the indicators and criteria for judging a “Green School” consists of six parts as follows:

- There is a managerial group at the school level in charge of EE/ESD;
- Concepts of EE/ESD are adopted through the proceeding of education;
3.3 Environmental Educators Initiative (EEI) for China

3.3.1 Background of EEI

By the end of last century, the Ministry of Education (MOE) realized the importance of carrying out EE/ESD in elementary and secondary schools, and the connotation and teaching method, which may push forward educational reform, have become clear to MOE. In 1996 MOE cooperated with the World Wildlife Fund (WWF) and British Petroleum (BP) to set up project of EEI in China. That was the first time for foreign institutions and non-governmental organizations to be involved in China’s official environmental education and educational reform.

Goal of EEI: Embedding education for sustainable development (ESD) in China’s national curriculum in support of the ongoing educational reform.

A Steering Committee was formed by MOE, WWF and BP; and three Environmental Education Centers were established at East China Normal University (ECNU) and other two teacher’s universities to undertake training of instructors, headmasters and core teachers from all over the country for EE/ESD. The Project of EEI was originally scheduled for three years: 1997-2000, but as its undertaking has been well commented by WWF, MOE and the whole society, it was re-scheduled as Phase 2 2001-2003 and Phase 3 2005-2007. At present moment it is still being undertaken.

3.3.2 Main Achievements of the Project of EEI

(1) “National Environmental Education Guidelines” has been formulated

“National Guidelines of Environmental Education in Elementary and Secondary Schools” (hereafter referred to as Guidelines) was formulated and promulgated by MOE in 2003. It defines the content and methodology of ESD in the aspects of knowledge, technique, action and awareness for students from Grade 1 to Grade 9. The implementation of the Guidelines has successfully integrated EE/ESD with the curricula in primary and middle schools as an important part of China’s general education. 200 million school children in China are learning or will learn ESD outlined by the Guidelines.

The Project of EEI, especially the formulations of the Guidelines and its implementation all over the country, has led to great success in EE/ESD in primary and middle schools. The Project was awarded “The Earth Prize” by WWF. Together with the Hope Schools, it was also awarded as one of the Ten Greatest Social Welfares.
(2) A wide-ranged network for ESD has been formed in institutions of higher learning

As the original three Environmental Education Centers were not enough for the development of training for EE/ESD, 21 ESD Centers have been established in the country and a wide-ranged network for ESD has been formed in universities and colleges. Core teachers from over 160 universities have been trained to master the principles and proceeding of ESD.

(3) Practice of ESD has been experimented in pilot schools all over the country

Since 1997 training for EE/ESD has been carried out in China’s educational system. Apart from the university master teachers, more than 10,000 instructors, headmasters of primary and middle schools, and teachers have undergone the training and after returning where they came from, trained others, so it is difficult to precisely estimate the total number of trainees who have been directly or indirectly trained. The EE Center at ECNU has organized training program for many times. For each time, participants were limited to 30 and the length of duration, 3-5 days (even 1-2 days). Over 1,000 people have been trained at ECNU; 17 experimental schools have been set up in Shanghai and the Provinces of Jiangsu, Zhejiang and Anhui; and ten EE/ESD schools have been established in Leizhou Peninsular, Guangdong Province.

(4) Courses and Programs of Sustainable Development have been offered in universities

In recent years courses and programs of sustainable development were offered at East China Normal University, Beijing Normal University and some other comprehensive universities. These courses and programs were usually lectured by the teachers who had been trained in the project of EEI. Building “Green University” has been popularized in many universities.

(5) Textbook of ESD have been compiled

During the course of training, a series of teaching material of ESD, including textbooks, case study, workshop material and local-based material, has been compiled. E.g. the EE Center of ECNU has compiled “Textbook of EE/ESD for Graduate Course”, “Textbook of EE for Senior High Schools in Jiangsu Province”, “Textbook of EE/ESD for Elementary and Secondary Schools in Anhui Province (9 volumes)”, “Textbook of EE for Primary and Junior High Schools in Guizhou Province (18 volumes)”, etc. Textbooks featuring local characteristics have been published in many places, too.

3.4 Advanced International Training Programme: Environmental Education and Education for Sustainable Development in Formal Education—China

3.4.1 Background of the Advanced International Training Programme
Having known about the situation of EE/ESD in China and investigated the capability of the EE Center at ECNU and what it had done in EE/ESD, representatives from Sweden decided to cooperate with it to carry out a project entitled “Advanced International Training Programme: Environmental Education and Education for Sustainable Development in Formal Education—China”. After two years’ preparation, the Programme was started up in 2004. Currently, it is the fourth year and the recruitment of trainees for 2008 has begun. The Programme is funded by Swedish International Development and Cooperation Agency (SIDA) and the partners working in the Programme are Ramboll Natura AB (Sweden), EE Center at ECNU (China) and SADC Regional Environmental Education Programme (South Africa).

3.4.2 Programme Objectives

The main objective of the Programme is to provide an opportunity of exchanging knowledge and experience in EE/ESD processes within formal education. By conducting the Programme in Sweden and China it is envisaged that participants will be able to explore a wide range of perspectives in environmental education and education for sustainable development.

The specific objectives are as follows:

- To develop a necessary and meticulous understanding of sustainable development;
- To obtain more knowledge of current trends and international initiatives in EE/ESD;
- To develop an extensive understanding of the institutional framework and the different structure/resources needed for effective implementation of EE/ESD;
- To explore ways of integrating EE/ESD into formal school curricula and teacher training;
- To get to know about different methods and proceedings of EE/ESD;
- To conform the learning to participants’ local conditions in the working contexts.

3.4.3 Structure and Contents of the Programme

The Programme is designed into four parts:

Part One Outlines of Working Context
As a pre-programme assignment, the participants will be asked to complete an assessment of their own institution’s undertaking in EE/ESD.

Part Two Programme in Sweden
A component of the whole programme consists of four interlinked modules: alternations of undertakings in view of institutional settings, sustainable development, education for sustainable development, and institutional frameworks in formal education.

During their stay in Sweden the participants will have the opportunity of working with resource persons from a number of Swedish EE/ESD institutions and organizations. The coursework of the Programme includes lectures, group
discussion, presentations, excursions and visits to schools.

Part Three  Home-based Assignments
  Sharing experiences with colleagues and making preparations for Part Four of the Programme.

Part Four  Programme in China
  Staying at ECNU for two weeks, work with fellow EE/ESD pros to develop a project of alternation. By the end of this Part all participants’ projects will be compiled in a collection together with plans of implementation and evaluation.

3.4.4 Achievement of the Programme

(1) More than 120 participants from about 30 provinces, municipalities and autonomous regions have been trained in the Programme

There are over 100 applicants every year volunteering to apply to the Programme, among whom, 30 people are selected by Ramboll Natura AB via SIDA to participate in the training and activities. So far 122 participants from educational circles, environmental protection system, non-governmental organizations and media (publishing houses and newspaper industry) in about 30 provinces, municipalities and autonomous regions have taken part in the training.

(2) Better understanding of EE/ESD in foreign countries, particularly in Sweden and South Africa, has been acquired

The three-week training in Sweden, lectures given by Swedish and South African experts, visits to Swedish schools and EE/ESD institutions have made the participants acquire a better understanding of the progress of EE/ESD in foreign countries, especially in Sweden and South Africa. Due to their previous experience in undertaking EE/ESD at their own posts of duty, the participants were able to use what they had newly learned as soon as they returned to their work. Such renewal and application of knowledge plays a positive role in EE/ESD in China.

(3) An extensive educational network for EE/ESD has been formed

While staying in Sweden for three weeks and in Shanghai for two weeks, the participants have deepened their comprehension of the connotation and proceeding of EE/ESD. They have made many new acquaintances and connections with and through each other, their communication helped introduce the situation and development of EE/ESD in one place to another, thus gradually an extensive educational network for EE/ESD has taken shape to further promote EE/ESD in all the places.

(4) Follow-up Activities

The Programme is fruitful featuring a variety of follow-up activities, including various on-line exchanges of messages and meetings between participants or between the EE Center at ECNU and them. A Fellow Union, conceived by Ms. Mair Neeser of Ramboll Natura AB, will be founded in Kunming, Yunnan Province in March 2008
to enhance the communication among the participants, to provide means for them to share the achievements and progress in EE/ESD all over the country, and to push forward EE/ESD in China, particularly in Yunnan Province. Of course, such a Fellow Union, which is unusual to see in other cases, will attract more volunteers to participate in the Programme.

3.5 Other Training Courses Offered by the EE Center at ECNU

In addition to being involved in national EE/ESD, the EE Center at ECNU is engaged in organizing a lot of EE/ESD training courses and providing advisory service for EE/ESD in many provinces and municipalities such as Anhui, Zhejiang, Guangdong, Shanghai, and so on. The Center has received widespread support from foreign institutions. Except SIDA and BP, British Council has kindly introduced a Project of Sino-British Higher Education Link for the Center to cooperate with Salford University UK for five years to jointly develop EE/ESD. Supports from WWF-US, American Chamber Shanghai and British Chamber Shanghai are also greatly appreciated.