Background
Nepal is a country in South Asia with a population of about 23 million people. Nepal covers the landmass of 147,187 sq.km and it is surrounded by two great neighbours the People’s Republic of China in the north and India in the south, east and west. The country has three distinct geographical characteristics: plain, hill and mountain. The mountain region houses eight of the highest mountains in the world including Mount Everest, the highest of all. Most of the people live in the hill and plain region. Because of the soil fertility and easy communication facility nearly 50 percent of the people live in plain areas which constitute only 23 percent of the total land of the country.

Nepal is predominantly an agricultural country. About 40% of Gross Domestic Product (GDP) comes from agriculture and about 80% of population earns their living from agriculture.

The nature resources of Nepal are the Himalayans providing water resources, the mountains with the possibilities of developing hydropower and tourism industry.

Government of Nepal is committed to the right of every child to quality basic education. The Jomtien Conference and Dakar Framework of Action highlight the commitment of government to provide basic education of good quality to all children by 2015.

The Dakar Framework for action sees education as the key to sustainable development especially in the areas of poverty reduction or alleviation. Currently UNESCO co-coordinated two major world initiatives in Education – Education for All (EFA) and the United Nations Literacy Decade (UNLD). From the point of view of EFA and UNLD education is a central strategy for sustainable development.

National Policy on Education
The education sector in the Tenth Plan of our country aims:

- Improving the access to quality of primary education.
- To improve the livelihoods of deprived groups, especially girls, dalits and disadvantaged children.
- Development and expansion of secondary education, production of middle level technical manpower through the expansion of vocational and technical education and production of higher level skilled manpower through the development of higher education.
- Decentralization of the management of local schools by handling it over to School Management Committees at the local level will be further accelerated and expanded.
- Improving and expanding teacher training programs to uplift the quality of education.
- Strengthening the school monitoring and school supervision.
- Teacher training at both primary and secondary education levels will be expanded.
- Expand adult literacy by setting-up Community Learning Centers.
- Provide scholarship to first child or first girl of poor families.
- Increase the enrolment of girls and disadvantaged children at primary level.
- Provide free education up to tenth grade.
- Providing education in mother languages up to the primary level.
- Setting-up of a Rural Education Development Fund which would be utilized for funding the education of marginalized communities.
- Reforms in higher education with a view to enhance financial sustainability and market relevance will be supported.

**Education for Sustainability Development (ESD)**

Education for Sustainability Development is a dynamic concept with many dimensions and many interpretations.

Education for sustainability is about learning to prevent the destruction of ecosystems, biodiversity threats, air and pollution loss of forests and fisheries and also addresses issues of human rights, over consumption, inequality, poverty, social conflicts and violence, health, cultural erosion.

Edution, both formal and non-formal, public awareness and training are key process by which human beings and societies can reach their full potential. Education at all levels is a key to sustainable development. Education must be reoriented to include the changes needed to promote sustainable development.

ESD includes learning how to make decisions that balance and integrate the long term future of the economy, the natural environment and the well being of all communities near and far, now and in the future.

The type of education to address the problem of sustainable development need to integrate three main components, environment, society and economy.

**Curriculum & Teacher Training**

Nepal has a system of using a national curriculum on teacher training. The languages used as a medium of instruction are Nepali and English. The system of training for secondary teachers was initiated in Nepal in 1957 when the government established College of Education with functional and technical assistance of the Government of USA. The College of Education offered a two-year I.Ed. program for the ten-year high school graduates to produce trained lower secondary school
teachers. In addition, the college also, offered a one-year B.Ed. course for those who hold Bachelor's degree in subjects other than education. In 1973, the College of Education was converted into the Institute of Education as one of the ten institutes of Tribhuvan University. The Institute of Education was offered the responsibility to conduct all the in-service and pre-service training. As a part of Tribhuvan University, the Institute of Education had several campuses in different parts of the country. The Ministry of Education started getting directly involved in the in-service teachers training program during the early years of 1980's when the government executed Science Education Project with the financial assistance of Asian Development Bank.

Academic & Training Requirement for Teachers
Successful completion of 12 year schooling is the academic requirement for lower secondary school teachers. A bachelor degree is the academic requirement for secondary school teachers. A ten-month training is a mandatory requirement for any person to be qualified for permanent tenure for the teachers of primary, lower secondary and secondary teachers. However, there is a system to recognize the training requirement if the candidate had offered education as his or her major subject. Two systems are in operation.

System I: Students of higher secondary schools or university first year and second year can major in "Education". Such students are recognized as persons having completed 10 months training and qualified as trained primary and lower secondary teachers.

System II: A one-year B.Ed. course offered to bachelor degree holders is regarded as complete training for secondary teacher.

Pre-service Training System
The higher secondary education with education specializing is, at present, the pre-service training for lower secondary teachers. The system II stated above is, in fact, the program, which is the pre-service training for secondary teachers. The Universities also offer an 3-year B.Ed. program to produce trained graduates for secondary teaching. Pre-service training of lower secondary teachers and secondary teachers has remained the responsibility of academic institutions.

Tribhuvan University is the only major institution to provide pre-service training for secondary teachers. It has more than 200 affiliated campuses, which provide pre-service training for secondary teachers.

In-service Training System
The long-term 10 months training is regarded as in-service training when the training is offered to the serving teachers. There are thousands of permanent untrained teachers. As training is mandatory for all teachers, the government has made a special arrangement to provide the 10-month training to the serving untrained teachers. Recently, the Ministry of Education as devised a special package of long-term training. The package consists of three modules. Module I cover 330 hours out
of which 132 hours are offered on the training center and 198 hours are offered in their own schools (school-based). Module II consists of 660 hours, which is offered through "Distance Mode". The Module III also covers 330 hours out of which 132 hours are offered in the training center and 198 hours are offered in the schools (school based).

Ministry of Education has a network of institutions and a management structure to operate the in-service training for primary and secondary teachers. The National Education Development Centre as an apex body has nine Education Training Centers at the regional level and 25 Education Training Centers at sub-regional level. The Education Training Centre (ETC) is equipped with human resource and physical facilities to conduct the in-service training. Besides, the Ministry of Education operates 1096 Resource Centre as short-term training centers spread all over the country. A two year M.Ed. program is to produce higher level manpower in the field of education.

ESD is interdisciplinary and holistic. It is not included as a separate subject but embedded in the whole curriculum. Education for sustainable development has connections with other programmes and concerns in education. It has to be re-oriented so that education plays its part in building the capacities of all members of society to work together to build a sustainable future.

In Nepal, the issue of environmental education was first discussed formally in the early 1980s in a national level seminar on environmental education in which high level governmental officials and representatives of non-governmental organisations in Nepal has participated. After that a seven day training workshop was organised in 1983 for School and University Teachers, Supervisors and Curriculum Specialists. Both the meetings stressed the need to add environmental dimensions to school level programmes and non-formal education and to develop strategies for teacher training in environmental education.

The realization of cause and effect of environmental degradation was made in the sixth five-year plan (1980-1985). During the five-year plan period (1985-1990) Government of Nepal with the assistance of International Union for Conservation of Nature (IUCN) formulated the National Conservation Strategy (NCS) a policy document whose objective was to integrate elements of environment and conservation into Nepal's development process. In 1987 a workshop was organised by Nepal National Committee for Conservation Strategy (NCS) in 1987 and endorsed as policy in 1988, has stated the essential role of environmental; education in fulfilling Nepal's conservation priorities along with various national and international agencies in Nepal e.g. HMTTC (Hotel Management and Tourism Training Centre), NASC (Nepal Administrative and Staff College), WTC (Women Training Centre), Ministry of Forests and Soil Conservation, Ministry of Agriculture, ICIMOD (International Centre for Integrated Mountain Development), IUCN (The World Conservation Union formerly International Union for Conservation of Nature and Natural Resources), UNDP (United National Development Programme),
UNICEF (United National Children's Fund) and WWF (World Wildlife Fund) are working in the environmental sector.

The technical session of bio-diversity ground of National Conservation Strategy Implementation Project (NCSIP) held on the 10 April 1997 raise number of valid issues and problems related to the bio-diversity programme.

Motivating profile at the grassroots level requires exploration, proper documents and transfer for knowledge from present generation to the coming generations. This aspect needs economic incentives, employments and literacy packages from various sectors.

The technical session of the education and communication programme were also held in 10 April 1997. The group of this session gave a member of recommendations, which were grouped in formal education non-formal education and communication.

In formal education the following recommendations were given:

1. To incorporate environmental education into the curriculum of 10+2.
2. Should environmental education be treated as a separate subject in the school level curriculum or to integrate with other subject.
3. As the provision of subject sectors of educational environment education has not yet been made, the teachers of any educational have been searching environmental education at school that has deteriorated the quality of teaching. So the trained teachers in the relevant field or other who have the background of science or social studies education should teach the environment education.
4. Environmental education should be integrated with the curriculum of faculty of Education of Tribhuvan University.

Non-formal Education
1. The weight given to environmental education in the training course conducted by the Ministry of Local Development, Women Development Training Centre and other should be increased to develop adequate knowledge and skills among the trainees with a view to enable them to conduct training in environmental conservation and to carry out environment protection programmes.

2. Participation of women should be enhanced in the activities of environment conservation and men and women should bear equal responsibility in the process of conservation of the environment.

3. Environmental education should be integrated with the training programme which are being implemented by various training institution, such as Council
of Technical Education and Vocational Training (CTEVT) and Private Training Centers affiliated with the government agencies.

4. Development and conduct awareness programme on environment for political leaders, social workers and policymakers.

5. Environmental education should be integrated with the different types of education programmes, such as literacy courses and training courses related to income generation and community development.

Formally the environmental population and health have been included as compulsory subject in the IX and X school grades, Research Centre for Educational Innovation and Development (CERID), Tribhuvan University Nepal has also conducted various workshops and seminars for School Teacher, Interfacing School and Community to environment education is one of the workshop conducted by CERID in 2001. In that workshop school teachers listed some environmental activities which can be carried out in collaboration with the community. The activities are school parents meeting, cleaning campaign with their school compound which can be organised in the community by students, parents and teachers and VDC people as a collaborative programme, waste material management in the school as well as in the community. Plantation of trees in the school compound as well as in the community. Accordingly CERID in 2002 conducted International Improvement in school environment education. In this workshop a series of teacher training were organised at CERID in which teachers were exposed to practical activities such as preparation of instructional materials for environment education from cutting of magazines, newspapers, leaves, waste boxes etc. They were also exposed to live presentations on cultural heritage. Similarly then teachers and students were both taken to EE camps various forests and cultural centers existing environment situation in Nepal. The students were involved in competition activities like poem recitation, singing, quiz context dancing and drama got give awareness regarding conservation programme of biodiversity.

Land use has been changing rapidly in Nepal to aim increasing demands for food, fodder and fuel wood. The productivity of agriculture, forest and pastureland is decreasing. The decreasing trend in land productivity is partly due to improper management of land resources.

The conservation programme could be enhanced right from the grass-root levels like linking the school curriculum with community.

**Difficulties and barriers to attempt to build in ESD in our institute**

- Lack of adequate trained professionals who are knowledgeable about ESD.
- Lack of adequate funding and material resources.
- Lack of adequate national and local policy to support ESD.
- Lack of awareness about importance of ESD.
- Lack of access to in-service training related to ESD.
- Lack of co-ordination among Ministries of Environment, Education, Health, Agriculture etc.

**Aims and Objectives**

The overall objective of teacher training program in our institution is to produce manpower in the field of education. The main objectives are:

- To develop leadership manpower in the field of education.
- To produce better qualified and competent teacher educators.
- To produce efficient educational planners, administrators and supervisors and other educational experts.
- To promote innovative practices in the field of education and to produce better trained teachers.

Science Education, Health Education, Geography Education, Economic Education cover the concerns of ESD.

Integration of ESD component in the literacy programs and development of teaching learning materials on ESD and utilizing them in various literacy and NFE programs will be supporting activities for sustainable development.

The knowledge and skills gained by the learners of the literacy programs will empower them to proactive environment friendly technologies in their daily life for sustainable development.

**Whole School Approach (WSA)**

School approach is a new concept in Nepal in the field of primary teacher training. Whole School Approach (WSA) is an innovative approach to provide effective recurrent teacher training which is found to be particularly applicable to the early primary school level (grade 1-3) where most of the school subjects are integrated. The concept of WSA is to train the whole school family including school principals, teachers, parents, students.

The main focus of the training is to foster teamwork and to create a joyful learning atmosphere in the classroom by the use of child centered interactive methods of instruction. Different kinds of teaching aids and devices using indigenous materials were used to motivate children and to keep them interested in the teaching learning activities.

The implementation of this approach increase the enrolment of students in schools.

- Make the students attendance regular.
- Develop the habit of working. in groups among the students.
- Make students homework regular and time bound.
- Help many student pass the examinations.
• Develop the skills in constructing the teaching learning materials among students and teachers.
• Bring the students and teachers closer together for interaction.
• Develop awareness about children's education among the parents.
• Enable teachers to enjoy teaching and get professional satisfactions.
• Make SMC members becomes attentive to school development activities.
• Help VDC people become helpful in school development.

**Involvement of Community**

In our country SMC comprises of school headmaster, teacher, student, guardians, community leaders, local government representatives. It represents a resourceful and powerful school community body. SMC provide encouragement to nature club of their school and to teachers to promote ESD.

**Parents Involvement**

Parents are expected to play a more active role in ensuring quality education for their children and in supporting their schools. They can encourage their children and community to lead sustainable lifestyle. Parents can involve in other activities organised by nature club, school and community organisation.

**Content**

Science Education, Health Education, Geography Education, Economic Education, Foundation of Education are the respective subjects where concerns of ESD are addressed in our institution.

Our institute's training curriculum has indirectly given attention to some aspects of ESD (related to Appendix I)

1. Under health education advanced study in community health is designed to provide the basic concept and understanding about community health.

2. Seminar on health production is another course which is designed to acquaint the students with the concept knowledge and understanding of health promotion. This course suggest the controlling methods against drug abuse and misuse through the educational social and legal aspects. It also analysis the situation of gender equity and status of health and women.

3. The topic related to ESD like conservation and management of natural resources are included in economic geography.

4. Concept of ecosystem, introduction to environment, pollution uses of pesticides are included in environmental geography.

5. Renewal of national resources, environmental degradation, mortality, AIDS are included as ESD.
6. Global warming, greenhouse effect, ecotourism, peoples participation and association for community development are included in population education.

7. Agricultural practices, biodiversity conservation measures are included in environmental education.

8. Diseases included in pathogenic activities in functional and applied biology.

9. Human right, marginalized communities, basic education, literary, peace education, general equality, social justice are included in foundation of education.

Global Issues on ESD

Human Rights
Without respect for human rights there will be no sustainable development. One of those right is the right to a quality basic education of which literacy is a part. Both EFA and UNLD underline the rights based nature.

Climate Change
Climate change as a natural phenomenon. It is brought by human activities through industrial emission into the atmosphere resulting into the change in atmospheric chemistry. Climate change is the major component of global change. It is happening because of the enhanced greenhouse effect.

Pollution
Pollution is an undesirable change in the physical, chemical or biological characteristics of air, land and water that will harmfully affect human life or industrial processes, living conditions and cultural aspects. Pollution can also be defined as qualitative depletion of natural resources due to over use and qualitative degradation.

Sustainable Development
The chief objectives of sustainable development is to bring co-ordination among the population, resources, environment and development. The sustainable development has emphasized to reduce pollution, to develop technology and instruments to make less use of natural resources. The sustainable development brings improvement in the aspects related to agriculture, health, education, transport, tourism and in the protection of environment as well.

Peace
Many opportunities for education and sustainable development are being undermined by the lack of tolerance and intercultural understanding upon which peace is mentioned. The conflict caused significant human tragedies, health system, destroys home, schools and whole communities. This leads to increasing numbers of displaced people and refugees. The goals of literacy and EFA cannot be met
under such circumstances. Therefore education for sustainable development seeks to build skills and values for peace in the minds of humankind.

**Poverty**
EFA and UNLD see poverty alleviation as the framework within which action for development is undertaken. DESD sees it as one of the key-pillars by which sustainable development will be supported.

**Gender Equality**
This forms the basis for one of the EFA goals. Gender equality is seen as both aim and pre-condition of sustainable development in World Summit for Sustainable Development Plan (WSSD). In formal education also the main objective of the UN. Girls Education Initiative (UNGEI) is gender equality. All these emphasis the need for gender sensitive approaches and materials and for the integration of gender perspectives in all educational activities.

**Pedagogy and Assessment**
Lecture, demonstration, discussion, observation, interaction, field visit, library work, guest lecture, survey are the main types of teaching methodologies. Conducting seminars and writing reports are also the modes of delivery adopted by the students.

**Practicum**
Practicum is an integral part of teacher training program. There are two phases of the teaching practice program.

1. In the first phase the student teachers are required to attend the pre-practice teaching orientation program in their own campus designed to prepare them to undertake their responsibilities as teaching interns. In this phase student teachers are required to participate in the workshops on lesson plan preparation, test item construction, instructional material construction, observation of instruction and classroom management, microteaching etc.

2. During the second phase the student teachers are engaged in actual teaching under the supervision of classroom teachers and campus supervisors. Each student is required to act as a full time teacher of the co-cooperating school during the duration of the student teaching program fixed by the campus. As a particular requirement student teachers are assigned to complete a fixed number of lesson plans. The student teachers have to perform the following activities:

   a) Prepare lesson plans and use them in classroom teaching.
   b) Select, prepare and use instrumental materials.
   c) Select and use appropriate teaching methods.
   d) Develop and use various evaluation tools.
   e) Administer test, keep records of student progress and report student progress.
f) Manage classrooms.
g) Identify learning difficulties of the students and provide guidance.
h) Organise co-curricular and extra curricular activities.
i) Observe and analyze teaching.
j) Participate in staff activities.
k) Presentation of reports after conducting case studies.

The duration and number of class period is fixed by the campus and the time schedule (routine) is fixed by the co-operative schools so that the schools academic calendar is not disturbed.

Practicum should be more practical oriented. A pre-service student will not be able to begin his/her teaching unless he/she is not sure what to teach and how to teach. So he/she should be given adequate content knowledge and appropriate techniques as well as practical exercises on how to teach and what to teach in their respective campuses before they start teaching in schools.

**Preparation and use of indigenous materials using natural resources to save our environment.**

**Objectives**

Students will be able to:
- Explain the importance of natural resources.
- Prepare the indigenous materials using natural resources
- Use the prepared materials in the classroom, cafeteria and everywhere in the school community
- Explain that the use of those materials make other day to day life more comfortable.

Leaf, Paper, Jute, Cloth are some of the resources that are produced from natural resources.

**Leaf**

We can prepare the following materials from leaf
- Plates (nk]\;\) Bowls (^k/L, b'gf cflb) from it and use these from various purposes like for eating tiffin suggest the canteen staffs for the use as after decomposition it can be used as compost.
- It can be used for the excursions, big gatherings in the school.

**Paper**

We can prepare
- Paper napkins
- Paper bags from the used newspapers, used papers of student and that are available in the schools. These bags can be used to purchase the foodstuffs.
- Prepare tea mats from the cardboard.
• The boxes of cardboard like TV boxes, washing machine cover boxes can be used for the storage purposes and biscuits boxes, chocolate boxes can be used as waste paper boxes.

**Jute**
We prepare jute for the following purposes

• To wipe out the floors.
• Prepare jute bags for keeping the instructional materials and for the marketing purposes.

**Cloth**
The used cloth like bed sheets and towels etc. can be used for the following purpose:

• To clean the tables, chairs and other furnitures.
• To make pot holders and aprons to do the lab work in science.
• Prepare the handkerchiefs.
• To clean the floors.

**Outcomes**
The following programs can be initiated to foster further interest in ESD in our country.

1. By allowing community participation in educational reforms.
2. Make flexible curriculum at the local level to facilitate the use of local resources and techniques.
3. Provide occupational and market entrepreneur skill through non-formal education for the needy youths because they are likely to discontinue education at the higher level.
4. Develop strong linkage between the formal and non-formal education to help disadvantaged children get to the school.
5. Ensure provisions to reduce dropout, increase enrollment and enhance overall standard of education.
6. Develop co-ordination among the government, NGO and CBO's for the development of local communities.

Therefore, there is a need to develop basic education focused on sustainable development with direct relevance to the local contexts. Income generating educational activities are essential for economic empowerment of the rural people.

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