

CHAPTER 22

Education and Training in Biodiversity

Ms Beatrice Adimola
National Environment Management Authority
(NEMA)

INTRODUCTION

"Education is critical for promoting sustainable development and improving the capacity of the people to address environment and development issues.... Both formal and non-formal education are indispensable to changing people's attitude so that they have the capacity to assess and address their sustainable development concerns. It is critical for achieving environmental and ethical awareness, values and attitudes, skills and behaviour consistent with sustainable development and for effective public participation in decision making", Agenda 21, Chapter 36, UNCED 1992.

Education is a major tool for capacity building and developing human resources. Many times well-intentioned and planned projects are started but fail because there was an omission of education component, communication strategies, or gender perspective. The Convention on Biodiversity recognises the key role education can play, hence the inclusion of an article on education. Article 13 which focuses on Education and Awareness states that "contracting parties shall,

- (a) Promote and encourage understanding of the importance of, and the measures required for the conservation of biological diversity as well as its propagation through media, and the inclusion of these topics in educational programmes and
- (b) Co-operate, as appropriate, with other states and international organisations in development education and public awareness programmes, with respect to conservation and the sustainable uses of biological diversity".

Education is defined solely in terms of its intended outcome. Education or biodiversity seeks to change people's attitudes and behaviour towards the resources. While increased awareness and understanding may be important steps to conservation of biological diversity, it is important to go further and use education as tool to promote participation. Education for biodiversity conservation must be planned for and policy statement translated to reality on the ground.

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This session seeks to discuss the role of education, women and environmental education, initiatives in environmental education, constraints and prospects for education in biodiversity.

THE ROLE OF EDUCATION AND TRAINING IN BIODIVERSITY

It is widely accepted that education and communication are essential tools in promoting conservation efforts. On the other hand, this conviction is not matched by practice in reality. In the past, in Africa, our ancestors lived in harmony with the environment. Before the introduction of formal education, knowledge was passed on by the older people at the fireplace in the evening. During the day, the young were shown the species in the field. Knowledge, values and skills were perpetuated continuously.

Education can:

- enhance perception and understanding of the importance of biodiversity;
- help bring about participation and therefore it is worth investing in. A multiplier effect is created at the grassroots level when people are educated about an issue;
- promote awareness, acquisition of knowledge and skills, change in attitudes, values and commitment;
- facilitate a two-way learning process leading to mutual benefit;
- empower individuals and communities to work out solutions to their problems;
- provide opportunities to develop and practice skills in problem-solving and decision-making, to assess and evaluate complex and often conflicting evidence concerning conservation issues and to make rational, informed decisions concerning their own attitudes and behaviour.

The guiding principles of environmental education

The philosophy and concept of environmental education was developed in the 1970s at the Tbilisi conference. They are internationally recognised and widely used. They are so fundamental that they have not changed in the last twenty years. The goals, objectives and guiding principles are set out below:

GOALS		
to foster clear awareness of, and concern about, economic, social, political and ecological interdependence in urban and rural areas;	to provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills, needed to protect and improve the environment;	to create new patterns of behaviour of individuals, groups and society as a whole towards the environment.

Objectives of environmental education

Awareness: To help social groups and individuals acquire an awareness of and sensitivity to the total environment and its allied problems.

Knowledge: To help social groups and individuals gain a variety of experience in, and acquire a basic set of values and an understanding of the environment and its associated problems.

Attitudes: To help social groups and individuals acquire a set of values and feelings of concern for the environment and the motivation for actively participating in environmental improvement and protection.

Skills: To help social groups and individuals acquire the skills to identify and solve environmental problems.

Participation: To provide social groups and individuals with an opportunity to be actively involved at all levels in working towards the resolution of environmental problems.

Some of the guiding principles

Environmental education:

- considers the environment in its totality: natural, technological, social and cultural, etc.;
- is inter-disciplinary in its approach;

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- is a continuous, lifelong process;
- focuses on current and potential environment and development situations;
- examines major environment and development issues from local, national and international co-operation;
- stresses the value and necessity of local, national and international co-operation;
- explicitly considers environmental aspects in plans for sustainable development/growth;
- helps learners discover the real causes of environmental and development problems;
- enables learners to assume roles in planning their learning experiences and making decisions;
- emphasises the complexity of environmental and development problems and thus the need to develop critical thinking and problem-solving skills;
- relates environmental sensitivity; knowledge, problem-solving skills and clear values;
- employs diverse learning environments and educational approaches to teaching/learning in, from and about the environment and development.

Education Programmes must take into consideration people's attitudes to and perceptions of their environment and resources (see Box 1 below).

WOMEN AND BIODIVERSITY/ENVIRONMENTAL EDUCATION

Although women in Africa have knowledge and awareness of the environment, there is a need to develop their knowledge further so as to empower them to use the resources sustainably. Women can contribute a lot to the transmission of knowledge, social values and development of human resources. These are important attributes that need to be promoted and enhanced. The issue which was raised at the Global Assembly of Women and the Environment in Miami, USA (1991) is how to design and deliver environmental education which is geared towards addressing and meeting women's learning needs (Leo-Rhynie, 1993). Other issues which are to be considered are:

--- *Gender and Biodiversity in Africa* ---

- the perception and participation of women in the promotion of environmental management;
- the lifestyle and nature of women's work;
- women's exposure to technology.

BOX 1: Some Zambian Perceptions of the Environment

Wild Animals

- There are still a lot of wild animals in Zambia. They cannot finish. Any animal which kills a person should be killed too.
- The government stops us from killing the animals, so we have to go to hunt when the government is not seeing us.
- Rich men with big guns come to hunt while we look on. They kill large numbers of animals while we starve for meat.
- They asked us to move from our original village so that they could create a national park. Who benefits from the national park?
- In our language no-one is called poacher. We are hunters and not poachers.

Fish

- Fish drop from the sky with rain so it cannot get finished from the rivers.
- We cannot observe the non-fishing season, we will starve.

Forest

- Trees cannot finish in Zambia.
- Which persons or people plant trees? They must be crazy.
- Nobody plants trees. They grow on their own.
- We still have a lot of trees in the Northern Province, therefore deforestation is not a problem.
- If you advise to plant trees, when shall we plant maize?
- The trouble with trees is that they take too long to give you the fruits.
- Forests should be burnt to remove all dangerous animals.

Juliana Chileshe

Examples from the Commonwealth

- Commonwealth country reports presented at the Global Assembly of Women and Environment: Using education as a strategy in the process of addressing local environmental problems.
- Malaysia Project MY0032 Rural Community Programme in Sarawak: Addressing barriers to women accessing education in a project.

Approaches

The majority of the women live in the rural areas and it is vital to target them in order to contribute to a wider distribution of sustainable development.

- The "bottom up" approach to education can be very effective in initiating change at the local level. The approach addresses specific problems, promotes problem-solving by the local people, and motivates them as they see the results. Initiatives can come from the top and be effective. This should not be exclusive of the top to bottom approach.
- Women should be involved right from the beginning in designing the educational programmes.

Constraints to education and training in biodiversity

Constraints can be external factors such as legislation or internal such as perception.

BOX 2

- Lack of capacity of education institutions to integrate new concepts into their programmes.
- Conceptual complexity. Environmental education is a new dimension and not well understood.
- Lack of materials on biodiversity.
- Logistical. Perceived lack of funds, time, materials etc.
- Information not readily available or disseminated.
- There are few available courses addressing the African context apart from Wildlife colleges etc.
- Lack of ownership.

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Constraints should not be perceived as a deterrent to initiating educational programmes. Groups should not doubt their capacity to overcome such constraints. It is important to get people to value education, see the need for it and budget for its inclusion in their activities. Ensuring the integration of education component in every project is a cost-effective way of overcoming some of the constraints. Constraints should be looked on as challenges that should be addressed.

Prospects for education and training in biodiversity

There are many opportunities for education and training in biodiversity that have not been developed. Africa is known for being a continent of great potential. The onus is on us to take the initiative to tap the opportunities for our own benefit. The opportunities range from a wealth of knowledge; abundance of unique resources; and a vast population that can contribute to conservation activities. The population can be divided into target audiences as shown in the table below.

Need for research in biodiversity education

TARGET GROUP	AIMS
<ul style="list-style-type: none"> • School-going children • Initial training programme • Teacher-training programmes • General education • Agricultural colleges • Game Rangers • Forest Rangers • NGOs • Out-of-school youths • Women's organisations • Policy-makers • Local authorities • Community training programmes • Journalists • Public 	<ul style="list-style-type: none"> • Incorporating biodiversity concerns into the study programmes • Plan and implement projects that promotes participation of target groups with communities • Incorporate biodiversity into sector activity • Integrate biodiversity into group's activities

Educational research should strive to improve the education process of policy-making, implementing, teaching and learning levels:

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- Investigate activities designed to build up and document insight related to biodiversity issues.
- Developing education and training materials on biodiversity.