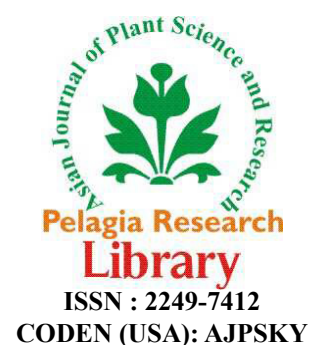




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Community Based Education to Promote Nature Conservation

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ABSTRACT

Without the real cooperation of local communities and landowners, conservation efforts cannot be significantly successful. Local people manage natural resources on a day to day basis and can preserve or overexploit the resources for their livelihoods. Therefore, educating local communities and raising their awareness need to be in the priority agenda of conservation. This paper focuses on indigenous and local communities who live in rural areas of high natural resources and biological diversity and their important role in nature conservation. Such communities are mostly poor and consume natural resources as a means of maintaining their daily livelihoods. This paper presents arguments for using education as a tool to promote conservation among local communities. Effective natural resource management techniques and traditional knowledge of managing resources sustainably could be brought back to local people through practical educational programmes. Subsequently, the paper recommends some methods for educating local communities. Community-based natural resource management and using bottom up approach in policy development have been proposed as an effective ways to educate local communities and to promote conservation efforts.

Keywords: Local communities, Indigenous people, Conservation, Education, Natural resources, Biodiversity

INTRODUCTION

Educating local communities could be effective in promoting the conservation of natural resources and biodiversity William J [1]. Conserving natural resources and biodiversity to some extent depends on environmental awareness of the local and indigenous communities who live among the areas rich in natural resources. The question of whether local communities are conserving or overexploiting natural resource and biodiversity has been widely debated at international conferences. One such conference is the Convention on Biological Diversity (CBD) that was launched in December 1993. The aim of this convention is to conserve biodiversity, ensure the sustainable use of biodiversity and ensure the fair and equitable sharing of benefits arising from the use of genetic resources [2]. Educating local communities is important because a lack of conservation measures concerns fundamental moral and economic questions about the way we use natural resources including the wildlife and diverse species in various territories. The topic of educating local communities has been raised widely in recent years by governments and global communities; because a wide variety of species are extinct, and many other species are at the risk of extinction or are endangered [3]. The level of knowledge and understanding among people about the complexity of ecosystems and how nature works determines the extent to which local communities sustainably utilize or over-utilize biological diversity. A variety of arguments have been put forward about the ways of educating and building the capacities of local communities to increase the value of natural resources and biodiversity.

THE ROLE OF EDUCATION TO PROMOTE CONSERVATION

Education is an important tool used by environmental managers to accelerate conservation efforts. Education could enhance people's awareness, attitudes and long-term behaviors towards natural resources [1]. Education has been considered separate other conservation efforts, but in practice, most conservation programmes require some level of understanding and knowledge. Therefore, it is essential to include education as a key component of conservation

projects and vice-versa. Changing human behavior towards the environment, reducing habitat loss and over-exploitation depends on the effective educational programmes to raise awareness of the consequences of damaging the environment. Environmental education promotes the appreciation for the natural environment and strengthens the ecological, cultural, spiritual and economic services and benefits of biodiversity.

In most cases, local communities are exploiting and degrading natural ecosystems due to fewer employment opportunities, a low literacy rate and a lack of health services [4]. They are exploiting natural resources to fulfill their basic needs of living such as food, fuel and clothing. Degradation brings further challenges for these communities such as deforestation and loss of plant species that are highly valuable for producing medicines and ecosystem sustainability. Other challenges are habitat destruction of highly sensitive species and loss of land for livestock grazing, permanent extinction of some flora and fauna, soil erosion and flooding. The situation is exacerbated by a lack of opportunities for development and a lack of knowledge about the environmental impacts of their activities and inappropriate conservation measures. Subsequently, increasing population and rising consumption of natural resources makes it difficult to implement conservation activities [1]. Given that the overexploitation of natural resources brings multiple challenges to local communities and the risk to global sustainability, it is necessary to introduce new ways of protecting biodiversity. One effective way to promote biodiversity is to inform and educate local communities about the importance and benefits of nature conservation as there could be inadequate knowledge among local communities of the importance of biodiversity conservation [5] and the negative consequences of environmental degradation. To be able to protect the environment, biodiversity and other natural resources, it is important to understand the role of conservation education in local communities. Comprehensive conservation education and training packages need to be designed based on the capacity of the communities. This is only possible when proper conservation education and training packages are designed according to the needs of local communities. Such educational packages should focus on developing the critical thinking skills necessary to understand environmental problems and encourage local communities to take responsibility to conserve natural resources.

Agenda 21 of the Rio Earth Summit 1992 refers to the importance of not only formal but also informal education, including public awareness and training, should be recognized as a process by which human beings and societies could reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of people to address environmental and development issues. Both formal and non-formal education is indispensable to changing people's attitudes. Therefore, environmental education should comprise diverse methods of informing the community, including hands-on training, practical learning by doing projects, awareness resources and transfer of indigenous knowledge.

EFFECTIVE CONSERVATION EDUCATION METHODS

A couple of studies have been conducted on appropriate techniques and methods of conservation education for different audiences [1]. The level of knowledge of each community is not the same, therefore it is essential to consider the capacity of a particular audience and design appropriate educational packages. Special educational programmes should be considered for indigenous and local communities. For example, a high-quality formal educational curriculum could be appropriate for high school and university students while it may be inappropriate for local communities who require training on the importance and benefits of conservation rather than high-level scientific analysis of carbon emission.

Therefore, it is important to conduct a training needs assessment at the initial stages of designing an educational programme. Different assessment techniques as appropriate could be taken, such as interview and reviewing the background information about the audience. It can be useful to examine the response of the target audience to a range of similar materials. What language do they prefer, reading posters, watching videos or following a guided walk? At what stage do they lose interest and whether they would absorb the messages? To enrich and assess the impact of training, it is helpful to use different assessment tools to measure the effectiveness of the training programme. As with other aspects of conservation, it is extremely valuable to assess the success of projects in relation to measurable objectives [6]. The impact could be measured by monitoring changes in knowledge and attitudes of people towards natural landscapes and biodiversity in the area [7].

The aim of these programmes should be to enhance community involvement in conservation activities; for example, community members around the Band-e-Amir national park in Afghanistan were trained to preserve the protected area around a natural lake. They were provided with intensive training on managing their local area as well as awareness raising programmes on the importance of protected areas and the economic benefit for their community. The local

people not only banned their children from throwing garbage in the lake but also avoided livestock grazing near the lake WCS (Wildlife Conservation Society), Annual report [8].

INDIGENOUS KNOWLEDGE OF LOCAL COMMUNITIES

Several international agreements have focused on conservation of biological diversity during the past few decades. The Convention on Biological Diversity (CBD) is an international agreement that paid specific attention to the protection of global issues such as natural resources and biodiversity. Based on the realization that many areas of the world contain high levels of biodiversity and are inhabited by indigenous and local communities, the significant role such communities could play in preserving natural resources was underlined in the convention [9]. Such communities rely on natural resources for basic living and have carried the traditional knowledge of undertaking the management of natural resources from their ancestors UNEP (United Nations Environment Programme) [10]. They use their traditional knowledge for farming and agriculture and often use only rain-fed agriculture as a means for crop production, therefore they become very vulnerable to the negative effect of environmental issues such as climate change and the variability of the weather.

The majority of biodiversity hotspots is located in developing countries and is inhabited by indigenous communities [9]. Effective management of natural resources and protected landscapes depends on the active participation of local residents and indigenous people in that area. They have inherited the knowledge from their ancestors and observed nature by living in complex ecosystems. It is important to use the traditional knowledge of these indigenous people in conservation activities and involve them actively because these communities have experienced and know what works better for specific species and ecosystems. Furthermore, it is necessary to link conservation initiatives with community involvement. In this process, indigenous knowledge as a prime part of culture has come to play an important role in international debates on development planning and conservation strategies.

In discussing the links between biological and cultural diversity [9] acknowledges that not all human beings have positive effects on the environment and the diversity of species. This assertion is based on the increasing number of indigenous and local communities who are discarding sustainable traditions in favor of destructive activities. Consequently, many indigenous and local communities are highly dependent on biological resources.

BOTTOM UP APPROACH IN POLICY DEVELOPMENT

It is a common practice in most organizations responsible for policy development to acquire top-down approach in preparing policy and then sharing with the public for implementation. This might be due to the low capacities in such organizations to engage with local communities from top-down approach and make policy development a more participatory process [11]. Involving local communities in decision making and policy development process would not only contribute to the efficiency of the public policy development process but will educate communities well in advance for implementation which is key to the success of a policy/strategy piece. The Hyogo Framework for Action (HFA) recommended strengthening local communities to manage potential risks and attain their local development goals. This would require authorities to involve communities where possible in the decision-making process that would affect them. In order to make conservation efforts effective, effective governance and public administration is required and this is possible when citizens have a say on underlying principles, foundations, quality and effectiveness of public administration UNESCO [12].

COMMUNITY-BASED NATURAL RESOURCE MANAGEMENT (CBNRM)

'Community-based Natural Resource Management (CBNRM) is an approach under which communities become responsible for managing natural resources (forests, land, water, biodiversity) within a designated area [13].

One of the best ways of promoting conservation education for local communities could be to establish pilot projects and providing them with the technical knowledge and encouraging them to implement the project themselves. In this way, they will improve their skills and knowledge through learning by doing, for example how to keep nurseries and how to expand those to forests. Involving local communities from the beginning of designing conservation projects could make a real difference. Through participation in the whole process of natural resource management, local communities' expectations and real needs are considered in addition to the conservation of natural resources. Similarly, the capacity of local communities will increase, and they may become supportive of reducing their impact on the environment. Subsequently, they could help in identifying the needs and problems, implementing activities,

and evaluating the outcomes. CBNRM approach encourages the involvement of communities at the heart of decision-making processes and implementation of natural resource activities [14]. By actively involving local communities, they will not only be able to manage the resources in their area but may also be able to manage natural disasters. Therefore, educational programmes on environmental management should consider the community-based approach and enhance the capacity of local communities to cope with environmental issues. A case study CBNRM project was implemented in Sudan by the United Nations Environment Programme. This project started in 1978 in Sudan with the establishment of tree belts in Nile state to protect agricultural land from sand encroachment and to promote a revival of traditional agricultural land. Local communities were involved in the process of forest planting and protection and undertook forestry administration, land deterioration and collaboration with an international organization. The result of this project was the development of a community forest, and the generation of revolving funds to support village development in aspects such as school, health services and livelihoods UNEP [15].

In addition, the government and environmental authorities may take some responsibility for providing local communities with clean technologies such as solar panels and clean cook stoves. For instance, by demonstrating effective techniques in agriculture such as drip-irrigation system. Another example is a case study that shows the prototype clean cook-stoves and other low-cost energy solutions in the Central Highlands of Afghanistan helped local communities, especially women, to reduce their fuel consumption; by reducing fuel consumption, the burden on wild shrubs reduced UNEP [16].

BENEFIT OF ECOTOURISM FOR LOCAL COMMUNITIES

Ecotourism encompasses two ideas; one is experiencing wildlife and the other is causing minimal environmental damage [6]. It involves travelling around the world to see and observe biological diversity such as wildlife and natural ecosystems. People involved with ecotourism activities raise their awareness and knowledge about the value of nature and often create a deeper connection with the natural environment, eventually try to conserve it [17]. Environmentalists have used this interest in tourism as a positive conservation tool for encouraging the local communities to develop their economies and protect the environment. 'Ecotourism is about uniting conservation, communities and sustainable travel [18]. This means that ecotourism can bring employment opportunities for local communities by providing accommodation, guiding the tourists and selling their goods such as handicrafts.

The benefits of ecotourism vary from area to area. In some places, the benefits can be very large but often little of the profit goes to the conservation site and instead, benefits hotels, restaurants and car hiring companies [6]. For example, in Afghanistan tourists visit the Wakhan Corridor which is a protected area to see wildlife and observe glaciers. The local community provides accommodation, food, goods, services, yaks and horses for fees to the tourists [19]. In this way, they make an income. This could encourage local communities to be more supportive of the conservation activities in their area and they take an active role in protecting the wildlife. However, some negative economic, social and environmental effects of ecotourism have been raised by critics. For example, tourism depends on establishing basic infrastructures such as roads and restaurants and it falls on the government to provide such facilities. In addition, tourism is often seasonal, and the revenue generated by tourism is not sustainable, which creates tension among local communities. The social problems caused by tourism and the visits of foreigners could include crowding and congestion, drugs and alcohol and increased crime levels. Similarly, tourism may lead to behaviour change among younger generations, causing an erosion of traditional cultures and values. Overall, ecotourism has been seen to play a greater role in education and environment protection. Ecotourism provides a base for social and cultural exchange to take place between local communities and tourists [20].

CONCLUSION

Education and awareness programmes play important role in changing the behavior of local communities towards natural resources. Giving attention to local communities and conducting effective conservation education programmes will enable local and indigenous communities to understand the value of nature and biodiversity. Furthermore, in some areas, natural resources might be the only important means of livelihood for local communities. Provided with educational programmes and effective tools for managing natural resources, local and indigenous people might try to minimize the adverse impact of their actions on nature. Reducing the unnecessary exploitation of resources may spearhead the habitat protection of diverse species that exist within an ecosystem in rural areas. Community-based natural resource management, together with utilizing the traditional knowledge of local communities, could prove an effective method to preserve the biological diversity and other natural resources. In order to develop and implement

effective policies and strategies, it is recommended to take a bottom-up approach and consult and involve communities at the very initial stages of policy development. Simultaneously engaging with ecotourism activities enhances the awareness and knowledge about the value of nature and encourages further conservation.

However, education alone will not solve all environmental and conservation problems. Successful educational and training programmes could lead to a better management of natural resources and biodiversity [1]. Therefore, more studies need to be conducted to identify other effective ways of delivering the educational programme for local communities that promote conservation. Different audiences including local communities have different capacities and culture, which should be taken into consideration while designing educational programmes. Similarly, it is useful to evaluate the impacts of different conservation education strategies and record the lessons learned.

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