Nigerian Journal of Ecology 1 (79-86) 1999

SOCIO - ECONOMIC ISSUES IN THE MANAGEMENT OF BIODIVERSITY AND THE ENVIRONMENT

OKUNEYE, P. A., AND ADEBAYO, K.
College of Agricultural Management Rural Development and Consumer Studies
University of Agriculture, Abeokuta.

ABSTRACT

The threat to the maintenance of a sustainable environment and biodiversity has brought to the fore a concern for the environment, in recent years, that is unparalleled in human history. Several people - related, interactional and survival issues have been found to impinge on the efforts to sustain the environment and maintain biodiversity. This paper high-lights and redirects these issues. They include: the dis-empowerment of local communities and institutions by external forces; the domination of the course of development by foreign and local experts, the neglect of indigenous technology; the inequality of access to local resources and the sustainable use of local resources and institutions.

The paper thus concludes that the maintenance of biodiversity and a sustainable environment encompass more than a technical or ecological approach. The people and traditional institutions are also important. It therefore calls on the academia, research scientists, policy makers and extensionists not only to continue to document relevant indigenous technology, but also to find sustainable ways of incorporating these into contemporary knowledge systems for the development of man-kind.

INTRODUCTION

The concern for the environment has been a prominent issue in the last decade in many countries particularly the developed world. This concern varied from, the emission of hazardous gases into the environment, the destruction of natural habitats (Singh, 1991), the unsafe use of pesticides in agricultural systems (Aina, 1995), to natural disasters, such as desertification, flood, drought, earthquakes, landslides and hurricanes. Consequently, the World today, is more conscious of these harzards and have developed many technical and institutional means of addressing them. Voices of dissent to major "developmental" projects such as hydro-electric power dams are becoming louder due to their adverse environmental impact. Agencies such as the United Nations Environmental Programme (UNEP); the various national Environmental Protection Agencies and Commissions are now in place to ensure that the security of our environment is not threatened.

In this light, the World has come to realise that there are significant rapid changes in the composition of the environment. The fact that each of the different elements in every ecosystem possesses distinct characteristics that make its removal detrimental to the organic existence of the entire system, makes biodiversity a topical aspect of any discussion on the environment.

The current state of knowledge on the subject of biodiversity implies that a sustainable environment (agro - ecosystems, agro - forestry systems, farming systems, as well as industrial and domestic systems) can

only be attained when there is as little as possible intrustion on the natural biological balance. Thus, it is now accepted that the establishment of vast hectarages of monocropped estates; reforestation and aforestation based on single species; extensive land clearing for industrial and domestic uses do not preserve biodiversity, and are therefore injurious to the maintenance of a sustainable environment. To address these problems, farming systems, such as the alley cropping, were developed by the International Institute of Tropical Agriculture (IITA) Ibadan. At present, a number of Forestry Departments in Nigeria encourage the practise of taungya farming, and many participatory development researchers now recommend a return to traditional systems of land management including swidden agriculture (an agricultural system based on bush fallow practiced by "tribos" and "indos" in Latin America as well as peasants in Asia) as well as the African shifting cultivation (Johansson and Mlenge, 1993).

Despite the increased awareness and technical recommendations, the threat to the environment continues to mount. Though, it might be argued that the consciousness of the threat has not reached a vast majority of the human race, especially in Third World Countries, it is also true that several people who are aware find it difficult to implement the desired change. Thus, it became necessary to focus on people as the fulcrum to maintaining biodiversity and a sustainable environment. This paper therefore seeks to highlight and redirect some relevant, people - oriented socio - economic issues, which have in the recent past, been in contention in the management of biodiversity and the environment.

THE RELEVANCE OF SOCIO - ECONOMIC ISSUES IN THE MANAGEMENT OF BIODIVERSITY

Socio - economic issues as used in this paper, may be construed to mean those people (individuals and community) related, interactional and survival parameters that may determine their reactions to keeping a natural habitat intact or intruding upon it in a sustainable manner. Man's survival instinct is traditionally dependent on social pressures and rational decision making. If man needs food, he advances to the nearest suitable source. If man needs medicine, he approaches the nearest suitable source. According to Wariu, (1995), World Health Organization (WHO) records state that about 80% of the world's people depend on traditional medicine for their primary health care needs. The greater part of this therapy involves the use of plant extracts for their active ingredients. When there is a threat to man's access to the nearest sources of food or medicine either through domination by external forces, unequal distribution of resources (or access to it) or disempowerment of traditional authority, then, the tendency to loose interest in preserving that near source of food and medicine becomes reduced. As this happens, issues of sustainability, participation and indigenous technology become relevant.

Furthermore, though there is a strong tendency to view the issues of domination, inequality, empowerment, participation and indigenous technology as strictly local issues, the global nature of the impact of use or misuse of the environment bear a relevance beyond the local community.

Unless these issues are better understood and channelled towards a positive orientation, the proper management of biodiversity and the environment would be jeopadized.

THE CONTEMPORARY ISSUES IN BIODIVERSITY MANAGEMENT

(a) Empowerment of Local Communities/ Institutions: Efforts at proper management of biodiversity and maintenance of a sustainable environment have been channelled through two contrasting development approaches. These are "top-bottom" and "bottom - up" approaches. The "top - bottom" approach was the dominant paradigm before the last decade. It implies that "experts" conceive a management or improvement procedure for a particular situation, plan for it, obtain the necessary support and execute it without carrying the concerned people along. The consistent failure or sometimes non-sustainable success achieved by the use of this approach gave rise to the "bottom - up" paradigm. This paradigm is conceived, at the extreme, as allowing the benefitting or immediate - access community to evolve the ideas, plan for it, specify the kind of assistance required, and execute the plan. It is thus believed that the people would identify with and accept the project as essentially theirs.

The reality, even when it is expressly stated that the project has used the "bottom - up" approach, and phrases like: self - help, local assessment and participation are used; specialists, bureaucrats, sponsors and other external powers end up imposing their proposals. This is done either by stipulating the objectives, approaches and methodologies of work to be followed as a prerequisite for funding; or through more subtle modes of "rationalizing" and "systematizing" the work of local counterparts, who are assumed to be incapable of organising and discussing their ideas (Valarezo, 1993).

Local communities throughout the world, especially in developing countries have always planned and have quite elaborate techniques for so doing. For instance, in Andean communities of South America, clay models have been used to plan management strategies (Valarezo, 1993). Also, in Yoruba communities in Nigeria, the idea of planning has traditionally been encoded in myths, folk songs, stories etc.

The stack reality today is that many traditional authorities and institutions for implementing management plans for the maintenance of biodiversity and a sustainable environment have been rendered impotent and non-functioning by new administrative circuits. This has been the bane of many development efforts. For instance, the dagashida in Tanzania which balanced the power of the temi, (the king), have been pushed into oblivion by both colonial and post - independence governments in the nation. In Nigeria, recent experiences have shown that traditional institutions such as the asode or vigilante groups (as in Yoruba land) appear to be more effective than the Police Force in curbing crimes. However, several such traditional institutions have been made extinct, with the few that remain being reduced to mere figurines of their earlier existence. Konate (1993) reports the case of the "Alamodiou", a traditional association for the management of natural resources in present day Mali. He notes the significance

of the "Alamodiou"in enforcing local laws and other community based social control norms in respect of what forest or water resources can be used and when. Such associations, if left to their own devices portend great potentials for the effective management of biodiversity and the environment.

(b) Domination by external forces: This is an issue that is viewed from two main perspectives. First, from a global one, which sees developed nations, international financial institutions such as the World Bank (IBRD), International Fund for Agricultural Development (IFAD) and the International Monetary Fund (IMF), as well as international aid agencies such as Swedish International Development Agency (SIDA), United States Agency for International Development (USAID) etc; as directing developing nations to engage in activities which favour the developed nations more than the Third World. Such activities are often introduced as conditions for funding or for technical assistance. The bottom line therefore is that loan components from foreign assistance are often used mainly for acquiring products of foreign companies such as cars, machinery and equipment, tractors etc and their spare parts. Thus, the companies clear stock on loans often provided by their parent companies based in the developed countries, even though, the recipient nations' marginal utility for the products are far below optimum.

The other perspective is local. Local elite ("experts"), agronomists, foresters, pathologists, genetics, economists, extensionists and their counterpart from abroad who feel they have answers to all the problems of the rural people (including the management of biodiversity and environment) proffer those solutions provided by their technical partners and then try to compel the local people to practice them. When local rationality stands against such solutions and no headway is made in its adoption, the local people are often described as conservative illiterates.

The implication of such domination is that indigenous technology is undermined. When such external forces are removed, the traditional dynamism would have been impaired. As such, the confusion that often follows become more detrimental to the maintenance of biodiversity and the environment.

(c) Indigenous Technology : Very recently, several development experts have come to appreciate the worth and relevance of indigenous technology (IT), or the maintenance of biodiversity and the sustainability of knowledge systems (Cernea, 1989; Cernea and Guggenheim, 1985). Indigenous technical knowledge (ITK) refers to practices, systems and patterns peculiar to people within a definable area which has over time become part of community processes. This knowledge is often specific to a single community. This is a result of the great ecological variation and biodiversity which in turn has led to development of technology that is adapted to specific situations. A new lease of life should be given to such knowledge because of the realization that 'development' in the First World is causing ecological deterioration, social instability and economic imbalance. (Saravia, 1992). Efforts at managing biodiversity and maintaining a sustainable environment would become more effective if more of the

planning and implementation responsibility is handed over to local user - groups. According to Kattel (1994): "by listening to them, we can appreciate their concern for bush fire, soil erosion, desert enchroachment and illegal hunting and appreciate their views on the management of biodiversity and the environment.

(d) Inequality : Inequality in human circles is as old as human history. But its relevance to the management of biodiversity and the maintenance of a sustainable environment is just being realised. The oldest and most widely institutionalised form of inequality is in gender. That is, the unequal access of men and women to common resources, extension services, irrigation facilities, external organisation and even markets. The other form of inequality, relevant to this discussion is socio - economic class. Resource - rich individuals possess several advantages when compared to their resource - poor counterparts.

Adebayo (1994) and Adebayo (in-press) emphasized the nature and implication of inequality in farmers' gender and other socio - economic characteristic for the adoption of agricultural technologies. The main implication of inequality is that women and resource - poor individuals are often forced by their unfavourable access to land, woodlots and other common and private natural resources to engage in unsustainable use of these resources and thus hamper the maintenance of biodiversity and the sustainability of the environment. This fact has stimulated the emergence of NGOs whose main concern is to improve the access of the underpriviledged to common resources. Attempts at ensuring this has met with various institutional and legal barriers. But unless notable success is made in this direction the hope of maintaining biodiversity and a sustainable environment will continue to be a mirage.

(e) Sustainability: Sustainability commonly implies the systematic use of resources today, such that it does not impinge on its availability for use by future generation. However, from a socio-economic point of view, it also extend to the maintenance of social institutions and development organisations such that they continue to function as effectively for this generation as for future generations.

The issue of sustainability has generated so much debate in the last decade, especially from the common viewpoint of sustainable use of natural resource (Blade, 1989; Brady, 1990; and Okigbo, 1990). All the other socio - economic issues raised in this paper revolves round the purpose of ensuring the sustainable management of biodiversity and the environment. Several aid agencies including the United States Agency for International Development (USAID) now conceive of sustainability as an essential component of any programme of development and the environment. According to Blake (1989), USAID's environmental record can be summarizewd in the following statements: "it supports environmentally sound agricultural development; agricultural sustainability has since 1987 become a greater part of agency policy; it has helped developing nations come to grips with their natural resource problems; it supports natural resource - oriented agricultural research; field missions in the main have not yet done a good job in this respect; AID, Washington is increasingly equipping field missions for

their tasks; and field missions. through programmes of private voluntary organisations and otherwise are supporting a few projects, which can serve as models for environmentally sensitive agricultural development ". The same can be said of many other aid agencies. The import of this is that, efforts by Third World Countries need to be continously channelled towards the sustainable use of natural resources as well as management of biodiversity and environment for them to benefit from aid assistance from the North.

THE WAY FORWARD

The maintenance of biodiversity and a sustainable environment encompass more than a technical or ecological approach. The people whose lifes revolve round the environment are important. Hence, issues bordering on their survival both as individuals and as a group cannot be handled with levity.

Traditional institutions have evolved over several generations as the best alternative options for addressing complex ecological and environmental situations. Recent developments the World over have shown that attempts to sidetrack them have only brough more disasters than progress.

Scientists, Administrators, NGOs and Government representatives should pay more than lipservice to local knowledge and concerns. The local people's opinion should not be assumed or taken for granted. Even though participatory procedures for eliciting the necessary response from local communities have been developed, "expert" attitudes have not changed. Yet, this change in expert attitude is what is required for any meaningful progress to be made in addressing the issues of empowerment and domination by external forces.

A situation where a Nigerian pharmacist knows more about the chemical analysis of chloroquine than he knows about "agunmu iba" or when a graduate of agriculture knows more botanical names of wheat, oat and barley than orin ata, ewe gbegbe, and kanako must simply be reversed. Indigenous technology and indigeneous technical knowledge is relevant. The academia, research scientists, policy makers and extensionists should therefore channel more effort not just to documentation of ITK, but also its intergration into contemporary knowledge system. Note that contemporary and traditional knowledge systems need not compete. They should be made complementary. Then, development will be more relevant, biodiversity will be maintained and the environment will be sustained.

It is noteworthy that people's participation cannot be bought. It cannot be coerced. Willing and equal partners must emerge between "expert" and local people. Though external resources are often weighted as the determining factor in ascertaining the direction of any intervention, these resources cannot operate in a vaccum. The people are important!

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