EVANGELICAL LUTHERAN CHURCH IN TANZANIA
KARAGWE DIOCESE

AFFORESTATION PROJECTS

BWERANYANGE AND MURONGO CHURCH DISTRICTS

THEME:
THE ROLE OF THE CHURCH IN ENSURING SUSTAINABLE ENVIRONMENTAL UTILISATION

TOPIC:
BEST METHODS OF ENVIRONMENTAL MANAGEMENT

SEMINAR PARTICIPANTS:
FARMERS AND LOCAL LEADERS

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BEST METHODS OF ENVIRONMENTAL MANAGEMENT IN THE LOCAL AREA CONTEXT

BACKGROUND

The vast majority of people in Africa, Asia and to a lesser extent Latin America continue to depend directly on a productive natural resource base for their livelihoods. In many parts of the developing World, pressure on local natural resources is increasing which has resulted into environmental degradation.

- **There are some factors that cause environmental degradation in less developed countries. These can be grouped into social, demographic, political, economic and ecological factors**.

1. **SOCIAL FACTORS:**
   Growth in population and increasing use of land for cultivating export crops and consumption crops, have forced more and more people to the marginal lands to produce food. On these marginal lands, the woody vegetation is removed and after this, often, undesirable processes develop, particularly, soil erosion and soil degradation. This has given rise to lower agricultural yields; hence new marginal lands have to be de-forested in order to be used for agricultural purposes. The result is that, both the food and firewood shortages increase instead of being solved.

2. **DEMOGRAPHIC FACTORS:**
   Rural populations continue to grow especially in Africa and Asia despite rapid urbanization and massive urban migrations. The average increase of population is 2% per year in rural areas, while it is 4% per year in cities, especially in developing countries. An increase in population means an increase in use of fuel wood and other natural resources. This is due to the fact that in many areas, a large part of the urban population uses charcoal. This charcoal is often produced in inefficient ways such that more wood is needed than when the wood is used directly as fuel. Strong urban growth caused by immigration of people from rural areas, leads into more wood cutting.

   Furthermore, as population increases, there arises demand for more food production. People are consequently forced to establish new land for cultivation. As a result, expansions are done towards highly sensitive areas which are also inappropriate for permanent cultivations. E.g. water catchments areas.

3. **POLITICAL FACTORS:**
   A deteriorating economic situation often gives rise to political instability. Such instability leads to improper policy designs and corruption. In particular reference to the land laws, land resource tenure rules are formulated in a manner in which they are often contradictory, vague or undergoing rapid changes. Similarly, due to

political instability, there are displacements and resettlements of populations due to conflicts or wars which exacerbate resource pressure e.g. Refugee situations like the recent influx of Rwandese into the Great lakes region and Tanzania.

4. **ECONOMIC FACTORS:**
   Rapid economic growth has led to the integration of previously isolated areas into the global economic and trading system. The global players end up establishing large scale investments such as natural resource extraction companies which also degrade the environment.

5. **CLIMATIC FACTORS:**
   Prolonged drought in many areas is seen as one of the causes for degradation. Drought automatically leads to reduction in forested area wherever it occurs. It also works against growth of young tree plants and regeneration of natural vegetation is deterred. It should also be noted that environmental degradation problems here in Tanzania have had a more pronounced effect on ecologically fragile areas such as slopped dry upland areas and coastal zones.

6. **SILVICULTURAL FACTORS:**
   Lack of silvicultural knowledge and experience (e.g. Seed treatments), is one of the causal factors. Lack of the required mangement interventions (eg. Moment and type of cutting), can be a cause of environmental degradation.

Best Methods of Environmental Management

- **As we have seen some factors that lead for environmental degradation, now we can see best methods that may be used for managing environmental degradation.**

1. **PARTICIPATORY APPROACHES**
   Participation, the direct involvement and responsibility of the local population for planning and evaluation of the projects, is an indispensable instrument. In the past, efforts to address the problem of natural resource degradation and diminishing, local livelihoods have often discounted or totally ignored the role of local people. However, even through local men, women and children in rural areas are among the poor, but they posses a number of assets that are essential to resolving the problem, that:

   - They have intimate knowledge of their local resource base.
   - They are motivated to improve productivity, if they see benefits accruing to them.
   - They have evolved local decision making processes and social enforcement methods / mechanism, for resolving resource conflicts.
   - They are optimistic and hopeful, despite their desperate situations

   However, this approach, is known as Community Based Natural Resource Management (CBNRM), that entail community level participatory process of institutional-building or institution-strengthening, enhancement of local technical capacity, experimentation and research.

2. **CAPACITY BUILDING**
   Capacity building (institutional and technical), among communities to address their natural resource problems. There is usually a need for leadership training in the communities and for the training of trainers among local resource users.

3. **FORMULATED RURAL ENERGY POLICY**
   This policy will not only have to focus on technical aspects, but certainly also on the socio-economic sides. Technically, the fuelwood problem can be approached in two different ways:
   (a). To increase the supply of fuelwood ie. Planting trees.
   (b). To reduce the demand for fuelwood.

   A: Increase of supply can be achieved on different ways like:
   - Reforestation, ie including individual tree planting and agro-forestry.
   - Improved management of existing woody vegetation, natural as well as man made.

Agro-forestry means sustainable land management system with a tree component, a crop and livestock component. Many of these system fit very well in the farmers desire to minimize risks and to risk spreading.

Improved management will have to occupy an important place because, woody production system only can achieve there full productivity under a proper management regime. Improved management of existing woody vegetations will have to get priority, now the local population knows the various use possibilities, the costs will be lower since on starts from an existing vegetation and finally, products and services are available.

B: Reduction of the demand of fuelwood:
The most ways to achieve a reduction in demand are:

- At the domestic level, there should be an increase in the efficiency of the cooking system ie. Stove, cooking pot, the fuel and the cook.
- An increase in the efficiency of the charcoal production.
- Introduction of new food preparation system.
- An increase in the efficiency of (semi) industrial processes which use wood energy in order to reduce the competition with the population for the same resource.
- Replacement of wood, by other forms of energy like oil, gas, solar, etc.

4. SUPPLY OF FOREST PRODUCTS

A well established fact is that, the patterns of forest product output and consumption, in most developing countries, rural societies and in general, varies greatly from one area to another. In most countries, the production of fuelwood (and charcoal) far outrips (in volume terms), that of timber varies. The relative importance of non-wood sources of energy (eg. Crop residue, dung, kerosene, etc) varies too. Therefore, per capita production and wood consumption of fuelwood fluctuates greately even even within similar ecological regions. In the area of population concentration, there is high need of fuelwood and other forest production for consumption so there should be standard formula of supplying forest products from one area to another as follows:

- Organize supply of fuelwood from “surplus” areas and transport to another area eg. From rural to urban areas.
- Attempt other elements of managed harvesting eg tree marking element of zoning.
- Commoditization of natural resource ie. Converting the price of fuelwood into the oil.
- Inform about how to economize on fuelwood and introduce fuelwood saving replacing alternatives (agricultural residues, peal, etc)
- Teach environmental awareness.
- Plant trees around huts, shelters as a component of agro-forestry, etc.

NB: Commoditization of fuelwood means treating it as an ordinary commodity whose prices fluctuates according to the supply and demand.

5. COMMODITISATION OF FUELWOOD, FUELWOOD MARKETS

The two key economic incentives are prices and secure ownership. Prices signal scarcity. The more scarce the commodity (in relation to the underlying demand), the higher will be its price. Where the commodity is fuelwood, the higher price can take the form of increased effort needed to collect the wood. Greater walking distances are the equivalent of a price increase.
In general terms, higher price (or longer walking distance), result in less fuelwood consumed and more fuelwood grown. Low or zero prices encourage high consumption and discourage tree growing.

6. SECURE OWNERSHIP OF LAND

The role of secure ownership of land or access to land and encouraging sustained supply of forest products, is into two folds:

(i) The demand side, this forces the users to face the real cost of wood. With wood being taken from poorly protected areas or open access areas without payment, its price become more than it should be because the user did not know its cost.

(ii) Indispensable conditions for individuals and communities to invest in longer-maturing crops such as fuelwood that he/she will recognize the cost of investments.

7. INNOVATIVE APPROACHES TO THE PROVISION OF FOREST PRODUCTS

Efforts aimed at sustaining or increasing the supply of forest products under such circumstances fall within several main categories.

(i) Technical and management improvements aimed at increasing or “stretching” supply. This will include activities ranging from the introduction of new cultivation or management practices.

(ii) Conservation or better utilization of existing forests.
This includes better control of harvesting, setting aside certain areas of forest for natural regeneration, control of fire, etc.

(iii) Altering the pattern of incentives and disincentives to bring about compliance with the objective of the forests, sustainable use.

8. ENVIROMENTAL EDUCATION TO LOCAL COMMUNITY

(I) Role of Information, Research and Communication.

- Community access to information is key to the desired local empowerment and impact associated with other projects.
- This is closely linked with the central role of participatory research in generating and sharing relevant information.
- Access to modern information communication technologies, eg. Through rural tele-centers (having internate services, community radio, etc)

(II) Role of Interdisciplinary Research.
Successful community, require interdisciplinary research team (resource persons from outside the community) working very closely with community members.

This process will lead lead:

- Knowledge transfer between local community members and specialist from outside the community.
- Improved production technologies in order reduce degradation and increase productivity.
- Innovate organizational or management system, local development of decision process, resource inventory, allocation and monitoring mechanism, capacity building and resource conflict resolution.
- Policy innovations-development of local regulatory mechanisms and enforcement.
- Interaction and integration-improved methods for interacting other components and information flow between other stakeholders.

9. ENVIRONMENTAL POLICIES, REGULATIONS & LAWS

A statement of some of the fundamental requirements, which together could enable managing the environment.

(i) A democratic and decentralized political system to interact and negotiate with local community representation. The village communities were suppressed and any objection to the political order was considered intolerable.

(ii) Availability of local commerce based on local opportunities.

Commerce at the community level will only flourish where there is legal natural resource utilization, on understanding of basic environmental economic options, and the availability of free market enterprise for locally produced commodities and crafted products.

(iii) An enabling natural resource policy situation.
The prevailing natural resource policies in effect excluded any genuine community based management for local resources.

As the local community were unable to realize the economic value from natural resource, their use was often illegal, unregulated and typically unsustainable.

10. ENVIRONMENTAL REHABILITATION

Environmental rehabilitation means an attempting restoration of an environment's ability to sustainably deliver the ecological functions and natural value it has for human society.

Effective and sustainable environmental rehabilitations activities require and understanding of the incentives and motivations for local communities to involve themselves in such activities.

Rehabilitation activities should therefore seek to maximize the benefits to the individual without compromising environmental sustainability.

(I) Forestry:
Sustainable forestry practices take many forms and include management for natural regeneration, intergration of trees into arable and grazing lands, homestead planting and plantation.

(II) Energy:
Energy-saving (eg through the use of improved cooking techniques), can reduce the pressure on the remaining natural resource base.

(III) Planning:
Transparent consultation with all actors in the planning process is important if these actors are to play role in rehabilitation.

(IV) Gender issue:
Understanding gender relations at the local level, and their influences on resource management practices, is an important pre-requisite for environmental rehabilitation. This means much more than just the involvement and empowering women.

After recognizing these, environmental rehabilitation activities can be achieved on implementing:

- Nursery operations.
- Private seedling production.
- Tree planting in greenbelts (plantations & enrichment planting).
- Tree planting in and around our shelters.
- Forest patrols.
- Soil erosion prevention work.
- Environmental campaigns.
- Environmental training work.
- Rearrangement of shelters in clusters.
- Production of environmental items.
- Constructions of wood save-stove.

- Fuel-efficient stove.
- Solar cooker.
- Grass stove.
- Kerosene uses.
- Private sale of seedlings from nurseries to partner agencies.
- Sale of products from plantations.
- Environmental fund.

This would be set up to monitor the economic operation of the energy tax.

11. MAINSTREAMING GENDER ISSUE IN ENVIRONMENTAL MANAGEMENT

"Women have an essential role to play in the development of sustainable and ecologically sound consumption and production patterns and approaches to natural resource management" *(Agenda 21).*

As consumers and producers, caretakers of their families and educators, women have a stake in environment and are major actors in the sustainable development of the environment. Yet, women remain largely absent at all levels of policy formulation and decision making in natural resource and environmental management, conservation, protection and rehabilitation.

Women can play a powerful role in influencing sustainable consumption decision within the family and community, through their productive role. Women as the stable members of a community, assume the role of the provider and ensure the adequate and sustainable allocation of resources within the household and whole community.

They make decisions within the family and community when they are female heads of households. Therefore, it is vital to involve them in the decision making process of environmental management.

Therefore, the full participation of women may be promoted through the establishment of environmental management committees with an equal partnership and participation of women and men. An equal participation of women is essential so that the women do not suffer from a black-lash as a result of men's rejection of the project and technologies. The formation of committees and the participation of women in the committees is in itself empowering experience for women. With participatory techniques the women may be encouraged to participate more fully in the decision-making processes.

CONCLUSION

Environmental degradation has economic, social, ecological and health consequences. It can also exacerbate relations with the local community and affect political relations.

Local community suffers disproportionately from this degradation because of their reliance on the immediate environment for farming income generation, and basic raw materials such as fuelwood and shelter.

So on that case; it is our role as local community to take part and action in managing, conserving, protecting and rehabilitating our environments and natural resources.

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