

Multifunctional Landscapes for Better Living Conditions and Ecosystem Services Provided by Forests

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ABSTRACT: *The scientific community is concerned about contemporary challenges affecting millions of people in food production and tropical forest conservation. In many parts of Asia, food insecurity is an issue owing to population and urbanisation, soil degradation, land salinization and global warming. An assessment of the literature on harvesting, forest use and landscape management for ecosystem services was carried out to see how Bangladeshi forest livelihoods and sustainability impact. A method of agricultural production that includes perennial timber species minimises land deterioration, improves local productivity and, if not all, reduces the level of degradation through interactions with trees, land, crops and livestock. The damaged territory might be recovered. It is possible. Bangladesh has a deforestation rate of 0.3% a year, which means that there will be little or no forestry in 20 years, endangering millions of lives. Will tougher forestry laws now assist to reduce deforestation and improve landscape management? In particular, agroforestry systems may supply food, nutrition, financial stability, environmental services and sustainable protection of biodiversity. In future studies agroforestry will demonstrate the requirement for the financial and institutional support of the State to become a successful self-sustaining company that integrates all such advantages instead of market orientation and evidence-based project interventions.*

KEYWORD: *Agroforestry, Conservation, Deforestation, Ecosystem Services, Forest Management.*

1. INTRODUCTION

Soil conversion and deforestation are currently generating about 1.7 billion tonnes of carbon annually. More than 17% of world emissions are in this number. Tropical forests may absorb up to one billion tonnes of carbon annually and, once properly maintained, are home to thousands of animal and plant species. Forests are increasing in popularity, particularly tropical they, as forests provide local people numerous opportunities and advantages. The World Bank states that over 90% of the 1.2 billion people who live in severe poverty somehow depend on trees. Many people consider Asia to be the "continent of the 21st century," however other analysts believe that many Asian countries are unable to cope with predicted population increase in the 21st century [1].

In the 2010. Gross Domestic Product (GDP) was allocated \$ 250 billion by forestry. This is considerably higher than the total sum received in 2010. Real values are basically huge because of data limitations. Forests have many more non-monetary benefits than economic ones such as carbon and ecological services. As a result, it will be difficult to reduce poverty if 10 million people do not pay special attention to nutritional and dietary diversity that rely on trees for their livelihoods. The main issue for forests in the past two thousand years was abstract and complementary economic values, especially in the last two centuries. In Asia, food production has traditionally been on the verge of population increase [2].

For a number of commodities, services, and advantages, people have relied on trees for thousands of years. The value of wood has expanded and increased due to rapid economic growth and technical advances. Forestry migration and greater foresight have traditionally been connected to the early phases of economic expansion, with the rising levels of forestry

movement and cover. How forests help people's lives by means of a range of products and services, how forests are maintained and managed and some methods to better conserve and appreciate the forest's historic assets. The following state of the suggestion for literature study explores the present degree of information on how woods assist people. The so-called 'technical problems' in different regions of the world, particularly Asia, are worse and limit grain output [3].

Deforestation is one of the world's largest environmental issues and is connected to agricultural expansion and development. There are, however, two sorts of deforestation causes: direct and essential. Direct influences include urbanisation, development of agricultural land, commercial logging and war. Population poverty and pressures often lead to deforestation. Deforestation is often linked to and called bad problems. Efforts to minimise deforestation must take on the ongoing food needs of humans into consideration. According to forest research and rural development, forest conservation must be equated with the lives of the needy. Asian food production is dominated by smallholders, a characteristic aspect of it. More than 80% of farms in South Asia, for instance, are less than 0.6 ha, and many small farms have one or more mixed types of garden [4].

The long-term viability of forest management is significantly influenced by market and policy failure. Furthermore, poor foreign-currency economic performance pushes governments to accelerate their forest expansion. Forests have historically influenced patterns of economic development, sustained means of living, facilitated structural changes and fostered long-term growth. The forests, trees and woods offered for thousands of years before the Industrial Revolution agricultural and human settlements, building materials, fuels and energy and food and land. Even before the industrial revolution, the significant use and development of woodland resources led to initiatives to protect forests and establish new forests in different regions of the world. In addition, the financial resources necessary for the repairs of damaged areas are lacking in most of the nations in the area. For agricultural politicians, these are significant issues, as is the limited potential of the region to develop agricultural land because of the high population density [5].

In the 17th and 18th centuries, France and Germany pioneers in the development of regulations to limit and protect forest use. The European Colonial Forestry Office is a feature of forestry development as a science focusing on sustainable wood production and is created by European settlers in the rising nations. Many forestry sectors throughout the world have emerged with the objective, such as land conservation and watershed preservation, to improve forestry management and to provide forest community benefits. On the other hand, most forestry agencies are under great financial difficulty and often attempt to protect wood from commercial harvesting. Deforestation is another significant issue that threatens ecological stability and reduces natural resource stocks [6].

Sometimes there are tensions between government organisations and poor communities who rely on wood as a source of revenue. Different industrialised countries have adjusted their forestry strategies in the 1970s as a result of growing demand for wood products and environmental concerns. Many forest products were touched by this legislation and their production and accessibility have been significantly influenced. From 1990 to 2010, India, Bhutan, and Vietnam expanded their forest areas with substantial replanting initiatives, whereas most other countries in Southeast Asia have added around 28,000 square kilometres of forest or forest every year. A 1% loss occurred. The probable effects of climate change on terrestrial ecosystems have been discussed by scientists and public opinion, notably as regards

plant growth, biodiversity changes and the global impact on biosphere carbon storage in the past few years [7].

2. LITERATURE SURVEY

T. Sunderland et al. stated in their article that Conservation biological science as well as the planning and implementation of Earth's biodiversity protection programmes are quite different, and science is widely recognised as not being able to offer genuine information. It's a wonderful idea to preserve. There are a number of causes for this implementation lag. Conservation biologists seldom read scientific journals outside the institution and there's no motivation for researchers to use their expertise. In the same manner, professionals in fields rarely disclose their fieldwork or experiences to conservative scientists. There are causes for this gap in access to scientific knowledge, scientific significance in an interdisciplinary context, the expectancy of donors and the lack of critical investigation at every level of conservation theory and practise. Conservation biologists and field workers often find themselves in highly different environments, with diverse tasks and career goals that limit their ability to learn from other skills. This paper extends upon past literature discussions, using case studies to illustrate vulnerability-specific problems and depends on the project management and research skills of the author. Identify five major problems about communication. All these are options for bridging the gaps between scientists, on-the-ground practitioners and science of conservation that have access to scientific materials, scientific information, lack of trans-disciplinary issues, the absence of sharing conservation experience and new methods of working [8].

M. S. H. Chowdhury et al. presented in the article that Bangladesh has 19 protected areas (PA) which reflect the nation's four kinds of forests. Not only are these protected regions a great source of biodiversity, but also the income of local people is generated by researchers. All protected areas are managed by the State Forest Service, however a recent Joint Management Strategy has been a trial project involving partners and stakeholder commitment for sustainability. Although the project has many important elements, there are several shortcomings, which must also be addressed to ensure that the participatory approach succeeds and the occurrence of the conservation programme. This document examines previously published work, government and project documentation, assesses the PA's present state, and provides recommendations [9].

3. DISCUSSION

The yearly deforestation rate in Bangladesh is at 0.3 per cent. Ancient practises of mobile agriculture, the primary agricultural system in the region, are a major cause of deforestation in eastern Bangladesh. Large-scale deforestation has led to the loss of natural resources in the Bangladesh Forests and to the exacerbation of poverty. The first to achieve preservation of legislation and policies continues to be the economic benefit of individuals, businesses and governments from forests. In 2008, forest industry generated more than \$ 450 billion in national income, accounting for more than 1% of world GDP, and employs 0.4% of the global workforce. Many of them have a hundred years of history of production and tiny, limited farmers still have food, food and fuel year by year in the tropics against the common public perception [10].

Forests provide additional income and life advantages, including informal work opportunities and a store of economic value to assist buffer household income shocks, especially in rural regions and communities in emerging states. But the data needed for consistent evaluation on a global and national scale of the non-industrial economic benefits of forests is just missing. These benefits are usually larger than the advantages for which systematic national and global

data are collected based on national estimations. The survey seeks to provide Bengalis with alternatives to deforestations and livelihoods by developing and employing agroforestry technology on a landscape scale. People with more "capacity to buy" food have higher cash incomes, especially in the absence of farming or crops. In addition, production diversification is a strategy of safeguards which is particularly crucial in view of current agricultural problems in numerous countries in South and Southeast Asia.

It also identifies the main factors for deforestation in Bangladesh and thus poverty. Finally, the different legal and business frameworks that individuals need to use to harvest the long-term advantages of agroforestry technology are examined by the public. Agroforestry has been well known for improving ecosystems by preserving the traditionally shifting livelihoods of agriculture. In Bangladesh, researchers are examining data demonstrating that holistic forest management offers numerous benefits for better life and also protects biodiversity and ecological services. Different products (fruit, vegetables, spices etc.) are available in systems like house gardens all year round, ensuring not just food security during "small" seasons, but also a variety of formalities [4].

Changes to perspectives on forest values and people links to changes in techniques of forest management have been connected in the previous 50 years. In the 1970's and 80's, the initial recognition of forests and their flexibility has been made, but the motto of ecosystem management have been overridden in many nations early efforts to manage forests with a view to guarantee a constant supply of commercial forests as sustainable forest management. Increasing deforestation has encouraged several nations and international organisations, in spite of measures to control deforestation and reverse it, to experiment with deforestation reduction techniques. Forests are also excellent providers of mineral nutrients that help families enhance their safety, especially for those at danger (e.g. mothers and children). During the trials the participants significantly increased their vitamin-rich fruit and vegetable production and consumption throughout the year in comparison with the non-garden control group.

As a consequence of the increased awareness of biodiversity as an earthly biodiversity reserve and the importance of forests, protected areas have been rapidly and extraordinarily expanded, currently covering 10% of the world's territory. Examine several sources such as academic journals, government publishing, donor reports and peer-reviewed journals in this area. The keyword phrase is used to search for similar information from the Knowledge Web and Google Scholar. Based on the journeys and in the following field, it gives findings and opinions. This includes key terms and expressions such as logging and deforestation and livelihoods, biodiversity and forest management, forestry policy and other forests, ecosystems, landscapes, trees, forests, local and civic populations. In a time where Asian agriculture stressed use of agricultural inputs, agroforestry, which needs less inputs, was disregarded as a resource for food production. Such scattered or bordered mixed gardens are not of particular interest to the development community.

Since the 1970s, increasing emphasis has been given to the crucial links between woods and the lives of the poor, ethnic minorities and indigenous peoples. As a consequence of this substantial legislative work, the duties of these nine groupings for forestry and forest benefit sharing have been identified and defined. Social forestry, community forestry, forestry involvement and other kinds of participatory forestry allow forest usage and management, making it fairer and more effective. Due to increasing government financial constraints in many developing countries, forest-management decentralised programmes are often linked to initiatives to engage people in at least part of forest management. Perennial mixes in the tree are likewise poor yields and hard to maintain, thus the 'evolutionary model' of mass production

is becoming more common. As a result, Asia's small-scale mixed orchards have a lot of untapped potential for increasing production and profitability.

3.1 Forests and Deforestation:

According to available statistics, the amount of wood in Bangladesh as high as 93 per cent was lost or decreased. The nation's protected area network is one of the smallest in the world with a total size of approximately 1.4 percent. Bangladesh risks losing its great biodiversity and forest resources, even if deforestation is now limited (less than 1% year), unless that trend is reversed. Since the 1850s, the world has swept away rapid economic progress. In view of the widely held idea that early economic progress requires destruction, the forest's function has therefore changed. The primitive civilization, including of hunter-gatherer families, relied on forests for virtually all of its necessities.

Only the technology and work available for cultivation of land and crops limited agricultural advancements, leading to a large deforestation of arable soil. The bulk of the poor in emerging nations receive autarkies food, fuel and wood from forests, and these products remain their principal source. Agricultural development is a major source of deforestation in Bangladesh, primarily through shifting cultivation into highland forests. The rise in population is rapid, which further decreases forest resources in the country. Commercial logging and the gradual transformation to grassland and agricultural regions degrades woodlands.

Forest invasion, excessive firewood gathering, wildfires and illegal logging are the causes of deforestation across the country. However, the sort of forest products needed and the level of demand have changed as the industry has increased. Forests are used to manufacture, furnish, paper, pulp, and essential industrial and food crops. Forests are the raw resources. Massive global demand for such things has caused very high rates of deforestation, especially in tropical places, throughout the 20th century. In many areas of the world, especially in South Asia, East Asia, and Europe, large-scale deforestation occurred early in their history.

Initial deforestation primarily happened on land used for agriculture. In addition, Bangladesh's current forestry strategy has significant difficulties. Noteworthy is the lack of clearly defined implementation strategies to achieve this goal, despite the vague claim that they determine poverty and promote forested rural development. Land tenure, social stratification and favouritism are not addressed in policy, and hence policies are avoided, with all of its effect on sustainable forest management. These are the people who plant premium trees for wildfires across wide areas of unprotected forest without investing in land.

In all its history, India and China have suffered deforestation as well. As a result of population increase, China's forestry cover plummeted to its lowest point in the mid-20th century, with just around 10 per cent of the forest area covered in 1950. But forest cover has been slowly but gradually increasing over the past two decades, with a combination of 80 million hectares of forest. Forests have been destroyed throughout South Asia, raising the agricultural border before the colonial era. Ironsides with a view to improve ecosystem services such as soil conservation and flood control by scientific forest management, one of the worst de forestry eras in South Asia happened soon after the establishment of the royal forestry services.

Reforestation and conservation activities have resulted in a slight increase in the forest cover during the previous two decades, notably in India. Southeast Asia continues to lose cover, unlike China and India. The global demand for timber and development of agriculture for raw materials in the region are the root cause of most of the deforestation. In Bangladesh's Chittagong forest community, Slash and Burn agriculture is a prevalent agricultural technique

and its use is closely connected to the social identity of people. Mobile agriculture has historically included 15-20 years of fallow to restore and reforest soil fertility.

The current population growth is placing pressure on agricultural land, resulting in a fallow period of three to four years. The upshot of this decrease has been a decrease in ecosystem services, loss of trees and biodiversity and huge land losses. Because of population growth, limited land use, resource depletion and a decline in livelihoods traditionally dependent on primary production and forest-based trade activities, poverty continues to rise in these regions. In order to fulfil many aims, such as protection of forest resources, food production and environmental conservation, new modes of production are needed to offset this trend.

New technology is needed, but connected market mechanisms and regulations are necessary. Agroforestry, or crop planting, is a well-established Bangladesh technique to reduce deforestation and deforestation. From the beginning of the first encounter until the 1700s, the colonisations in Europe in Latin America had devastating repercussions, some of which estimated a population decrease of 90-95 percent. Due to significant border colonisation and forestry transformation, the region was somewhat deforested in the 18th- and 19th centuries, although in the 20th century, deforestation grew and remained until the 21st century for basic agricultural such as bovine animal and soya.

The deforestation rate is declining. The major cause of loss of African forests is agriculture. The Congo Basin remained mostly unsettled for huge forests until recently, but demand for tropical hardwood, the growth of profitable crops and large-scale relocations are driving destruction across Africa more and more.

3.2 Agroforestry as well as Forest Culture:

In ancient Mesopotamia, now Iraq, Iran, Turkey, Syria and Lebanon, agroforestry was first used ten thousand years ago. Approx. 4000 before Christ, 5000 before Christ, 7000 before Christ, and 5000 before Christ have been domesticated, respectively, using millet/sorghum, squash, and beans. In the 1980s, agroforestry became known as an interdisciplinary study because of its importance in the tropics as a growing need. The agroforestry system can meet financial, social and environmental goals by diversifying agricultural products and offering benefits to society. Agroforestry technology with various forms and patterns in Bangladesh is varied.

Recently, the expectations for social and economic sustainability have increased. The methods employed by ethnologists may be used to assess farming data and to better understand the differences underlying agroforestry models for Bangladeshi farmers. However, based on the basic distinction between temperate agriculture and peasant farming in the tropics, the two major plant domestication and development are tried to distinguish between the two.

3.3 The Hortus Model:

Hortus is a kind of tuber found in the garden. The fundamental phrase for this approach is the diversity of species that also encompasses architectural and functional diversity. Tubers and plant gardens, variations of the hortus idea, continue to rely on agriculture and forests. All of them had a role to play in the formation of their natural surroundings and rich soil and production attitude. As a consequence of cultivation and fire, agroforestry and related management approaches may have expanded significantly. Trees can be planted in overgrown vegetation like corn, wheat, rice, and young trees. As a consequence of progressive technological adjustment to prevent abrupt changes in the whole agriculture system, especially on tiny countries, forced forestation is helpful.

3.4 The Ager Model:

The paradigm of Ager is based both on the history of white domestication and agriculture activities in ancient Mesopotamia and the Mediterranean. There is a clear contrast in this paradigm between natural and arable land, as well as a productive attitude that promotes the expansion of modern agriculture.

4. CONCLUSION

Trees offer important contributions to the home economy, livelihoods of communities, national incomes and global production, all essential and increasingly important for thousands of years of continuing economic expansion. The forests of a large portion of the tropical nations represent the world's forests for sustainable economic growth, reacting well, as people have done over the past century, to climate change mitigation and adaptation. However, for many forest tribes, the usual prisms by which climatic change is conserved remain colonial times and promote forest management as short-term commodities.

Bangladesh has seen a loss of biodiversity and ecosystem function, which is an important concern, in terms of deforestation and agricultural intensification. Increasing awareness and adoption of agroforestry by farmers in the damaged forests in Bangladesh might contribute to forest conservation, ecosystem services and poverty reduction. In addition to the historical backdrop, researchers have offered a viable path for agroforestry adoption in Bangladesh by studying traditional farming practises and arrangements on locally owned land. More research would link farmers to the agricultural market and successful public policy. The study would be carried out.

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