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## The Importance of Bioresources in The Development of The Green Economy

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**Abstract:** This paper provides scientific descriptions of the status, movement, composition, concepts, and structure of Bioresources in the context of green economics. It also highlights Bioresources as a key aspect in economic development. Furthermore, the unique characteristics of bioresources are highlighted, with emphasis on the prominent role of the green economy in fostering sustainable development. The analysis examines the progress of implementing the green economy about the improvement of natural resource utilization and the modernization of the economy in the context of sustainable development.

**Keywords:** green economy, greening, bioeconomics, bioresource, sustainable development

Bioresources refer to any resource that originates from a biological source or is obtained from nature. Put simply, Bioresources are regarded as natural and enduring renewable and biodegradable essential materials and processes[1]. The history of human development originates from their intimate relationship with bioresources. From the inception of human civilization, early human ancestors resided in a dense forest and subsisted genuinely on the abundant resources at their disposal. The tight interconnection between humans and nature signifies a shift from a predominantly rural society to an urban one. Thus, Bioresources play a vital role as a fundamental element of Natural Resources and have a prominent position in human culture and economy[2].

Bioresources on Earth differ from other resources, specifically fossil resources. Bioresources encompass a diverse array of flora and fauna, as well as human beings who are cultivated for specific reasons. This category includes agricultural crops, lumber from forests, marine resources, byproducts of aquatic and terrestrial weeds, and trash from agricultural, industrial, and community activities[3]. In contemporary times, scholars worldwide recognize the significance of investigating the correlation between humans and the natural world. Consequently, this topic garners considerable global interest. Research on areas characterized by abundant forest cover and rich biodiversity has gained significant attention in the global pursuit of sustainable utilization of biological resources.

Bioresources are essential components of bioeconomics and have a crucial role in fulfilling fundamental human requirements, such as sustenance, animal feed, biofuel molecules, energy, housing, fibre, and other value goods. Bioeconomics encompasses primary production across several sectors, including agriculture, forestry, fisheries, and aquaculture, as well as other businesses such as food, cellulose and paper, chemical, biotechnology, energy, and the utilization and refinement of bioresources. Hence, Bioresources are regarded as one of the key elements that have a direct or indirect impact on present and future socio-economic developments.

Bioresources play a crucial role in the manufacturing of a diverse range of items that are essential for human well-being. Consequently, a variety of Bioresources are consistently utilized to create the aforementioned significant and enhanced-value products. Nevertheless, it is crucial to exercise caution when utilizing Bioresources, as excessive use of these resources might pose a significant hindrance to the country's progress and economic endeavors[4]. The overutilization of bioresources can have detrimental impacts on the environment, leading to its destruction. Bioresources refer to non-fossil biogenic resources that can be utilized by humans to fulfill their individual and societal requirements, such as food, necessary goods, and energy demands. Significant bioresources encompass a range of essential elements, primarily agricultural crops and waste, forestry timber, marine resources, common and algae, organic remnants from industries, and communal remains (see figure 1.1). These Bioresources can be categorized into two distinct groups:

1. Primary bioresources refer to bioresources that are intentionally created for specific reasons in order to be used in forestry, agriculture, and aquaculture for the production of food, commodities, and energy.

Secondary Bioresources refer to a distinct category of Bioresources that mostly consist of byproducts or waste generated by agricultural, industrial, or societal activity. Typically, their utilization does not compete with land, allowing for alternative uses of the area. Usually, these Bioresources can be utilized in a sequential manner (expanding the value chain of a core resource within a community) or alongside a valuable crop (often utilizing components of non-commercial plants like salmon or corn cobs). [1]. The subsequent sections provide a concise overview of many significant secondary Bioresources.

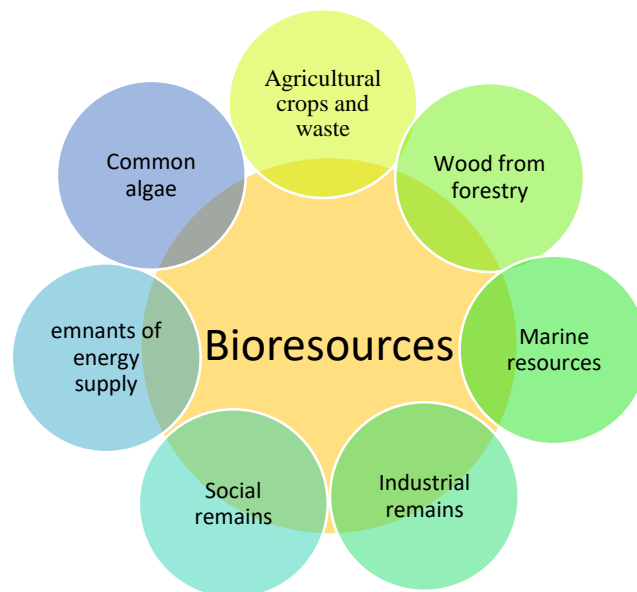


Figure 1.1 displays a range of significant bioresources.

Agricultural crops, sometimes known as plants, are essential bioresources that fulfill several fundamental requirements of both humans and animals. These plants can be cultivated either for direct consumption or for the purpose of harvesting a significant amount of produce for economic gain or personal sustenance. Agricultural crops can be classified into six broad categories:

- Food crops are plants that are commonly consumed by humans, such as wheat, rice, vegetables, potatoes, fruit plants, and various grains.

- Feed crops are grown specifically for livestock, including oats and alfalfa. - Fiber crops are used to produce yarn and textiles, such as cotton and hemp. - Oil crops can be used for consumption or industrial purposes, such as cotton seeds, corn, and sugarcane.

- Ornamental crops are grown for horticultural purposes, such as dogwood and azalea.

- Industrial and secondary crops have various personal and industrial uses, including rubber, tobacco, and medicinal plants. Timber derived from forestry plays a crucial role in forest bioeconomics, encompassing activities such as forestry, furniture production, wood processing, and the creation of many valuable goods.

Humans have extensively researched marine bioresources over time because of their immense potential for utilization. However, the unregulated exploitation of these resources has sparked widespread concerns globally[1]. Marine resources can be utilized in three primary ways to attract humans: fishing (extraction), aquaculture (farming), and tourism (contemplation) [5]. The diversity and distinctive biological activity of marine biomass, including bacteria, plants, and animals, have garnered significant interest over time. The user's text is enclosed in tags.

The Ministry of Economy and Finance has been established as the authoritative entity responsible for promoting the "green" economy and implementing the concepts of "green" growth. It is also tasked with coordinating efforts to reduce greenhouse gas emissions across various sectors of the economy. Presently, the international business community is allocating significant resources towards the advancement of technology with the objective of mitigating climate change and minimizing environmental degradation. Alternative energy sources refer to renewable sources of energy that are derived from hydropower, wind power, solar power, geothermal energy, biomass, and flood power. Renewable sources of energy, unlike fossil fuels such as oil, natural gas, coal, and uranium ore, are inexhaustible, hence their name. The energy production capacity in Uzbekistan has been increasing in recent years, although at a slower rate compared to neighboring nations, particularly Russia. Uzbekistan is highly susceptible to climate change due to its extensive grasslands and desert regions, which make approximately 80% of the country's territory. This vulnerability poses a significant threat to Uzbekistan's economy. Since the 1950s, the country's average temperature has increased at twice the rate of global warming. According to current estimates, if appropriate actions to reduce the impact are not implemented, the average temperature in the country is projected to increase by 1.8°-3.3° C by 2050 [5]. In the absence of further adaptation measures, the country is likely to face heightened water scarcity, intensified desertification, and degradation due to drought by the middle of this century. The adverse impact of severe weather conditions on agriculture, tourism, health, and infrastructure hampers the progress of Uzbekistan. The ecological catastrophe of the Aral Sea is a clear manifestation of the impacts of climate change. Today, Uzbekistan recognizes the exceptional chance to surpass the constraints on its current development model and enhance its economic competitiveness in the global market, which is increasingly conscious of climate and ecology. The country is implementing structural reforms to accelerate the establishment of a "green" growth model that is both low-end and climate-resistant. This model is based on the flexible, inclusive, sustainable, and efficient use of natural resources. The goal is to create new jobs in developing areas for the benefit of the economy, people, and the

planet. However, in order to achieve a more sustainable and environmentally friendly economy, the government must address current environmental issues and other risk factors that hinder economic progress.

**Conclusions and suggestions:** To effectively achieve the primary objectives of the policy aimed at enhancing environmental quality, it is crucial to ensure the implementation of all regulatory functions in the field of ecology, establish a standardized approach for environmental experts, establish a mechanism for studying public opinion when making environmentally significant decisions, and incorporate scientific resources for environmental protection. Additionally, it is essential to develop a comprehensive eco-education system and implement programs for training and retraining highly skilled personnel in this field.

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