

How the bioeconomy can contribute to the local economic development in Colombia?

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ABSTRACT

This paper investigates how the bioeconomy can contribute to the local economic development in Colombia in the context of strategies for promoting sustainable and inclusive bioeconomy models. Progress has been made on a range of issues, but there remain challenges of developing strategies to strengthen the productive potential of the country to generate more and better opportunities for local economic development. Colombia appreciates a wide and different base of common assets, including area, water and natural decent variety along with a rising economy and accessibility of HR. However, its economy is still very dependent on extractive industries and the primary sector. This paper explores opportunities to leverage new bioeconomy strategies for sustainable local economic development in Colombia. The research analyses information from different the government, universities and industry about the bioeconomy, local economic development, and interactions among those three actors mentioned to drive bioeconomy strategies. Three key questions are explored: What are the interactions between the government, universities and industry in Colombia to motivate advances in bioeconomy? With the advances that exist in the production of the bioeconomy in Colombia, is it possible through bioeconomy strategies to generate local economic development? And, what are the scope and limitations of bioeconomy approaches in the search for local economic development? After probing these questions, local and national level policy implications for integrating bioeconomy, sustainability, and local economic development are examined.

INTRODUCTION

After the Green Revolution, Latin American nations decided on improvement models that helped support financial development dependent on common assets and import replacement. Be that as it may, this plan demonstrated to be feeble because of the little expansion and esteem expansion from industry, and to the conviction that normal assets are constrained and urgent for their supportability. Numerous nations got themselves gotten up to speed in item showcases, subject to vacillations in accessibility and costs.

It is because of this circumstance that the idea of Bio economy develops, as it speaks to a financial model that lessens reliance on fossil assets and advances the creation and escalated utilization of information on assets, forms, what's more, organic standards for the economical flexibly of merchandise and enterprises in every monetary division (bioenergy, horticulture and bio-inputs, food, strands, wellbeing items, modern items and bioplastics). Also, bio economy perceives the essential job of logical and mechanical information as a key driver to characterize the connections among agribusiness, biomass and

industry. In this methodology, biomass based forms are roundabout and practical: the creation of buildups and waste is diminished to a least; new items and administrations are created for various areas, which permit the exhaustive also, predictable examination of the difficulties inside a district, while making new wellsprings of even-handed financial and social development, from a regional point of view.

NEW BIO-BASED STRATEGIES, INCREASED SUSTAINABILITY

Bioeconomy is a response to four rising and uniting worldwide difficulties: I) an expanding total populace (9 billion individuals for 2050); ii) an expanding worldwide interest of biomass (in any event 60% above current levels), which intensifies normal asset shortage; iii) an expanding proof that the time of oil and minimal effort vitality is reaching a conclusion; and iv) environmental change concerns. Every one of these patterns show that staying aware of a similar model isn't a choice and that adjusting financial and social examples is pivotal if the United Nations' Sustainable Development Goals (SDGs) are to be met.

What separates this new financial model is the consolidation of information in the meaning of new profitable pathways and choices, which moves an impractical oil-based economy towards a biomassbased economy, and empowers the move from nonrenewable sources to inexhaustible procedures and plans that may be named "continuous photosynthesis", setting ozone depleting substance (GHG) discharge and catch at the equivalent land time, and not isolated by a huge number of years, as on account of oil, which creates a round procedure and, therefore, builds supportability. Current information on the organic procedures, just as the ability to follow up on and control them as indicated by explicit interests or objectives, permits, from one perspective, to propose arrangements, and on the other, to create openings (items, procedures, administrations) and hence open generally obscure, yet encouraging fields. Consequently, it is not, at this point about the customary procedures to include esteem, however about the rise of totally new worth chains or systems that will augment the effect of 'course' advances to improve the procedures related to numerous items.

The bio-based techniques change the equalization set out as far as access designs, asset use, and circulation of benefits, among different perspectives, to advance a development in profitability and intensity of the yield created by the economy of a specific region. This makes the requirement for a superior comprehension at the network level, with clear dynamic procedures to distinguish and oversee focal points and burdens rising up out of conventional and new exercises, at the diverse

execution levels, and in the short and long haul. A key methodology for this is the support of preparing at each level, building pioneering limits, just as the correspondence and dynamic procedures. What's more, it is basic to energize the explanation of various institutional activity under the standards of intensity, value, maintainability, multisectoral approach, and decentralization. Thereupon, the usage of bioeconomy requires a foundation of key players, where the beneficial division has a proceeded with discourse with various services and open organizations, researchers, and common society.

TRANSITION TOWARDS BIOECONOMY

For a particular territory, the successful transition towards bioeconomy will require an intensive effort to develop human resources and better mechanisms for an inclusive participation in society. Bio-based products require not only a solid technological background and a rearrangement of the scientific skills base for research and development (R&D), but also producers and manufacturers capable of managing the new processes (innovation), which are usually much more knowledgeintensive than conventional efforts. Bioeconomy is a reality in many developed countries, such as Germany, France, Finland, The Netherlands, Russia, and Japan, among others. In the European Union, for example, this model employs over 22 million people in the agri-food, chemical, biotechnological, and energy industry. In Latin America and the Caribbean, there are important developments in Argentina, Brazil, and Costa Rica. It is clear that every country and every region must set its own bioeconomy development agenda, consistent with its conditions, capacities, and needs, to identify possibilities and opportunities, with the involvement of different sectors of society.

Although progress has been made adopting processes under the concept of bioeconomy and initiatives with this approach have been suggested, Colombia is undergoing an appropriate time to advance a more thorough discussion on the topic, with the purpose of proposing a new model of economic relations that allows access to a more prosperous and sustainable economy based on innovation. A development model under the concept of bioeconomy allows the utilization of a country's natural wealth, taking into account the specificities of each territory, and facilitates its integration into the global economy with new sustainable products and services, adding value on the basis of scientific and technological knowledge. The country enjoys an enabling institutional environment for this model. There are several public and private institutions that have undertaken the task of getting to know, assess, conserve, and use the country's biodiversity in a sustainable fashion, with the purpose of contributing to a competitive, sustainable, and socially inclusive development. To do so, sector strategies have been articulated in the 2014–2018 National Development Plan (PND, its Spanish initials), several CONPES [National Economic and

Social Policy Councils], and sectoral initiatives that are currently under implementation.

BIOINITIATIVES IN COLOMBIA

In 2015, an investigation recognized 34 Colombian organizations that might be considered as illustrative of the advancement of bioeconomic activities, concerning the three need pathways: bioenergy, biotechnology, and biodiversity (basically applied to wellbeing). These organizations are sorted out under nine sub-parts: sugarcane for ethanol para la Transformación del Campo Colombiano [Mission for the Transformation of the Colombian Countryside], and Colombia BIO. The test confronted respects the structure and usage of changes being developed needs for the nation, redefinition of the methodology of open strategies, age of new legitimate and administrative instruments, just as total clearness on institutional administration and the job of national and neighborhood entertainers creation, oil palm for biodiesel creation, hereditarily altered creatures (GMOs), bio-inputs, bioremediation, compound industry, pharmaceutical industry, biocosmetic industry, and applications in wellbeing.

A similar report shows that Colombia has ideal conditions for the advancement of bioeconomy, contemplating the wide accessibility of biomass related with its state of megadiverse nation; a science and innovation framework in combination, essentially in natural sciences, building, ICTs; the nearness of one of the first encounters in quite a while/areas, for example, the pharmaceutical business, beauty care products, bioinputs, GMO use, biofuels, and food; and the nearness of some business parts with activities/involvement with development (particularly the agrarian segment). Among the most applicable discoveries, one that stands apart is the way that a high rate (80%) of the Colombian bio-organizations under examination began as privately-run companies with their own assets or assets from private banks, almost every one of them are inventive in their items or procedures, and fare to goals, for example, Latin America, Europe, and Asia. These organizations work in firmly directed parts, perceiving the significance of significant worth chains, accomplishing intentional accreditations, and the execution of social and natural duty plans inside their tasks. Be that as it may, acknowledgment of licensed innovation as a component to ensure their developments, the power in college organization relations and their unified portrayal are as yet a rising subject.

TOWARDS A NATIONAL BIOECONOMY STRATEGY

For Colombia, bioeconomy could be a troublesome factor to accomplish monetary development, which numerous legislatures have define as a State objective. Scientists and specialists with various foundations, just as scholastic, instructive, and worldwide collaboration forums² have suggested that the administration ought to organize bioeconomy

as an advancement model, since it would be the best recipe to utilize and save the nation's wide biodiversity, while advancing monetary and social prosperity in the areas, on the premise that bioeconomy is based upon regions.

Utilizing biodiversity and biotechnological procedures and items (for the most part non-GMOs) could be one of the most powerful types of creating bioeconomy in Colombia, just as planting hereditarily changed yields. In such manner, during the 2000s, open arrangement reports were distinguished that, without referencing the idea of bioeconomy, effectively included a principle system dependent on the practical utilization of normal assets to broaden the economy. For more than two decades, the Colombian Government has utilized diverse open approach instruments to advance the improvement of science and innovation, especially of biotechnology, as one of its foundations. Such instruments have been molded into laws, strategy rules, for example, those gave by the National Economic and Social Policy Council (CONPES), in various parts and zones of national economy.

The angles shrouded in this note feature how significant embracing a bioeconomic point of view might be as a manual for the reasonable improvement of the nation. Colombia has the common assets and the logical and mechanical abilities to push ahead toward this path. Actually, it is as of now actualizing it, as it has been obviously called attention to by the cases alluded to here, just as by the idea of conversations held during the National Bioeconomy Forum: Sustainable Territorial Innovation. When talking about bioeconomy in Colombia, it isn't about conceivable outcomes, yet about real factors, in a setting where a decent portion of the primary on-screen characters in the process are as of now having a functioning impact.

CONCLUSION

Despite the prior, the advancements won't extend and solidify except if strategies are plainly characterized and the private area concedes to explicit speculation forms. In this regard, it might be worth to close this note accentuating the specific job bioeconomy could play inside the nation's present political circumstance. Colombia has discovered the way to leave its ongoing bloodstained past behind, yet for this way to be combined, it will be important to prevail with regards to making financial action and rebalancing work in regional terms the nation over, to lift a wide area of Colombian culture out of neediness. Regional in its temperament, bioeconomy offers an incredible open door for new options in contrast to the densification procedure of locales where assets are found and along these lines create the business required to set the comprehensive development as of now requested. The encounters and thoughts proposed in this note show that

voyaging this way is conceivable and they offer a premise to expand upon the angles to consider beginning.