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Impact of Economic Reforms on the Agriculture Sector of Kerala: A Study of Selected Cash Crops

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Abstract

This study investigates the profound effects of economic reforms on the agriculture sector in Kerala, with a specific emphasis on selected cash crops. Kerala, known for its unique socio-economic landscape, has undergone significant economic reforms since the liberalization era of the 1990s. These reforms aimed to enhance productivity, market efficiency, and overall agricultural sustainability. The research focuses on key cash crops such as rubber, spices, and cashew, which are pivotal to the state's economy and agricultural identity. Through a comprehensive analysis of statistical data, policy documents, and field surveys, the study evaluates the direct and indirect impacts of economic reforms on production trends, market dynamics, income distribution among farmers, and the overall socio-economic welfare of stakeholders in the agricultural value chain. Furthermore, the study explores the challenges encountered by the agriculture sector in adapting to these reforms, including issues of land fragmentation, market integration, technological adoption, and environmental sustainability. It also examines the role of government policies and institutional support in shaping the outcomes of economic reforms on cash crop cultivation in Kerala. Ultimately, this research aims to contribute empirical insights into how economic reforms have shaped the agriculture sector in Kerala, offering valuable lessons for policymakers, researchers, and practitioners interested in sustainable agricultural development and rural livelihoods in similar contexts.

Keywords: Cashew, Economic Reforms, Environmental Sustainability, Market Dynamics, Rubber, Spices

1. Introduction

Most people agree that structural adjustments are essential for promoting economic growth. Economic growth and structural changes are inextricably linked, highlighting the mutual dependence between the two as growth both propels and is driven by these changes. A major reallocation of GDP and labour force from the primary sector—which includes agriculture—to the secondary and tertiary sectors—which include industry and services, respectively—is usually associated with structural changes. This shift is indicative of a more general economic evolution in which economies upgrade and diversify.

The agricultural sector's share of the Gross State Domestic Product (GSDP) in Kerala has significantly decreased since the late 1970s, which has had an impact on the state's agricultural development. In addition, there has been a discernible decrease in the area planted to food crops, such tapioca and rice, and a significant increase in the area planted to cash crops that are not food. This change is indicative of a more general structural change in Kerala's agriculture sector [1].

The shift from highly profitable cash crops like rubber to subsistence crops has been one of the most noticeable shifts. The demand for greater economic returns, since Kerala's land holdings are among the smallest in India, has caused this move. Compared to traditional food crops, cash crops have shown to be more financially lucrative for farmers. As a result, rubber plantations have grown dramatically and now dominate Kerala's agricultural terrain.

Each country develops on a unique trajectory that varies from the others. He promoted a close correlation between the expansion of industry and the economy's overall production. The size, geographic location, and quantity of natural resources of a nation all influence the paths it takes to get wealthier. To make the shift from a

traditional to a modern economic system, the nation must undergo a number of interconnected changes in its economic structure in addition to the accumulation of both human and physical capital. All aspects of the economy are affected by these structural shifts, which include changes in consumer demand, foreign commerce, resource utilization, and production patterns. Socioeconomic variables like urbanization and the expansion and distribution of consumer markets are also affected of the country's population [2].

These techniques help the study find patterns, trends, and notable differences in the data, which helps to clarify the underlying problems. Strong secondary data sources and simple statistical methods work together to guarantee that the study is based on reliable data and can be easily understood. With the use of this methodology, the study can provide well-reasoned findings and insights that the general public, researchers, and policymakers can all understand [3].

2. Historical Context Of Agriculture In Kerala

The yield effect, which has a particularly strong influence on output growth in the state, and location effects were determined to be the main drivers of productivity increase in the study. In particular, the cropping pattern effect boosted output growth in the districts of Kannur and Alappuzha. This was explained by a change in the area under cultivation from food to non-food crops. Coffee, coconut, rubber, pepper, arcanum, and grow at positive rates in the area, suggesting that these crops are preferred. The productivity growth rates of all crops showed a general upward trend, although the growth rates of rice, tapioca, and cashew were negative.

Over the past 50 years, Kerala's economic development can be divided into three distinct phases: 1956-1975, 1976-1991, and 1991-2006. Initially, Kerala grappled with significant socio-economic issues, notably widespread poverty and high unemployment rates. During the first phase, the state's economy was largely agrarian with limited industrial growth, and efforts were primarily focused on land reforms and enhancing agricultural productivity.

The start of widespread migration to the Gulf countries during the second phase was a watershed moment. Remittance inflows from this migration were significant and were a pillar of Kerala's economic development. Higher household incomes from remittances resulted in higher rates of savings and consumption. Better housing, healthcare, and education were provided with these money, greatly lowering the rate of poverty and changing the socioeconomic environment. Additionally, the remittance inflow encouraged investment across a range of industries, creating jobs and advancing regional development.

There is an urgent need to address the reduction in the area under crops, especially paddy fields. 20,000 hectares of paddy land were significantly converted to other uses between 2008 and 2013, even after the Kerala Conservation of Paddy Land and Wetland Act was passed in December 2008. This concerning figure highlights the dearth of sincere attempts and efficient enforcement to protect Kerala's paddy farming (GOK, 2013). The Act's main goal was to protect the diminishing wetlands and paddy fields, which are essential to the state's ecological balance and agricultural viability. But the ongoing conversion suggests that without strong implementation and stringent enforcement, legal measures alone are insufficient.

As a result, it is essential that these Acts be applied vigorously and carefully. Strict monitoring, fines for infractions, and incentives for farmers to continue paddy production must all be part of the immediate response. By doing this, it will be possible to prevent further degradation of the remaining paddy regions. Moreover, educating farmers and the public about the value of paddy field conservation might encourage a group effort to protect these essential agricultural resources. In order to preserve Kerala's agricultural legacy and ecological integrity, conservation regulations must be implemented effectively. [5]

On the other hand, the situation was different for tapioca. Even though there was a decrease in the land used for tapioca cultivation, it didn't affect the production. This was because the increase in yield was big enough to make up for the reduced land, resulting in an overall increase in production [6].

3. Selected Cash Crops In Kerala

Kerala's agricultural sector has traditionally been export-driven, with a strong emphasis on cash crop production and a substantial trade in spices like cardamom and pepper, along with coffee, tea, and rubber. Kerala's agricultural sector has experienced significant change during the colonial era, characterized by the growth of commercial crops frequently at the expense of traditional food crops. The profitability and increased demand for these cash crops worldwide, which make them more appealing to farmers than subsistence farming, have caused this change.

Numerous factors have contributed significantly throughout time to the state's commercial and plantation crops' exceptional growth in terms of acreage, productivity, and production. The crops' relative price advantage and ensuing profitability account for the largest percentage of these elements. Evidently, industries like rubber, tea, coconut, and cardamom have benefited from these financial advantages. More precisely, rubber farming has shown remarkable expansion. This expansion has been fuelled by institutional actions and policies implemented by the Rubber Board apostle. The Rubber Board's price support mechanisms and other market interventions, along with effective R&D and extension services, produced a favourable climate for the growth of rubber cultivation, which greatly expanded in the state [8].

Agronomic viewpoints

A blend of the traditional and the modern This chapter highlights changes in Kerala's agronomic landscape—where rice is farmed across vast areas in Kuttanad and Palakkad—by examining some of the major profiles of production, export, and consumption. Recent data on rice output reveals variations caused by shifting weather patterns and land use, among other factors. The number of vegetables produced for domestic use has increased significantly. Approximately 78.5% of Kerala's vegetable needs are currently produced, a more than 100% increase in numbers from five years earlier. However, the state remains depends on neighbouring states for staples like tomatoes, onions, and potatoes. Coconut and rubber continue to be at the forefront of their role.

Nearly 85% of India's natural rubber comes from Kerala, primarily from the regions of Pathanamthitta and Kottayam. Coconut production contributes significantly to the state economy and accounts for almost 70% of India's total output. The majority of black pepper in India is produced in the region dubbed the "Spices Garden of India," along with large amounts of cardamom, cinnamon, and nutmeg. The state still maintains its standing as a pioneer in the production and export of Indian spices today.

However, there are instances when an excess of some vegetable varieties, like cucumbers, is wasted. Therefore, improved processing facilities and market links are needed. Crop variety diversification and sustainable agriculture are key components of agriculture's long-term health. When new markets are opened up and the export commodities' quality and packaging are improved, Kerala's rural economy may see a dramatic upturn. Thus, Kerala's agriculture sector has grown generally in most areas, but overall development for self-sufficiency and realizing full export potential has not kept pace. The only way to address these weak points is through pertinent policy efforts paired with infrastructure support [9].

4. Economic Reforms And Their Impact On Cash Crop Farming

They speak of measures that lessen government interference and increase the space available to market forces. They have had a significant influence on global agricultural market patterns. Typically, this entail lowering tariffs, getting rid of subsidies, deregulating markets, and promoting private sector involvement. Although the agriculture sector undoubtedly needs liberalization's overarching goal of increased efficiency, competitiveness, and innovation, the effects of this reform are extremely complicated and region-specific, mostly relying on the implementation tactics and settings. The allocation of resources has become more efficient as a result of liberalization.

Availability to global competition Farmers and agribusinesses are forced to upgrade their technologies and procedures in order to increase productivity and reduce costs by the examiner's exposure to domestic markets.

For example, improved seeds, fertilizers, and farming equipment contributed to a rapid increase in agricultural production in liberalized India in the early 1990s.

Lower trade restrictions provide the door to a massive global market. Liberalization may be advantageous for a nation that possesses comparative advantages in relation to certain crops. For instance, Brazil is now one of the world's top exporters of cattle and soybeans as a result of the liberalization measures. Brazil liberalized its agricultural policies in order to take use of its plentiful arable land and advantageous environment. The agricultural industry receives FDI inflow as a result of liberalization. These in turn can offer the crucial financial foundation, cutting-edge technologies, and specialized knowledge. A number of African nations have benefited from foreign direct investment (FDI) in agriculture since it has helped modernize supply networks, agriculture, and food security.

Customers frequently gain from cheaper costs and a wider selection of produce as a result of greater efficiency and competition in the agricultural market. This is true in many developing nations where the cost of staple goods has decreased due to liberalization, making them more affordable for those with low incomes.

Liberalization leaves the domestic agriculture markets vulnerable to fluctuations in world prices. Small farmers typically find it challenging to adjust to rapid drops or increases in the cost of agricultural inputs, particularly in developing nations. For example, Mexico's corn business suffered following NAFTA because small-scale corn growers could not compete with the heavily subsidized corn supplied by the United States of America. Liberalization's advantages are seldom shared fairly.

Environmental deterioration may result from intensifying agriculture to compete in liberalized markets. Increasing the use of chemical pesticides, fertilizers, and irrigation can harm the ecosystem by causing pollution, soil erosion, and a shortage of water. In a nation like Indonesia, liberalization policies have spurred the expansion of palm oil plantations, posing serious environmental issues. Through imports, liberalization boosted food availability, but it also decreased domestic food output. Over-reliance on imported food carries a risk in the event that global supply networks are disrupted, as happened with the COVID-19 pandemic. Nations that have significantly liberalized agriculture, like Egypt, have had to find a way to reconcile the needs of local food security with the promotion of export-oriented products.

Estimating the total impact of trade liberalization on biodiversity is still challenging and speculative due to the close relationship between biological diversity and agricultural productivity and the challenges associated with robustly estimating data-grounded coefficients. It is rather enmeshed in conjecture. It is therefore challenging to determine the exact causes of trade liberalization and biological diversity. But the most sensible pragmatism starts with assessing the degree of trade distortions and restrictions that are specific to the agricultural sector. Nonetheless, it is always possible to extrapolate or estimate how liberalization may cause shifts in relative prices, which will have an impact on how resources are distributed both within and across markets. Trade liberalization, for example, would spur agriculture toward extensive or intense cultivation based on how profitable crops and livestock are in relation to one another.

This has the potential to modify land use patterns, which nine times out of ten implies habitat modification or loss, both of which have an immediate negative impact on biodiversity. Furthermore, trade liberalization may encourage the introduction of non-native species or the adoption of monocultures, both of which would further complicate the biodiversity landscape. Therefore, the examination of trade distortions and their likely cascading consequences on resource allocation will always provide a key foundation for the study of trade policy changes from an environmental perspective, even though precise forecasts will typically be difficult to come by.

Indeed, trade distortions and prohibitions that are severe and widespread throughout the world afflict the agriculture industry. On the other hand, the study of price manipulations and agricultural policy dates back many centuries. However, the sharp increase in protectionism that began in the 1950s is a well-known phenomenon that has been observed more recently in transition economies as well as many industrialized nations. Several restrictive

and distorting regulations are frequently implemented in the food producing industry. Tariffs, which levy taxes on imports to safeguard home industries, are the most widely used policy. A product's maximum amount that might be imported or exported would be restricted by quotas. Farm revenues are provided by income support programs to assist farmers. While subsidies for productive inputs lower farmers' expenses and promote higher levels of production, export subsidies lower the price of the goods supplied on the international market.

These are the more conventional tactics; the ones that follow exacerbate the situation: tariff rate quotas (TRQs) or decoupling cash transfers, which are not linked to amount generated. The latter-imposed tariffs and quotas combined, as from the Uruguay Round, for progressively more sensitive products. Applications for TRQs are frequently opaque, which furthers the obscurity of international commercial ties. When combined, these actions provide a trading environment heavily impacted by government distortion, since the parody portrays pricing, production choices, and market accessibility as less effective, internationally distorted resource allocations.

The final observations state that while liberalization policies have brought about early changes in the agricultural markets, such as increased access to markets, fuel efficiency, and innovation, the transition process is not without issues brought on by unstable markets, unfair opportunities, declining environmental quality, or threats to food security. When needed, strong regulatory frameworks that are complemented by safety nets could be implemented as effective instruments to distribute the positive effects of liberalization and mitigate its drawbacks. Put another way, one of the biggest issues facing policymakers globally is striking a balance between liberalization and the demands of sustainable development [10].

The poverty rate has significantly decreased, from 55% in 1973 to 20% in 2011, thanks to recent increases in agricultural production and fast industrial expansion. Even with its remarkable progress and expansion, India continues to house the world's greatest proportion of impoverished individuals. About one-fifth of the world's impoverished live in India, where there are 250 million people living below the poverty line. In this nation, the effects of child malnutrition are most severe; approximately 25% of children experience severe malnutrition. More than half of pregnant mothers and preschoolers in rural areas are anaemic. Those who are undernourished also experience extreme hunger. The current study highlights a few agribusiness initiatives and highlights their development successes the Indian agricultural community.

Since 1973, the percentage of people living in poverty has dropped dramatically from 55% to 20%, largely due to rapid industrial growth and subsequent advances in agricultural productivity. India still has the highest percentage of destitute people in the world, notwithstanding its impressive growth and development. Approximately 25% of the world's impoverished reside in India, where 250 million people live in poverty. The impacts of child malnutrition are particularly bad in this country, where 25% of children suffer from severe malnutrition. In rural settings, anaemia affects more than half of expectant moms and preschoolers. Severe hunger is also experienced by those who are malnourished.

A few agribusiness efforts and their development results for the Indian agricultural community are highlighted in the current study

5. Comparative Analysis With Other States

Kerala's agricultural reforms have diverged greatly from those of most other Indian states. The Keralan government at the time implemented early tenancy changes to safeguard tenant farmers. Tenant ownership rights and modest rent ceilings were established by the Kerala State Land Reforms Act, 1963. Large estates were divided up and land was given to the landless as part of redistributive measures. This was crucial if the problem of inequality was to be resolved and the general populace's agricultural productivity was to increase. The land reform program in Kerala aimed to change the relationship between farmers and the conventional, oppressive landlordism.

While some states prioritize organic farming, others are moving toward chemical-intensive farming due to the potential for higher short-term yields. Organizations such as VFPCK promote produce directly, eliminating middlemen and guaranteeing farmers receive a higher price. Kerala has numerous programs for the benefit of farmers, including pension and insurance plans. Some states have more direct income assistance programs than others; one such example is PM-Kisan. Other states have more thorough crop insurance programs, such Tamil Nadu [25]

The environmentally and financially sustainable management of pests through the use of a variety of biological, cultural, physical, and chemical techniques. Techniques include minimizing soil disturbance, having plants cover the soil constantly, and crop diversification are good for improving waste health and increasing biodiversity. By putting an emphasis on healthy soils, plants, animals, and people, natural processes and cycles are harnessed in place of synthetic inputs. Thus, while learning from the past and best practices, sustainable agricultural growth can be achieved to meet the problems of environmental health, economic success, and human food security. preservation of fisheries and safeguarding aquatic habitats while ensuring the fishing communities' means of subsistence [26].

Farm mechanization, precision farming, and irrigation technologies can all lead to increased production and efficient utilization. Keralan farmers can benefit from digital platforms that facilitate market access, advisory services, and financial inclusion, primarily through improved information and resource accessibility [27].

This involves having too much water during the monsoon and not enough water during the dry seasons. This means that effective irrigation and water-saving techniques are needed. Many farmers are unable to satisfy their financial obligations, which keeps them outside of loan and insurance programs. Their capacity to invest in cutting-edge farming techniques and technology is subsequently impacted by this. It is certainly feasible to achieve sustained growth in the agriculture sector and better farmer livelihoods in Kerala by riding fresh waves of trends and overcoming obstacles [29].

In addition to improving environmental health, these measures can assist Kerala strengthen the agriculture sector's resilience and make it more sustainable for the livelihoods of farmers and the community's overall food security [30].

6. Conclusion

The state's domestic food security as well as the dynamic performance of the commercial agriculture sector are seriously threatened by the emerging agricultural growth scenario in Kerala. Many contradictions in the agriculture development model, which was motivated solely by "peasant rationality," have contributed to the state's agricultural crisis. These contradictions have also disrupted the agrarian society, jeopardizing the livelihoods of a sizable portion of traditional food producers and farm labourers. The state's agricultural growth scenario presents a number of policy, governance, and developmental challenges, prompting questions about the traditional role of the state in defending farmers and farm labourers by preserving agro-ecosystems, natural resources and the environment that shape their livelihoods.

The analysis reveals that there is a compelling argument for revitalizing the state's agriculture industry by bolstering the food crop production sector and prioritizing institutional interventions and highly responsive policies to protect the natural environments, especially the wetland ecosystems. From a policy perspective, the state's current efforts to expand the rubber crop should be immediately curtailed to prevent additional damage to agro-ecosystems and the hydrological regimes that the inland wetlands, which include paddy fields, support.

Additionally, in order to create action plans for promoting integrated farming systems rather than the mutually exclusive promotional schemes that are currently in place, close coordination between the state-level crop promotion agencies and the nationally sponsored commodity boards, like the Rubber Board and Spices Board, is required. Similarly, given the growing labour scarcity of rubber tappers in both the smallholding and plantation sectors, the vitality brought about by the rise of commercial crops, particularly rubber, in Kerala is

seriously jeopardized. In order to address the labour market issues, the new scenario basically requires the rubber producing sectors to be extremely sensitive.

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All the data is collected from the simulation reports of the software and tools used by the authors. Authors are working on implementing the same using real world data with appropriate permissions.

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