An Evaluation of the Structural Change of the Agrarian Sector in Kerala

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ABSTRACT

Purpose: *The study made an effort to look into Kerala's agricultural development patterns, growth performance, and structural changes. In Kerala, commercial cash crops like rubber and coconut replaced food crops including lentils, rice, tapioca, cashew nuts, and ginger, causing a shift in the cropping pattern in favour of non-food crops at the expense of food crops. Agriculture has become more vulnerable as a result of the shrinking cultivable area, the predominance of small and dispersed holdings, the fall in agricultural labour, and cultivator use.*
Methodology: *The methodology used in this study is Descriptive Research, which is mainly concerned with secondary data sources. Books, newspapers, journals, articles, and government websites are used to gather secondary data. The information has been collected by using the keywords - sectoral wise changes, structural transformation, agricultural development, commercial agriculture, and agribusinesses. The required articles were obtained by electronic search and manually screened.*
Originality: *The significance of the current study rests in the fact that the preceding studies have not yet addressed the entire structural transformation of Kerala's agrarian sector in a thorough and comprehensive manner, making it necessary.*
Value: *By examining the productivity of the sector, the study will aid in determining the change in trends of agriculture scenario in Kerala and the problems of agriculture sector in Kerala.*
Findings: *The study discovered that while the employment share of the primary sector has not decreased in pace with the substantial reduction in its part of the GSDP. Furthermore, there has been only a little increase in the percentage of income from the secondary sector in the GSDP due to the excess labour force moving from the primary to the secondary sectors, which has led to abundance in the latter. In Kerala, the changes in land use patterns over the past few decades were unparalleled in terms of deforestation, growth in current fallow land, expansion of non-agricultural land, and decreases in net sowing and gross crop area, which led to a drop in cropping intensity.*
Paper Type: *Descriptive study*
Keywords: sectoral wise changes, structural transformation, agricultural development, commercial agriculture, agribusinesses, and SWOC analysis.

1. INTRODUCTION :

The process by which the relative importance of various economic sectors and activities shifts over time is known as structural transformation. The economic growth model used in Kerala saw a number of structural changes between 1980–1981 and 2010–2011. The primary sector's percentage of the GSDP has significantly decreased, which is one of the structural changes. But the primary sector has not experienced a commensurate fall in employment share. Structure-related changes are seen as a key component of economic growth. It has been argued that structural changes and economic progress are inextricably intertwined. Economic growth is thought to be the driver of structural changes, which are then brought on by economic growth [1].

Kerala, a state known for its network of emerald-coloured rivers, streams, and backwaters, is proud of its agrarian economy. Agriculture predominates in the state's economy because of the amount of water provided by the reservoirs and various minor runnels, countless backwaters and water bodies, 44 rivers fed by rain that run over the state's topography, and the adequate annual rainfall of 3000 mm that the state receives [2].

Kerala's economy is based on agriculture, and it has seen a change in cropping patterns supportive of cash crops like rubber and coconut at the expense of food crops like lentils, rice, tapioca, cashew nuts, and ginger. Cash crops provide Kerala's agriculture with a distinctive flavour, including coconuts, rubber, tea, coffee, pepper, nutmeg, ginger, cinnamon, and cloves. The primary source of income for the populace in agriculture is coconuts [3].

2. REVIEW OF LITERATURE :

The word "structural shift" refers to a considerable alteration in a country, industry, or market's operations, generally resulting from sizable economic advancements. The mechanism for bringing about structural change is the dynamism that is embedded into that system. In other words, over time, economic activity might change between sectors. Additionally, it can change both within and between subsectors. In all cases, the process of change is referred to as structural transformation or structural change. [4]. In this essay, the terms "sectoral wise changes," "structural transformation," "agricultural development," "commercial agriculture," and "agribusinesses" are used to describe how Kerala's economy and agrarian sector have changed during the past 18 years, from 2003 to 2021.

Table 1: This table reviews the various works of literature on structural change in Kerala economy and the agrarian sector in Kerala.

S. No.	Area	Contribution	Authors
1.	Developmental economics	The performance of important state economic sectors during the previous two decades—including agriculture, manufacturing, and the financial sector—is analysed in this article, along with the issues they have faced. The study emphasises Kerala's lack of growth and employment-generating development strategy.	Jeromi (2003). [5]
2.	Commercial Agricultural	Kerala's agricultural sector has changed its crop structure to focus on less labour-intensive commercial crops after enduring prolonged stagnation brought on by rising production costs and decreasing profitability, notably as a result of rising wages.	Joseph & Joseph (2005). [6]
3.	Development agriculture	This essay explores the challenges of agricultural development at a time when both labour and profits are in short supply and suggests a number of solutions to tackle the issue head-on.	Kannan (2011). [7]
4.	Agribusiness	The current scenario of Kerala state is examined, where notable social development indicators coexist with unfavourable industrial development. In Kerala, unemployment is at an extreme level. At the same time, Kerala's reliance on imported agricultural products from other countries—which are grown using chemical fertilisers and pesticides—is growing. Youth in our country, of course, carries enormous potential and promises that haven't been fully realised. The report makes suggestions for how to encourage young people to work in farming and increase the state's agribusiness population.	Vinisha bose (2013). [8]
5.	Sectoral wise changes	It focuses on changes in the production workforce that alter the employment pattern and cause, such as transfers from rural to urban areas and from agricultural to non-agricultural employment structures.	Puthuma Joy (2016). [9]

6.	Structural transformation	The study looked into how much of the state's GDP was made up of the primary sector, the reduction in employment that resulted, and how the pattern of compensation had changed.	Sanitha & Naresh (2016). [10]
7.	Youth participation in agriculture	In order to determine the sustaining and inhibiting factors encouraging young people to choose agriculture as their major career, a study was carried out in the Keralan districts of Calicut, Ernakulam, and Thiruvananthapuram between 2020 and 2021.	Pasula & Sreedaya (2021). [11]

Source: Compiled by the author

The study "rationalisation of agriculture in Kerala" demonstrates that the state's domestic food security as well as the brisk performance of the commercial agriculture sector are both seriously threatened by the emerging agricultural development scenario in Kerala [12]. Multiple inconsistencies in the agriculture development model, which was only motivated by "peasant reasoning," have contributed to the state's current agricultural crisis and have, in turn, disrupted the lives of a significant portion of traditional food producers and farm labourers. Questions about the state's traditional role in defending farmers and farm workers by preserving the agro-ecosystems, natural resources, and environment that affect their livelihoods are raised by a number of developmental issues, policy conundrums, and governance issues raised by the state's scenario for agricultural growth [13].

3. RESEARCH GAP :

Many scholars and government officials have researched the structural changes in the economy, the contribution of the agricultural sector to the economy, and the structural changes in agricultural production. However, none of the studies have examined Kerala's economy's structural transformation, specifically with regard to the agriculture sector. As a result, the current study places a strong emphasis on the shifting patterns and issues in Kerala's agriculture sector.

4. RESEARCH AGENDA :

- What are the changing trends of agriculture scenario in Kerala?
- What are the problems of agriculture sector in Kerala?

5. OBJECTIVES :

(1) To study the change in trends of agriculture scenario in Kerala.
(2) To study the problems of agriculture sector in Kerala.

6. RESEARCH METHODOLOGY :

This study used descriptive research, an approach that is based on secondary data sources. Secondary data is gathered from publications like books, journals, newspapers, articles, and government websites. The data was gathered by searching Google Scholar and Sci-Hub using the terms "sectoral wise changes," "structural transformation," "agricultural development," "commercial agriculture," and "agribusinesses." Electronic searches were used to find the necessary articles, which were then manually inspected.

7. RESULTS OF THE STUDY :

7.1 An overview of Kerala's agriculture sector

Due to urbanisation, Kerala's land under cultivation has drastically decreased over the years. However, both rural and urban residents are becoming more interested in returning to agriculture. Kerala has a long history of being a consumer state that depends on its neighbours for food. Despite having distinct and varied agro-climatic conditions in several places that allow it to cultivate a wide variety of crops, the state's agricultural legacy is not comparable to that of other states [14].

Coffee: Kerala's coffee production increased from 63,476 tonnes in 2016–17 to 66,465 tonnes in 2017–18 despite no change in the area under cultivation. With a contribution of 21% to national

production, Kerala ranks second among the states that produce coffee after Karnataka. About 71% of that is in Karnataka, and 5% is in Tamil Nadu [15].

Arecanut: Kerala's agricultural land has shrunk little during the past ten years, although production has not decreased at all. However, Kerala's average yield per hectare is lower than the national average, which is greater. Areca nuts are mostly farmed in Assam, Kerala, and Karnataka [16].

Coconut: Coconut cultivation in the state has not been extremely successful throughout the years, despite being one of the principal crops. Kerala's cultivation land and production shares, that were 69.58% and 69.52%, respectively, in 1960–1961, fell to 37.6% and 31.9%, respectively, in 2016–17. Kerala is the top state among the four major states that produce coconuts in terms of area and production, but it ranks fourth in terms of productivity, after Tamil Nadu, Karnataka, and Andhra Pradesh [17].

Sugarcane: In comparison to other major sugarcane producing states, Kerala has a fairly small region where sugarcane is grown and produced. Compared to 22,34,000 hectares in Uttar Pradesh, Kerala only grows 1,000 hectares of sugarcane [18].

Paddy: 7.3% of Kerala's total cultivated land is used for paddy, a significant food crop. The state makes the 11th-largest amount of rice in the country. In the state of Kerala, rice is grown in Palakkad, Alappuzha, Thrissur, and Kottayam, which together make up around 79.6% of the entire area. 81% of the state's total rice crop is produced in these areas. With a record production of more than 115 million tonnes, India is the second-largest producer of rice in the world, after China. West Bengal, Uttar Pradesh, Punjab, Tamil Nadu, Andhra Pradesh, Bihar, Chhattisgarh, Odisha, Assam, and Haryana are the top states for rice production [19].

Cashew nut: In 2017–18, Kerala accounted for 3.8% (area) and 10.79% (output) of the nation's cashew farming. Both acreage and productivity have decreased significantly during the past ten years. In 2008–09, the production was 42,000 tonnes; in 2017–18, it was 25,000 tonnes, and during that time, 39,000 hectares instead of 53,000 hectares were under cultivation. With 33% of the nation's total cashew crop, Maharashtra leads all other Indian states; Andhra Pradesh comes in second (14%) [20].

Apple: The sole commercial apple-growing region in the state is Kanthalloor in Idukki. However, it hasn't yet cemented a substantial presence in the fruit markets. Apple has only recently entered Kanthalloor, but other fruits including oranges, guavas, gooseberries, blackberries, egg fruits, plums, passion fruits, peaches, pears, and tamarillo are grown there because of the area's cold climate. In Kanthalloor, there are allegedly 5 hectares of apple orchards [21].

Vegetables: Despite the fact that India is the world's second-largest producer of vegetables after China, Kerala has been reliant on its neighbouring states of Tamil Nadu and Karnataka to meet its daily vegetable and fruit demands. Kerala is a consumer state. The state's vegetable production increased from 6.5 lakh tonnes in 2016 to 9.5 lakh tonnes in 2019. Similar to this, from 42,477 hectares in 2012–13, the area devoted to vegetable farming has expanded dramatically [22].

Jackfruit: To advertise "Kerala jackfruit" as a brand in marketplaces across the country and beyond and to highlight its natural, nutritional qualities, the Kerala government designated jackfruit as its official fruit in 2018. Even though the state produces 32 crore jackfruits a year, 30% of them are lost or squandered [23].

Pineapple: Kerala farms are dominated by the Mauritius type. About 95% of the approximately 18,000 hectares under cultivation are planted with the variety, with the rest MD2 varieties [24].

However, agriculture plays a vital role in the economy because it is necessary for the rural population's subsistence and the food security of vast numbers of people. According to the 2011 Census, India's agriculture industry employed 263 million people, 55% of them were employed as agricultural labourers, compared to 45% who were cultivators [25]. Kerala's agriculture industry has encountered difficulties as it has tried to expand. According to data from the Directorate of Economics and Statistics (DES), crops, cattle, forestry & logging, fishing, and aquaculture all experienced annual growth rates of (-)6.31% in 2013–14, (-)0.02% in 2014–15, (-)5.10% in 2015–16, and (-)0.65% in 2016–17 [26]. In 2017–18, the sector expanded by 2.11 percent. However, in 2018–19 and 2019–20, respectively, the growth fell to (-)2.38 percent and (-)6.62 percent. While the remainder of the sectors experienced negative growth in 2018–19, the State's fishery and forestry sectors experienced positive growth rates of 6.55 percent and 0.54 percent, respectively. All industries experienced negative growth rates in 2019–20 [27]. The State's total GSVA (at constant 2011-12 prices) has undergone a secular decline in the

share of agricultural and allied industries, which fell from 12.37 percent in 2013–14 to 8.03 percent in 2020–21 [28]. Here are some specifics:

Agriculture and related sectors' percentage share of GVA/GSVA at the national and state levels, at constant prices in 2011–12, from 2013–14 to 2019–20

Year	Share of agriculture and allied sectors in total GVA (India)	Share of agriculture and allied sectors in GSVA (Kerala)
2013-14	17.8	12.37
2014-15	16.5	11.92
2015-16	15.4	10.74
2016-17	15.2	9.96
2017-18	15.1	9.60
2018-19	14.6.	8.83
2019-20	nil	8.03

Source: National Accounts Statistics 2020, GoI; Directorate of Economics and Statistics, GoK [29]

7.2 Problems of Agriculture in Kerala

(1) Agriculture Production Drops Kerala's agricultural sector is currently experiencing a crisis that the state has never known since its founding in 1956. Kerala was given a special model for social change and agricultural development by the progressive land reform policies of the former communist state. However, none of these actions were able to improve Kerala's agriculture from its pitiful state. The main issues in the state's agricultural industry are declining crop profitability, a lack of farm labourers, unusual price rises for land, and a high rate of conversion of agricultural land for other uses. With a fall in GSDP share from 26.9% in 1990–1991 to 9.1% in 2011–12, Kerala's agriculture has undergone substantial structural changes, signalling a shift from an agrarian economy to one dominated by the service sector [30].

(2) Despite the huge increase in wage rates, the shortage of farm labourers has caused a widening supply-demand mismatch in agricultural labour recently. There are several causes for the growing shortage of farm labourers in the workforce. First, the state's extensive adoption of numerous poverty alleviation initiatives including the IRDP, JRY, TRYSEM, and DWCRA has greatly increased the number of employment options available to rural residents outside the agricultural sector. Second, a lot of auxiliary and small-scale industrial units are springing up around the state in rural and semi-urban areas, and the rural population generally fills their labour needs in these locations. Thirdly, a large amount of the new generation of rural labourers is absorbed by the frantic construction activities occurring in and near rural regions as well as the quickly expanding tertiary sector. Fourth, the state's supply of farm labourers has decreased as a result of the widespread rural youth migration to other states and abroad. Finally, the issue of a labour shortage in the agricultural sector has gotten worse due to the slow rate of mechanisation in the farm sector and the growing reluctance of rural youngsters to pursue farm work as a full-time employment [30].

(3) Agricultural land being used for other purposes paddy field became the primary objective of demand for non-agricultural uses due to its relative affordability in the neo liberal era with the increased need for land for construction activities and for urbanisation. Agricultural land is being converted for the construction of homes, businesses, roads, hospitals, and other institutions, which reduces the overall area under cultivation. This conversion is occurring throughout the state due to population pressure and the development of the secondary and tertiary sectors. Poor agricultural research accomplishments, challenges in developing and implementing agricultural development programmes, environmental degradation, poor social management, insufficient plant protection measures, etc. have all contributed

to slowing the state's agricultural development rate. Once more, it is discovered that in Kerala, the prices of land used for food crops like paddy and tapioca are considerably lower than those used for income crops. Thus, even the simple change from growing food crops to cash crops increases the value of the land. Because food crop land is relatively less expensive, it is frequently converted for non-agricultural uses. The state's increasing proportion of absentee landowners is another factor contributing to changes in land use patterns. Due to these absentee landowners' propensity for producing money crops rather than food crops, which require more attention and personal monitoring, the acreage planted in food crops is falling [31].

(4) In the lack of any significant advances in farming technology, the price of fertiliser, the rapid increase in the daily salaries of farm labourers, and the relatively slower growth rates in farm prices of agricultural products have all had a negative impact on the profitability of crops. Indicators showing the costs and prices farmers in the state have paid for agricultural production have risen since 1986. The index of prices that farmers receive shows a considerably slower rate of growth [32].

(5) Unusual Growth in Land Prices When the paid-out expenditures of cultivation are combined with Kerala's exorbitant pricing for agricultural land, none of the state's principal crops are economically feasible. As a result, land isn't necessarily viewed as a tool for production in the state, but rather as a resource that can be traded for speculative purposes. As a result, a large number of speculative investors with no real interest in farming have already bought land. Again, because land is a secure investment with reasonable liquidity, a sizeable amount of foreign remittances entering the state each year are utilised to buy land, which fuels a steady rise in its price. As a result, it is clear that agricultural lands have been turned into real estate assets for the reasons listed below. Since agricultural income is free from income tax, agricultural land is the most common tax planning tool used for laundering illicit funds. Agriculture income is, nevertheless, taxed under the Kerala Agricultural Income Tax Act. Similar to other Indian states, the value of agricultural land has been steadily rising across the majority of Kerala. Agricultural land has developed into a significant investment sector due to the different tax advantages as well as the potential for capital appreciation. The price of agricultural inputs such as seeds, fertiliser, pesticides, labour, tractors, etc. has increased significantly over time. In many situations, farming is an unprofitable endeavour due to low market prices and high input costs [33].

(6) Farmers in Kerala are experiencing severe economic challenges as a result of their inability to sell a variety of agriculture products at fair prices. The market for agricultural products is heavily regulated and controlled by middlemen. A producer farmer does not receive his fair part of the produce's selling price. He is frequently obliged to conduct a distress sale. These goods are almost always sold for very high prices, with the intermediaries taking home a sizable cut. The farmers lack the ability to influence the market and the bargaining strength to do so. Kerala's production of several foodstuffs, vegetables, and cash crops is drastically decreasing. A big portion of farmers' security of livelihood is in danger because of the farmer's rapidly diminishing purchasing power [34].

(7) Many of the government-sponsored programmes and plans that have been put into place thus far have not adequately addressed the complaints of the farmers. As a result of high labour costs and subpar economic returns, many farmers gave up farming. The string of farmer suicides in districts with a high concentration of agricultural land are obviously sympathetic to the dire plight of Kerala's small and marginal farmers. The farmers from Wayanad, Kannur, and Palakkad in north Kerala killed themselves during the past two days. The gulf boom was followed by a construction boom that fundamentally altered Kerala's agrarian situation. The rural landscape has already made way for commercial crops during the past three decades. All of these things made paddy cultivation unfeasible. Alappuzha and Palakkad were historically regarded as Kerala's rice bowls. The state's farmers are perpetually in poverty as a result of low or non-existent returns from rice farming in recent years. In Palakkad, paddy agriculture had experienced a worrying drop. In the district, paddy was grown on 1,82,621 hectares in 1970–1971; by 2011, that number had dropped to 12,837 hectares [35].

The rules and priorities changed along with the physical environment in the new circumstance. However, attempts to restart paddy agriculture were attempted during the LDF administration from

2006 to 2011, but they were only partially successful. Given this context, Kerala's younger and more educated population is not inclined to pursue a career in agriculture. According to Gopa Kumar, some of the major difficulties facing agriculture today are crop loss, poor prices, a shortage of labour, mobile radiation, climate change, an excessive amount of fertility, a lack of water, etc [36].

8. SWOT ANALYSIS :

SWOT analysis is a strategic planning method used to evaluate the Strengths, Weaknesses, Opportunities, and Threats involved in any venture [37]. SWOT analysis is a strategic planning and strategic management technique for identifying strengths, weaknesses, opportunities, and threats in corporate competitiveness or project planning or a situation [38][39]. It's also known as scenario analysis or situational evaluation. It's also known as scenario analysis or situational evaluation.

- Strengths: These are the qualities of a business or circumstance that give it an advantage over others.
- Weaknesses: These are the characteristics that make it less advantageous than others.
- Opportunities: These are the exterior traits that can be used to the best possible benefit for the business or circumstances.
- Threats: These are also the external elements in the environment that could cause trouble for the enterprise.

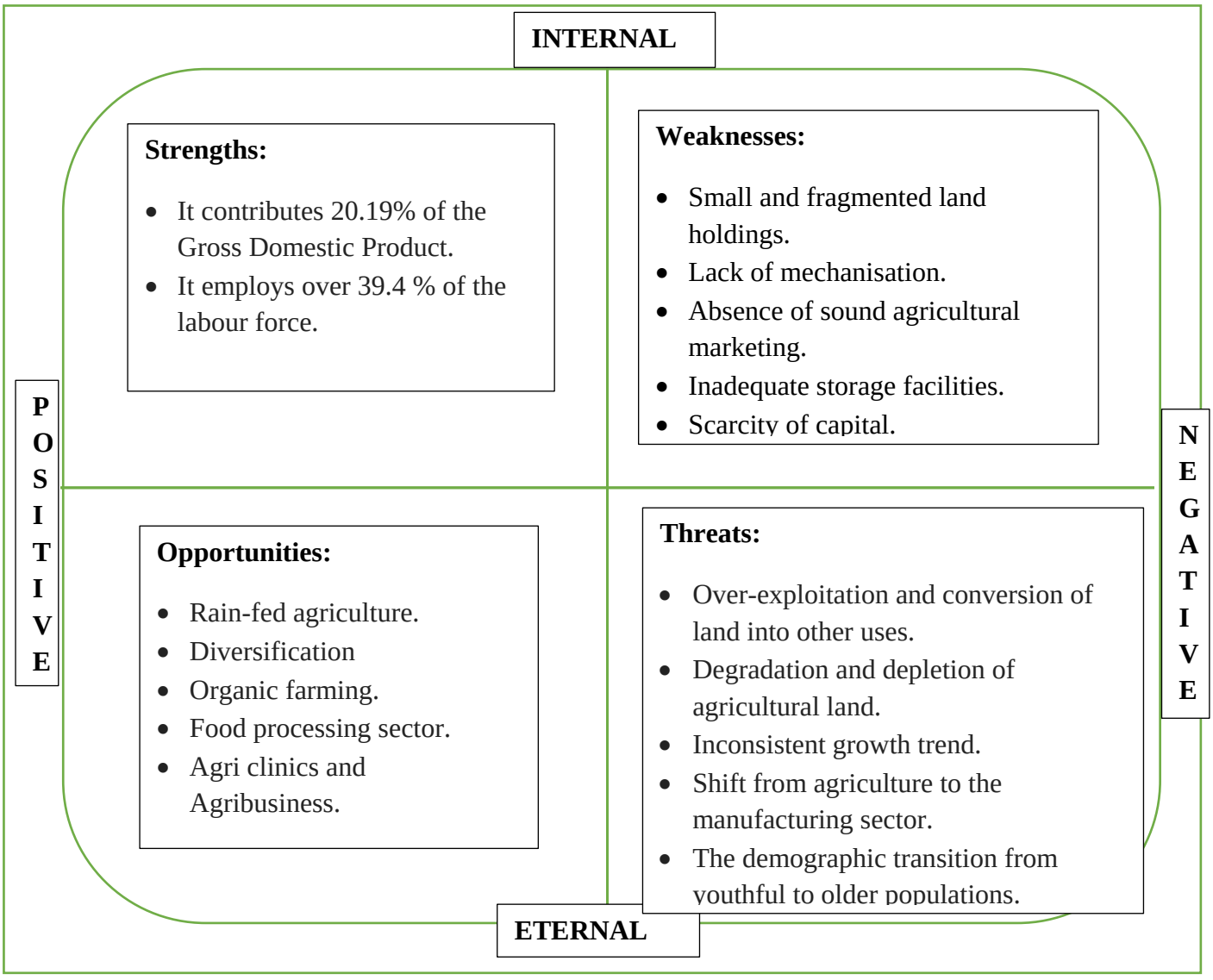

Fig.1: SWOT analysis

9. FINDINGS :

- Kerala's agriculture industry has encountered difficulties as it has tried to expand.
- The main issues in the state's agricultural industry are declining crop profitability, a lack of farm labourers, unusual price rises for land, and a lot of agricultural land is being converted to other purposes.
- Due to urbanisation, Kerala's land under cultivation has drastically decreased over the years.
- Conversion of Agricultural Land for Other Purposes: Due to its relative affordability, paddy land became the primary focus of demand for non-agricultural uses as the demand for land for urbanisation and construction activities increased.
- Being a consumer state, Kerala has relied on its neighbours Tamil Nadu and Karnataka to supply its daily needs for fruits and vegetables.
- Large tracts of paddy fields have been left fallow as a result of the younger generation of landowners leaving.
- Due to their lack of enthusiasm in farming, Keralan farmers must pay more for hired labour, which drives up the cost of output.

10. SUGGESTIONS :

- The study has made some policy recommendations, including training for workers who have been transferred to the secondary sector, monitoring the amount of land used for food crops, increasing the area under guaranteed irrigation, strict law enforcement mechanisms to prevent needless conversion of agricultural land to non-farming activities, and the establishment of "Labour Banks" to revive Kerala's agricultural economy.
- The largest problem facing farmers today is that climate change and global warming pose a greater threat than war. We need to take climate change and insurance based on weather more seriously.
- For the development of safe food, it is important for farmers to use and implement modern agricultural techniques like carbon neutral agriculture.

11. CONCLUSIONS :

Land-use change is a phenomenon that shows important changes in how people interact with the environment. Different agricultural patterns and a trend toward non-agricultural land use are obstacles to the sustainability of farming systems. Reduced economic viability, labour shortages, and population pressure on land are the key factors driving the transfer of paddy fields to other land uses. Changes in land usage and agricultural structure also reflect the effects of unintended policy oddities, in addition to the livelihood alternatives farmers established in reaction to these reasons. Inadequate sectoral integration of policies and execution techniques and policy disagreements are the root drivers of these problems, which have more lasting effects.

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