

## **ANALYZE THE EFFECTIVENESS OF EXISTING AGRICULTURAL POLICIES AND SUBSIDIES**

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### **Abstract**

*Subsidies and price restrictions are key tools used by nations to regulate production and achieve the goal of national food security. However, there are other obstacles that might make it difficult to achieve the desired results, such as small markets, a lack of suitable infrastructure and storage facilities, incomplete information from a poor system for tracking and predicting prices, and significant fiscal consequences. In light of this, the study aims to comprehend the many policy tools that governments have used in various nations to achieve the dual goals of increasing agricultural production for national food security and raising farmer income and prices. An overview of agricultural policies, including those pertaining to pricing, income assistance, procurement, stock, and trade, is given in this study. These regulations are essential in providing farmers with incentives and guidance on what and how much to produce.*

**Keywords:** *Agricultural Policies, Subsidies, Effectiveness, Sustainability, Innovation.*

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### **1. INTRODUCTION**

Any nation's progressive agriculture is a vital source of economic growth and development. By supplying the required labour, capital, raw materials, wage products, and foreign currency, it aids in the beginning and maintenance of the growth of other economic sectors (Kumar et al., 2007). The Indian government is essential to the growth of agriculture because it provides jobs, ensures food security, offers producers subsidies and other forms of support for implementing new technologies and inputs, lowers price volatility, and raises farm households' incomes. This crucial role may be played in a variety of ways, including via the implementation of import-export laws and domestic policies that affect the price and accessibility of agricultural inputs including loans, fertilizer, seeds, irrigation water, and price support programs. The Indian government offers price support programs in addition to a number of incentives to promote agricultural development [1]. Subsidies are seen to be the most effective tool for increasing agricultural output among incentives for it. They are intended to offset the high cost of production and encourage the adoption of contemporary inputs and technology. It often creates a gap between production costs and consumer prices, as well as between private and societal costs of production, which affects choices about supply and demand. The Government of India adopted the plan of subsidies for different agricultural inputs in 1965 based on the recommendations of the Jha Committee (Jha, 1968).

#### **1.1. Agricultural Subsidies in The World**

Worldwide, subsidies are a powerful tool in the agricultural sector. The topic of agricultural subsidies is particularly significant as it directly affects food, which is a fundamental human need [2]. The social rationale for the subsidies stems from the idea that, in order to achieve the

objective of accelerating agricultural development, they have to be dispersed evenly throughout the various areas and socioeconomic categories. Not only rich nations like the United States but even emerging nations like India provide agricultural subsidies. Developed nations assist the agriculture industry with massive subsidies. Over time, the scope and amount of subsidies have grown significantly. Governments support agriculture throughout the world at a rate of almost \$1 billion per day. When export and biofuels production subsidies as well as public funding for dam construction and river basin engineering are taken into account, this number increases to almost double that. These regulations influence land usage in a variety of ways, such as the crops that producers choose to plant and the commodities that purchasers want.

### **1.2.Kinds Of Agricultural Input Subsidies In India**

Distribution of inputs at prices lower than their average market price is one way to provide subsidies [3]. As a result, the amount of subsidies will be determined by dividing the two prices for each distributed unit of input.

#### **❖ Fertilizer subsidy**

Fertilizers, either chemical or organic, are supplied to farmers at a price lower than the cost of manufacture, including any applicable import duties. It is the gap between the price farmers get and the price paid to local or international fertilizer manufacturers. In some instances, these subsidies are provided by waiving the tax that would have otherwise been applied on fertilizer imports.



Figure 1: **Fertilizer subsidy**

#### **❖ Irrigation subsidy**

The gap between the irrigation charges collected from farmers and the running and maintenance costs of the state's irrigation system is known as the irrigation subsidy (Ranade and Dev, 1997). This may be accomplished by offering farmers access to public commodities like dams and canals, which are built by the government and for which it charges little or no fees. It might also happen via inexpensive, personal watering devices like pump sets.



Figure 2: **Irrigation subsidy**

❖ **Power subsidy**

The government is said to be charging low or flat prices for the power that it supplies to farmers via the electricity subsidies. Farmers utilize electricity mostly for irrigation needs. It is the discrepancy between the price farmers get and the cost of producing and delivering power to them. Farmers are encouraged to invest in pump sets, borewells, and other equipment by power subsidies.



Figure 3: **Power subsidy**

❖ **Seed subsidy**

The government provides cheap seeds of high-yielding varieties. In addition to the direct expenses of production, the government also funds the research and development required to create such fruitful seeds; as a result, the money spent on these efforts is like a subsidy given to the farmers. As a conduit for new technology for increased crop yields and agricultural production, the Tamil Nadu Department of Agriculture offers better variety seeds under a number of initiatives, including the National Pulse Development Program and the Seed-Village Program.



Figure 4: **Seed subsidy**

### ❖ Credit subsidy

It is the sum of the interest rates paid to farmers, the true cost of extending credit, and other expenses like write-offs and poorly executed loans. For a year, small and marginal farmers may get interest-free loan subsidies from cooperative banks. Similarly, agricultural loans with a one-year payback term are offered by nationalized banks in India at an interest rate of 4%. If the payback term is more than a year, it is 7%.



Figure 5: Credit subsidy

## 2. LITERATURE REVIEW

Huber, R., Finger, R., and Ehlers, M. H. (2021) [4]. This research looks at how much the use of digital technology may lead to new design specifications and alternative agricultural policy tools that more effectively and perhaps more efficiently handle sustainability issues in farming. Using examples from experience and theoretical ideas, it builds and implements an analytical framework that focuses on the implications of digitalization in several policy dimensions within a European setting. We demonstrate that the analogy technologies used in conventional agricultural policy are not simply replaced by digital agricultural policy. It presents fresh possibilities for agricultural policy, such as creative solutions to problems in a more efficient manner. Specifically, it presents chances for more efficient geographical targeting and instrument customization, including results-based subsidies. To facilitate policy learning and design adaptation, digital data may be strategically created via the use of appropriate instrument designs. Digitalization often results in lower transaction costs and more benefits for information-intensive devices and designs. Agriculture policy may shift from direct involvement to information-based governance as a result of digitalization.

In 2021, Czyżewski, B., Majchrzak, A., Guth, M., Grzelak, A., and Matuszczak, A [5]. Through the computation of environmentally sustainable value (ESV) indicators, this work provides a methodological addition to the value-based sustainability strategy. The authors have made an effort to integrate frontier benchmarking with the value-oriented approach. Then, using a long-term panel of regionally representative farms from Farm Accountancy Data Network (FADN) with reference to factor endowments, for the years 2004–2017, they investigated how the European Union Common Agricultural Policy (CAP) programs contribute to ESV. In order to manage the time variant and time invariant spatial heterogeneity of European areas, the groundbreaking within-between definition was used. The primary conclusion is that ESV benefits from more investment assistance. The capital-labour ratio has a beneficial effect on

factor endowment influence. The payments have a negative impact on ESV, with the exception of the cross-sectional impact of environmental subsidies.

Laborde, D., Vos, R., Martin, W., Mamun, A., and Piñeiro, V. (2021) [6]. Climate change both significantly affects and contributes to agricultural productivity. A quarter of all greenhouse gas (GHG) emissions worldwide are caused by land-use change and agriculture. Government assistance for agriculture is estimated to be worth US\$600 billion annually globally. There hasn't been a thorough assessment of how this funding affects greenhouse gas emissions. This piece fills up the gaps. Here, we discover that although government support has encouraged the creation of high-emission farming systems over the years, it currently has little effect on causing additional global greenhouse gas emissions from agricultural production. This is due in part to the fact that support is not consistently biased in favour of high-emission products and in part to the fact that support brought about by trade protection raises consumer prices, which in turn decreases demand for some high-emission products. A more thorough redesign of the current system of support for agriculture and food consumption is necessary to significantly reduce greenhouse gas emissions from agriculture while maintaining food security.

Mishra, A. K., Chen, Y. H., and Chen, M. X. (2020) [7]. This research creates a theoretical framework to examine how production uncertainties affect agricultural subsidy programs' effectiveness when both environmental preservation and food security are taken into consideration. Six distinct situations are examined for the fundamental model, and additional research is also given. Our models demonstrate that the effectiveness of agricultural subsidies is strongly impacted by uncertainty, including production, cost, and price uncertainties, as well as technological conversion efficiency. Output-oriented subsidies are acceptable for achieving objectives related to food security and environmental preservation in conditions of high technological conversion efficiency. Policymakers should choose between input-oriented and output-oriented subsidy schemes by taking into account both production efficiency and unpredictability.

In 2020, Lankoski, J., and Thiem, A [8]. Every G20 and OECD nation wants to see more sustained productivity development in the food and agricultural sectors. Simultaneously, how the existing set of agricultural regulations impacts the sector's environmental performance and productivity development is a key policy challenge for many countries. The impacts of certain agricultural support policies on productivity and environmental sustainability are not well-supported by empirical research, despite the issue's high significance. By examining the effect of agricultural assistance policies on sustainable production, the current study aims to close this gap. Our findings, which are based on observational data and configurational techniques of analysis, demonstrate that low livestock densities and agricultural assistance payments that are either not tied to output or come with environmental restrictions help nations attain high sustainable productivity.

### **3. EVALUATION OF AGRICULTURE POLICY AND SUBSIDIES' EFFICACY.**

**Ensuring Efficiency:** Farming practices and endowments may involve significant financial investments by government-run agencies. Evaluating their viability ensures that these

resources be used effectively and provide the best outcomes. Through examining the impact of strategies and sponsorships on critical indicators such as homestead earnings, productivity, and natural sustainability, policymakers may identify areas where modifications are anticipated to enhance their feasibility.

**Achieving Policy Objectives:** Agricultural plans and appropriations are meant to achieve certain objectives, such as maintaining natural manageability, boosting efficiency, and achieving a balance between ranch lifestyles. By evaluating their sufficiency, policymakers may determine if these objectives are being accomplished and identify any gaps or possibly harmful side effects that could result from the implementation of the plan.

**Addressing Changing Agricultural Dynamics:** The horticulture industry is always evolving due to shifting consumer preferences, environmental fluctuations, technological advancements, and shifting economic conditions [9]. Evaluating agricultural practices and endowments helps policymakers respond to these developments by identifying new challenges and opportunities and changing approach metrics accordingly.

**Promoting Accountability and Transparency:** Evaluating the suitability of horticulture tactics and sponsorships promotes accountability and transparency in management. It enables partners—ranchers, people, and groups representing common society—to assess the effective use of public resources and hold officials accountable for their decisions.

**Informing Evidence-Based Policymaking:** Vigorous information gathering and research are necessary for proof-based policymaking in order to reveal dynamic cycles. Evaluating agricultural agreements and sponsorships provides policymakers with experimental evidence on the impact of different approaches, enabling them to make well-informed decisions based on reliable facts rather than sporadic evidence or political speculation.

**Enhancing Stakeholder Engagement:** Involving partners in the evaluation cycle promotes collaboration and communication. These partners may include ranchers, agricultural groups, experts, and policymakers. Policymakers may get valuable insights into real-world challenges, obstacles, and opportunities by collaborating with partners to evaluate the suitability of agricultural practices and sponsorships [10]. This can lead to more comprehensive and fruitful plan outcomes.

Overall, ensuring the effective use of public funds, accomplishing policy goals, addressing new issues, encouraging accountability and transparency, guiding evidence-based policymaking, and boosting stakeholder engagement in the agricultural sector all depend on the evaluation of agricultural policies and subsidies.

#### **4. INEFFECTIVE POLICIES MAY CAUSE MARKET DISTORTIONS, INEFFICIENCIES, ENVIRONMENTAL DAMAGE, AND SOCIAL INEQUITIES.**

- **Market Distortions:** Inadequate rural policies may lead to market mutilations by ostensibly influencing costs, demand, and inventories. For example, cost-help schemes that establish lowest prices for agricultural goods may result in surplus and overflows, causing value instability and market failures. This might throw off market dynamics, skew asset allocation, and lead to losses throughout the whole horticultural value chain.

- **Inefficiencies:** Insufficient methods might lead to continued failures in agricultural production, distribution, and marketing systems. For instance, improperly designated or verified input appropriations might encourage the misuse of information sources like as pesticides and manures, causing natural degradation and inevitable losses for ranchers. Furthermore, financial support initiatives that fail to promote sustainable farming methods or efficiency improvements risk stagnating rural development and undermining long-term commitment.
- **Environmental Degradation:** Regular asset consumption and ecological corruption might be exacerbated by inadequate agricultural techniques. Sponsorships that support monocropping or concentrated farming practices, for example, may lead to soil erosion, contaminated water, a decline in biodiversity, and the exploitation of natural areas [11]. Furthermore, strategies that ignore farming's role in environmental transformation and moderation might contribute to increased emissions of substances that deplete the ozone layer, deforestation, and vulnerability to extreme weather events, all of which would exacerbate the risks and challenges associated with nature.
- **Socioeconomic Disparities:** Inadequate agricultural policies might exacerbate economic disparities and abuses both within and between provinces. Sponsorships that unfairly favor large-scale company ranches or wealthy landowners, for instance, may increase pay disparities and undervalue smallholder ranchers and rural households. Additionally, policies that fail to take into account the needs of marginalized groups like women, children, and indigenous communities might uphold social prohibition and impede overall progress in rural areas.
- **Food Insecurity:** Inadequate agricultural methods have the potential to undermine food security and nutrition outcomes, particularly in communities with low incomes and food scarcity. Exchange strategies that limit access to affordable import food products or fail to support local food production, for example, may exacerbate food insecurity and increase need on food assistance and compassionate care [12]. In essence, plans that prioritize planting planned income crops above harvests of basic foods may want to reconsider their emphasis on food independence and resilience to external shocks.

Overall, the effects of inefficient agricultural subsidies and policies go beyond the agricultural industry and have an influence on results related to food security, environmental sustainability, and wider socioeconomic development [13]. In order to address these issues, extensive policy changes that are supported by evidence-based analysis, stakeholder involvement, and a dedication to advancing equitable and sustainable agricultural growth are needed.

## 5. CONCLUSION

The goal of this article is to determine how input subsidies affect India's agricultural growth. Additionally, an effort is made to assess the impact of investment vs input subsidies in terms of agricultural production. In order to help policymakers choose the best instrument and prevent wasting money on ineffective state spending, the paper also determines which aspect of input subsidies is most helpful for increasing productivity in the example of India [14]. Using autoregressive and distributed lag (ARDL) cointegration, we looked at four different regression

models throughout the course of a time series framework that covered the years 1983 to 2019. The first model examines the efficacy of public investment with all input subsidies taken into account collectively. The remaining three models use input subsidies in their disaggregated forms, namely electricity, irrigation, and fertilizer subsidies. We discover cointegration in every model, indicating the presence of a long-term stable equilibrium connection between the variables [15]. It is noted that input subsidies continue to make a greater contribution than do public investments. Additionally, it is discovered that, in terms of agricultural production, electricity subsidies are the most effective kind of input subsidies, followed by fertilizer subsidies.

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