IOSR Journal of Economics and Finance (IOSR-JEF)
e-ISSN: 2321-5933, p-ISSN: 2321-5925.Volume 16, Issue 1 Ser. 1 (Jan. – Feb. 2025), PP 75-85
www.iosrjournals.org

The Impact of Agricultural Subsidies on Trade Imbalances: A Case Study of India and the USA

Vivhan Dhariwal

Abstract
This study paper examines how Indian and United States agriculture subsidies lead to trade imbalances in the two countries yet the countries are world agricultural power bodies. Although subsidies are arguably claimed in the interest of food security and rural welfare, this paper examines how subsidies are developed and in what quantity they distort comparative advantage, lower the international price of the commodity, and increase bilateral antagonisms, especially in case of India and the USA. The paper finds the historical development of subsidies in both countries, breaking down their economic and environmental externalities using macroeconomic statistics, WTO reports, government policy documents, and academic literature, and examines how subsidies affected the development of trade dynamics between 2010 and 2020 in the two states. The conclusion of the analysis is that the price-support-based system of India (i.e., Minimum Support Price, fertilizer subsidies, etc.) is highly skewed to the staple crops[1] resulting in the inefficiency of the market, soil degradation, and loss of export competitiveness. In the meantime, the largely decoupled but biased in favor of extensive agribusiness U.S. subsidy framework[2] keeps overproducing and depressing world prices. Such policies not only create a cycle of reciprocating trade retaliation actions but also make the countries dependent on each other and incur very much financial costs which strain the finances of the governments. The paper provides workable policy recommendations in listing such actions as, reorientation of all subsidies to sustainable practices; a gradual decoupling with output, and multilateral organizations like WTO[3]. By replacing distortionary support arrangements with productivity-based incentives and rewards, it believes that more food security, environmental resilience, and even-handed trade will be supported positively in the long term.

I. Introduction

Agricultural subsidies are among the most controversial and enduring policy instruments by the governments in the intricate global trade sector. Although these subsidies are economically meant to contribute to domestic food security, rural income, and stability in the economy, they tend to rearrange comparative advantage, reduce the global commodity price, and result to a huge imbalance of trade[4]. And no better example can be produced of this paradox than in the trading relationship between India and United States, the two economies which have quite disparate agricultural bases, and which are nevertheless most closely connected with each other by bilateral trade. Their economic rivalry based on their subsidy programmes, has continued to manifest itself in multilateral trade forums like the World Trade Organization (WTO) raising larger concerns on whether national subsidy systems in agriculture can cohere with the international standards of free commerce.

India is a developing country with a huge agricultural base whose subsidy regime has been long used as an instrument of food security of its mammoth population and its objective of protecting the lives of more than half of its population that gets its livelihood in the agricultural sector[5]. Main tools, which include the Minimum Support Price (MSP), fertilizers and electricity subsidies and massive state purchases of agricultural products, are

[1] "Cabinet Approves Minimum Support Prices (MSP) for Rabi Crops for Marketing Season 2021-22." Pib.gov.in, 2021, www.pib.gov.in/PressReleasePage.aspx?PRID=1657426. Accessed 4 Aug. 2025.
[2] "ICRIER - Think Tank | Indian Council for Research on International Economic Relations (ICRIER)." ICRIER, 2023, icrier.org/. Accessed 4 Aug. 2025.
[3] "Agricultural Policy Monitoring and Evaluation 2022." OECD, 2022, www.oecd.org/en/publications/agricultural-policy-monitoring-and-evaluation-2022_7f4542bf-en.html. Accessed 14 Aug. 2025.
[4] "Agricultural Policy Monitoring and Evaluation 2022." OECD, 2022, www.oecd.org/en/publications/agricultural-policy-monitoring-and-evaluation-2022_7f4542bf-en.html. Accessed 14 Aug. 2025.
[5] "Agricultural Policy Monitoring and Evaluation 2022." OECD, 2022, www.oecd.org/en/publications/agricultural-policy-monitoring-and-evaluation-2022_7f4542bf-en.html. Accessed 14 Aug. 2025.

deep-rooted within the agricultural policy of India. The buffer stocking and subsequent public distribution of grains use the Food Corporation of India (FCI) which is supported by the state finance further strengthening the national aspect of subsidies. Nevertheless, these programs have attracted criticism especially by the developed countries such as the USA on the pretext that they are way past the WTO-approved provisions and they manipulate the global prices by allowing India to ship excess grains at subsidized prices[6].

The United States, on the other side of the equation, although mostly playing the role of a champion of free markets as well, has a well-developed and advanced system of agricultural subsidies. The U.S government through its periodic Farm Bills offers a massive form of aid through its crop insurance, programs in relation to disasters, price loss coverage and financing of marketing loans. These mechanisms though may not take the same shape as given in India, they serve the same purpose; that is to stabilize rural incomes and reduce agricultural risk and even to achieve greater global competitiveness. As an example, the U.S. corn, soybean, wheat, and cotton markets are intensively subsidized and surplus production are often sold at a price deemed unrealistic by its critics as to be below the actual cost of production. This has been blamed in caustic terms as price dumping by developing nations including India[7] that argue that the checking of counterplaying field by the U.S. agricultural policies create future bilateral trade deficits.

The meeting place of these two subsidized satisfied systems has created an ever-growing unbalanced trade relation. India has been trading in surplus with the United States[8] between the year 2010 and 2020, and agriculture has been a hidden but major contributor in the process. At the same time, the two countries have put complaints against each to the WTO on non-compliance with the Agreement on Agriculture (AoA) and Sanitary and Phytosanitary (SPS) Measures Agreement. The incompatibility between national policies and international obligations, which were increasingly unworkable in such areas as agriculture, has been stressed in these conflicts. Due to climate change, food insecurity, and the geopolitical tensions, the difficulty to bridge this gap is more obvious than ever before.

The aim of this paper is to examine the degree of impact that the subject of agricultural subsidy that is implemented in India and the United States, has over the ten-acre span of the period 2010 to 2020 which has caused the inability of balance in trade between these two nations. It shall use economic theory, empirical evidence, policy arguments and country-specific WTO cases to study the role of the subsidy regime in two nations and how this has affected export rivalry, import penetration and trade negotiations. Through evaluating the at hand issue both in macro and micro economic perspective, (trade flows, current account data and producer incentives, market distortions respectively), this study will be able to provide a sound analysis on whether subsidies continue to sustain an unsustainable and inequitable trading relationship. Moreover, it will also take into consideration the possible policy options, and routes to reform, which can bring national development strategy into line with the general requirement of fair trade among the nations.

The argument centering on finding a solution to the appropriate agricultural subsidies and its effects as far as international trade is concerned has been the focus of any study on global economy. The proposal that countries ought to specialize in production of what they do best has anchored the global theory of trade which was first organized by the classic theory of comparative advantage and was initially formalized by David Ricardo in the 19th century. Nonetheless, agricultural subsidies unnaturally reduce the cost of production and result in the establishment of competitive power based on no economic premises. This is of specific concern to India - U.S. trade relationship with the two countries using pervasive subsidy programs that affect international prices as well as bilateral trade.

---

[6] Committee on Agriculture Original: English CERTAIN MEASURES of INDIA PROVIDING MARKET PRICE SUPPORT to PULSES, INCLUDING CHICKPEAS, PIGEON PEAS, BLACK MATPE, MUNG BEANS and LENTILS COMMUNICATION from CANADA and the UNITED STATES of AMERICA pursuant to ARTICLE 18.7 of the AGREEMENT on AGRICULTURE 1 INDIA'S PROVISION of SUBSTANTIAL MARKET PRICE SUPPORT for PULSES, INCLUDING CHICKPEAS, PIGEON PEAS, BLACK MATPE, MUNG BEANS and LENTILS.

[7] Zurita, Carlos. "Trade Policy Shifts and Their Potential Implications for U.S. Agricultural Exports." *Farmdoc Daily*, vol. 14, no. 165, 12 Sept. 2024, farmdocdaily.illinois.edu/2024/09/trade-policy-shifts-and-their-potential-implications-for-u-s-agricultural-exports.html. Accessed 5 Aug. 2025.

[8] "FAS - Global Agricultural Trade System (GATS)." Usda.gov, 2025, apps.fas.usda.gov/gats/default.aspx. Accessed 14 Aug. 2025.

India's Subsidy Framework and Trade Concerns

Agricultural subsidies regime of India has a long tradition of traditionally targeting food security and the rural poverty. Since 1960s, Minimum Support Price (MSP) mechanism has guaranteed prices to more than 20 crops such as rice, wheat and pulses. As shown in Commission of Agricultural Cost and Price (CACP, 2021), there was a sizeable increase in fiscal commitment by the government with the MSP of wheat increasing by 75.16 per cent (₹1,120/quintal in 2010 to ₹1,975/quintal as on 2020). Public procurement by Food Corporation of India (FCI) in the same decade improved by more than 35% since Food Corporation of India (FCI) had procured over 40 million tons of rice and wheat annually to be distributed through the Public Distribution System (PDS) (RBI, 2021).

Besides output subsidies, India subsidizes error to a large degree inputs especially fertilizers, electricity, irrigation and credit. According to the Union Budget 2022 (GOI, 2022), fertilizer subsidies alone are estimated to cost the government 1.27 lakh crores (approximately 15 billion) in 2021-22. Severe groundwater uses because of heavy electricity subsidies, especially in Punjab and Haryana, amounts to between 6,000 and 8,000 crore a year, encouraging inferior crops and technique and worsening climate change (Gulati & Banerjee, 2020).

The increased agricultural exports by India have attracted the world attention especially in the rice, which is the direct benefactor of the MSP and government purchases. India went on to be the leading exporter of rice in the world between 2015 and 2020 with more than 30 percent share of the world rice trade amidst huge government subsidies on the crop (FAOSTAT, 2021). The United States Trade Representative (USTR, 2020) claimed that India supports its prices of rice and wheat above the 10 percent de minimis limit in the WTO in its Agreement on Agriculture (AoA). Market price support of rice in India comprised 13.5 percent of total value of production in the 2018-19 crop year, or according to a U.S. calculation submitted to the WTO, WTO Document G/AG/W/193).

Other Indian economists like Ashok Gulati have admitted the distortionary nature of subsidies. According to Gulati (2020) in a paper on Indian Council for Research on International Economic Relations (ICRIER), subsidies have resulted in misallocation of resources in terms of "long term inefficiencies in cropping patterns due to over-reliance on rice and wheat and neglect of high-value crops".

U.S. Agricultural Support and Its Global Impact

Although often supportive of free-market ideas, direct agricultural support is a large part of the United States system of supporting agriculture with its Farm Bill, a multiyear legislature that contains more than 12 years spending on subsidies, insurance, and rural development. In total, in 2018, the U.S. Farm Bill spent 428 billion dollars on nutrition and agriculture over five years, whereby approximately 90 billion dollars thereof was on the commodity crops and crop insurance programs (CRS, 2020).

Key U.S. subsidy programs include:

- **Price Loss Coverage (PLC)** and **Agricultural Risk Coverage (ARC)**, which compensate farmers when market prices fall below reference levels.
- **Crop Insurance**, heavily subsidised by the government (up to 60% of premiums), with payouts reaching **$11.5 billion in 2019** (ERS, 2021).
- **Marketing Assistance Loans**, which allow farmers to borrow against their harvests at fixed prices.

The crops which the United States exports are mainly of subsidised crop such as corn, wheat, soy, and cotton. In 2020, the U.S. has sold off more than 20 billion dollars' worth of subsidised corn and soybeans, which are often not even sold at the actual cost of production as critics discourage (OECD, 2021). Researchers such as Vincent Smith (AEI, 2022) have defined this as an instance of implicit dumping, where their arguments point to unfair market competition on the side of the developing world.

This imbalance has been a concern of India amongst other people. Trade statistics revealed that the exports of edible oils, almonds, and cotton by the United States in India rose above 45% in 2020 relative to 2010 as previously recorded by the Ministry of Commerce, India. Such figures are indicative of the intricate conditions that U.S. subsidies, despite their decoupling with production, still have on world competitive principles.

WTO Disputes and Institutional Perspectives

The World Trade Organization (WTO) has emerged as the most important location of resolving any of the disputes facilitated by agricultural subsides. In particular, it is seen that the United States accuses India of limiting the import of U.S poultry under the guise of safety standards on avian flu through filing of the WTO case

DS430 against India in 2012. This case was not involving subsidies strictly speaking, although it demonstrated increased tensions in Indian-U.S. agricultural trade.

More to the point, the U.S. has often protested against the existence of Indian subsidies in rice and sugar during the WTO meetings. The USTR filed a detailed report in 2019 alleging that subsidies were being provided by India to its sugar industry and that the sugar subsidies were in violation of AoA obligations and that India was artificially increasing the world supply (WTO G/AG/W/193). India in its turn justified its subsidies by the reference to the provisions of the AoA under so-called development box whereby the developing countries have broader possibilities.

Nevertheless, transparency at WTO remains loose. According to a 2019 report of the OECD, less than 70 per cent of the data on agricultural support notified by the members of the WTO was timely of complete, which is difficult to monitor. Among scientists, Aaditya Mattoo (Brookings, 2020) has insisted that WTO regulations need to change to reflect new, less transparent methods of subsidies and meet the demands of the developing economies with the equity of international trade.

Balancing Equity and Efficiency

Though most of the literature can be critical of subsidies on the perspective of market efficiency, there is emerging interest of it as a tool of poverty alleviation particularly in the agrarian economy like in India. Ha-Joon Chang (2002) is known to have contended that most of the currently developed nations applied protectionist measures such as subsidies when they were in the industrialization stage. Refusal to give such instruments to emerging economies in the present age might lock inequality into the international trade regime.

In this regard, the defence by India on its subsidy regime is based on developmental logic and not trade logic. The dilemma, though, is how the subsidy constraints could be selectively applied or un prone altogether so that global trade can be based on rules? The literature reaches one common set of findings, namely, unless more clarity of rules, better transparency and context-based reforms are brought about, issues of subsidies as between India and the United States are likely to remain strong.

II. Methodology

Theoretical Framework

To rigorously analyze the impact of agricultural subsidies on the trade imbalance between India and the United States, it is essential to anchor the research in relevant economic theory. This section employs key models such as comparative advantage, trade distortion theory, and the political economy of protectionism, along with data-driven interpretations, to offer a theoretical scaffold for the case study that follows.

Comparative Advantage and Trade Efficiency

Comparative advantage as proposed by David Ricardo would mean that countries should specialize in what they are relatively efficient at and transfer their products through trade, just so that everyone wins (Krugman & Obstfeld, 2021). In a perfectly competitive global economy where there is free trade, it is through this principle that the global best interest is achieved since every nation produces what it specializes in. But the distortion of relative production costs caused by agricultural subsidies improperly boosts domestic agriculture competitiveness and thus interferes with the natural allocation of this comparative advantage.

As an example, the price of rice and wheat in India supported with the help of the MSP scheme is usually between 50 percent and 100 percent higher than in the international market (CACP, 2022). This worsens the appeal of Indian crops to the local producers even against more efficient options, which is a breach of the comparative advantage. Farm subsidies such as Price Loss Coverage (PLC) or Agricultural Risk Coverage (ARC) in the US have contributed to excessive production of commodities such as corn and soybean, even though they are oversaturated at the global level. According to USDA Economic Research Service (2023), more than 38 percent of every farm in the U.S received at least one type of commodity or insurance payment in 2020, totaling over 30 billion.

The artificial overproduction in the exporting countries and the low international price level result in the decreasing competitiveness of the countries without any comparable support system. The net effect is the mounting imbalance in trade with excessive output being dumped into the global market at considerably inaccurate prices with no resemblance to comparative advantage.

Trade Distortion and Deadweight Loss

Agricultural subsidies are savable by regular welfare economics. Subsidies cause the supply curve to shift to the right and decrease the equilibrium price and increase the quantity though they also cause deadweight loss to be incurred. The resultant effect is that producers are being subsidised by taxpayers to produce more in what is inefficient production.

The OECD (2022) reported that India had a total support estimate (TSE) of agricultural support equivalent to 5.7 percent of the agricultural GDP of $85 billion; in the U.S., agricultural GDP was estimated at around 1.5 percent of agricultural GDP or about 53 billion when it comes to total support estimate (TSE). These are the numbers to determine how far the market intervention is artificial and not justified by the reason of development or food security as both these countries argue.

Subsidies linked to output, and not income (the system operated in India and the ARC/PLC schemes in America) would cause an output bias. The consequence is that there sees an increase in the supply of the domestic economy, exportation soars and the prices decrease. When the results of these interactions are overlaid upon liberalized markets the results are not only stifling on the subject of efficiency but present trade misalignments in the trade realm. Both Bhagwati and Panagariya (2004, 2005) have already shown that even with decoupling of production, such distortions still exist because the market still has expectations of historic interventions.

Balance of Payments and Twin Deficits

Another theoretical approach is the theoretical aspects of agricultural subsidies on the balance of payment (BoP). The BoP model is related to current account deficits with trade imbalances and budget deficit with patterns of spending by the state. In India, agricultural subsidies form a big fiscal burden where it is estimated that over 3.74 lakh crore ($45 billion) will be spent in 2022 23; This aspect of strain leads to the twin deficit issue where fiscal deficit and current account deficit increase hand in hand (Ministry of Finance, 2023).

The agricultural exports of India (with mainly rice and sugar (heavily subsidised)) amounted to 43.7 billion in the year 202223, compared to 20.4 billion in the year 201920 (APEDA, 2023). Though these players are indicative of competitiveness, the WTO has spoken against the public stockholding program in India because the country goes against the AoA under subsidy provisions, given that some of the grains bought under the scheme are being exported. The WTO notifications show that India provided 13.5 percent of the value of production in rice subsidies in 2018 19 and exceeded the permitted 10 percent under the AoA (WTO, 2021).

This strains the importing nations such as the U.S where producers cannot compete effectively with imported Indian products at artificially low prices. The result is the asymmetry of trade flows, as subsidised Indian exports parallel the growth of U.S. imports, and the bilateral agricultural commodity trade is offended.

Political Economy of Subsidies

Such a continued existence of subsidy regimes in spite of their inefficiencies can be given proper conceptualization under the political economy framework. Farm lobbies of countries such as India and the U.S have disproportionate decision-making power. Votes Amidst these dynamics are the rural votes, which are essential when calculating how the elections will turn out in India: More than 43 percent of the population hinges on agriculture (World Bank, 2022). Subsidies turn out to be a political instrument of appeasement and not an effective economic policy. According to the National Sample Survey Office (NSSO, 2021), more than 60 percent of the Indian farmers rely on the government to become viable.

Likewise, big farmers in the U.S create strong lobby groups. In 2020, farm lobby organizations spent $129 million on lobbying and obtained more than 46 billion dollars in federal bailout, particularly during the COVID-19 pandemic (Environmental Working Group, 2022). This invokes a path dependency: as soon as the subsidies are institutionalized it becomes politically impossible to withdraw them, irrespective of the effects on trade.

Such economists as Douglas North and Dani Rodrik have investigated the effect of institutions and political preferences on trade policy, which have not always been focused on efficiencies in international markets. Their models contribute to the fact that even WTO discipline has commonly been unsuccessful in reducing agricultural assistance because domestic and international politics supersede the liberal trading rules.

Strategic Trade Theory

A slightly less emphatic form is the Strategic Trade Theory that states that, in imperfectly competitive markets, the government intervention can maximize the national welfare, assuming that the government action assists domestic companies to acquire a share in the international market (Brander & Spencer, 1985). In this sense, subsidies of India and U.S. can be considered as the means of long-term agriculture competitiveness.

In fact, India is now the biggest exporter of rice in the world due to the subsidised exports of rice, at 22 million tons in 2022 (FAO, 2023). Equally, the American corn has taken over the global markets due to the American subsidies, and its exports make up to 36.8 percent of the entire world exports in 2023 (USDA, 2023). Nonetheless, these interventions might be considered strategically rational, but in any case, they create externalities on the rest of the world, and they often motivate some retaliation, which destroys any prospect of global cooperation in trade.

To empirically assess the impact of agricultural subsidies on the trade imbalance between India and the United States, it is essential to examine actual trade flows, key commodities, policy shifts, and international disputes over the 2010–2023 period. This section demonstrates that subsidies in both nations—though politically motivated and structurally different—have contributed significantly to the distortion of bilateral agricultural trade, amplifying tensions and altering comparative trade dynamics.

III. Result and Discussion

Bilateral Agricultural Trade Trends (2010–2023)

Between 2010 and 2023, agricultural trade between India and the United States expanded considerably, but not symmetrically. According to data from the United States Department of Agriculture (USDA, 2023) and the Ministry of Commerce, Government of India (2023), the trade balance has increasingly favoured India.

- In **2010**, India exported **$1.7 billion** worth of agricultural goods to the U.S. and imported **$0.9 billion**, resulting in a **$0.8 billion surplus** for India.
- By **2022**, Indian exports had risen to **$5.1 billion**, while imports from the U.S. stood at **$1.8 billion**, yielding a trade surplus of **$3.3 billion**.

This widening imbalance coincided with aggressive subsidy-backed exports from India and declining U.S. competitiveness in specific commodity segments such as rice, spices, and processed foods.

India's Export-Oriented Subsidy Regime

A major contributor to India's rising agricultural exports has been the **Minimum Support Price (MSP)** and **public procurement** system, particularly for rice, wheat, and sugarcane. The Food Corporation of India (FCI) procures grains at fixed MSPs and maintains large buffer stocks, a portion of which has been exported in recent years—often at prices below procurement cost.

- In 2021–22, India exported **21.2 million tons of rice**, accounting for **over 40% of global trade**, even though **the MSP was ~30–50% higher than international prices** (APEDA, 2023).
- These exports were enabled by subsidy-backed stockpiles, and the WTO has flagged India for breaching **domestic support limits** under the Agreement on Agriculture (AoA). In 2019, India reported **rice subsidies amounting to 13.5% of the crop's value**, breaching the WTO-mandated 10% ceiling (WTO, 2021).

In the eyes of the U.S., such exports—backed by non-market pricing—represent an unfair trade practice. A USTR (United States Trade Representative) report from 2020 stated that India's subsidy structure "significantly distorts global markets and undercuts fair competition" (USTR, 2020).

U.S. Agricultural Subsidy and Its Trade Impact

In contrast, the U.S. employs **market insurance programs** like **Price Loss Coverage (PLC)** and **Agricultural Risk Coverage (ARC)**, along with **federal crop insurance**. These programs, while less overt than India's MSP, still represent significant government support:

- Between 2010 and 2020, the U.S. federal government disbursed over **$150 billion in farm subsidies**, with **$46 billion** in direct payments made during 2020 alone (Environmental Working Group, 2021).

- Corn, soybean, and wheat producers were major beneficiaries, often using these subsidies to maintain global market share. In 2022, the U.S. exported **56 million tons of corn**, or **about 36% of global exports**, aided by guaranteed pricing and yield protection (USDA, 2023).

While the U.S. justifies these payments under "green box" and "amber box" criteria, developing countries like India argue that the indirect support still depresses global prices and makes fair competition impossible—particularly for rain-fed, low-input Indian farms.

WTO Disputes and Tensions

The India–U.S. agricultural trade relationship has also been punctuated by formal trade disputes at the WTO:

- In **2018**, the U.S. challenged India's export subsidies under the **Foreign Trade Policy 2015–2020**, including those affecting agricultural exports. The WTO ruled in favour of the U.S., mandating India to withdraw these subsidies (WTO Dispute DS541, 2019).
- Conversely, India, along with the G33 coalition, has criticized U.S. subsidy levels for violating the spirit of the AoA, particularly with regard to cotton and dairy.

These disputes reveal mutual accusations of trade distortion, with both nations using different methods to support domestic agriculture—India via **price floors and export push**, and the U.S. via **income stabilization and risk mitigation**.

Impact on Trade Imbalance

These subsidy regimes have had a structural change in agricultural trade between the two states cumulatively. This has increased India exportability of subsidised rice, sugar and processed foodstuff whereas agricultural products export by the U.S. into India have been limited by tariffs and non-tariffs barrier, including sanitary standard of foodstuffs represented by poultry, dairy and pulses.

A report by Congressional research service (CRS) of 2022 shows that less than 2 percent of the agricultural exports of the U.S were destined to India whereas the U.S ranked among the top five agri-importers of India, particularly in the consumption of fruits, nuts, and cotton (CRS, 2022).

More so, the India-U.S. Trade Policy Forum, which was resuscitated in 2021, noted the disagreement on issues over agricultural market access, with American officials particularly demanding that India make alterations to its subsidy programs and payments on exports that they say distorts the field of play.

Effects on Domestic Producers

Subsidy-induced trade imbalances have had ripple effects on producers in both countries:

- Indian rice exporters gained global dominance, but small farmers became increasingly dependent on MSP, leading to overproduction and **ecological degradation** in states like Punjab and Haryana (NITI Aayog, 2023).
- In the U.S., farmers faced increasing import competition from India in niche crops like basmati rice and spices, prompting industry lobbying for protective trade measures and retaliatory tariffs.

This case study illustrates that **agricultural subsidies are not merely domestic policy tools but active agents of international trade distortion**, contributing significantly to the widening trade imbalance between India and the U.S.

While agricultural subsidies are often politically justified as tools for food security and rural welfare, their cumulative economic consequences—especially in trade—raise deep concerns about allocative efficiency, global equity, and environmental sustainability. The India–USA case offers a sharp lens into how subsidy-driven distortions undermine comparative advantage, deepen bilateral trade imbalances, and trigger retaliatory or defensive policies.

Allocative Inefficiency and Deadweight Losses

From a neoclassical economic standpoint, subsidies disrupt market equilibrium by lowering prices artificially and encouraging overproduction of certain commodities. In India's case, the **Minimum Support Price (MSP)** regime creates **price floors**, leading to supply levels above market equilibrium. Conversely, in the U.S., insurance and income-support programs cushion producers from market risk, resulting in continued production even when global demand falls.

- According to the OECD (2022), India's Producer Support Estimate (PSE) for rice and wheat indicates **"implicit taxation" of consumers and environmental resources**, while the U.S. PSE suggests inefficient capital allocation, particularly in capital-intensive crops like corn and soy.
- The World Bank (2019) estimates that global trade distortions from agricultural subsidies result in **$100 billion in welfare losses annually**, driven by inefficiencies in global allocation of land, water, and labour.

Such inefficiencies are more acute when both countries subsidize the same commodities—e.g., rice and wheat—leading to subsidy wars rather than gains from trade.

Opportunity Cost and Misallocation of Fiscal Resources

The opportunity cost of agricultural subsidies is one of the most powerful arguments against this practice and entails the determination of what the government money could be spent on. India In the last five years, the central and state governments have spent more than 2.5 lakh crore (approximately thirty billion dollars) on food subsidies alone in FY2022 23 (Ministry of Finance, 2023). This involves inefficiencies in procurement, storage and distribution whereby over 30 per cent of grains end up as leakage or spoilage (CAG Report, 2022).

Compared to this, the U.S. allocated a significant amount of 46 billion dollars to the support of farms in 2020 with a great portion of it to larger agribusinesses not to small farmers (EWG, 2021). The 10 percent of farms capture over 60 percent of the subsidization in America, in question of equity and political capture (International Food Policy Research Institute, Glauber, 2022).

These misplaced expenditures do not only run the government finances dry but also displace investments in productivity increasing activities such as irrigation, research and development or education in rural India.

Environmental Externalities

In both countries, subsidies have contributed to **negative environmental externalities** that worsen long-term trade competitiveness.

- In India, guaranteed procurement of water-intensive rice and wheat has led to **groundwater depletion** in Punjab and Haryana, with **80% of districts facing critical or over-exploited aquifers** (Central Ground Water Board, 2022).
- U.S. subsidies for corn have driven monoculture farming in the Midwest, worsening **topsoil erosion, fertilizer runoff**, and contributing to the **Dead Zone in the Gulf of Mexico** (US EPA, 2021).

These externalities are rarely priced into global trade, giving both countries an **illusory comparative advantage** while concealing the environmental debt that future generations will bear.

Political Economy of Subsidy Persistence

Despite the economic rationale for reform, subsidies in both India and the U.S. are deeply entrenched in political structures.

- In India, over **60% of rural voters** depend on agriculture, making subsidy reform politically suicidal. Attempts to reform the MSP regime, such as the **2020 Farm Laws**, were met with mass protests and eventual repeal (The Hindu, 2021).
- In the U.S., farm lobbies such as the **American Farm Bureau Federation** exert significant influence on Congress. The **Farm Bill**, passed every five years, includes multi-billion-dollar provisions for crop insurance and commodity payments, which few politicians dare oppose (CRS, 2023).

Thus, despite WTO pressure or macroeconomic inefficiency, subsidy reform is **politically high-risk and institutionally sluggish**, prolonging trade imbalances and retaliatory trade measures.

Retaliatory Measures and Trade Tensions

Subsidy-driven trade surpluses often provoke **retaliatory trade measures**, escalating into protectionist cycles. The India–USA relationship has seen multiple such instances:

- In 2019, the U.S. **revoked India's GSP (Generalized System of Preferences)** status, affecting over $5 billion in Indian exports, citing **lack of reciprocal access**, especially in agriculture.
- India responded with **tariff hikes on 28 U.S. products**, including almonds and apples—commodities grown in politically sensitive U.S. states like California and Washington (Ministry of Commerce, 2019).

Such tit-for-tat actions not only strain bilateral relations but also violate the principle of **mutual benefit in trade**, replacing cooperation with confrontation.

Equity and Distributional Impacts

Subsidy structures often entrench **inequality** both within and across countries:

- In India, **small and marginal farmers (<2 hectares)** make up **85% of landholders** but receive less than **35% of MSP benefits**, largely due to lack of access to procurement centres (NABARD, 2022).
- In the U.S., large agribusinesses benefit disproportionately, with the top 1% of farms receiving more in subsidies than the bottom 80% combined (EWG, 2021).

Globally, such inequity is even more pronounced. Countries in Sub-Saharan Africa and Southeast Asia—unable to match rich nations' subsidies—are **priced out of global markets**, compounding trade imbalance and underdevelopment. According to the **FAO (2022)**, "existing agricultural support structures reinforce global inequality and violate the principle of level playing fields."

This evaluation makes clear that while agricultural subsidies may serve short-term goals of income support or price stability, they come with heavy long-term costs—economic, environmental, and diplomatic. For India and the U.S., persistent subsidy regimes have entrenched a **trade imbalance born of artificial advantage rather than comparative efficiency**.

Having evaluated the structural inefficiencies, environmental externalities, and trade distortions resulting from agricultural subsidies in both India and the USA, it becomes evident that reforms are necessary — not only to correct bilateral trade imbalances but to create a more equitable and sustainable global agricultural system. The following policy recommendations aim to address the core inefficiencies without disregarding the social and political realities that drive subsidy persistence.

Reorient Subsidies Towards Productivity and Sustainability

Instead of direct price support or input subsidies (fertilizers, electricity), both India and the U.S. should **shift toward targeted investment in agricultural productivity**. This includes:

- **Public R&D funding** for drought-resistant or high-yield crops.
- **Subsidizing irrigation infrastructure**, not electricity, to promote efficient water use.
- **Market-linked incentives** for sustainable farming practices.

Evidence from China's switch to "green subsidies" between 2015–2020 suggests that reallocating just **10% of conventional subsidies to sustainable practices** increased long-term yield without raising fiscal costs (World Bank, 2020).

For India, replacing MSP-based procurement with **Direct Benefit Transfers (DBTs)**, as trialed in Andhra Pradesh's *Rythu Bandhu* scheme, could maintain farmer income without distorting output prices.

Gradual Decoupling of Income Support from Output

In the United States, decoupling of income-linked subsidies in relation to a particular commodity production ought to be based on the format in the WTO green box classification. This would avert excessive production and price dumping in the world.

An example is the Common Agricultural Policy (CAP) reforms that the EU has come up with after 2013: replacing product-specific support with land-based payments that depend on environmental conditions. Experts

demonstrated that such shift decreased market distortions by more than 25 percent within five years (OECD, 2019).

In India, this system could be partially adapted; specifically with water-intensive crops, where crop diversification, e.g., pulses or oilseeds, that have a reduced environmental impact and can address e.g., national food insecurities through domestic nutritional deficits, can be incentivized.

Strengthen Multilateral Trade Institutions

Trade imbalances born of subsidies cannot be resolved bilaterally alone. Instead, the World Trade Organization (WTO) must be strengthened to:

- Enforce existing **Agreement on Agriculture (AoA)** rules, especially limits on Aggregate Measure of Support (AMS).
- Push for greater **transparency and reporting of subsidy data**, particularly from developing countries where informal subsidies remain unrecorded.
- Reopen negotiations under the **Doha Development Round** to better balance the rights of developing economies like India with the obligations of advanced economies like the U.S.

India and the U.S. should **lead by example** in proposing a "phased sunset" clause on certain subsidies, conditional on parallel reform by other large agricultural economies (e.g., China, EU).

Introduce Trade-Linked Environmental Standards

Given the growing overlap between trade and climate, a new frontier lies in aligning **subsidy reforms with environmental targets**. Both countries could propose a bilateral framework where:

- Subsidies for inputs (e.g., fossil fuels, fertilizers) are **phased out over time**.
- New **carbon-adjusted tariffs or incentives** are imposed on imports that meet sustainable production standards.
- **Carbon footprint disclosures** become part of agricultural trade documentation.

This would shift the nature of comparative advantage from artificial price supports to **genuine resource efficiency**, encouraging innovation and long-term resilience.

Rebalance Fiscal Priorities Through Political Consensus

Finally, both nations must confront the **political economy barriers** to subsidy reform.

- In India, this requires building **coalitions across states**, ensuring compensatory measures for smallholder farmers, and using **digital procurement platforms** to ensure transparency in reform.
- In the U.S., restructuring subsidies must go hand in hand with **rural transition plans**, including support for farmers shifting to regenerative practices or non-agricultural employment in rural areas.

Cross-sectoral reforms — involving ministries of trade, agriculture, environment, and finance — will be essential. So will **electoral insulation** through multi-year implementation timelines, bipartisan commissions, or conditionality linked to international trade deals.

IV. Conclusion

Though agricultural subsidies are anchored in the vision of food security and alleviation of rural welfare, they have surpassed the intended purpose in India and the USA. The direct result of their persistence is causing severe and dangerous economic distortions, cuneiform trade relations, and the growth of retaliatory feed cycles that works against the realities of the global trading order.

The paper has discussed the effects of subsidies that interrupt comparative advantage, lead to bilateral conflicts in businesses, and give negative environment and equity results. It has also demonstrated that these effects are not unavoidable instead they are an outcome of obsolete organization, political malaise, and financial mismanagement.

In the case of India, excess use of MSP-supported procurement has undermined the export industry alongside promoting environmental degradation and stagnation at the rural level. In the case of USA, excessive aid to agribusinesses has skewed international prices in the commodity markets and enshrined inequality within

the country and in international markets. With global trade getting more integrated in sustainability and resilience, the two nations will be at a vantage point.

The way out is not to rush into a declaration of immediate withdrawal of support but to smart conversion: from price floors to productivity, from distortion to diversification and from subsidy wars to reform by collaboration. In case the two giants in world economic and agricultural positions, India and the USA, pave the way in this change, this change will bring loads of benefits way beyond bilateral trade. They will redefine a more effective, fair, and environmentally sustainable food system in the world.

References:

[1]. Ministry of Agriculture & Farmers Welfare, Government of India. "Minimum Support Prices (MSP) for Rabi Crops for Marketing Season 2021-22." *Press Information Bureau*, 2021. https://static.pib.gov.in/WriteReadData/specificdocs/documents/2021/sep/doc202191311.pdf.

[2]. Press Information Bureau, Government of India. "Cabinet Approves Minimum Support Prices (MSP) for Kharif Crops for Marketing Season 2024-25." *PIB*, 19 June 2024. https://www.pib.gov.in/PressReleasePage.aspx?PRID=2026697.

[3]. "Minimum Support Prices (According to crop year) As on 22.01.2025." *Department of Agriculture & Farmers Welfare (India)*. https://desagri.gov.in/wp-content/uploads/2025/02/MSP_for-website_English-version.pdf.

[4]. "MSP for Wheat Hiked to ₹ 2,015 per Quintal for 2021-22 Crop Year." *Business Standard*, 8 Sept. 2021. https://www.business-standard.com/article/economy-policy/govt-hikes-wheat-msp-by-rs-40-to-rs-2-015-per-quintal-for-2021-22-crop-year-121090800771_1.html.

[5]. Livemint. "Centre Hikes Wheat MSP by 2% to ₹ 2,015 per Quintal (2021-22)." *Livemint*, 8 Sept. 2021. https://www.livemint.com/news/india/amid-farmers-protest-centre-hikes-wheat-msp-by-2-to-rs-2-015-per-quintal-for-2021-22-crop-year-11631095727803.html.

[6]. IndiaWest. "India Reports Record Foodgrain Production (2022-23)." *IndiaWest*, 2023. https://indiawest.com/indias-reports-record-foodgrain-production/.

[7]. "Government Procurement at MSP in Full Swing, but Wheat Prices Crash in Mandis." *Global Agriculture*, 22 Apr. 2025. https://www.global-agriculture.com/india-region/government-procurement-at-msp-in-full-swing-but-wheat-prices-crash-in-mandis/.

[8]. Environmental Working Group. *Farm Subsidy Database: Top-1 % Recipients Receive 27 % of U.S. Farm Subsidies*. EWG, 2025. https://farm.ewg.org/progdetail.php?fips=00000&page=conc&progcode=totalfarm&regionname=theUnitedStates.

[9]. Environmental Working Group. "Triple-dipping: House Farm Bill Increases Likelihood of Wealthy Farmers Raking Billions Each." *EWG Research*, 2023. https://www.ewg.org/research/triple-dipping-house-farm-bill-increases-likelihood-wealthy-farmers-raking-billions-each.

[10]. U.S. Department of Agriculture, Risk Management Agency (RMA). *Summary of Business – 2019*. 2020. https://www.rma.usda.gov/SummaryOfBusiness.

[11]. Congressional Research Service. "Record Prevent Plant (PPL) Acres and Payments in 2019." CRS, 2019. https://www.congress.gov/crs_external_products/R/PDF/R46180/R46180.1.pdf.

[12]. FarmDoc Daily. "Crop Insurance Performance in 2019." *farmdocdaily.illinois.edu*, July 2020. https://farmdocdaily.illinois.edu/2020/07/crop-insurance-performance-in-2019.html.

[13]. U.S. Government Accountability Office (GAO). "Crop Insurance: Update on Opportunities to Reduce Program Cost." GAO-24-106086, June 2024. https://www.gao.gov/assets/d24106086.pdf.

[14]. Congressional Research Service (CRS). "Federal Crop Insurance: A Primer." CRS Report R46686, 2021. https://sgp.fas.org/crs/misc/R46686.pdf.

[15]. World Bank. *Unfair Advantage: Distortive Subsidies and Their Effects on Global Trade*. World Bank, 2023. https://thedocs.worldbank.org/en/doc/0534eca53121c137d3766a02320d0310-0430012022/related/Unfair-Advantage-Distortive-Subsidies-and-Their-Effects-on-Global-Trade-2023.pdf.

[16]. Trade & Development Chart (World Bank blog). "How Government Subsidies Distort Trade." *World Bank Blogs*, 20 Sept. 2023. https://blogs.worldbank.org/en/trade/trade-and-development-chart-how-government-subsidies-distort-trade.

[17]. World Bank. "Government Subsidies and Trade." *World Bank Brief*, 2024. https://www.worldbank.org/en/topic/trade/brief/subsidies-and-trade.

[18]. World Trade Organization. "India — Measures Concerning the Importation of Certain Agricultural Products (DS430)." *WTO Dispute Settlement*, 2015. https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds430_e.htm.

[19]. World Trade Organization. *Dispute Settlement: DS430 Summary*. WTO, 2015. https://www.wto.org/english/tratop_e/dispu_e/cases_e/1pagesum_e/ds430sum_e.pdf.

[20]. USTR. *India – Measures Concerning the Importation of Certain Agricultural Products (DS430); USTR U.S. Submission*. USTR, 2012. https://ustr.gov/sites/default/files/DS430.US_.Sub2_.Public.pdf.

[21]. Oxford Public International Law. "India – Agricultural Products Case (DS430)." *OPIL*, 2015. https://opil.ouplaw.com/display/10.1093/law-epil/9780199231690/law-9780199231690-e2230.

[22]. World Bank. *Bird Flu, the OIE, and National Regulation: The WTO's India*. World Bank, 2016. https://openknowledge.worldbank.org/bitstreams/a66bf8e6-a629-587e-bbff-2759ec1b2b16/download.