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Effect of Exchange Rate Fluctuations on Sustainable Agricultural Trade

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Abstract

Exchange rate fluctuations play an important role in shaping the dynamics of international trade mainly in the agricultural sector. Fluctuations in exchange rate have significant impact on agricultural exports especially in developing nations. It has impact on farmers, traders and policymakers. Developing nations are highly dependent on farming as a source of income and employment. Currency fluctuations create uncertainty. This makes it difficult for farmers and agribusinesses to plan the production and maintain the agricultural product's supply chain stable. Policy makers and Government try to reduce the risks through adopting currency stabilisation measures, trade agreements and through some financial instruments such as hedging, etc. Export market diversification and value-added processing helps to reduce dependency on fluctuating exchange rates. This research paper examines the impact of exchange rate fluctuations on sustainable agricultural trade in India where agriculture contributes significantly to Gross Domestic Product. It also focuses the mechanisms through which exchange rate fluctuations affect agricultural exports and imports. Study provides a comprehensive analysis of the interplay between exchange rates and agricultural trade sustainability. Promoting sustainable techniques of farming enhances the flexibility to economic fluctuations that ensures the long-term agricultural productivity and stable trade practices. Exchange rate fluctuations can pose challenges and also have impact on sustainable agricultural trade. This Paper will examine the challenges and opportunities created for producers and exporters.

Keywords: *Agricultural Trade, Exchange Rate Fluctuations, Export Competitiveness, Import Dependency, Global Markets, Sustainable Agriculture, Price Stability*

Introduction

India is one of the largest exporters of agricultural products, with commodities such as rice, spices, tea, and organic product. Over the few years there has been a growing emphasis on sustainable agriculture. It focuses on reducing environmental impacts and ensuring ethical production. Sustainable agricultural exports not only cater to increasing global demand but also contribute to the livelihood of millions of Indian farmers. Agricultural sector is highly sensitive to external economic factors. Main fluctuation occurs due to exchange rate. The value of the Indian Rupee (INR) against U.S. Dollar (USD) and Euro significantly influences the competitiveness of Indian exports. Currency depreciation can make exports more attractive but also increase input costs for sustainable farming. Conversely, currency appreciation can reduce competitiveness in global markets.

Agriculture is the backbone of the Indian economy. It contributes approximately 15% to the GDP and provide employment around 50% of the workforce. India is largest producers of various agricultural commodities mainly rice, wheat, milk, and spices. The sustainability of agricultural trade is crucial for ensuring food security, rural livelihoods, and environmental conservation. Exchange rate fluctuations that refer to the changes in the value of one currency relative to another have significant impact on agricultural trade by altering the competitiveness of exports and the cost of imports. When a country's currency gets depreciated (loses its value), country's exports become cheaper. Agricultural products become cheaper for foreign buyers. There will be an increasing demand for the goods and services produced in an economy, which helps in boosting exports. But this benefit can be for short period, as production costs may increases due to high prices for imported inputs such as fertilizers, machinery, and fuel.

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On the other hand, currency appreciation (when the local currency strengthens) makes exports more expensive for foreign buyers, which may reduce international demand and hurt farmers' incomes adversely. Frequent exchange rate fluctuations create uncertainty. Maks it harder for farmers to plan the production, investment in technology, and adopt environmentally friendly practices. On the other hand, Sustainable agricultural exports require stable prices and predictable revenue for farmers. Countries which are heavily dependent on agricultural exports are facing economic instability. Their earnings are unpredictable due to exchange rate shifts.

This paper aims to explore the effect of exchange rate fluctuations on sustainable agricultural trade in India. It begins with a review of the literature on exchange rate volatility and agricultural trade, followed by an analysis of the Indian agricultural trade scenario. The paper then examines the impact of exchange rate fluctuations on agricultural exports and imports, and discusses the implications for sustainable agricultural practices. This paper concludes with policy recommendations for mitigating the adverse effects of exchange rate fluctuations and promote sustainable agricultural trade.

Objectives

1. To understand the Impact of Exchange Rate Changes on agricultural trade
2. To find the difficulties which farmers and traders face when exchange rates fluctuates
3. To examine how sustainable farming is influenced by exchange rate fluctuations.

Literature Review

Trade in agricultural products is significantly impacted by exchange rate fluctuations. In developing countries agriculture is a significant contributor to the economy (1). Kandilov, I. T. & Leblebicioğlu, A. (2011). Literature review explores how changes in exchange rates affect agricultural trade and its sustainability.

1. Exchange Rate Fluctuations and Agricultural Trade

Exchange rates determine the value of one currency relative to another. Fluctuations in it can have significant impact on international trade. For agricultural trade, exchange rate changes affect both exports and imports:

- **Price Competitiveness**: A nation's exports become more affordable on global markets as its currency depreciates, or loses value. if the value of the Indian Rupee declines in relation to the US dollar. For overseas consumers, Indian agricultural goods like rice and spices are becoming more reasonably priced. In emerging nations, agricultural exports benefit from currency devaluation. Exports will rise. Studies by Kandilov and Leblebicioğlu (2011) shown that currency depreciation helps agricultural exports in developing countries. Exports will increase.
- **Import Costs**: Where as a weaker currency makes imports more expensive. High costs for essential agricultural inputs like fertilizers and pesticides as well as machinery which are oftenly imported can increase production costs for farmers and reduces their profitability.

2. Impact on Sustainable Agricultural Practices

Agriculture sustainability involves practices which protect the environment and support the livelihood of farmers. It also ensures long-term food security. Therefore exchange rate fluctuations can influence sustainability.

- **Income Effects**: Weaker domestic currency can increase the income of farmers as it raises the value of export earnings in domestic currency. This additional income can be reinvested by farmers in the sustainable activities like organic farming or in efficient irrigation systems. And Vice-versa. But if exchange rates are highly volatile then farmers may face uncertainty and hesitate to adopt such practices.
- **Input Costs**: Exchange rate fluctuations may affect the cost of imported inputs. For instance - a sharp depreciation of the Indian currency can make these inputs more expensive. It may force farmers to cut costs or switch to cheaper and less sustainable alternatives.
- **Risk Management**: Exchange rate volatility introduces uncertainty in international trade. Farmers and agribusinesses often struggle to manage the risks associated with exchange rate volatility. This may affect the decision making power. Without proper hedging tools farmers and agribusinesses may face financial losses. Some strategies may not be accessible to small farmers because of high transaction costs and lack of financial literacy.(2) **Dhakal, D., Nag, R., & Pradhan, G. (2010)**.

3. Global and Indian Context

Different studies have examined the impact of exchange rate fluctuations on agricultural trade. Research by Bahmani-Oskooee and Gelan (2018) found that exchange rate volatility have negative impact on agricultural trade in African countries. Fluctuations in exchange rate increased uncertainty and transaction costs. Similarly studies in Latin America have shown that currency depreciation can boost agricultural exports but simultaneously it increase the cost of imported inputs. (3) **Bahmani-Oskooee, M., & Gelan, A. (2018)**.

In India, exchange rate fluctuations have mixed effects on agricultural trade. The depreciation of Indian currency between 2013 and 2015 boosted agricultural exports but it also increased the cost of imported fertilizers and machinery. According to the Reserve Bank of India exchange rate volatility has significant impact on India's agricultural trade balance.

There are certain **gaps** found that need to be focused. Majority study focuses on short term impacts of exchange rate fluctuations. long-term effects on sustainable agricultural practices can be address.

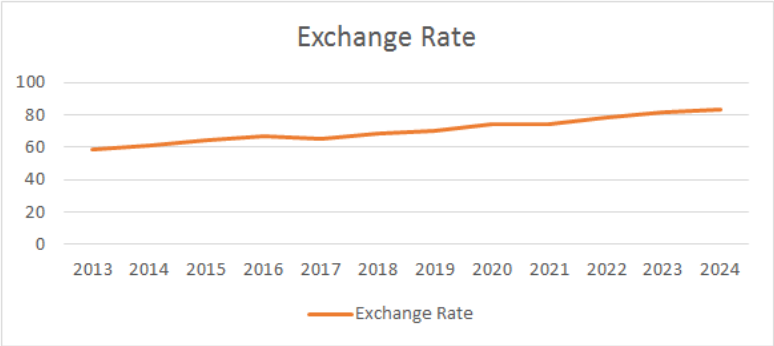
Small and marginal farmers are the majority of India's agricultural workforce. But they are unable to access tools due to their minimum earnings. More study is required to understand the exchange rate fluctuations and its impact on this group.

Exchange rate fluctuations may have different impact across the regions. There are differences in infrastructural facilities, crop patterns and accessibility in market area. Regional level study can give specific policy recommendation.

Indian Agricultural Exchange Rate

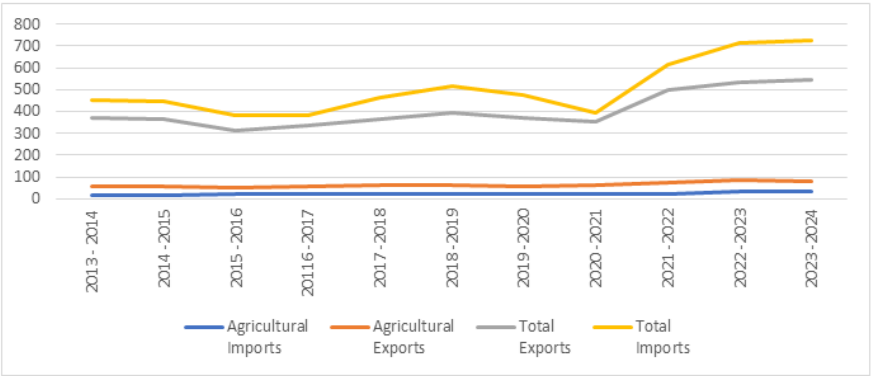
Year	Exchange Rate
2013	58.62
2014	61.03
2015	64.15
2016	67.21
2017	65.12
2018	68.41
2019	70.39
2020	74.10
2021	73.94
2022	78.61
2023	81.90
2024	83.68

Source: RBI Website



Indian Total Trade and Agricultural Trade Scenario

Year	Toal Exports	Total Imports	Agricultural Exports	Agricultural Imports
2013 - 2014	314.4	450.2	43.25	15.53
2014 -2015	310.3	448	39	17
2015 -2016	262.3	381	32	20
20116 -2017	275.9	384.4	33.87	25.09
2017 -2018	303.5	465.6	38.21	24,89
2018 -2019	330.1	514.1	38.54	23
2019 -2020	313.4	474.7	35.6	21.86
2020 -2021	291.8	394.4	41.25	20.84
2021 -2022	422	613	50.21	25
2022 -2023	447.5	714	53	35.7
2023 -2024	468	723	48.65	32.8



India's agricultural trade has significant changes over the past few decades. India becomes a net exporter of various agricultural commodities. According to the Ministry of Agriculture and Farmers Welfare India's agricultural exports reached USD 41.25 billion in 2020-21 and imports at USD 20.84 billion. India's total exports and imports have increased over the periods

of year. But there is a fall in 2015-16 and 2020-21 due to changes in global economic factors and the COVID-19 pandemic. India exports majorly agricultural products which include rice, marine products, spices, and buffalo meat, while imports include vegetable oils, pulses, and fruits. According to the balance of payment statement it is found that India is facing deficit in their Balance of Payment. Sustainable agricultural trade will help to cure the situation. Sustainable agricultural trade requires food security, rural livelihoods, and environmental preservation. Impacts the cost of imports and the competitiveness of exports will be impacted by sustainable agricultural trade. But changes in exchange rate may create hurdle to the sustainability of agricultural trade.

Before falling to a projected $48.65 billion in 2023–2024, agricultural exports reached a peak of $53.00 billion in 2022–2023. Despite fluctuations, imports saw a notable uptick in 2022–2023, mostly as a result of a spike in the import of vegetable oil. After rising steadily, agricultural exports reached $53 billion in 2022–2023. Demonstrating India's significant influence on the world agriculture economy. However, a drop in agricultural exports in 2023–2024 points to issues such shifting global demand, supply chain interruptions, and volatile exchange rates. The dramatic rise in agricultural product imports, especially for necessities like vegetable oils, suggests an increasing reliance on outside sources. India is facing high trade deficits in their current account due to increase in imports where as we have capital account surplus due to strong inflows of foreign direct investment, government schemes like Make in India which supports foreign investment.

Impact of Exchange Rate Fluctuations on Agricultural Exports

Exchange rate fluctuations can have a significant impact on agricultural exports. A depreciation of the Indian Rupee can make Indian agricultural exports cheaper and more competitive, while an appreciation can have the opposite effect.

For example, sharp decline of Indian currency against the US dollar from 2013 to 2015 increased the competitiveness of Indian agricultural exports. The RBI claims that during this time, the Indian Currency lost over 20% of its value in relation to the US dollar. Indian agricultural exports which caused to rise significantly. India's agricultural exports hit USD 43.23 billion in 2013–14, the highest amount in the previous ten years. Though this happens, agricultural exports may also suffer from exchange rate depreciation. For example, a significant decline in the value of the Indian rupee can raise the price of imported inputs like pesticides and fertilizers, which can lower the profitability of agricultural exports. Additionally, fluctuations in currency rates can create uncertainty in global trade, which influence farmers' and agribusinesses' decision-making.

Impact of Exchange Rate Fluctuations on Agricultural Imports

Exchange rate fluctuations have impact on agricultural imports. An appreciation of the Indian currency can make agricultural imports cheaper, while a depreciation can have the opposite effect.

For instance, during the period 2016-2018, the value of Indian rupee appreciated significantly against the US dollar. The cost of agricultural imports had reduced. According to the RBI report Indian currency appreciated approximately by 10% against the USD during this period leading to a significant increase in agricultural imports. In 2017-18, India's agricultural imports reached US dollar 24.67 billion which is the highest level in the past decade.

Exchange rate appreciation can also have adverse effects on agricultural imports. Appreciation of Indian currency can reduce the competitiveness of domestic agricultural products, leading to an increase in imports and a decline in domestic production. Therefore exchange rate volatility can introduce uncertainty in international trade which affect the decision-making of farmers and agribusinesses.

Implications for Sustainable Agricultural Practices

Exchange rate fluctuations have significant implications for sustainable agricultural practices. Exchange rate depreciation can boost agricultural exports, which can help to increase farmers' income and incentivize sustainable agricultural practices. Where as exchange rate volatility can introduce uncertainty in international trade. It affect the decision-making of farmers and agribusinesses.

Exchange rate volatility affect the adoption of sustainable agricultural practices such as organic farming and conservation agriculture. Farmers can reluctant to invest in sustainable agricultural practices. They are uncertain about the future profitability of their exports. Exchange rate volatility can affect the availability and cost of imported inputs. For example organic fertilizers and biopesticides can affect the adoption of sustainable agricultural practices.

Policy Recommendations

To mitigate the adverse effects of exchange rate volatility and promote sustainable agricultural trade, the following policy recommendations are proposed:

1. Exchange Rate Management: The RBI should adopt a managed floating exchange rate regime to reduce exchange rate volatility. This can be achieved through interventions in the foreign exchange market such as buying and selling foreign currency.
2. Risk Management: The government should promote the use of risk management tools, such as forward contracts and options, to manage exchange rate risk. This can be achieved through financial literacy programs and subsidies for small and marginal farmers.
3. Diversification of Export Markets: The government should promote the diversification of export markets to reduce the dependence on a single market. This can be achieved through trade agreements and market development programs.
4. Promotion of Sustainable Agricultural Practices: The government should promote the adoption of sustainable agricultural practices such as organic farming and conservation agriculture. This can be achieved through giving subsidies, arranging training programs for farmers, research and development activities.

For improvement in India's trade in agriculture quality of agricultural exported product must be improved. Branding of products must be there to meet global standards. We must reduce the import dependencies on foreign markets. And lastly government must work to stabilizing the value of rupee in international market. For sustainable agriculture development country should promote rain water harvesting and better irrigation facilities. Country must adopt Climate-Resilient Agriculture policy. Provide better transportation and cold storage facility to reduce waste. Also long term trade policies will support farmers where agricultural exports will stabilize and fluctuations in prices will eliminates.

Conclusion

India's agricultural development is significantly impacted by fluctuations in exchange rates. Although exchange rate volatility can create barriers to the sustainability of agricultural commerce. It offers opportunities for timely governmental interventions to improve sustainable agricultural practices. By enacting a managed floating exchange rate regime, promoting risk management strategies, growing its export market base, and promoting sustainable farming methods, India can mitigate the adverse effects of exchange rate volatility and promote sustainable agricultural commerce.

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References

1. **Bredahl, M. E., Meyers, W. H., & Collins, K. J. (1979).** The effects of exchange rate changes on U.S. agriculture: A dynamic analysis. *American Journal of Agricultural Economics*, 61(3), 534-541.
2. **Cheng, F., & Orden, D. (2005).** Exchange rate misalignment and its effects on agricultural producer support estimates: Empirical evidence from India and China. *International Food Policy Research Institute.*
3. Food and Agriculture Organization. (2020). The State of Agricultural Commodity Markets 2020. Data Retrieved from http://www.fao.org
4. **Ghosh, S. (2017).** Foreign exchange rate and agricultural performances: A time series analysis for India. In *Agricultural Development and Food Security in Developing Nations* (pp. 213-231)
5. Kandilov, I. T. (2008). The effects of exchange rate volatility on agricultural trade. *American Journal of Agricultural Economics*, *90*(4), 1028-1043.
6. **Mehta, R. (2020).** A study on impact of foreign exchange rate fluctuation on Indian foreign trade. *International Journal of Engineering and Management Research*, 10(2), 50-55.
7. Ministry of Agriculture and Farmers' Welfare. (2021). Agricultural Statistics at a Glance 2021. Data Retrieved from https://agricoop.nic.in
8. **Reddy, A. A., & Reddy, G. P. (2010).** Volatility in agriculture commodity prices in India: Impact and macroeconomic and sector-specific policy responses. *Indian Journal of Agricultural Economics*, 65(4), 638-653.
9. Reserve Bank of India. (2021). Annual Report 2020-21. Data Retrieved from https://www.rbi.org.in
10. **Vijay, G., & Dhanasekaran, P. (2015).** The impact of exports and imports on exchange rates in India. *BVIMSR's Journal of Management Research*, 7(1), 19-26.

Data Sources

1. Reserve Bank of India (RBI) - Exchange Rate Data
2. Ministry of Agriculture and Farmers' Welfare - Agricultural Trade Data
3. Food and Agriculture Organization (FAO) - Global Agricultural Trade Data