Food security and trade: public stockholding through the lens of economies and law

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Abstract

Purpose – The debate to find a solution for domestic price support under the WTO Agreement on Agriculture (AOA) has been a long one. The stance of India is critical to determine due to its large population. This paper aims to analyse the benefits or demerits of minimum price support and what approach could be adopted by India.

Design/methodology/approach – The paper is a mix of both analytical and theoretical research. The paper first provides a background on the issues related to public stockholding and further analyses some data at which India procures wheat and rice from the farmers and then compares it with retail market prices in India.

Findings – The paper finds that the difference in price between minimum price support and retail market prices in India for wheat and rice is minimal. Therefore, the concern that India might be taking advantage of the minimum price is uncalled for. India also needs to balance its own interests as well as abide by its WTO obligations. The paper finds that cooperation among countries or regional blocks might help to address the problem of food insecurity.

Originality/value – The paper portrays India's stance with regard to WTO AOA as well as studies the Indian market for wheat and rice.

Keywords Agreement on agriculture, Buffer stock, India, MSP, Public stockholding, WTO

Paper type Research paper

1. Introduction

The world today is facing crises in terms of geopolitics, climate change and food insecurity. It is also pertinent to note that enough food is being produced to meet energy and protein requirements of the current world population if the food were distributed according to needs. Furthermore, projections by Food and Agriculture Organization show that the food supply will be sufficient for the foreseeable future [1]. However, interestingly, surplus production and widespread hunger coexist both at the global level and in several countries, most notably India [2]. The global hunger index of 2022 shows that around 44 countries of the world have alarming or serious levels of hunger [3]. Further, as per Global Hunger Index 2023, 9 countries are in alarming category whereas 34 countries are in serious category [4]. Therefore, it is evident that food security has become an important policy goal for all the countries. The United Nations Sustainable Development's second goal is also "to end hunger, achieve food security and improved nutrition and promote sustainable agriculture" [5]. To achieve these goals, most countries' agricultural policy have a provision for buffer stockholding [6]. The ultimate goal of buffer stocks is to stabilize prices and ensure food security [7]. The aim of buffer stocks in India is well articulated by the Food Corporation of India (FCI), which states that "Maintaining satisfactory levels of operational and buffer

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stocks of food grains to ensure National Food Security" [8]. However, it is pertinent to note that there is a difference between buffer stockpiles and emergency supplies. The main aim of buffer stockpiles' is to ensure price stability, whereas emergency stockpiles are released by the government in times of force majeure events (release of the stocks is usually free of cost).

The policy of buffer stock emphasizes the concerns of both consumers and producers. For Instance, it is acknowledged that exposing poor farmers to unstable and low pricing can harm their livelihoods, incomes and eventually their ability to feed themselves. As a result, buffer stocks seek to address price volatility throughout the normal agricultural production cycle as well as during times of emergency brought on by climatic or political events. Typically, governments establish a pricing band, or a range within which they seek to keep prices, with a floor price (usually the minimum price at which the procurement happens) intended to benefit farmers and a ceiling price (usually a maximum price beyond which the price cannot be increased) intended to shield consumers from price increases [9]. The kind of food security that buffer stock policies aim to address depends on how strategies are constructed/implemented at the sub central level/central level of any country. There could be possible situations where the goal of the strategy may merely be to temporarily minimise food insecurity by restricting price variations on a short-term basis. Since price stabilization can only be accomplished over a number of years, the goal of the policy then stretches to long-term food security, even though the initial intention was to apply the strategy in the short term [10]. Even though buffer stocks are aimed at reducing food insecurity, still they are viewed as trade distortion by many countries. The policy of public stockholding has been a subject of a long debate at the WTO for various reasons, as discussed below in the paper.

1.1 Public stockholding and the WTO agreement on agriculture

The WTO Agreement on Agriculture (AOA) provides a mechanism to calculate market price support. The measure of market price support is the difference between the current administered price (the price set by the government) and the fixed external reference price (FERP). The FERP is calculated as the average of import prices over the period of 1986–1988 and multiplied by the volume of eligible production to get price assistance. The calculation for price support as provided under the AOA is very distinct as understood from an economic perspective, as in economics, the price support would change depending upon market prices rather than having a fixed base rate [11]. The fixed base rate came into being as there was minimal change in nominal average global agricultural prices between the periods of 1986 and 1988. The impact of the market pricing formula used in the WTO regulations was not a concern during the early years of the AOA or when the Doha round mandate was being discussed in 2001, due to largely stable prices. However, since that time, the formula is now more restrictive due to the sharp increase in nominal global food costs [12]. A gap has developed between the current administered price and the FERP, implying increased domestic support under WTO rules, even though the difference between the world market price and administered price may not increase at all or even decrease.

In the recent years, the WTO rules on price support may, in fact, be causing more harm than good. For instance, in the period of low supplies or high global prices, countries may impose export prohibitions, taxes or other export restrictions along with price support to keep domestic costs low for consumers and to shield them from worldwide price shocks. These strategies were widely applied during the period of 2007–2008, when food prices were skyrocketing. Unfortunately, the intent of these measures would be difficult to materialize due to the set FERP. The measure of export restriction along with price support can rather have the effect of lowering domestic producer prices below international market prices, offsetting the effect of any market price support provided to producers through the purchase of stocks and any complementary import restrictive measures, even though they may help the government achieve its objectives of increasing domestic availability and containing rising prices [13]. Therefore, it is evident that the price support as set by the AOA is not working as effectively as it was envisaged in today's world. For instance, the Organization for Economic Cooperation and Development and the Indian Council for Research on International Economic Relations found an overall negative producer support for India for the entire period studied (2000–2016), in part due to the price-depressing effects of export prohibitions, export quotas, export duties or minimum export prices [14]. The goals of public stockholding frequently involve assisting producers while ensuring fair prices for consumers, and in doing so, the various tools of policy that are used may have opposing results. For instance, the producer incentives offered by public procurement may be countered by policies that support consumers and export restrictions that try to drive down prices. The significant fiscal costs and operational difficulties of executing public stockholding programmes, along with these and other domestic market implications, call for a study of their cost effectiveness. The paper would first provide an overview of the discrepancies that are involved in the structure of price support, along with an overview of the developments at the WTO, and then analyse whether buffer stocks are beneficial for India or not.

1.2 Discrepancies in aggregate measurement of support (AMS)

Aggregate measurement of support (AMS) is the sum of all domestic support provided for specific and non-specific products. However, the *de minimis* provision allows any AMS, whether product-specific or non-product-specific, to be excluded from the total AMS if the product-specific AMS or non-product-specific AMS are below a specific threshold calculated from the year's product-specific or aggregate value of production (VoP), respectively. The *de minimis* thresholds each year are a given percentage of the values of production of each basic agricultural product and of agriculture as a whole. The percentages are 5% for developed countries, 10% for developing countries and 8.5% for China and Kazakhstan (resulting from their accession protocols to the WTO at a later date). With regard to public food stockholding programmes in developing countries, the AOA makes it clear (footnote 5 to Annex 2) that while governments have the right to acquire and sell food at administered prices, the difference between such prices and the "external reference price" is accounted for in the AMS. As most of the developing countries have their final bound total AMS set at zero, they can provide non-exempt agricultural support only up to *de minimis* level, thus limiting the amount of policy space for AMS support that is available to them and constraining their use of non-exempt policies. Moreover, since *de minimis* levels are based on the current VoP, it is difficult for administration purposes to know what that limit might be in advance. In this context, it is to be noted that those members who provided trade-distorting support above the *de minimis* level during the base period (1986–1988) under the Uruguay Round were rewarded in the form of final bound AMS entitlement [15]. This has allowed the USA and EU to have AMS entitlements of US$19bn and €72bn, respectively. More than 95% of global AMS entitlement is shared by the developed members. It allows these members to provide product- specefic and non-product-specific information above the applicable *de minimis* limit. From the developing members' perspective, elimination of AMS entitlement for developed members is of utmost importance, which would result in capping product-specific support by the *de minimis* limit. The discrepancy in the support price is not only evident among the developed and developing countries but also amongst the developing countries. Few developing members, namely, Brazil, South Korea and Thailand, enjoy the AMS entitlement in the form of final-bound AMS. It allows these members to provide product- and non-product-specific support above the applicable *de minimis* limit [16]. At the global level, though some developing members have the AMS entitlement, their share of the global AMS entitlement is only 4.23% in comparison to 95.77% for developed members. Further, more than 85% of global AMS entitlement is shared by the EU, the USA and Japan [17]. Therefore, the domestic support price of a country differs and causes various disruptions in the markets and among countries. These issues would need a permanent solution. The developing and least developing countries have been pushing for this for a long time but to no avail.

2. Developments at the WTO regarding domestic price support

The Uruguay Round of multilateral trade negotiations had restricted the scope of public stockholding as a part of the reform of disciplines on agricultural subsidies [18]. This was done because public stockholding was viewed as something that could be used by countries to distort trade. Many countries feared that stocks would be acquired at administered prices set by the government, which could be higher than market prices. This would serve as a subsidy to the farmers and give impetus to the farmers to grow more, wherein supply of certain food stocks would be more than normal market conditions. Subsidy-driven domestic production can lower the demand for imports in major- importing countries and lower global prices. Additionally, grains purchased at regulated rates and kept in storage can be sold in foreign markets at subsidised prices, which also has the potential to result in trade losses for rival nations [19]. However, given the prevalent situation of hunger in developing countries and least developing countries, public stockholding cannot be abolished completely. To limit public stockholding, it was decided in the WTO AOA that:

- the stock levels must be pre-determined and acquired only for the purposes of enhancing food security; and
- the sale and acquisition of public stocks shall be made at prices not noticeably different from the prevailing market price. More importantly, government subsidies for stockholdings acquired through administered prices shall not exceed 5 % and 10 % of the total value of domestic production in developed and developing countries, respectively, known as *de minimis* [20].

Further, violation of the above two principles could result in a countervailing duty action under the Agreement on Subsidies and Countervailing Measures.

The scenario changed drastically after the 2007–2008 food crisis, where there was a sharp rise in poverty and undernourished population [21]. This crisis led to many countries' interest in reviewing the WTO limitations. At the WTO's 9th Ministerial Meeting in Bali in 2014, a formal request for regulatory improvements was made. According to a proposal by the G-33, a group of developing nations led by India laid out that the permissible subsidy under the AOA for purchasing stockholdings at regulated prices is limiting the policy space required to purchase sufficient food stocks to reduce supply shocks. The G-33 therefore, urged that the limitations be lifted [22]. However, the G-33 proposal raised issues for some WTO members. They stated that the current WTO agreements offer enough alternatives for policymakers to help poor nations handle their issues with food security without extending the use of managed pricing to buy stock. The implied message was that global trade flows are adequate to counteract the impacts of shocks that endanger food security [23]. The members could not agree to a permanent solution, and that is why the "peace clause" was agreed to, wherein members of the WTO would not bring cases against other countries as a violation of AOA until a solution was reached. Further discussions were supposed to be held in MC12, but unfortunately, the members could not come up with a solution.

2.1 The debate regarding minimum support price (MSP)

As mentioned above, India, along with other G-33 developing countries, have been pushing for change in the current framework of domestic price support. For the facilitation of public stockholding, the government of different countries procure food grains from the farmers at a particular price, which is termed as minimum support price (MSP). There are continuous disputes over the various ways that members of the WTO interpret the elements of the methodology used to determine MSP. Governments are allowed to buy and sell food at administered prices, but the WTO AOA mandates that they must count the difference between those prices and the "external reference price" as "market price support" when determining their Aggregate Measure of Support (AMS). The calculation of MSP is reiterated as [24]:

2.2 MSP = (applied administered price−fixed external reference price) × eligible production

The *fixed external reference price* (or FERP) is the international free on board (f.o.b.) price in the 1986–1988 period for a given commodity, and the *eligible production* is the quantity of production that is "eligible" to receive the price support provided through the applied administered price.

The areas of different interpretations regarding MSP have been a topic for debate for long. Some of the contentions are as follows:

- *Alternative base periods*: The base period for calculating FERP (as indicated in AOA) is not consistent for all the members of the WTO. One such case is that of Korea. The Republic of Korea notified for certain products including beef a FERP calculated on the basis of year 1989–1991. The country did so claiming that it did not have sufficient price data to determine the FERP of those products on the basis of years 1986–1988 (base period). The Panel and Appellate Body that investigated the case of *Korea – Measures Affecting Imports of Fresh, Chilled and Frozen Beef* (*Korea-Beef dispute*) [25] stated that, even if Members do not have all the data, they are always supposed to notify on the basis of the 1986–1988 reference period. While this ruling added clarity for the original members, it left uncertainty for those who acceded to the WTO at a later stage. Thereafter, the WTO dispute settlement panel investigating China's domestic support for agricultural producers found that China was entitled to use the period included in its accession protocol, rather than 1986–1988 [26]. It is evident that the base period for certain countries could be different, and this causes a huge difference in the calculation of MSP for different countries. The variances have a huge impact on the international markets as well.
- *Different currencies for MSP programmes and FERP*: Some members' practice is to adjust for currency fluctuations in the calculation of MSP. For instance, India's supporting tables include the FERP expressed in national currency, but the country notifies all its market price support in US$. In practice, in its notifications, India calculates MSP based on an applied administered price in US$ after converting it from Indian rupees using the exchange rate during the period covered by the notification, while for the FERP, the 1986-88 exchange rate is used. Overall, numerous questions have been raised in the WTO Committee on Agriculture regarding the practices by some members of reporting support in US$ and the different exchange rates used for calculation of the market price support [27].
- *FERP adjusted for inflation*: Some WTO members, for example, Jordan, Tunisia and Ukraine, notified the WTO that they adjusted their FERPs when calculating their market price support to take account of inflation [28]. These countries are claiming

that the basis for this practice is contained in Article 18, paragraph 4 of the AOA, which states that "in the review process Members shall give due consideration to the influence of excessive rates of inflation on the ability of any Member to abide by its domestic support commitments". However, other WTO members do not agree with this interpretation. They maintain that this article only calls for Members to give due consideration to excessive inflation rates when they are reviewing the notification of other Members and does not justify the notifying Member to adjust FERPs, which is supposed to be fixed [29].

- *Eligible production*: The definition of "the quantity of production eligible to receive the applied administered price", i.e. eligible production, has been subject to intense debates in the WTO. Some members notify as eligible production only the production purchased by government at the administered price, while others use the total of their marketable production. The provisions of the AOA do not specify this aspect. An important case that has helped to shed light on this issue was the above-mentioned *Korea-Beef* dispute [30]. The findings of the Panel had further confirmed that eligible production should refer to the volume of marketable production that is "fit or entitled" to be purchased for procurement and not the quantity that was actually purchased by the government. However, as the report of the Appellate Body on the *Korea-beef* case underlines, there may be circumstances when eligible production may be less than total marketable production. This could be the case, for instance, where there is a legislatively predetermined numerical limitation on the quantity of marketable production that a governmental agency could take off the market at the administered price in any year [31].
- *VoP*: The VoP of a particular product is another important variable as it determines the *de minimis* threshold for the specific product. The AOA does not provide a clear definition of the VoP. Various countries and international organizations have been developing definitions using different methods, which result in different estimates of this variable. This complicates efforts to ensure compliance with domestic support rules on applying *de minimis* [32].

The above-mentioned issues were also recently highlighted in the Committee of Agriculture [33]. The least developing countries and net-importing countries highlighted that they should be provided with flexibility under the AOA, considering the economic situation. The need for this flexibility becomes crucial if world's food insecurity needs to be controlled and lowered.

2.3 Developing country's perspective on food security

Developing countries' dissatisfaction with the AOA has been a recurring theme after the completion of the Uruguay round, and during the current agricultural negotiations, initiated in March 2000 and reaffirmed at Doha [34]. The developing countries have followed two main approaches to redress the imbalances in the AOA. The first being "offense" where countries have tried to limit the ability of rich countries (developed countries) to use high protection and large subsidies. The other has been a mostly "defensive", such as pushing for higher permissible levels of agricultural protection and subsidization in developing countries [35]. This is basically special and differential treatment which developing and least developed countries (LDCs) have been asking for.

The needs of the developing and LDCs have been well recognized by virtue of the ministerial decision on measures concerning the possible negative effects of the reform programme on LDCs and net food importing developing countries (NFIDCs) [36]. This decision was taken in light of the fact that openness of market might cause problem for some countries. To address the situation, an action programme was chalked out, such as reviewing the level of food aid and initiating negotiations to establish a level of food aid commitments to meet the legitimate needs [37]. However, it is unclear to what extent the decision has been effective in encouraging the provision of technical assistance in the agricultural sector to LDCs and NFIDCs. It is in the form of a policy recommendation to donor countries, not a commitment. The basic understanding of the WTO Committee on Agriculture, which monitors the implementation of the decision, is that the provision of technical assistance is essentially a bilateral matter between donors and recipients, based on requests made by recipients [38].

In this regard, India, being a developing country and having largest population [39] still despatched several shipments of humanitarian assistance to the people of Afghanistan, including 33,000 ***metric tonnes (MT) of wheat of a total commitment of 50,000 MT [40]. During the pandemic, India provided food aid in the form of thousands of MT of wheat, rice, pulses and lentils to several countries around the world, including Afghanistan, Comoros, Djibouti, Eritrea, Lebanon, Madagascar, Malawi, Maldives, Myanmar, Sierra Leone, Sudan, South Sudan, Syria, Zambia, Zimbabwe and others, to strengthen their food security [41].

The above instance indicates that developing countries are working towards global food security to the extent that various conditions and constraints within a developing country allow them to do so.

2.3.1 India's position regarding buffer stocks at the WTO. India recently notified the Committee on Agriculture that it has exceeded the *de minimis* limit specified under Article 7.2(b) of the AOA for rice, a traditional staple food crop, for the marketing year 2021–2022 [42]. The notification pointed out that the *de minimis* level for rice has been exceeded pursuant to the support provided through public stockholding programmes for food security purposes ("PSH programmes"), which were in existence as of the date of the Bali Ministerial Decision on Public Stockholding for Food Security Purposes (WT/MIN(13)/38). India highlighted that the stocks under the programme are acquired and released to meet the domestic food security needs of India's poor and vulnerable population and not to distort trade or adversely affect the food security of other Members. For these reasons, the breach of the *de minimis* limits for rice is covered by the peace clause set out in the Bali Ministerial Decision on Public Stockholding for food security purposes (WT/MIN(13)/38) and the General Council Decision (WT/L/939) [43]. India's stance at the international forum has been clear: firstly, it wants a permanent solution at the WTO regarding public stockholding, and secondly, India would have to prioritize its own population to keep hunger and malnutrition in check. Even though there are arguments to support that the buffer stock holding might prove to be counterintuitive, India still cannot let go of it completely as the markets today have become very volatile, which might adversely affect the Indian farmers. Today, many developed countries are facing recessions, which in turn cause inflation. India, having such a large population, would not be able to afford the brunt of market dynamics, which will have the most effect on small farmers. To understand and study India's situation, certain policies of India regarding buffer stockholding are analysed in this paper.

3. India's policies managing buffer stock

India in the year 2022 has been ranked in a serious category by the global hunger index [44]. In this scenario public stockholding may be viewed as a viable option for India to cater to the needs of people who are unable to afford food. Buffer stocks not only include procurement of food at certain MSP but also include public distribution system along with other social welfare programmes [45]. The standards for operational stocks alter on a quarterly basis, with different quantities prescribed in the first months of January, April, July and October [46]. The Government of India announces the MSP for procurement on the basis of the recommendation of the ***commission for agricultural costs and prices (CACP), which, along with other factors, takes into consideration the cost of various agricultural inputs and a reasonable margin for farmers for their produce. The Central government, together with State Governments, procures food grains from farmers at the MSP with a view to achieving objectives of food security. Volume and accumulation of stocks are determined in accordance with the mandate of the National Food Security Act, 2013, which specifies coverage of up to 75% of rural and 50% of urban population at the national level, as well as nutritional support for children, pregnant and lactating mothers and the manner of allocation and distribution across the country. Keeping in view the objective of food security for the people of India, the government determines the manner in which eligible households and other specified beneficiaries are to be identified to receive food grains at subsidized prices. Eligibility of households is under two categories: (a) priority households and (b) households covered under Antyodaya Anna Yojana (AAY). Priority households are identified using state-specific criteria determined by the state governments. AAY covers poorest of the poor households across the country and is identified by state governments on the basis of guidelines prescribed by the central government [47].

In India, the central government has authorized FCI to procure agricultural produce at the prices recommended by MSPs for around 23 commodities in its price policy reports every year [48]. The government, in turn, circulates CACP reports to state governments and concerned central ministries for their comments. After receiving the feed-back from them, the cabinet committee on economic affairs of the Central government takes a final decision on the level of MSPs and other recommendations made by CACP. Once this decision is taken, CACP puts all its reports on the website for various stakeholders to see the rationale behind CACP's price and non-price recommendations. The MSP set by India is done transparently and is decided after taking into consideration the market situation and other factors rather than imposing it arbitrarily.

While recommending the rates of MSP, CACP accordingly analyses:

- demand and supply;
- cost of production;
- price trends in the market, both domestic and international;
- inter-crop price parity;
- terms of trade between agriculture and non-agriculture;
- a minimum of 50% as the margin over cost of production; and
- likely implications of MSP on consumers of that product [49].

It may be noted that cost of production is an important factor that goes as an input in determination of MSP, but it is certainly not the only factor that determines MSP. CACP uses both A2+FL and C2 costs while recommending MSP.

- "A2": Covers all direct cash and kind costs incurred by the farmer on seeds, fertilizers, pesticides, hired labour, leased-in land, fuel, irrigation and so on;
- "A2+FL": A2 plus an estimated value of unpaid family labour; and
- "C2": Comprises "A2+FL", as well as revenue foregone on owned land (rent) and fixed capital assets (interest) [50].

In the Union Budget 2018–2019, the Government of India announced the pre-determined principle to keep MSP at levels of one and half times the cost of production, i.e. A2+FL.

However, C2 costs are used by CACP primarily as benchmark reference costs (opportunity costs) to see if the MSPs recommended by them at least cover these costs in some of the major producing States. Government's price policy is to ensure remunerative prices for farmers by offering to procure their produce at MSP. However, farmers are free to sell their produce to the Government procurement agencies at MSP or in the open market whichever is advantageous to them [51]. The Central government, post the recommendation of CACP, determines and announces the price of MSP, and FCI proceeds to procure the buffer stocks at the announced price.

In the current paper, the analysis of the MSP is restricted to rice and wheat, as these are the two main crops consumed in India. In the pursuance of that, procurement data of rice and wheat is as follows:

The below Figure 1 data shows that the procurement of rice and wheat has seen a gradual increase over the years. Corresponding to this data, it can be seen that the Global Hunger index of India has improved over the years (Figure 2). The lower the score indicates, the less people go hungry in the country of India.

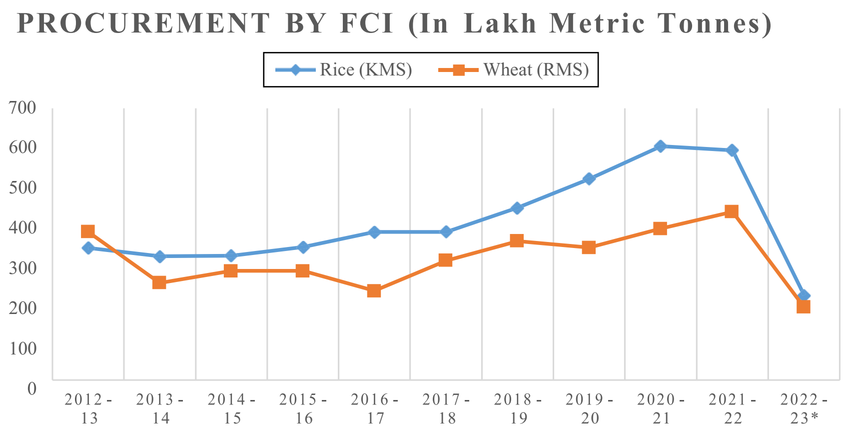
The correlation between buffer stock and food security would need more analysis to determine what should be India's stand at the WTO. To do so, the paper has also analysed whether the MSP price is higher than international prices.

3.1 India's domestic support and international prices of wheat and rice

The following graph portrays MSP; at these prices government of India through FCI has procured the wheat and rice (Figure 3).

Whereas the market prices of wheat and rice are listed in Table 1: Retail Prices of wheat (desi) [52] and rice (common) [53] are available in the open market.

To determine the specific yearly prices of commodities, calculations were made using the average of monthly data from each financial year, along with the average retail prices observed in various states. The states used for the research are Andhra Pradesh, Assam, Bihar, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu and Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Delhi, Odisha, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh, West Bengal and Union Territories of Port Blair, Silvasa, Andaman and Nicobar Islands and Dadar and Nagar Haveli.



Source: https://fci.gov.in/procurements.php?view=297

Figure 1. Date on procurement of wheat and rice (data is still in progress)

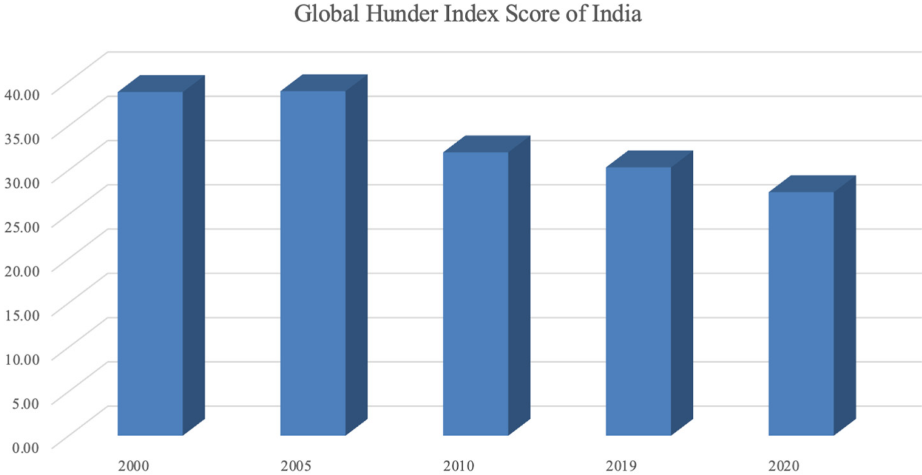


Figure 2. Graph depicting India's position on Global Hunger Index

Source: www.globalhungerindex.org/india.html (Figures taken from Global hunger Index, and figure depiction is Author's representation to them)

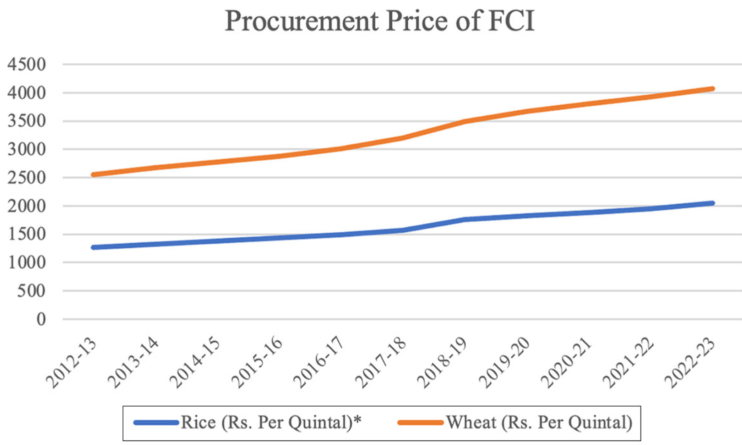


Figure 3. Graph depicting the MSP or procurement prices at which Government of India through FCI procures the wheat and rice from farmers; * Rice is processed from Paddy, which is generally procured in two qualities i.e. Common and Grade A, the price referred here is average of those two

Source: Minimum support price for wheat and paddy (dfpd.gov.in) https://fci.gov.in/procurements.php?view=89

Upon analysing the presented data, it becomes apparent that the MSP or administered price for common grains is significantly lower compared to their corresponding retail prices (Figure 4). This indicates that India is not unjustly providing subsidies to its farmers through the MSP policy, nor is it unnecessarily creating public stockholding at an inflated price that would disrupt free trade competition. The subsidies offered through MSP are justified and necessary to support the agricultural sector and maintain stability in the market. It is also to be noted that since 2015, India's administered price has remained close to the international price, while the administered price [54] of India's rice prices have been below the indicative international price [55]. Therefore, it is evident that India's MSP is not causing trade distortion.

4. Lessons from other countries/regions

It is seen that the issue of public stockholding might not get resolved very soon at the WTO. Also, providing excessive subsidy might also hamper India's trade. India might see the practices of other countries to lower the *de minimis* limit so that it could comply with the WTO obligation in the meanwhile. The following are the practices/lessons of the countries which might be beneficial for India to adopt.

Mexico – In Mexico, under the presidentship of Salinas, the country had undergone massive change such as reduction of heavily subsidized credit for small and medium-scale peasants, abolition of support prices, privatization of input industries such as fertilizers and seeds and liberalization of trade for all crops except maize and beans, which ultimately led to food insecurity [56]. Opening up of markets post North American Free Trade Agreement caused the Tortilla crisis in 2007, where many small farmers were severally affected [57].

Year	Wheat (Rs. per quintal)	Rice (Rs. per quintal)
2018–2019	2,627.35	3,064.31
2019–2020	2,753.81	3,139.91
2020–2021	2,912.06	3,649.06
2021–2022	2,981.90	4,583.60
2022–2023*	3,230.55	3,550.36

Note: *Up to January 2023 only
Source: By authors

Table 1. Retail prices of wheat and rice

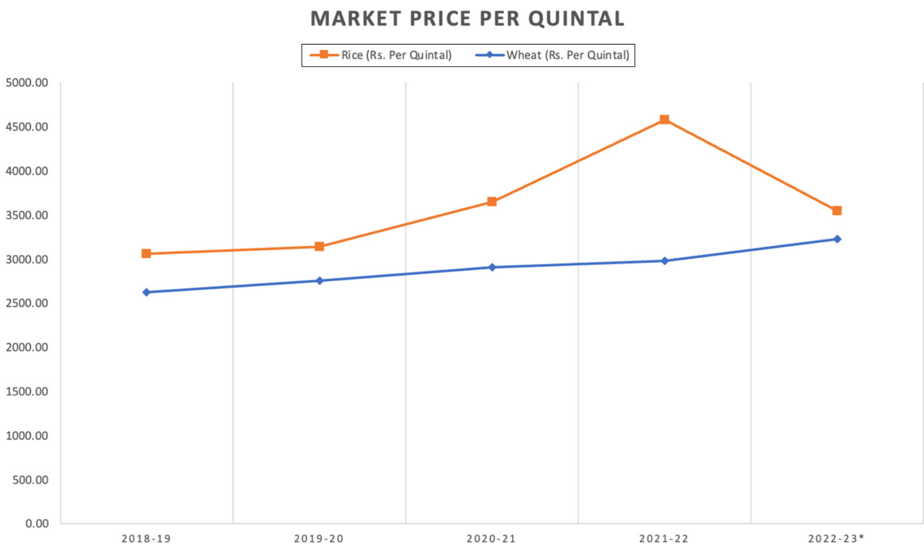


Figure 4. Illustrates the market prices of wheat and rice per quintal in the retail sector

This led Mexico to rethink its food policy and introduce the rural food support programme (DICONSA), through which a network of government-owned stores sells basic commodities at subsidized rates [58], a practice similar to that present in India. It is to be noted that opening up of agricultural market or removing any subsidies has to be done mindfully; otherwise, India could also face similar crisis as Mexico.

China – With less than 10% of the world's fertile acreage available for cultivation, the Chinese government was faced with the issue of feeding the one-fifth of the world's population. China has provided food security support by buying the grains through Sinograin when the market price falls below the established support level. Depending on the differences in market prices and those offered by the government from one year to the next, Sinograin purchases varying volumes of crops at minimum or intervention prices [59]. China's buffer stock policy is on of main reasons to why China experienced stable domestic prices during the food price crisis in 2007–2008 and is able maintain stable prices throughout, which is shown in the table below (Table 2):

Indonesia – Since the 1970s until the late 1990s, Indonesia's BULOG national logistical agency has been involved in the stabilisation of rice price policy. Due to a combination of market liberalisation, extreme droughts in 1997–1998 and floods in 1998–1999 and market deregulation, a record-breaking flurry of rice imports into the domestic market occurred in 1998 and 1999 [60]. In 2003, BULOG changed its structure to become Perum BULOG, a semi-profit organisation whose major goals are to promote rice producers and uphold steady, affordable prices for customers [61]. The government of Indonesia, through BULOG, is still responsible for procuring around 4% of rice harvest each year. This rice is then distributed at subsidized prices, primarily through the rice-for-the-poor RASKIN program. Recent increases in the prices of several commodities have given rise to indications that the government may be considering a larger role for BULOG in the management of key commodities to stabilize prices [62]. This indicates that countries cannot solely depend on the market for demand and supply in cases relating to food, unlike other commodities. India would have to be extra cautious in dealing with food security, considering its population.

Chile – COTRISA is a state-owned enterprise that is in charge of several functions related to public stockholding, such as buying, selling, packaging, storage, transporting, distribution and trading, aiming to improve marketing conditions of small producers. Purchases are made when domestic prices decline, taking as a reference international prices and import costs [63]. India might consider one of the factors as international prices while determining the MSP.

	Wheat			Rice			
Year	White	Red and mix	Average	Japonica	Early Indica	Mid to late season Indica	Average rice price
2007	1,440	1,380	1,410	1,500	1,400	1,440	1,447
2008	1,540	1,440	1,490	1,640	1,540	1,580	1,587
2009	1,740	1,660	1,700	1,900	1,800	1,840	1,847
2010	1,800	1,720	1,760	2,100	1,860	1,940	1,967
2011	1,900	1,960	1,930	2,560	2,040	2,140	2,247
2012	2,040	2,040	2,040	2,800	2,400	2,500	2,567
2013	2,240	2,240	2,240	3,000	2,640	2,700	2,780
2014	2,360	2,360	2,360	3,100	2,700	2,760	2,853
2015	2,360	2,360	2,360	3,100	2,700	2,760	2,853
2016	2,360	2,360	2,360	3,100	2,660	2,760	2,840

Table 2.
Minimum purchase price (yuan/tonne) [80]

Apart from few examples or case studies as provided above, there have been lot of regional arrangements to secure food security. Some of the initiatives are as follows:

ASEAN: In Asia, 60% of the world's hunger resides, and South East Asia prioritises rice over other food products due to culture-specific food habits [64]. To overcome food insecurity, the ASEAN has formed the ASEAN Plus Three Emergency Rice Reserve (APTERR). The APTERR is a regional cooperation established under the APTERR Agreement signed by the Ministers of the Agriculture and Forestry of the ASEAN Plus Three at the 11th Meeting of the ASEAN Minister on Agriculture and Forestry Plus Three (AMAF + 3) on 7 October 2011 in Jakarta, Indonesia [65]. APTERR coordinates to support the ASEAN countries whenever in need of food crisis. The APTERR also registers which country has contributed and how much. The APTERR consists of physical pledges (rice specifically designated for the APTERR) and earmarked pledges (commitments from national reserves). The majority of the obligations, or 787,000 tonnes, are earmarked pledges. The ASEAN member countries have pledged a total of 87,000 tonnes, compared to 700,000 tonnes from the Plus Three nations (Japan, China and South Korea) [66]. Rice will be made available under the APTERR through a three-tiered structure that includes:

- special commercial contracts;
- emergency grants and loans; and
- distribution of donated rice in times of extreme emergency [67].

Under Tier One, specialist commercial agreements between the supplying and receiving countries are used to release allocated rice supplies to fulfil emergency need. These agreements have multilateral decision-making, emergency triggers, and the source of stocks from emergency reserves, which set them apart from government-to-government rice agreements. According to long-term loan agreements or grants between the providing and receiving nations, Tier Two enables the release of designated emergency rice stocks in response to demand during a crisis. It is comparable to Tier One except that there is no predetermined delivery scheme; therefore, it is essentially voluntary [68]. To address the urgent and emergency demand for food aid, Tier Three permits the release of physical stockpiles and monetary gifts for the purchase of rice. A request from a recipient nation or an automatic system run by the APTERR Secretariat can start a release. Under this tier, recipient nations will be in charge of rice distribution; however, they may do so with aid from humanitarian agencies [69]. There are a few reports of APTERR that include the following in regards to providing food security relief to APTERR member countries that are experiencing a food security crisis as a result of the COVID-19 pandemic [70]:

- Japan's donation of 300 MT of rice to Cambodia, which was suffering from a food security crisis. The tier three programme of APTERR is used to carry out this supply of rice aid; therefore, the aid is provided in the form of actual rice. As much as 222 MT of this relief will be given to people who are unable to meet their own food needs, and 78 MT will be given to future reservoirs.
- A rice transfer by Japan to three APTERR members, Cambodia, Myanmar and the Philippines, totalling 1.779 MT, will be used as prepositioned and urgent request systems.
- A 1.350 MT donation of rice for the people of Myanmar from Japan and South Korea. South Korea started its rice donation by providing 600 MT of rice as an urgent donation to avert a food security disaster in Myanmar.

It may be inferred from the facts provided above that APTERR has done a good job of fulfilling its mission as a collaboration with the aim of eradicating food insecurity in its member countries. However, compared to China, Japan, and South Korea, which are members of ASEAN Plus Three, the involvement from ASEAN member nations in rice contribution is significantly less [71]. India could also think of getting into regional arrangements to deal with food shocks, considering the rise in friend-shoring and near-shoring arrangements among various countries.

RESOGEST – To guarantee access to food in the event of scarcity, it was established by the Sahel countries of West Africa and the Permanent Interstate Committee for Drought Control in the Sahel (CILSS). The main goal of RESOGEST is to promote sub-regional commerce in agricultural goods and food products while facilitating the exchange of cereals among and between nations with net surpluses and net deficits through triangular operations (purchases, sales, and loans). The regional food reserve will receive 5% of the national food stock from each member nation [72]. Although it has been observed that members of such arrangement have not been able to use the benefit to its fullest extent, continuous cooperation and consultations are on the way to achieve the same [73].

The Caribbean Community (CARICOM) – It was established in 1973 as a framework to promote cooperation among 11 member States. CARICOM is not just concerned with maintaining food security; it also addresses more general economic concerns. The ***Regional Food and Nutrition Security Policy (RFNSP) of CARICOM is distinctive. The ability for domestic food production in CARICOM countries is limited, and their reliance on imported food is significant [74]. The community has created a 15-year (2012–2026) regional food and nutrition security action plan to help carry out the goals of the RFNSP to lessen vulnerabilities connected to food and nutrition. The RFNSP has two main goals:

(1) to build regional and national "value chains" by connecting small- and medium-sized farmers with local food industry; and

(2) to cut back on imports of important American commodities like feed corn.

In light of this, CARICOM's programmes on food and nutrition are intimately linked to larger regional agricultural management activities that go beyond the narrow emphasis of addressing and mitigating food security-related efforts [75].

SAARC Food Bank – India has a similar arrangement to the South Asian Association for Regional Cooperation Food Bank (SFB). The SAARC Food Bank is the brainchild of 14th SAARC Summit held in New Delhi on 3–4 April 2007. It was agreed that the SAARC Food Bank shall have a reserve of food grains to be maintained by each member states, consisting of either wheat or rice, or a combination of both, as assessed by the country. The objectives of SFB were to provide and act as a regional food security reserve for the SAARC Member Countries during normal time food shortages and emergencies; and to provide regional support to national food security efforts; foster inter-country partnerships and regional integration; and solve regional food shortages through collective action [76]. This project, however, struggled to take off effectively for a variety of reasons, including: a lack of specific financing provisions, a lack of guidelines for achieving the goals, a lack of an appropriate monitoring authority to oversee, carry out, and monitor the agreed-upon activities, and a failure by net food importers to contribute to the reserves to the necessary extent [77]. There have been several amendments to the SFB agreement, but the result has not been as favourable as anticipated. The SAARC members can take inspiration from other regional arrangements, as discussed above. The transparency and reporting of members regarding their production and contribution and better cooperation would help in establishing a better framework for food security. The geopolitics also plays a role in the functioning of SFB, ***and India may consider getting into more arrangements of this sort to ensure that food insecurity is controlled and lowered.

Even though there are regional arrangements, as discussed above, they have not been as effective as anticipated. The above arrangements can be a temporary solution to the problem of food security, but a long-term solution would be needed, which India is pushing for at the WTO [78].

5. Recommendation

The following are the actions to address key challenges:

- through open communication and the sharing of experiences, create a shared awareness of the role played by public stockholding programmes in achieving food security;
- determine the effects of public stockholding programmes and related policy measures on producers, consumers, government spending and international markets; compare these policies and measures to alternatives in each situation;
- nations to make sure that the policy actions implemented to achieve national food security goals do not jeopardise goals for food security in other nations or the free and fair international trade; and
- revise the base prices from 1986 to 1987 to the most recent prices to get the clearer picture of the FERP and MSP. This revision will provide an updated and more accurate depiction of the relationship between the FERP and the MSP.

6. Conclusion

There is widespread agreement that having large food stockpiles helps stabilise global commodities markets in the wake of the COVID-19 and the 2007–2008 crises in food prices around the world. Public stockholding programmes also try to allay justifiable policy worries about domestic markets in many nations. When correctly targeted, public food procurement can offer smallholder farmers stable prices and greater earnings, benefiting both their lives and providing incentives for farmers to make the required investments to boost productivity. Despite fluctuations in food prices, subsidised food transfers connected to public stocks can guarantee the poorest and most vulnerable customers' physical and financial access to food. Alternately, as a short-term fix, India may also think about entering into regional agreements, as discussed in the study, to reduce food insecurity.

Further, the continuous criticism of India's MSP at the WTO [79] is unjustified, considering the correlation between market prices, farmer subsidies through MSP, and the relatively small difference compared to international prices. The magnification of these differences can prove beneficial for India if the base year for the FERP is accurately changed to reflect a more accurate and up-to-date picture. By updating the base year, the disparities between international prices and MSP can be more effectively highlighted, providing valuable insights for policy adjustments and market analysis.

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