

WTO and Indian Agriculture Issues, Concerns and Possible Solutions



WTO and Indian Agriculture Issues, Concerns and Possible Solutions



NATIONAL ACADEMY OF AGRICULTURAL SCIENCES, NEW DELHI

December 2021

- CONVENERS** : Dr Sachin K. Sharma, Centre for WTO Studies,
Indian Institute of Foreign Trade, New Delhi
Dr Pratap S. BIRTHAL, ICAR-National Institute of Agricultural
Economics and Policy Research, New Delhi
Prof Abhijit Das, Centre for WTO Studies, Indian Institute of
Foreign Trade, New Delhi
- EDITORS** : Dr Pratap S. BIRTHAL
Dr Malavika Dadlani
- REVIEWER** : Mr Jayant Dasgupta, Former Ambassador of India to the WTO, Geneva
- CITATION** : NAAS 2021. WTO and Indian Agriculture: Issues, Concerns, and Possible
Solutions. Policy Paper No. 102, National Academy of Agricultural
Sciences, New Delhi, pp24.

EXECUTIVE COUNCIL 2021

President:

Dr T. Mohapatra (Delhi)

Immediate Past President:

Dr Panjab Singh (Varanasi)

Vice Presidents:

Dr J.C. Katyal (Gurugram)

Dr Anil K. Singh (Delhi)

Secretaries:

Dr P.K. Joshi (NOIDA)

Dr K.C. Bansal (Gurugram)

Foreign Secretary:

Dr U.S. Singh (Delhi/ Varanasi)

Editors:

Dr P.S. BIRTHAL (Delhi)

Dr Malavika Dadlani (Delhi)

Treasurer:

Dr R.K. Jain (Delhi)

Members:

Dr Madhoolika Agrawal (Varanasi)

Dr J.S. Chauhan (Jaipur)

Dr M.S. Chauhan (Karnal)

Dr S.K. Datta (Kolkata)

Dr Arvind Kumar (Jhansi/Delhi)

Dr W.S. Lakra (Mumbai)

Dr Rajender Parsad (Delhi)

Dr A.R. Podile (Hyderabad)

Dr (Ms) Taru Sharma (Izatnagar)

Dr Brahma Singh (Delhi)

Dr Rajeev K. Varshney (Hyderabad)

Dr R. Visvanathan (Tamil Nadu)

Dr Ch. Srinivasa Rao (Hyderabad)

ICAR Nominee

Published by Executive Director on behalf of
NATIONAL ACADEMY OF AGRICULTURAL SCIENCES
NASc, Dev Prakash Shastry Marg, New Delhi - 110 012
Tel: (011) 25846051-52; Fax: (011) 25846054
Email: naas-mail@naas.org.in; Web site: <http://www.naasindia.org>

Preface

India targets doubling of its agricultural exports to US \$60 billion by 2022-23 from about US \$30 billion in 2018-19. This is expected to contribute towards enhancing farm income and also an acceleration in agricultural growth. India has a comparative advantage in the production of many agricultural commodities, but their export is constrained owing to several domestic and international factors, including the tariff and non-tariff barriers that demand adjustments of the agri-food systems all along the value chain. The upstream of the value chain is dominated by smallholders, who often lack access to technologies, markets and finances in their adjustment process. Besides, there are asymmetries in the international trade agreements, as in the Agreement on Agriculture (AoA) of the WTO, which challenge the implementation of the domestic support and food security policies.

The 12th Ministerial Conference of the WTO is now scheduled to be held in 2022. The National Academy of Agricultural Sciences organized a brainstorming session on October 7, 2021, to seek inputs from a wide range of stakeholders, including trade experts, policymakers, academicians, civil society organizations and farmers that would serve as important feedback for India to effectively negotiate at the WTO Conference. This paper highlights the asymmetries in the existing provisions of the AoA of the WTO and synthesizes the observations, suggestions and views of the stakeholders for creating a level playing for all members of the WTO. I hope the information contained in it would be useful for policymakers from India and other developing countries in negotiating effectively at the WTO.

I, on behalf of the Academy, thank Drs Sachin K. Sharma, Pratap S. BIRTHAL and Abhijit Das for convening this brainstorming session, and to all the panellists and participants for their valuable inputs have helped us to bring the document in this form. I also thank Mr Jayant Dasgupta, Former Ambassador of India to the WTO for his valuable comments on the document. My sincere thanks to Drs Pratap S. BIRTHAL and Malavika Dadlani for their editorial support.



Trilochan Mohapatra
(President, NAAS)

December 2021
New Delhi

WTO and Indian Agriculture: Issues, Concerns, and Possible Solutions

1. INTRODUCTION

The globalization of agriculture under the World Trade Organisation (WTO) has always been an issue of concern for India and many other developing countries, mainly because agriculture is the main source of livelihood for a majority of the population there. In India, the agricultural sector engages about 45% of the total workforce and contributes around 15% to the gross domestic product (GDP). More importantly, the sector is dominated by subsistence-oriented smallholder farmers, who often lack access to finances, markets, technologies and information, essential for adjusting their product portfolio to the requirements of the international trade under the WTO. Not only that, the inherent asymmetries and imbalances in the WTO Agreement on Agriculture (AoA) challenge India's agricultural support policies; and restrict policy space for the implementation of the food security programs.

India's diverse climatic conditions confer on it a comparative advantage in the production of several agricultural commodities, but their share in the merchandise trade has been low — 7.3% in exports and 4.7% in imports in 2019. Nonetheless, India's share in the world agricultural exports has increased from 0.85% in 1990 to 2.37% in 2019. At the same time, India's share in the world imports of agricultural commodities too has increased from 0.39% to 1.91% (Ratna et al., 2021). The Government of India has set a target to double agricultural exports to the US \$ 60 billion and to double farmers' income by 2022-23. To achieve these targets, several policy measures have been taken. These measures, however, need to be in compliance with the country's commitments to the AOA.

India has been facing many issues related to domestic support, market access, export subsidies and food security at the WTO. The developing countries, in general, are affected by the asymmetries in the AoA, which have favoured the developed countries to continue with the massive agricultural subsidies without breaching their commitments to the AoA. Their Aggregate Measurement of Support (AMS) entitlement has allowed them to provide high levels of trade-distorting support along with product-specific concentration, leading to overproduction of agricultural commodities and consequently depression in their international prices, that in a way causing losses in farm incomes in developing countries (Sharma et al., 2021a). And it also leads to related issues of the surge in cheap imports in the domestic markets of developing countries. Farmers in the developing countries are small and subsistence-oriented, and hence they remain highly vulnerable to the volatility in international prices and import surges of agricultural commodities.

India also finds itself restricted in implementing welfare-oriented agricultural policies owing to strict disciplines laid under the AoA. In recent times, even the existing flexibilities available to the developing countries are being proposed to be subjected to disciplines in agricultural negotiations. India's support programs have consistently been attacked at the WTO in terms of counter-notifications (for example, for cotton, sugar, wheat and rice) and questionings in various meetings of the Committees on Agriculture (CoA). The recent dispute on India's sugar policy is an example (Sharma et al., 2021b). The price support based procurement and public stockholding of foodgrains, the backbone of India's food security, also faces criticism at the WTO.

Given such an environment at the international level, India needs to develop a roadmap for negotiations that seek redressal of the existing asymmetries and imbalances in the AoA. The aim of this brainstorming session was to generate feedback for the policymakers to effectively manage the challenges that India faces at the WTO. A few illustrative questions that this session has addressed are as follows:

- Imbalances in the provisions of the AoA, which have inherently favoured the developed countries.
- Special and differential treatment provisions, which create a level playing in the agricultural trade for developing countries.
- A permanent solution concerning the issue of public stockholding for food security purposes.
- Special Safeguard Mechanism (SSM) for the developing countries to protect their farming and farmers from import surges.
- Sensitization of farmer organizations and other stakeholders on the developments at the WTO.
- Role of civil society organizations in furthering the cause of India's low-income poor farmers.
- Forming strategic coalitions of like-minded developing countries at the WTO to further the causes of mutual interest.

The 12th Ministerial Conference of the WTO is now re-scheduled for 2022. The feedback generated through panel discussion would help identify important issues for negotiations at the WTO and develop a roadmap that India and other developing countries may adopt for negotiations

2. UNDERSTANDING THE DOMESTIC SUPPORT TO AGRICULTURE

Based on their impacts on production, trade and prices, the domestic support measures outlined in the AoA are categorised into: the Amber, Green, Blue, and Development boxes. There is no financial limit for the programs under the Green, Blue and Development boxes. However, the trade-distorting support covered under the Amber box is subject to strict discipline and limits.

The public-funded programs or measures that do not have any price or trade-distorting effect are covered under the 'Green box' provided these satisfy the policy-specific criteria laid in Annex 2 of the AoA. These measures include general services, public stockholding for food security purposes, food aid, decoupled income support and other direct payments. General services include agricultural research, pest and disease control, training, extension and advisory services, inspection, marketing and promotion, and infrastructural services. Direct payments in the Green box consist of decoupled income support, government participation in income insurance and crop insurance, producer and resource retirement programs, investment aid, environmental measures, and regional assistance programs. It has to be noted that one of the conditions for the direct payments to fall in the Green box is that these should be based on the criteria defined and fixed during the historical base period. In other words, the Green box payments must not be based on, say, the factors of production in any period subsequent to the base period.

Direct payments with production-limiting conditions are included in Article 6.5 or 'Blue box'. However, these payments must also be based on any of the following sub-conditions:(i) fixed area and yields; or (ii) 85% or less of the base level of production; or (iii) a fixed number of livestock heads. Although linked to the production, the Blue box measures are not subject to any capping. Over the last 25 years, some members of the WTO, for example, the European Union, Norway, Japan and Iceland, have used the Blue box to support their producers. In 2016, China became the first developing country to use Article 6.5 to support its corn producers, and later on its cotton producers (Sharma et al., 2021b).

As a special and differential provision (S&DT), the AoA allows developing countries to support their farmers without any prescribed financial limits under Article 6.2 or the Development box. This includes measures such as(i) investment subsidies, generally available to agriculture, (ii) agricultural input subsidies, generally available to the low-income or resource-poor producers, and (iii) subsidies given to the producers to encourage diversification from producing illicit narcotics.

The Amber box covers all domestic support measures that are not included in other boxes. Product-specific support (PSS) and non-product specific support (NPS) are the main constituents of the Amber box. The PSS refers to the measures that are product specific, while the NPS is not restricted to any particular product. Minimum price support and deficiency payments are examples of product-specific Amber box support. On the other hand, expenditure on input subsidies (e.g., fertilizer, canal irrigation and power) are considered as NPS, as these are not targeted to producers of a specific product.

Table 1. Domestic support measures covered in AoA

Box	AoA provision	Coverage	Limits
Green box (no or at most minimal trade-distorting)	Annex 2	General services; Public stockholding for food security; Domestic food aid; Direct payments to producers, Decoupled income support, Government financial participation in income insurance and income safety-net programmes, Payments for relief from natural disasters, Structural adjustment assistance, Payments under environmental and regional assistance programmes	No prescribed limits for members
Development box(special and differential provision)	Article 6.2	Investment subsidies to agriculture, Input subsidies to low income or resource-poor farmers, subsidies for diversification from illicit narcotics crops	No prescribed limit for developing countries
Blue box (production limiting)	Article 6.5	Direct payments under production limiting programme based on fixed area and yields; or made on 85% or less of base-level production; or made on a fixed number of livestock heads	No prescribed limit for members
Amber box (trade-distorting)	Article 6.3-6.4, Annex 3	Market price support (MPS), Price deficiency payments and other budgetary support	Strict limits for members

Source: Authors' compilation based on the AoA text.

Although the policy space under the Amber box is capped, the AoA allows members to provide support up to a certain limit called '*de minimis* limit'. In simple words, *de minimis* is the minimum level of policy space available to the WTO members. The *de minimis* limit for the PSS is based on the value of production (VoP) of a specific product and for the NPS on the total value of agricultural production. The applicable *de minimis* limit for the developed countries is 5% and for the developing countries it is 10%. Being an acceding member of the WTO, China has an applicable *de minimis* limit of 8.5%.

However, the question that arises is: Can a member provide Amber box support above the *de minimis* limit? The flexibility to exceed this limit is determined on the basis of the Amber box support provided by a member during the defined historical base period, which is reflected in its Schedule of Commitments. As per the AoA, the support below the *de minimis* limit is exempt from the Amber box calculations. For illustrating this assume that a developing country provides a support of US \$300 million to its wheat producers under the Amber box which is equivalent to 8% of the VoP of wheat. In this case, the support to wheat producers is less than the *de minimis* limit of 10%, hence it is treated as zero in the Amber box. There is another case, where it provides PSS for rice worth the US \$ 600 million which is equivalent to 16% of its VoP and more than the *de minimis* limit of 10%. In the absence of PSS for other products and the NPS as well, the current support under the Amber box would be treated as the US \$600.

This example indicates the reasons behind the existing policy space available to the members. The members that had given support above the *de minimis* limit during the base period have the entitlement to support their farmers beyond the *de minimis* limit in future too. For example, the US, EU, Canada and Japan have secured additional flexibilities to continue with providing trade-distorting support above the prescribed *de minimis* limit. The PSS and NPS have been below the *de minimis* limit for most of the developing countries during the base period. Thus, their maximum policy space under the Amber box is capped by the *de minimis* limit.

3. ISSUES AND CONCERNS RELATED TO DOMESTIC SUPPORT

3.1 Shrinking Policy Space for Product-Specific Support

On account of the low level of support during the base period 1986-88, the policy space for India and other developing countries for PSS is capped at 10% of the value of production of a specific product. A member can provide support in the form of market price support (MPS), direct payment based on price gap, and any other budgetary support. The measures like price deficiency payments are direct payments based on the price gap, where a member compensates farmers for the difference between the target and market price of a commodity. This measure does not entail any procurement by the government agencies at the administered price, and the budgetary support incurred on it hence can be considered as PSS. Alternatively, members may choose to calculate PSS following the MPS methodology, which is explained in the following paras. The support provided by the US under the Price Loss Coverage programme (PLC) to its farmers is an example of the price deficiency payment (Sharma et al., 2020).

Many developing countries provide price support to their farmers. The MPS is a form of market intervention where the government procures produce from the farmers at pre-announced government-determined prices. Agencies like FCI-Food Corporation of India, Indonesia' BULOG, General Authority for Supply of Commodities (GASC) of Egypt, Sinograin of China, National Cereals and Produce Board (NCPB) of Kenya, National Office of Cereals and Legumes (ONICL) of Morocco, PASSCO of Pakistan, Turkish Grain Board (TMO) of Turkey, and Food Reserve Agency (FRA) of Zambia play an important role in ensuring remunerative prices to the farmers in their respective countries (Sharma and Das, 2017; Sharma, 2016b).

In India, the policy of minimum support price (MSP) is an example of the MPS. The AoA prescribes that the MPS be calculated by multiplying the difference between the External Reference Price (ERP) and the pre-announced price, called the applied administered price (AAP), with the production eligible to receive the AAP.

$$\text{MPS} = (\text{AAP} - \text{ERP}) * \text{eligible production}$$

The ERP reflects the export or import price of a product during the base period and depends on a country's status as a net-exporter or a net-importer of that product during the base period. Thus, essentially the AoA compares the fixed ERP with AAP to account for the trade-distorting support. However, the MPS calculation does not take into account the inflation, which means an exaggerated calculation of the MPS and shrinkage of policy space for the implementation of MPS measures over time (Berthelot, 2015; Sharma, 2018; Thow et al., 2019). For instance, a comparison of the minimum support price of wheat for 2021 with its fixed ERP based on the average of 1986-88, would lead to a highly inflated and unrealistic MPS. As per India's domestic support notification, the proportion of the marketed surplus procured by the government agencies is treated as eligible for calculating the MPS. In this context, the question arises: Whether inflation can be considered while calculating the MPS for a product? Article 18.4 of the AoA 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."

Although the AoA provides for adjustment of inflation, there is ambiguity whether this flexibility is a unilateral right or depends on the discretion of the other members of the WTO during the review process. Some member countries, for instance, Jordan and Turkey have considered inflation while calculating their current AMS. While some members have questioned it by stating that the consideration of inflation is not a unilateral right.

India notifies its domestic support in US \$. Table 2 shows the trend in the notified support to wheat farmers in India. For many years, the minimum support price was lower than the fixed ERP due to currency depreciation. For example, the average exchange rate between INR and US \$ during the base period 1986-88 was 13.47, which significantly depreciated over time, and currently, it hovers around 74 INR per US \$ (Sharma et al., 2021c).

Table 2. Trend in product-specific support to wheat in India

Marketing year	Applied administered price (US \$/t)	External reference price (US \$/t)	Eligible production (million t)	Production (million t)	Value of production (VoP) (million US \$)	Product specific support (million US \$)	PSS as % of VoP
1996–1997	107.04	264	8.16	69.35	7423.22	-1281.11	-17.26
2000–2001	134.00	264	16.36	69.68	9337.12	-2126.80	-22.78
2005–2006	158.12	264	14.79	69.35	10,965.62	-1565.97	-14.28
2009–2010	231.97	264	25.38	80.80	18,744.01	-812.92	-4.34
2010–2011	256.80	264	22.51	86.87	22,308.22	-162.07	-0.73
2011–2012	268.16	264	28.34	94.88	24638.56	117.76	0.48
2012–2013	248.16	264	38.15	93.51	24211.4	-604.23	-2.5
2013–2014	231.4	264	25.09	95.85	23151.07	-817.81	-3.53
2014–2015	237.16	264	28.02	86.53	21098.79	-752.12	-3.56
2015–2016	232.97	264	28.09	92.29	22292.4	-871.66	-3.91
2016–2017	242.28	264	22.93	98.38	24645.76	-498.04	-2.02
2017–2018	269.18	264	30.82	99.70	26993.18	159.68	0.59
2018–2019	263.15	264	35.8	103.60	27784.4	-30.53	-0.11
2019–2020	271.52	264	34.13	103.60	32962.63	256.7	0.78

Source: (1) Sharma (2016a); (2) Domestic support notifications of India

Currently, India supports the producers of specific products in the form of MPS, and therefore, the support should be less than 10% of the VoP to comply with its commitments under the AoA. It is to note that if India initiates a price deficiency payment, the additional expenditure will also be accounted as PSS.

$PSS = MPS + \text{direct payments based on price gap} + \text{other budgetary support} < 10\% \text{ of VoP}$

It is, therefore, imperative for India and other developing countries to aggressively demand a change in the fixed ERP based on 1986-88 prices to the average export or import prices of recent years or to provide flexibility to consider for the inflation for current AMS calculation.

3.2 Attack on Special and Differential Treatment for Developing Members (S&DT)

Despite the limited policy space available under the AoA, in recent times the certain flexibilities that are available to the developing countries in the form of S&DT provisions have come under attack at the WTO.

The Development box (Article 6.2) allows developing countries to provide support without prescribed limits for certain measures such as investment subsidies, generally available to agriculture, and input subsidies to low-income or resource-poor producers, and subsidies to encourage diversification from illicit narcotic crops. For instance, as per the Schedule of Commitments submitted by India a farmer whose landholding does not exceed 10 hectares is considered a low-income or resource-poor farmer. Accordingly, 99.43% of Indian farmers are low-income farmers (Gol, 2019). To be more accurate, almost all farmers are low-income or resource-poor farmers, and therefore, India has the flexibility to provide input subsidies to farmers without any financial limit. Furthermore, it is to be noted that India also has the policy space to provide input subsidies as the non-product specific support under the Amber box.

But it is capped at 10% of the VoP of the agricultural sector as a whole. As per the recent notification, that is for 2019-20, India provided the US \$25 billion as input subsidies, consisting of expenditures on fertilizers, irrigation, and power, under the Development box. *Subsidy on insurance premium and expenditure on interest subvention together amounted to the US \$4.7 billion. These are notified as non-product specific support, although these expenditures could have been covered under the Development box.*

However, a few proposals have been tabled at the WTO that seeks to dilute the S&DT provision for developing countries by capping these flexibilities. Canada, Australia and New Zealand have been frequently raising this issue in agriculture negotiations (Sharma, 2020). Besides, some members have advanced proposals to lower the *de minimis* limit. Currently, the developing countries can provide Amber box support up to 10% of the VoP of agriculture. The developed countries are trying to make a narrative that the policy space for developing countries under the Amber box has been increasing at a higher rate because of the higher *de minimis* limit (10%). As the *de minimis* limit depends on the VoP, the policy space under the *de minimis* also increases with an increase in VoP. On this logic, the developed countries seek to steeply reduce the applicable *de minimis* limit (Sharma et al., 2021d). Already many developing countries have been facing a lack of policy space to implement support programs under the Amber box. A further reduction in the *de minimis* limit would put farmers at a disadvantage. *Given the limited flexibilities available to the developing members under the AoA, some recent proposals on domestic support would invariably lead to a further reduction in the policy space available to them.*

3.3 Issue of Additional Entitlements

The AoA provides for the *de minimis* limit of 5% of the VoP of a specific commodity for the developed countries, and 10% for the developing countries. Some countries, for example, the US and EU, that had provided support above the defined limit during the 1986-88 base period secured additional flexibilities in the form of AMS entitlement to continue with the trade-distorting support above their *de minimis* limit. For the other countries that did not provide support above these limits, the permissible support has been capped at the *de minimis*. *The AMS entitlements allow countries to concentrate their support on particular products above the de minimis limit. The developed countries provide a very high level of subsidies. For example, owing to its AMS entitlement of \$19 billion, the US provided product-specific support of more than 50% of the VoP for rice, cotton, sugar and dry peas. In some years, more than 90% of the total product-specific support was concentrated on only two products, dairy and sugar.* Similarly, this flexibility allows the EU to support more than 65% to the butter, milk, apple, rice and sugar. The trade-distorting support doled out by the developed members has been noted to cause overproduction, and this is leading to the depression in international prices of agricultural commodities (Sumner, 2003). These highly subsidized exports adversely affect the livelihoods of the resource-poor farmers in developing countries (Oxfam, 2002; Banga, 2014).

The AMS entitlements represent the inherent imbalances and asymmetries in the AoA. The developing countries must demand the elimination of the AMS entitlement as a first step towards disciplining the trade-distorting support.

3.4 Issue of Public Stockholding for Food Security Purposes

An important issue of concern for India and other developing countries at the WTO is the public stockholding of foodgrains for food security purposes. Food security programs in several countries, including India, typically have procurement, stockholding, and distribution components. India implements price support backed public stockholding program to safeguard its farmers and consumers. The Government of India procures food grains such as wheat, rice, coarse cereals, and pulses from farmers at the government-administered minimum support price (MSP), and thereafter it distributes these at the subsidised prices to the poor consumers through the public distribution system (PDS) and other welfare schemes. Thus, procurement, stockholding and distribution are three integral components of India's food security network.

Under the AoA, the stockholding and distribution are covered under the 'Green box' and are exempted from the reduction commitments. However, the procurement at the administered price is covered under the Amber Box, which, as mentioned earlier, is capped at 10% of the VoP of a product. Given this, it is feared that many developing countries may have already breached or are likely to breach this limit (Sharma, 2016b). The lack of flexibility under the Amber Box makes it difficult to procure foodgrains from farmers at the administered prices without breaching the applicable *de minimis* limit. This may seriously jeopardize food security in developing countries.

Given the food security concerns, the provisions related to food security and public stockholding have intensely been negotiated at the WTO. In 2013, at the Bali Ministerial Conference, an interim solution in the form of a 'peace clause' was reached, agreeing that "*Members shall refrain from going through the WTO Dispute Settlement Mechanism to challenge the compliance of a developing member with its obligation related to domestic support*" for the support provided to traditional staple food crops for public stockholding programs for food security purposes. This provided developing countries with the flexibility to administer the price support policies for foodgrains. However, for the Bali Decision to be applicable, the developing countries have to ensure compliance with notifications, transparency, anti-circumvention and safeguard provisions as provided. Additionally, the Bali Decision received criticism for its limited scope and coverage, and the onerous transparency requirements on the countries taking recourse to it. *Although an interim solution in the form of the Bali Decision is available to the developing member countries, the members must engage in fruitful negotiations to reach a permanent solution addressing the issue of public stockholding for food security purposes.*

India became the first WTO member to take recourse to the Bali Decision for protecting its public stockholding program for rice. India's product-specific support to rice exceeded *de minimis* limit of 10% in 2018-19. By invoking the Bali peace clause, India is unlikely to face a legal challenge from other countries arising from this breach. The price support backed food security policy has played a vital role in fighting against hunger, especially during the COVID-19 pandemic when millions of people faced acute livelihood crises (Sharma and Dobhal, 2020; Sharma et al., 2021e). India, through the Pradhan Mantri Garib Kalyan Anna Yojana, provided 5 kilograms of rice or wheat or both and one kilogram of pulses to about two-thirds of the households during the COVID-19 pandemic. The consequences of the absence of a price backed procurement and stockholding could be beyond the imagination during such disasters.

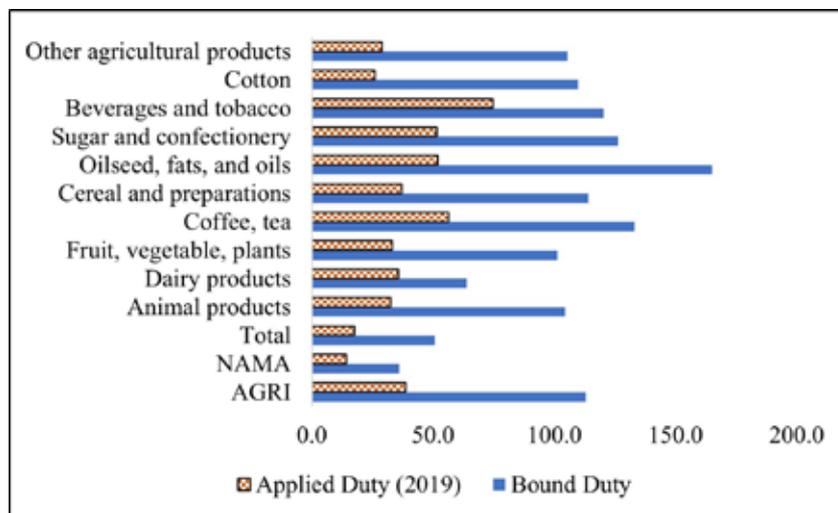
Currently, the members are engaged in negotiations to find a permanent solution to the issue of public stockholding of food grains. India must forward a proposal for a permanent solution that is better than the interim solution, in terms of coverage of more food commodities and future food security concerns with less onerous transparency and anti-circumvention conditions.

4. MARKET ACCESS AND SPECIAL SAFEGUARD MEASURES

The AoA mandated the conversion of non-tariff barriers on agricultural products such as quantitative restrictions, discretionary import licensing, variable import levies and voluntary export restrictions into customs duties using the process of ‘tariffication’ (Article 4, AoA). These customs duties adopted through the tariffication process were to be treated as the maximum level of applicable tariff or ‘bound tariffs’ and these have to be reduced over time. The members can convert their non-tariff barriers into customs duties that would provide agricultural commodities with an equal level of protection as do the non-tariff barriers (using the formula laid down in Annex 5 of the AoA). The developing countries had also an additional option of choosing a ‘ceiling binding’ approach that simply states the ‘bound tariffs’ without resorting to the given formula (Sharma, 2000).

India used the ‘ceiling binding’ approach to bind its tariffs on all agricultural products that had been previously ‘unbound’ by submitting the maximum applicable tariffs (FAO, 2003). In 2019, India had an average bound tariff of 113% and an average applied tariff of 39% on agricultural commodities (Figure 1). The average bound and applied tariffs for non-agriculture market access (NAMA) goods are significantly lower.

Figure 1. Bound and applied tariff across major agricultural goods



Source: Tariff Download Facility, WTO

It is to note that India had bound its agricultural tariffs for some agricultural products in the General Agreement on Tariffs and Trade (GATT) era at extremely low rates. These products

include rice (0%), maize (0%), milk and cream powder (0%), rapeseed, and colza and mustard oil (40%). Despite such low rates, India initially did not face any problem as it applied quantitative restrictions for the balance of payments reason until 2001. However, post-2001, when India had to remove these measures under the *India-Quantitative Restrictions* dispute (WTO, 2001), these products became highly vulnerable to import surges, unlike products 'bound' during the Uruguay Round (UR) under the ceiling binding approach. To address this issue and raise the bound rates on these products, India entered into negotiations under Article XXVIII of the GATT. India managed to successfully increase its bound rates on 15 agricultural commodities, including cereals, certain dairy products and rapeseed oil in exchange for the reduction of tariff on 25 other products, including some fruits, fruit juices and malt.

Table 3. Increase in bound tariff of select products under Article XXVIII Negotiations

HS Code	Description	Current binding	Proposed binding	Special remarks
0402.10	Milk and cream in powder, granules or other solid forms, of a fat content, by weight, not exceeding 1.5%	0	60%	A global TRQ of 10,000 t at an in-quota tariff rate of 15% applicable cumulatively to both the tariff lines 0402.10 and 0402.21
1005.10	Maize (corn), seed	0	70%	-
1006.10	Rice in the husk	0	80%	-
1514.10	Rape, colza or mustard oil, crude	45%	75%	-

Source: Modifications and Rectifications to Schedule XII- India, WTO Doc No. WT/Let/440

Table 4. Reduction in bound tariff of select products under Article XXVIII Negotiations

HS Code	Description	Current Binding	Proposed Binding	Special remarks
0802.11	Almonds, in shell	Rs 55/kg	Rs 35/kg	-
0805.10	Oranges	100%	40%	-
0808.10	Apples	55%	50%	-
1512.11	Sunflower-seed oil or safflower oil and fractions thereof, crude oil	300%	300%	A global TRQ of 150,000 t at an in-quota tariff rate of 50%

Source: Modifications and Rectifications to Schedule XII- India, WTO Doc No. WT/Let/440

However, the bound tariffs on products such as milk and cream powder, rapeseed, colza and mustard oil and maize were raised, but with an added condition that India would allow a certain quantity of these products to enter its domestic market at a lower tariff on a certain quantity under the Tariff Rate Quota (TRQ). India was also allowed to continue with its Uruguay Round bound tariff of 300% on sunflower oil with the added condition of the TRQ under the Article XXVIII negotiations. Thus, currently, India maintains TRQs on maize, milk and cream powder, rapeseed, colza or mustard oil and sunflower seed oil or safflower oil (see Table 3).

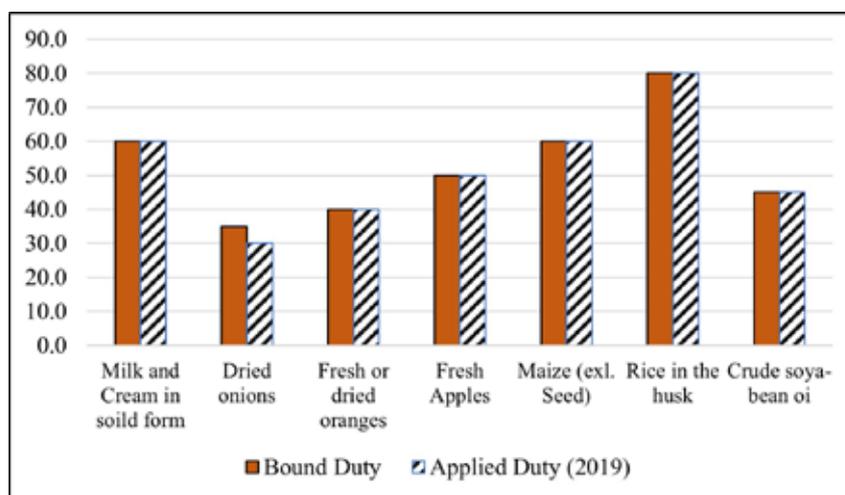
Table 5. Tariff Rate Quotas in India

H.S. Code	Description	TRQ
0402.10	Milk and cream in powder, granules or other solid forms, of fat content, by weight, not exceeding 1.5%	A global tariff rate quota of 10,000 MT at an in-quota tariff rate of 15% is applicable cumulatively to both the tariff lines 0402.10 and 0402.21
0402.21	Milk and cream in powder, granules or other solid forms, of fat content, by weight, exceeding 1.5% - not containing added sugar or other sweetening matter	
1005.90	Maize (corn), other	A global tariff rate quota at an in-quota tariff rate of 15% for 500,000 tonnes per year
1514.90	Rape, colza or mustard oil and fractions thereof, other	A global tariff rate quota of 150,000 MT at an in-quota tariff rate of 45%
1512.11	Sunflower-seed oil or safflower oil and fractions thereof, crude oil	A global tariff rate quota of 150,000 MT at an in-quota tariff rate of 50%

Source: Modifications and Rectifications to Schedule XII- India, WTO Doc No. WT/Let/440

At the aggregate level, there are significant differences between the ‘bound’ and ‘applied’ tariff rates on agricultural products, allowing India to increase tariffs on a product to the bound level in case of its import surges. However, at the disaggregated level, the difference between bound and applied tariffs on commodities like onion, milk, soybean oil, maize and apple is extremely low or even zero (Figure 2). This means India has a lack of policy space to raise tariffs on the said products to protect its domestic producers in case their imports surge. Due to lack of policy space, imports can displace local products, putting the livelihood security of domestic producers in jeopardy.

Figure 2. Selected products with no gap between bound and applied tariff



Source: Authors compilation based on Tariff Download Facility, WTO

Most developing members of the WTO lack mechanisms, except to raise the applied tariff up to the bound rate, to protect their agriculture from the adverse effects of import surges, and consequent price depressions. Even though trade-remedy instruments like anti-dumping duties, countervailing measures, and safeguard measures are available, these require proof of 'injury' to the domestic sectors, which is a complex and data-driven process (Finger, 2009). Developing countries, which have a large and unorganized farm sector with high dominance of smallholdings, often fail to gather required data on profits, market shares, and returns on investment, which makes it difficult for them to establish the 'injury factor'. Thus, the developing countries find these trade remedies ineffective in shielding their farmers from the import surges and resultant price depressions (Das et al., 2020; Halleart, 2005)

Thirty-nine members of the WTO gained flexibility in the form of the special agricultural safeguard ("SSG") under the AoA, to deal with the adverse impact of import surges on their agriculture. The SSG allows members to impose additional duties on the products, above their bound rates, in case of their import surges or depression in the prices without any proof of 'injury'. India does not have access to the SSGs and can only impose duties up to the bound limit. A recent study has shown that *India experienced an import surge for more than 300 tariff lines of the total of 663 agricultural tariff lines, highlighting the urgent need for an SSG like instrument* (Das et al., 2020).

Since the beginning of the Doha Round, the developing countries through a negotiation coalition called 'G-33'¹ have been demanding a policy instrument similar to SSGs in the form of a Special Safeguard Mechanism (SSM) that allows them to impose duties beyond the bound level on the products that face high import surges, or severe price depreciation.

Over the years, the need, importance and technical aspects of the SSM have been vigorously debated in agricultural negotiations. This resulted in several proposals and draft modalities being presented on the negotiating tables on various aspects of SSM such as product coverage and trigger levels. Nonetheless, as of yet, the members have failed to reach a consensus on the SSM modalities. While the developing countries stress the need for the SSM to be accessible, effective and operable for all the members, the developed countries believe a more accessible SSM would lead to increased protectionism in agriculture. Currently, the SSM negotiations are at a deadlock due to the divergent positions of the members.

Moreover, the developed countries have also attempted to link the SSM negotiations with the ongoing tariff-reduction negotiations, which would be detrimental to the policy space available to the developing countries. Under the tariff reduction negotiations, the members are attempting to arrive at formulas to reduce the bound tariffs in place, with a special focus on addressing extra high tariffs (tariff peaks), narrowing gaps between the tariffs on raw and finished agricultural products (tariff escalation) and reducing tariffs on special and sensitive agricultural products (UNCTAD,2010).

For several products, the gap between bound and applied duty is low, and a further reduction in tariff would make producers of such commodities, due to India's tariff commitment under the

1 The G33 is a coalition of 47 developing countries at the WTO which has been raising issue related to food security, SSM, Special products and, special and differential treatment for the developing countries in agriculture negotiations.

AoA, vulnerable to livelihood insecurity. In this context, *the demand for SSM that is accessible, operable and effective is most relevant to protect farmers from import surges and price volatilities. It is also important for developing countries to be cautious and mindful of ensuring effective special and differential treatment in agreeing to any proposed tariff reduction formula.*

5. ISSUES RELATED TO EXPORT SUBSIDIES

Unlike the domestic support and market access pillars, the members have a consensus on the elimination of export subsidies. Most countries recognize that export subsidies have an adverse effect on agricultural trade, in terms of price distortions and instability in the world market. Before the UR rounds, the agricultural export subsidies had only very limited disciplines under Art XVI of the GATT 1947. As a result, the members rampantly used export subsidies, and most of the developing countries faced the threat of their domestic markets being captured by the cheap imports from the developed countries.

One of the significant achievements of the AoA had been the disciplining of export subsidies to agriculture. The AoA contains an elaborate list of prevalent export subsidy practices and export subsidies not mentioned in the AoA, that are strictly forbidden. The AoA also imposes reduction commitments on all the identified forms of export subsidies, both in terms of volume of subsidized exports and budgetary expenditure on subsidized exports. These reduction commitments have been undertaken on a product-specific basis by grouping agricultural products into 23 product groups such as wheat, sugar, coarse -grains and oilseeds. Some members also took commitments on a more disaggregated level.

However, it is interesting to note that it is only the members who had been historically providing export subsidies are also entitled to provide further subsidies under the AoA (Article 3.3 and Article 8), albeit subject to the limits set out in their Schedules of Commitments. All the developing countries, under Article 9.4 of the AoA, however, are allowed to provide certain export subsidies such as those for international marketing of goods, international freight charges, internal transport charges etc.

The WTO members achieved a significant breakthrough at the Nairobi Ministerial Conference (2015), in terms of a decision of eliminating agricultural export subsidies and disciplining other export measures such as export finance and international food aid. This decision stated that the developed countries immediately eliminate export subsidies on all agricultural products (by 2016), except some products like swine meat and dairy products for an extended timeline stretching to 2020 was allowed. The developing countries with export subsidies entitlement were mandated to eliminate export subsidies by the end of 2018 unless any of the members had notified certain export subsidies in any of their latest three export subsidy notifications. In this case, the subsidies can be maintained until 2022. Moreover, the declaration also stated that developing countries be allowed to use the S&DT provisions under Article 9.4 with marketing cost subsidies and internal transport subsidies until 2023, but with an extension up to 2030 for the Least Developed Countries. The Nairobi Decision also laid down additional disciplines on export credits, export financing, and international food aid (WTO, 2015).

As of now, India and other developing countries are allowed to provide export subsidies related to export-marketing costs on agricultural products, including international transport, freight

and processing costs under Article 9.1 (d) and internal transport and freight charges on export shipments under Article 9.1 (e) up to 2023, as per the Nairobi Declaration.

That being said, India has been facing challenges to its export policy, with other members taking India to disputes at the WTO. In a dispute in 2019, the US challenged India's export-related measures alleging that these violated the Agreement on Subsidies and Countervailing Measures (ASCM). The said dispute involved a challenge on the Merchandise Exports from India Scheme (MEIS), which also covered agricultural products. India failed to defend its measures. India also faces challenges on the alleged export subsidies to sugar under ongoing *India - Measures concerning Sugar and Sugarcane* (WTO, 2020; Sharma et al. 2019).

This clearly implies the need for India to reorient its existing export subsidy framework in a WTO compliant manner. It is also important to remember that the window on the extended applicability of Article 9.4 is available only up to 2023. *It is imperative, that India focuses on building up WTO compatible export facilitation infrastructures before the set deadline approaches. However, developing countries should seek disciplines in other areas such as export financing and export credits.*

6. RECOMMENDATIONS

Given the inherent asymmetries and imbalances in the provisions of the AoA of WTO, the discussion in this brainstorming session led to the following recommendations that would help India and other developing countries for a level playing in the liberalized global economic order.

- India along with other developing countries must continue to demand removing asymmetries in the AoA, especially the AMS entitlements which allow developed countries to provide high levels of trade-distorting support under the Amber box provisions.
- Developing countries should continue to oppose any attempt to dilute the existing special and differential (S&DT) provisions, especially capping of the support under the Development box (Article 6.2) and the reduction in the *de minimis* limit.
- Since many developing countries have been implementing the price support backed procurement policy, there is a need to address the issue of external reference prices (ERP) that are based on 1986-88 prices. The ERP need to be based on the recent import or export prices of agricultural commodities. Alternatively, the developing countries should be aggressive in demanding flexibility to consider inflation in the calculation of market prices.
- Members of WTO are now engaged in finding a permanent solution to the issue of public stockholding of food grains for food security purposes. Any permanent solution should be better than the interim solution, i.e. the Bali Peace Clause, in terms of coverage of commodities, new programs and less onerous conditions.
- In view of the import surges of agricultural goods and their adverse impacts on farm income, the developing countries should seek a simple, effective, operable and accessible Special Safeguard Mechanism (SSM).
- Given the fact that India can provide transport and marketing related export subsidies only (Article 9.4) till 2023, there is a need to focus on improving infrastructure for agricultural exports.

- India and many other developing members have been highlighting sustainable development goals (SDGs) related to hunger and poverty in various proposals submitted to the WTO. However, there is a need to highlight these more aggressively in the negotiations to achieve a level playing field for the poor farmers.
- There is a need for frequent inter-ministerial meetings and discussions with stakeholders including farmers, civil society organizations and state governments to sensitise them on the issues critical to agricultural trade and seek their feedback on addressing these through domestic and trade policies.
- There should be greater cooperation among different ministries or departments related to agriculture, environment, external affairs and commerce in policy formulations to ensure that the policies are WTO compliant but not detrimental to the domestic interests. India has considerable policy space under the Green box that can be realized by aligning or reforming several of its existing agricultural and food policies.

India should have a market intelligence unit in its embassies to track the agricultural and trade policies of the concerned countries and provide feedback to the Government of India.

REFERENCES

Banga, R. (2014) Impact of Green Box Subsidies on Agricultural Productivity, Production and International Trade. Background Paper No. RVC-11, UNCTAD.

Berthelot, J. (2015) Why the Fixed External Reference Price of 1986-88 should be Challenged? Available at https://www.networkideas.org/wp-content/uploads/2016/07/External_Reference_Price.pdf

Das, A., Sharma, S. K., Akhter, R., Lahiri, T. (2020) Special Safeguard Mechanism for Agriculture: Implications for Developing Members at the WTO. Working Paper No. CWS/WP/200/59. Centre for WTO Studies, IIFT, New Delhi.

FAO. (2003) WTO Agreement on Agriculture: The Implementation Experience - Case Studies of Developing Countries. Commodity Policy and Projections Service Commodities and Trade Division, FAO. Rome.

Finger, J.M. (2009) A special safeguard mechanism for agricultural imports: What experience with other GATT/WTO safeguards tells us about what might work. *World Trade Review*, 9(2): 289-318.

Gol- Government of India. (2019) All India Report on Number and Area of Operational Holdings, 2015- 16. Department of Agriculture, Co-operation & Farmers Welfare, Ministry of Agriculture & Farmers Welfare, Government of India.

Halleart, J.J. (2005) Special Agricultural Safeguards: Virtual Benefits and Real Costs - Lessons for the Doha Round. IMF Working Paper WP/05/131, International Monetary Fund, Washinton, DC.

Oxfam. (2002) Stop the Dumping! How EU Agricultural Subsidies are Damaging Livelihoods in the Developing World? Oxfam Briefing Paper 31.

Ratna S., Sharma, S.K., and Dobhal, A. (2021) Indian agriculture under WTO and FTAs: An assessment. In: Ratna S., Sharma, S.K., Kumar R., and Dobhal A. (eds). *Indian Agriculture under the Shadows of WTO and FTAs: Issues and Concerns*, Springer: 3-25. DOI:10.1007/978-981-33-6854-5.

Sharma R. (2000) Preparing for negotiating further reductions of the bound tariffs, In: *Multilateral Trade Negotiations on Agriculture*. FAO, Rome.

Sharma, S.K. (2016) *The WTO and Food Security: Implications for Developing Countries*, Springer.

Sharma, S.K., Das, A. (2017) Food sovereignty under WTO: an unfulfilled promise at Buenos Aires. *Economic and Political Weekly*, 52 (52): 16-20.

Sharma, S.K. (2018) WTO and its Implications for India and China: Food Security vs. Naked Commercial Interest. *Agricultural Economics Research Review*, 31 (2): 207-219.

Sharma, S.K., Dobhal, A., Savooji, S. (2019) A Bitter Pill to Swallow: India's Sugar Sector under Siege at the WTO. Working Paper No. FCWS/WP/200/55, Centre for WTO Studies, IIFT, New Delhi.

Sharma, S. K. (2020) A Quantitative Analysis of Proposals on Domestic Support in WTO Agriculture Negotiations: Need for Reaffirming the Development Agenda. Working Paper No. CWS/WP/200/63, Centre for WTO Studies, IIFT, New Delhi.

Sharma, S., Dobhal, A. (2020) Amidst the COVID-19 pandemic, India's food security at the WTO. *The Hindu Business Line*, April 2. Available at <https://www.thehindubusinessline.com/economy/agri-business/amidst-the-covid-19-pandemic-indias-food-security-at-wto/article31234049.ece>.

Sharma, S. K., Sawant, A., Vats, P., Naik, S., Lahiri, T. (2020) Disciplining trade-distorting support to cotton in the US: An unresolved issue at the WTO negotiations. *Agricultural Economics Research Review*, 33(2): 119-134.

Sharma, S.K., Lahiri, T., Neogi, S., Akhter, R. (2021a) Revisiting domestic support negotiations at the WTO: Ensuring a level playing field. *The Journal of International Trade & Economic Development*. <https://doi.org/10.1080/09638199.2021.1967429>

Sharma, S.K., Dobhal, A., Agrawal, S., Das, A. (2021b) Demystifying Blue Box Support to agriculture under the WTO: Implications for developing countries. *South Asia Economic Journal* 22(2): 161-185. DOI: 10.1177/13915614211035852

Sharma S.K., Dobhal A., Savooji, S. (2021c) India's sugar woes at the World Trade Organization. *Economic & Political Weekly*, 56(37): 44-51.

Sharma, S.K., Das, A., Neogi, S., Lahiri, T., Mathur, P. (2021d) Agricultural Domestic Support Negotiations at the 12th Ministerial Conference: Diluting the Development Agenda. Working Paper No. CWS/WP/65, Centre for WTO Studies, IIFT, New Delhi.

Sharma, S.K., Mathur, P., Akhter, R. (2021e) Negative support to Indian farmers: Myth or reality? *Frontline*, March 26.

Sumner, D. (2003) The Impacts of US Cotton Subsidies on Cotton Prices and Quantities: Simulation Analysis for the WTO dispute. Available at https://projects.ncsu.edu/project/arepublication/Effects_US_Cotton_Subsidies.pdf

Thow, A.M., Sharma, S.K., Rachmi, C.N. (2019) An analysis of Indonesia's shrinking food security policy space under the WTO. *Food Security* 11(6): 1275-1287.

UNCTAD.(2010) Flexibilities for Developing Countries in Agriculture: Market Access Formulas. UNCTAD/DITC/TNCD/2008/1.

WTO.(2001) India - Quantitative Restrictions on Imports of Agricultural, Textile and Industrial Products. WTO Doc No. WT/DS90.

WTO.(2015) Export Competition-Ministerial Decision of 19 December 2015. Ministerial Conference 10th Session, Nairobi. WTO Doc No. WT/MIN(15)/45.

WTO.(2020) India - Measures concerning Sugar and Sugarcane. WTO Doc no. WT/DS581.

LIST OF PARTICIPANTS

1. Dr T. Mohapatra, President, NAAS, New Delhi
2. Dr J.C. Katyal, Vice President, NAAS, Gurugram
3. Dr Anil Kumar Singh, Vice President, NAAS, New Delhi
4. Dr P.K. Joshi, Secretary, NAAS, New Delhi
5. Dr P.S. Birthal, Editor, NAAS, New Delhi
6. Dr Sachin K. Sharma, Associate Professor, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
7. Prof Abhijit Das, Head, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
8. Dr Malavika Dadlani, Editor, NAAS, New Delhi
9. Ms Shubhra Agarwal, Trade Adviser, Department of Agriculture, Cooperation and Farmer Welfare, Ministry of Agriculture and Farmers Welfare, Government of India, Delhi
10. Mr Raihan Akhter, Senior Research Fellow, Centre for WTO Studies Indian Institute of Foreign Trade, New Delhi
11. Dr Y.K. Alagh, Vice Chairman, Sardar Patel Institute of Economic and Social Research, Ahmedabad
12. Dr Shalini Arora, Assistant Professor, LUVAS, Hisar
13. Dr Balaji SJ, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
14. Dr Mukesh Bhatnagar, Professor, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
15. Dr Khem Chand, Principal Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
16. Dr Prem Chand, Senior Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
17. Dr B.S. Chandel, Principal Scientist, ICAR-National Dairy Research Institute, Karnal, Haryana
18. Ms Nancy Gupta, Research Fellow, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
19. Mr Afsar Jafri, Asia Programme Staff, GRAIN, NOIDA, Uttar Pradesh
20. Dr Rajni Jain, Principal Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
21. Dr Abimanyu Jhahria, Senior Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
22. Dr Anjani Kumar, Senior Research Fellow, International Food Policy Research Institute, New Delhi
23. Dr Rajni Kapoor, Assistant Professor, Shaheed Bhagat Singh College, University of Delhi, Delhi
24. Dr Kiran Kumar T M, Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
25. Dr Nalini Ranjan Kumar, Principal Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi

26. Dr Sant Kumar, Principal Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
27. Dr Surinder Kumar, Professor, CRRID, Chandigarh.
28. Dr Dinesh Meena, Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
29. Dr Mruthyunjaya, Freelance Consultant, Bengaluru, Karnataka
30. Dr Basanti Nayak, Assistant Professor, Satyawati College (M), University of Delhi, Delhi
31. Dr Suvayan Neogi, Senior Research Fellow, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
32. Dr Vinayak Nikam, Scientist, ICAR- National Institute of Agricultural Economics and Policy Research, New Delhi
33. Dr Suresh Pal, Director, ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi
34. Dr Satpal Pradhan, Assistant Professor, CURAJ, Kishangarh, Rajasthan
35. Dr Vijay Sardana, Advocate & Techno-legal Experts, Achievers' Resources Techno-legal Services, New Delhi
36. Dr Raka Saxena, Principal Scientist, ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi
37. Dr Ranja Sengupta, Senior Researcher and Coordinator, Trade Programme, Third World Network, New Delhi
38. Dr Purushottam Sharma, Principal Scientist, ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi
39. Mr Saarthak Sharma, Research Associate, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
40. Ms Neetika Bansal, Director, DoC, DoC, New Delhi
41. Mr Yashvir Singh, Economic Adviser, Ministry of Commerce, Government of India New Delhi
42. Ms Shailja Singh, Legal Consultant, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
43. Ms Prachi Singhal, Deputy Director, Ministry of Commerce, Government of India New Delhi
44. Dr Shivendra Srivastava, Scientist, ICAR-National Institute of Agricultural Economics and Policy Research, New Delhi
45. Ms Vishakha Srivastava, Legal Research Fellow, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
46. Ms Stuti Toshi, SRF, Centre for WTO Studies, Indian Institute of Foreign Trade, New Delhi
47. Mr Alok Yadav, Young Professional, Ministry of Agriculture and Farmers Welfare, Government of India, New Delhi

Note: The designations and affiliations of the participants are as on date of BSS

63. Nanotechnology in Agriculture: Scope and Current Relevance	-2014
64. Improving Productivity of Rice Fallows	-2014
65. Climate Resilient Agriculture in India	-2014
66. Role of Millets in Nutritional Security of India	-2014
67. Urban and Peri-urban Agriculture	-2014
68. Efficient Utilization of Phosphorus	-2014
69. Carbon Economy in Indian Agriculture	-2014
70. MOOC for Capacity Building in Indian Agriculture: Opportunities and Challenges	-2014
71. Role of Root Endophytes in Agricultural Productivity	-2014
72. Bioinformatics in Agriculture: Way Forward	-2014
73. Monitoring and Evaluation of Agricultural Research, Education and Extension for Development [AREE4D]	-2015
74. Biodrainage: An Eco-friendly Tool for Combating Waterlogging	-2015
75. Linking Farmers with Markets for Inclusive Growth in Indian Agriculture	-2015
76. Bio-fuels to Power Indian Agriculture	-2015
77. Aquaculture Certification in India: Criteria and Implementation Plan	-2015
78. Reservoir Fisheries Development in India: Management and Policy Options	-2016
79. Integration of Medicinal and Aromatic Crop Cultivation and Value Chain Management for Small Farmers	-2016
80. Augmenting Forage Resources in Rural India: Policy Issues and Strategies	-2016
81. Climate Resilient Livestock Production	-2016
82. Breeding Policy for Cattle and Buffalo in India	-2016
83. Issues and Challenges in Shifting Cultivation and its Relevance in the Present Context	-2016
84. Practical and Affordable Approaches for Precision in Farm Equipment and Machinery	-2016
85. Hydroponic Fodder Production in India	-2017
86. Mismatch between Policies and Development Priorities in Agriculture	-2017
87. Abiotic Stress Management with Focus on Drought, Food and Hailstorm	-2017
88. Mitigation Land Degradation due to Water Erosion	-2017
89. Vertical Farming	-2019
90. Zero Budget Natural Farming - A Myth or Reality?	-2019
91. Loan Waiving versus Income Support Schemes: Challenges and Way Forward	-2019
92. Tropical Wilt Race-4 Affecting Banana Cultivation	-2019
93. Enhancing Science Culture in Agricultural Research Institutions	-2020
94. Payment for Ecosystem Services in Agriculture	-2020
95. Food-borne Zoonotic Diseases	-2020
96. Livestock Improvement through Artificial Insemination	-2020
97. Potential of Non-Bovine Milk	-2021
98. Agriculture and Food Policy for the Five Trillion Dollar Economy	-2021
99. New Agricultural Education Policy for Reshaping India	-2021
100. Strategies for Enhancing Soil Organic Carbon for Food Security and Climate Action	-2021
101. Big Data Analytics in Agriculture	-2021

Status / Strategy Papers

1. Role of Social Scientists in National Agricultural Research System (NARS)	-2015
2. Towards Pulses Self-sufficiency in India	-2016
3. Strategy for Transformation of Indian Agriculture and Improving Farmers Welfare	-2016
4. Sustaining Soybean Productivity and Production in India	-2017
5. Strengthening Agricultural Extension Research and Education	-2017
6. Strategy on Utilization of Glauconite Mineral as Source of Potassium	-2017
7. Vegetable Oil Economy and Production Problems in India	-2017
8. Conservation Policies for Hilsa and Mahseer	-2018
9. Accelerating Seed Delivery Systems for Priming Indian Farm Productivity Enhancement: A Strategic Viewpoint	-2018
10. Renewable Energy: A New Paradigm for Growth in Agriculture	-2018
11. Rumen Microbiome and Amelioration of Methane Production	-2019
12. Harnessing Full Potential of A1 and A2 Milk in India: An Update	-2019
13. Development and Adoption of Novel Fertilizer Materials	-2019
14. Innovations in Potato Seed Production	-2021

Policy Briefs

1. To Accelerate Utilization of GE Technology for Food & Nutrition Security and Improving Farmers' Income	-2016
2. Innovative Viable Solution to Rice Residue Burning in Rice-Wheat Cropping System through Concurrent Use of Super Straw Management System-fitted Combines and Turbo Happy Seeder	-2017
3. Soil Health: New Policy Initiatives for Farmers Welfare	-2018
4. Uniform Policy for Fish Disease Diagnosis and Quarantine	-2019
5. Saving the Harvest: Reducing the Food Loss and Waste	-2019
6. Better Management of Pesticides in India: Policy Perspectives	-2019
7. Regulatory Framework for Genome Edited Plants: Accelerating the Pace and Precision of Plant Breeding	-2020
8. Covid-19 Pandemic: Impact and New Normal in Agriculture	-2020
9. Direct Benefit Transfer of Fertilizer Subsidy: Policy Perspectives	-2020
10. Harmonization of Seed Regulations for Sustainable Food Security in India	-2020
11. Towards Revision of Biological Diversity Act 2002	-2021

NAAS DOCUMENTS ON POLICY ISSUES*

1. Agricultural Scientist's Perceptions on National Water Policy	-1995
2. Fertilizer Policy Issues (2000-2025)	-1997
3. Harnessing and Management of Water Resources for Enhancing Agricultural Production in the Eastern Region	-1998
4. Conservation, Management and use of Agro-biodiversity	-1998
5. Sustainable Agricultural Export	-1999
6. Reorienting Land Grant System of Agricultural Education in India	-1999
7. Diversification of Agriculture for Human Nutrition	-2001
8. Sustainable Fisheries and Aquaculture for Nutritional Security	-2001
9. Strategies for Agricultural Research in the North-East	-2001
10. Globalization of Agriculture: R & D in India	-2001
11. Empowerment of Women in Agriculture	-2001
12. Sanitary and Phytosanitary Agreement of the World Trade Organization – Advantage India	-2001
13. Hi-Tech Horticulture in India	-2001
14. Conservation and Management of Genetic Resources of Livestock	-2001
15. Prioritization of Agricultural Research	-2001
16. Agriculture-Industry Interface: Value Added Farm Products	-2002
17. Scientists' Views on Good Governance of An Agricultural Research Organization	-2002
18. Agricultural Policy: Redesigning R & D to Achieve It's Objectives	-2002
19. Intellectual Property Rights in Agriculture	-2003
20. Dichotomy Between Grain Surplus and Widespread Endemic Hunger	-2003
21. Priorities of Research and Human Resource Development in Fisheries Biotechnology	-2003
22. Seaweed Cultivation and Utilization	-2003
23. Export Potential of Dairy Products	-2003
24. Biosafety of Transgenic Rice	-2003
25. Stakeholders' Perceptions On Employment Oriented Agricultural Education	-2004
26. Peri-Urban Vegetable Cultivation in the NCR Delhi	-2004
27. Disaster Management in Agriculture	-2004
28. Impact of Inter River Basin Linkages on Fisheries	-2004
29. Transgenic Crops and Biosafety Issues Related to Their Commercialization In India	-2004
30. Organic Farming: Approaches and Possibilities in the Context of Indian Agriculture	-2005
31. Redefning Agricultural Education and Extension System in Changed Scenario	-2005
32. Emerging Issues in Water Management – The Question of Ownership	-2005
33. Policy Options for Efcient Nitrogen Use	-2005
34. Guidelines for Improving the Quality of Indian Journals & Professional Societies in Agriculture and Allied Sciences	-2006
35. Low and Declining Crop Response to Fertilizers	-2006
36. Belowground Biodiversity in Relation to Cropping Systems	-2006
37. Employment Opportunities in Farm and Non-Farm Sectors Through Technological Interventions with Emphasis on Primary Value Addition	-2006
38. WTO and Indian Agriculture: Implications for Policy and R&D	-2006
39. Innovations in Rural Institutions: Driver for Agricultural Prosperity	-2007
40. High Value Agriculture in India: Prospects and Policies	-2008
41. Sustainable Energy for Rural India	-2008
42. Crop Response and Nutrient Ratio	-2009
43. Antibiotics in Manure and Soil – A Grave Threat to Human and Animal Health	-2010
44. Plant Quarantine including Internal Quarantine Strategies in View of Onslaught of Diseases and Insect Pests	-2010
45. Agrochemicals Management: Issues and Strategies	-2010
46. Veterinary Vaccines and Diagnostics	-2010
47. Protected Agriculture in North-West Himalayas	-2010
48. Exploring Untapped Potential of Acid Soils of India	-2010
49. Agricultural Waste Management	-2010
50. Drought Preparedness and Mitigation	-2011
51. Carrying Capacity of Indian Agriculture	-2011
52. Biosafety Assurance for GM food Crops in India	-2011
53. Ecolabelling and Certification in Capture Fisheries and Aquaculture	-2012
54. Integration of Millets in Fortifed Foods	-2012
55. Fighting Child Malnutrition	-2012
56. Sustaining Agricultural Productivity through Integrated Soil Management	-2012
57. Value Added Fertilizers and Site Specific Nutrient Management (SSNM)	-2012
58. Management of Crop Residues in the Context of Conservation Agriculture	-2012
59. Livestock Infertility and its Management	-2013
60. Water Use Potential of Flood-affected and Drought-prone Areas of Eastern India	-2013
61. Mastitis Management in Dairy Animals	2013
62. Biopesticides – Quality Assurance	-2014