



CENTRE for AEROSPACE & SECURITY STUDIES

Seminar

Food Security for Pakistan

Dialogue Analysis



CENTRE for AEROSPACE & SECURITY STUDIES
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Introduction

The significance of food security for any state cannot be overemphasised as it is directly linked with the well-being of its people. Food security, as an essential element of human security is, hence, inextricably linked to the national security of Pakistan. Unfortunately, Pakistan's vulnerability to food insecurity has been increasing overtime for various reasons. Some of these reasons include a growing population, gross neglect of the agriculture sector, mismanagement of water resources, lack of research for the development of requisite technologies to improve agricultural yields, and negative impact of climate change, among others.

In order to create awareness and propose workable solutions to policymakers, the Centre for Aerospace & Security Studies (CASS), Islamabad, organised a seminar on the subject of ***Food Security for Pakistan***.

Specific questions of interest in the seminar included:

1. What is the role of the agriculture sector in food security for Pakistan?
2. What are the impacts of food insecurity on national security?
3. Is enough water available for agricultural needs?
4. What are the impacts of climate change on food security?
5. From a policymaking and governance viewpoint, what steps are required to ensure sustainable growth in agricultural output to match population growth?

The Keynote Speaker was Syed Fakhur Imam, Former Federal Minister for National Food Security and Research, Government of Pakistan. The other speakers included Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute, Islamabad and Convenor National Coordination Committee on Prime Minister's Agriculture Transformation Plan; Mr Ashfaq Mahmood, Former Federal Secretary for Water and Power, Government of Pakistan; and Ambassador Shafqat Kakakhel, Chairman Board of Governors, Sustainable Development Policy Institute, Islamabad.

The *Concluding Remarks* were delivered by President CASS, Air Marshal Farhat Hussain Khan (Retd), whereas Dr Zia Ul Haque Shamsi, Director, Peace and Conflict Studies at CASS, moderated the seminar.

Executive Summary

The Centre for Aerospace & Security Studies (CASS), Islamabad, organised a seminar on the subject of *Food Security for Pakistan* on 18 January 2023.

In his *Keynote Address*, **Syed Fakhar Imam**, highlighted that security, national security, international security and food security were all interlinked and could not be separated from each other. He remarked that agricultural education, agricultural extension and agricultural research were key to improving the agro-economy of Pakistan. He shared his concerns that these aspects were not being given due attention from the viewpoint of food security.

Dr Abid Qaiyum Suleri gave a well-structured presentation titled '*A Critical Appraisal of the Food Security Situation and its Impact on Social Development of Society / National Security*' and highlighted the significance of 'Triple C' crises affecting global security: COVID-19, Conflict, and Climate Change. Dr Suleri postulated that these three 'Cs' were shaping the world and influencing both traditional and non-traditional security, including food security. He was of the view that Pakistan was unique since it was caught in 'Tetra-C' crises since the country was also suffering from 'Complacency - that despite having relevant knowledge and foresight to be well-prepared, the nation and its leaders were choosing to remain 'complacent' and not take the requisite and relevant socioeconomic actions needed for course correction. On the main topic, he explained the four pillars of food security: availability, accessibility, absorption, and sustainability. For the first condition to be met, he said, food had to be physically present. For the second, food should be socially and economically accessible. About the absorption part, he stressed that resources other than food, such as water should be of equally good quality and quantity. The fourth pillar he mentioned was overall sustainability. He urged that Pakistan needed to shift to precision agriculture technologies; adopt climate-smart agri-practices; integrate social safety nets for farmers, including weather index-based insurance; improve agri-institutional arrangements; offer smart subsidies; and reform the MSP system, among others.

Mr Ashfaq Mahmood highlighted the current water scarcity in Pakistan and the challenges it posed for food security. He stressed on building large and small dams to save water in surplus years and manage monsoon floods. He emphasised on the importance of increasing water efficiency through improved technologies and conservation practices. Mr Mahmood insisted that Pakistan was moving towards a very grave water scarcity crisis which would impact every single sector of the economy, especially agriculture, and hence, the government needed to move away from 'Business As Usual' policies and take urgent actions.

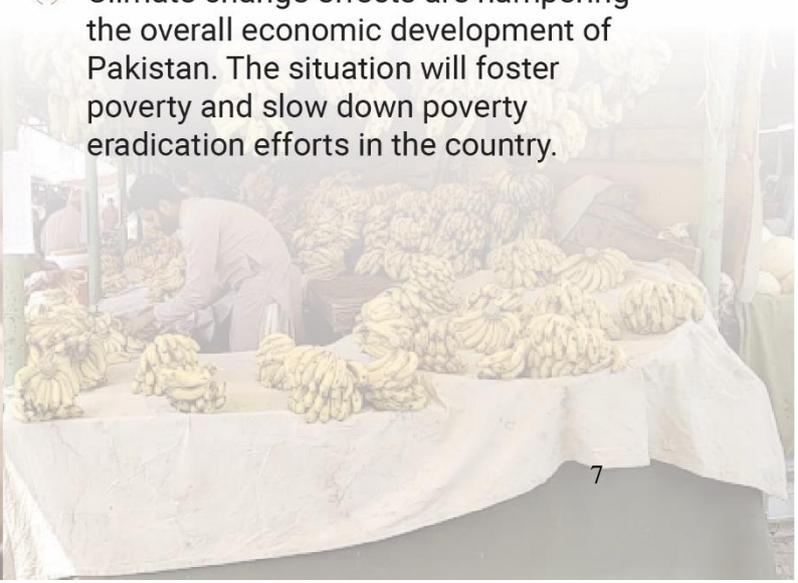
Ambassador Shafqat Kakakhel discussed key dimensions of food security including its availability, access, utilisation, and stability. 'Availability of food' implied

that a country should either produce its own food or be able to import or receive food in aid. He explained that 'access to food' meant ability of an individual or a household to have resources to buy or access food. While 'utilisation of food' meant attainment of nutritional well-being, and food 'stability' could be understood as the ability of a population, household or an individual to have access to sufficient food at all times. He expressed disappointment that the problem in Pakistan was not the preparation of plans and projects rather lack of implementation as institutional arrangements for translating them into tangible actions was continuously eroding. He warned that the cumulative effects of climate change would not just be on food security, but would also increase poverty and slow down poverty eradication efforts. He advised adopting perennial irrigation in the country.

In his *Concluding Remarks*, deliberating on the implications of food security, President CASS, **Air Marshal Farhat Hussain Khan (Retd)** thanked the speakers for their in-depth analysis of food security, especially its impact on Pakistan's security and socioeconomic development. He stressed that a malnourished population was vulnerable to exploitation by both internal and external adversaries and could not be expected to contribute to nation-building, hence, security of the state was being compromised. He urged that national security should define 'food security' as one of the vital national interests, and recommended that in order to become self-sufficient, more research and development on modernising the agriculture sector and adopting new irrigation techniques was a need of the hour.

Key Takeaways

- ❶ All strands of security: international, regional, and national are interlinked with food security and cannot be separated from each other.
- ❷ While food security is an essential element of human security, it largely depends on the total and projected population, the availability of water for agricultural needs, suitability of the soil, favourable climate, employment of innovative technologies, and availability of cost-effective power supplies.
- ❸ Agriculture has not been on the priority list of successive governments, therefore, the sector has not developed on scientific lines.
- ❹ The problem in Pakistan is not the preparation of plans and projects, rather lack of monitoring and implementation, because institutional arrangements for translating policies into tangible actions have been continuously eroding.
- ❺ In the policy domain, agricultural education, agricultural extension and agricultural research are key for improving the agro-economy of Pakistan.
- ❻ A malnourished population, like Pakistan, is vulnerable to exploitation by both internal and external adversaries and cannot contribute to nation-building, hence, national security is compromised.
- ❼ Pakistan was ranked 9th in the list of countries facing worst food insecurity even before the super floods and Russia-Ukraine War, primarily due to lack of availability, access, absorption, and sustainability that were impacted by 'Tetra C' crises - COVID-19, Conflict, Climate Change and Complacency.
- ❶ The National Nutrition Survey, 2019 reported that 40.2% children in Pakistan are stunted, 17.7% suffer from wasted growth while 28.9% are underweight, and 9.5% are overweight. In this context, the future generations of Pakistan face heightened risk of malnourishment, wasting, stunting as well as low IQ.
- ❷ The effects of global warming and climate change, which include; increased demand for water, rise in sea level, increased glacier melt, a higher degree of variability of water flows, and change in the pattern of monsoon systems, have made it difficult to ensure sustainable water management in Pakistan. Most importantly, food, energy, water, and health, as part of human security are under threat.
- ❸ The most drastic impact of climate change has been frequent, long-lasting and intense in the form of extreme events such as floods, droughts, and heat waves. Such extreme events damage and degrade water courses and infrastructure, including barrages, bridges, reservoirs, lakes, ponds and wetlands.
- ❹ Climate change effects are hampering the overall economic development of Pakistan. The situation will foster poverty and slow down poverty eradication efforts in the country.



Proposed Way Forward

- ④ Pakistan could make breakthroughs in various sectors, especially agriculture, but must invest in human resource and research. The country needs a total paradigm shift, with the best people at the top and best researchers from its own people.
- ④ The State has a responsibility to provide food security to its people, which is not only about feeding people, but also about giving them their due rights. Sufficient food with the correct dietary mix at all times is the bare minimum requirement of a common citizen. Therefore, the concept of National Security of Pakistan needs to define 'food security' as one of the vital national interests to ensure security.
- ④ Future of climate-smart agriculture lies with precision agriculture technologies. Precision farming uses modern technologies such as satellite imagery or field mapping through optical sensors, GPS, and drones, to improve crop quality and productivity. It contributes to the development of sustainable agriculture, allowing to solve both economic and ecological problems, which are becoming more acute.
- ④ Weather risk is pervasive in agriculture. Weather shocks can trap farmers and households in poverty. Hence, there is a need to implement weather index-based insurance in Pakistan through which farmers can be compensated in case of extreme weather events.
- ④ As it is impossible to predict the reduction of water as a result of climate change in precise quantitative terms, Pakistan should consider moving towards perennial irrigation owing to variability in the amount of water available for agriculture.
- ④ Water storage capacity can be increased in the country by building a combination of large, medium, and small dams for storage and delay action/check dams for better management of water, inter/intra-year transfers, flood control, and rationalising water going to the sea. This will help save water, recharge aquifers, and also address trust issues among provinces related to large dams.
- ④ The policy of solarising agricultural tube wells needs to be reviewed as it can encourage the owners of these systems to extract water indiscriminately wreaking havoc on the water table. Since Pakistan is a water scarce country, therefore, its agronomic practices need to be articulated carefully, as growing and exporting water-intensive crops like rice/sugar cane is akin to exporting the country's water resources.
- ④ The government, both at the Federal and Provincial levels, needs to resuscitate and reform agricultural institutions to help implementation of long-term plans.
- ④ The policy of deciding Minimum Support Price for wheat ought to be reviewed as its existing contours have created circular debt in provinces like Punjab which is a major cause of food insecurity in an agriculture-rich province.
- ④ Measures such as harvesting rainwater and hill torrents, particularly in Barani areas, rationalising water withdrawals by provinces, conserving and recycling water, preserving and improving water quality, proactively addressing transboundary water issues, promoting population control, checking the intrusion of sea water, desalinising sea water, and promoting information dissemination and rationalisation of virtual water could solve water problems of a country like Pakistan.

Summary of Proceedings

Keynote Address

Topic: Role of Agriculture Sector and Food Security in Pakistan

Speaker: Syed Fakhar Imam, Former Federal Minister for National Food Security and Research, Government of Pakistan

“Security, national security, international security and food security are all interlinked and cannot be separated from each other.”

Mr Imam started his Keynote Address by narrating an incident of a district in Pakistan where distribution points of wheat flour were needed although that particular district was producing a good amount of wheat every year. He linked the episode with a similar scene in the Soviet Union in 1989, where individuals were lined up for bread. Later, Soviet Union lost its political identity and fractured into many states in 1991.

Agriculture in Pakistan

“Pakistan has the largest irrigation system in the world, i.e., 25 million acres.”

According to the speaker, approximately 50 million acres out of 196 million acres of Pakistan’s land mass was under cultivation of which 31 million acres was irrigated and 19 million acre was non-irrigated, and hence, urged that it was time to seriously review where Pakistan stood vis-à-vis food security. He shared that it was well known that of the five major crops, wheat took up 36% of the fertile area, however, that was where the problem lay.

“We have failed to evolve varieties which give us high-yield crops.”

He also expressed concerns about the status of agriculture universities in Pakistan; and blamed educational institutions for continuing with outdated curriculum not at par with other institutions at regional and international level.

“Agricultural education, agricultural extension and agricultural research are key to improving the agro-economy of Pakistan.”

Cotton

Syed Fakhar Imam pointed out that cotton had become a disastrous crop of late with production receding to 4.8 million bales. He recalled that in 1991, Pakistan was ahead of India in cotton production given that the former was producing 12.8 million, while the latter's production was limited to 11.4 million bales. He highlighted that India, China and Australia took Bt technology from a private company in the United States to enhance their yields, whereas Pakistan refused this technology when it was offered back in 1998, for which the country had paid dearly. He also mentioned that a few Pakistani scientists were aiming to create triple gene cotton lines, but given the complexity involved, the chances of its success were very limited.

Population Growth

Mr Imam also highlighted that population growth in Pakistan stood at an alarming 2.4% which was comparable to that of developed countries like Singapore and New Zealand. He was concerned that this aspect was not given due attention from the viewpoint of food security.

Water Availability and Soil Quality

The Keynote Speaker stressed the importance of water and soil; and pointed out that techniques such as soil-testing could change the way agriculture took place.

“Mechanisation and modernisation can be the key to agricultural success in Pakistan.”

Syed Fakhar Imam also highlighted that Pakistan had not built a single dam after Tarbela. Moreover, Tarbela and Mangla had to replace the 37 million acre feet of water when Sutlej, Beas and Ravi were given to India, under the Indus Waters Accord. Whereas, Pakistan replaced only 9 million acre feet of water and most of it was silted. He also highlighted the energy problems of Pakistan and the economic value of hydroelectricity.

Investing in the Agriculture Sector

Mr Imam pointed out that agriculture required investment which was lacking for the last 25 years, and rural development was also in need of significant investment. He added that the country's figures were abysmally low in education and research; and identified the budgetary constraints of the state which were further impeding productivity and progress.

Topic: A Critical Appraisal of the Food Security Situation and its Impact on Social Development of Society / National Security

Speaker: *Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute, Islamabad & Convenor National Coordination Committee on Prime Minister's Agriculture Transformation Plan*

Dr Suleri presented his arguments through a well-structured presentation and discussed in detail the following aspects:

Understanding Food Security and Triple 'C' Crises

Dr Suleri referred to a recent conference conducted by the Sustainable Development Policy Institute (SDPI) titled, 'Sustainable Development in Unusual Times.' The 'unusual times' comprised of 'three Cs', i.e., COVID-19, Conflict, and Climate Change. Dr Suleri postulated that these three 'Cs' were shaping the world and influencing security, not only in the traditional domain but also in non-traditional domain, including food security. He further explained the four pillars of food security: availability, accessibility, absorption, and sustainability. For the first condition to be met, he said, food had to be physically present. Secondly, he said food should be socially and economically accessible. About the absorption part, he said resources other than food, such as water, should be of good quality and quantity. The fourth pillar that he mentioned was overall sustainability.

“Triple C’ crises are affecting all four pillars of food security: availability, accessibility, absorption, and sustainability.”

He also pointed towards other factors that could hamper food security, like the health of animals and plants was equally important as any disease or pest outbreak could impact food security.

COVID-19 and Food Security

For understanding the destruction caused by COVID-19 Dr Suleri laid out a few relevant financial and development statistics. He stated that in 2020, the world economy shrank by around 4.3%, while the cost of COVID-19 in 2020-2021 was about USD 10.3 trillion in foregone output. In the development sector, he regretted that COVID-19 undid the progress of decades to curb poverty and hunger as it was for the first time in 2019-2020 when global poverty increased after decades. He said even before the Russia-Ukraine conflict, and the extreme weather events of later half of 2021 and 2022, the world was heading towards a famine-like situation due to the Pandemic.

To present the picture of food insecurity in Pakistan, Dr Suleri quoted the 'Global Report on Food Crises,' which termed Pakistan as the 9th country with the highest number of people facing food insecurity. He drew attention to the fact that the report presented the data before the Russia-Ukraine war and Pakistan's super floods of 2022, which could have substantially worsened the situation. He also highlighted that before these events, food insecure people only fell in 'Crisis' or 'Emergency' categories in the report. However, now, he said the category of 'Catastrophe' had also been added.

Conflict

The second 'C' in the 'Triple C' crisis stood for 'Conflict', particularly, the Russia-Ukraine conflict and other conflicts in general. Dr Suleri explained that the Russia-Ukraine War affected food security the world over as it disrupted global food supply chains and prices considering that Russia was one of the biggest exporters of wheat, fertilizers, and energy. He said the war also disrupted humanitarian operations, e.g., the World Food Program used to procure almost 60% of wheat for humanitarian purposes from Ukraine which was obstructed after the war broke out.

Dr Suleri said Pakistan imported roughly 45% of its wheat from Russia, and 55% from Ukraine. He explained that the war rendered one of these import sources inaccessible, while it became extremely difficult to import from the second one due to sanctions (and threat thereof). He deduced that due to these reasons, food insecurity in Pakistan had become more aggravated. Moreover, he quoted a report by the International Organization for Migration (IOM) enlisting the top ten food-crisis hit countries hosting refugees/asylum seekers. At the time of publication of the report by IOM, Uganda was the country with the highest number, i.e., 1.6 million refugees or asylum seekers. However, after Taliban took over in Afghanistan in 2021 and the subsequent refugee influx, Pakistan outranked Uganda. So currently, Pakistan was hosting one of the highest number of refugees/asylum seekers in the world among the top 10 countries facing food insecurity as well as stagflation.

Climate Change

The third 'C' in the 'Triple C' crisis was Climate Change. Commenting on the food insecurity caused by climate change in Pakistan, particularly the post-floods situation in 2022, Dr Suleri said the flood-affected people were now forced to go back to stagnant waters which had still not receding in many places. Referring to analysis by the United Nations Satellite Imagery (UNSI), he said as of 31 December 2022, almost 8 million people remained exposed to or were living close to the flooded areas. Moreover, he said that the UN had categorised 35 districts across the country which would be severely affected by the winter.

Pakistan's Tetra 'C' Crises: Complacency

While the world suffered from three 'C' crises, Dr Suleri postulated that Pakistan was plagued with another C, which was 'Complacency.' He regretted that despite knowing and being mindful of all the three crises, 'Complacency' still prevailed in Pakistan, along with outdated policies and mindsets.

Political Instability

Reflecting on the wheat flour crisis in the country, Dr Suleri was of the view that it was caused by the political instability rocking the country. Narrating an example, he shared that due to political instability and lack of control, the Food Department started releasing wheat to private flour mills in April (rather than September) and continued until August due to which it ran short of stocks at the time of its actual release. Furthermore, the private sector was hoarding wheat flour and selling it on higher rates.

Discrepancies in Minimum Support Price

To ensure a smooth supply of wheat and incentivise farmers to produce more, the Pakistan Agricultural Storage and Services Corporation (PASSCO) procures wheat on a Minimum Support Price (MSP). This price is determined based on the excess and shortage of wheat supply in Pakistan.

“Disruptions in the wheat sector are also often caused due to the problematic mechanism in place for setting the MSP.”

Inconsistent Policies

Dr Suleri warned that unless data was not considered essential in policy input, and the stakeholders continued to stick to outdated policies, it would continue to result into a wheat flour crisis, currently unfolding in the country.

Impact of Food Insecurity

Dr Suleri referenced the 2022 Global Hunger Index, in which Pakistan ranked 99th out of 121 countries. Pakistan scored only 26.1 and had a hunger level that was categorised as 'serious'. However, this index utilised data before the super-floods hit Pakistan in 2022, meaning by the situation must have worsened further, he lamented. He also quoted the National Nutrition Survey 2019 (NSS-2019) to shed light on nutrition stats in the country. He informed the NSS-19 revealed that even before food security was aggravated by the Triple C crises, 40.2% of children in Pakistan were stunted, 17.7% were wasted, 28.9% were underweight and 9.5% were overweight. Moreover, around 37% of Pakistan's population in 2019 was experiencing some sort of food insecurity, which could have been aggravated after the Triple C crises hit. He cautioned that malnourishment affected brain growth, a condition which once

developed in the first five years, could never be reversed. He summated that this scenario meant that the future generations of Pakistan would be stunted, wasted, and malnourished with lower IQs.

Social Dimension of Food Security

Talking about the social dimension of food security, Dr Suleri presented his thesis that individual/human security was the foundation of all securities existing at national, regional and global level. He said that if individual/human security was compromised, security at all the other levels would be compromised too.

“Individual socioeconomic well-being or human security is protected under Article 38 of the Constitution of Pakistan as well as dozens of international conventions that make the state responsible to ensure that citizens are food secure. However, due to political instability, mismanagement, and stagflation, individuals in Pakistan are more food insecure now than they were before COVID-19, the Russia-Ukraine conflict and floods.”

Topic: Evaluation of the Availability of Water for the Agricultural Needs of Pakistan

Speaker: *Mr Ashfaq Mahmood, Former Federal Secretary for Water and Power, Government of Pakistan*

Mr Mahmood discussed the availability of water for agriculture needs of Pakistan. He highlighted that at the time of independence, Pakistan received water from six major rivers on its eastern border, including Indus, Jhelum, Chenab, Ravi, Sutlej, and Beas, as well as from the Kabul River in the West. However, 59% of this water originated from across the border, with 12% coming from Afghanistan and 47% from the eastern border.

Vulnerability of Pakistan’s Water Supply

According to the speaker, the vulnerability of Pakistan’s water supply, as majority of it came from across the border through the Indus, Jhelum, Chenab, Ravi, Sutlej, and Beas rivers, with a significant portion being controlled by India. He then discussed the events that took place immediately after the country’s independence. In 1948, India stopped the flow of water to Pakistan and as a result of subsequent negotiations and finalisation of the Indus Waters Treaty (IWT), Pakistan was left with access to only three rivers from the Eastern side and Kabul River from the Western side.

“About 70% of the water that Pakistan receives comes from snow melt and glaciers and the rest from rainfall, apart from river waters. Climate change is impacting this.”

River Basins and Water Reservoirs in Pakistan

Sharing the background and data on the major basins in Pakistan, Mr Mahmood shared his concern that the three major reservoirs: Tarbela, Mangla, and Chashma, were undergoing decreasing capacity due to siltation and infrastructure damage. In his view, the two dams under construction, Basha Dam and Mohmand Dam would add to water storage capacity but these were facing financing and implementation issues.

Water Management Issues

“A significant amount of water, up to 26-27 million acre-feet, goes to the sea each year due to lack of proper storage and management.”

Mr Mahmood asserted that out of 177 million acre feet (MAF) of water, 101.4 MAF were diverted to the irrigation system, but only 58.4 MAF reached the farm head due to losses, evaporation, seepage, mixing with saline water, and theft. He emphasised on the need for better management and saving lost/wasted water since even if 5% of the lost water was saved, it would make a major difference.

Water Availability and Usage

According to the speaker, Pakistan received 141 MAF of water from rivers, with a high degree of variability. Groundwater was over the threshold of aquifers and was 30 times more expensive than surface water. Overall efficiency of water usage in agriculture is around 50.9%, with projected water shortage of 70 MAF in the country, with 60 MAF of that shortage anticipated in the agriculture sector.

“Pakistan is in an extremely water-stressed situation and given the decline in per capita availability of water, immediate steps are needed to mitigate an impending crisis.”

Potential Impact of Climate Change on Water Availability

Mr Mahmood also discussed the potential impact of climate change on water availability and the need for inter-seasonal and inter-year transfers of water. He noted that climate change and global warming would further impact water availability, as water requirements for crops, humans, and cattle would increase, and sea level rise would intrude into the delta and lower part of Sindh.

Dealing with Water Scarcity in Pakistan

Stressing on the need for large dams to save water in surplus years and manage monsoon floods, as well as the importance of increasing water efficiency through improved technologies and management practices, Mr Mahmood noted that increasing efficiency by just 5% could save 7.6 MAF of water, equivalent to building a large dam.

“Water scarcity in Pakistan needs to be addressed by building a combination of large and small dams for controlling and storing water from monsoon floods and efficient management to meet increasing water demand.”

Mr Mahmood insisted that Pakistan would be in very dire straits if the country did not move away from ‘Business As Usual’ and undertook austerity measures. He highlighted the need for efficient irrigation practices and rationalisation of water use, as well as utilising techniques such as rainwater harvesting, water recycling, and water pricing to conserve and manage water resources.

“It is important to address transboundary water issues, population control, and information dissemination to raise awareness about water conservation. In the short-term, the most effective solution is to improve water efficiency and conservation, and in the long-term, invest in larger dams and infrastructure projects by involving the private sector in these efforts and the potential benefits for the economy and energy consumption.”

Topic: Climate Change and its Impact on Food Security of Pakistan

Speaker: Ambassador Shafqat Kakakhel, Chairman Board of Governors, Sustainable Development Policy Institute, Islamabad

What is Food Security?

Ambassador Kakakhel highlighted the adverse impacts of continued climate change on the food security of Pakistan. Before analysing the impact, he said that it was important to understand the definition of ‘food security’, decided at the World Food Summit in 1996, noting that:

“Food security exists when all people at all times have physical and economic access to sufficient safe and nutritious food that meets their dietary requirements for an active and healthy life.”

In order to understand the impact of climate change comprehensively, Ambassador Kakakhel also discussed key dimensions of food security including availability of food, access to food, utilisation of food, and food stability. 'Availability' implied that a country should either produce its own food or be able to import or receive food in aid. He explained that 'access' meant ability of an individual or a household to have resources to buy or access food. While 'utilisation' meant attainment of nutritional well-being, and food 'stability' could be understood as the ability of a population, household or an individual to have access to sufficient food at all times.

Climate Change and its Impact

Ambassador Kakakhel indicated that increased attention had been paid to the likely consequences of climate change on food security, especially in the global South, since the global discourse on climate change began in the mid-1980s. He noted that various impacts of climate change had been identified by climate scientists and by the Intergovernmental Panel on Climate Change (IPCC), established in 1988, with the mandate to assess climate trends, drivers and impacts of climate change and how the international community could address these negative impacts.

Rising Surface and Ocean Temperature and Climate Migration

Ambassador Kakakhel explained that higher surface and ocean temperatures were causing the sea level to rise, thus, inundating coastal regions and Island states. He noted that rising sea levels and their intrusion were also increasingly damaging human settlements and salinising freshwater.

“Climate change is, therefore, threatening farming because salinised water is not good for farming nor fishing.”

Consequently, farmers and fishermen were being forced to seek alternative livelihoods and homes elsewhere. However, he suggested that fresh investigations needed to be carried out to ascertain the scale and magnitude of the problem of climate migration.

Climate Change and Extreme Events

Ambassador Kakakhel informed that the most drastic impact of climate change had been frequent, long-lasting and intense extreme events such as floods, droughts, cyclones, storms and heat waves. He noted that these extreme events damaged water courses and infrastructure including barrages, bridges, reservoirs, lakes and wetlands. According to him, Pakistan had been witnessing an exponential increase in the number of extreme events over the past five decades.

“The 2010 and 2022 Super Floods caused huge losses and damage making food, agriculture, and livestock sectors the most climate vulnerable economic sectors in Pakistan.”

Ambassador Kakakhel also indicated that negative impacts of prolonged droughts occurring from 1996 to 2002 on agriculture had never been fully undone.

Impact of Melting Glaciers

While noting that Pakistan mainly received its water from two sources including glacial ice and snow melt and monsoon rains twice a year in winter and summer, Ambassador Kakakhel warned that the glacier mass in the country had been eroding which would result in net-reduction of water flow.

“The Indus aquifer is being destroyed by excessive abstraction through the 1.5 to 2 million tube wells.”

He expressed his disappointment that the depletion of the Indus aquifer in Pakistan and India was becoming as bad as the aquifer in the Gulf countries. He noted that the issue of aquifer depletion was a crucial issue for Pakistan’s agricultural economy as well as overall water and food security.

“The monsoon rains are vital for supplementing river flows in the Indus Basin and sustaining lakes and wetlands as well as recharging the Indus aquifer, our most reliable water storage.”

Degradation of Soil Fertility

Ambassador Kakakhel noted that as climate change was continuously causing heat waves, floods, and droughts, these in turn were degrading land quality and soil fertility. Though people in Pakistan applaud the fertile lands in the province of Punjab, he asserted that the quality of land soil was poor. ‘If one calculates the total amount of arid and hyper arid soil, then, only a third or 40% of the soil remains first class’, he shared.

Reduction in Amount and Quality of Fresh Water

“The international community has failed to reduce carbon emissions, which have been the primary cause of global warming, therefore, all the cumulative effects of climate change would result in a net reduction in the amount and quality of fresh water resources in the Global South.”

He suggested that as it was quite impossible to predict the reduction of water as a result of climate change in precise quantitative terms, therefore, Pakistan needed to adopt perennial irrigation owing to variability in the amount of water available for agriculture.

Impact on National Economy

“The cumulative effect of climate change impacts will be a net reduction of freshwater resources.”

Ambassador Kakakhel further stressed that climate change not only degraded food quality, crop yields and agriculture, but had also been hampering overall economic development of Pakistan. He indicated that the IPCC had warned that cumulative effects of climate change would lead to more poverty and slow down poverty eradication efforts. While citing assessments by government ministries, the European Union, The World Bank, Asian Development Bank and other UN agencies recording loss and damage caused by the recent floods in Pakistan, he noted that damage in sectors including agriculture, food, livestock, and fisheries was estimated at PKR 800 billion and the losses were estimated at PKR 1986 billion.

Focus on Reconstruction and Rehabilitation

To deal with the enormous calamity brought by the recent floods, Ambassador Kakakhel remarked that Pakistan had received pledges of generous funding by the international community. He emphasised that the funding pledged had been predicated on the preparation of projects and programmes. He noted that the Islamic Development Bank had promised support of USD 4.2 billion, while The World Bank, Asian Development Bank and the Chinese Bank of Infrastructure Development and some friendly governments had also promised up to USD 9 billion or in excess. ‘This financial help may be utilised to support the National Adaptation Plan, prepared by the Ministry of Climate Change, and other specific measures in six or seven economic sectors for reconstruction and rehabilitation identified by Pakistan during the recent Geneva discussions’, Ambassador Kakakhel concluded.

Concluding Remarks/ Vote of Thanks

Air Marshal Farhat Hussain Khan (Retd), Centre for Aerospace & Security Studies, Islamabad

In his *Concluding Remarks*, President CASS Air Marshal Farhat Hussain Khan, thanked the esteemed panellists for the rich discourse on a subject so crucial and important for Pakistan. He also offered comments on several of the important issues raised during the seminar.

Malnourished Population of Pakistan and National Security

According to President CASS, food security was not merely about feeding people, it was about giving them their due rights.

“When people are not fed properly, they are malnourished. 25% of the population of Pakistan is malnourished. Such a population of malnourished people is vulnerable to exploitation. If a person whose only objective is to earn two meals for his family, and fails to do so, he is vulnerable to exploitation by both internal and external adversaries, and ultimately becomes a law and order concern. Moreover, such people cannot contribute to nation-building.”

Responsibility of the State

President CASS, Air Marshal Farhat Hussain Khan, further highlighted that the State of Pakistan had a responsibility of providing food security to its people and they must have access to sufficient food of the correct dietary mix at all times - a bare minimum requirement of a common Pakistani.

Impact on the Economy

Highlighting the impact of food security on the economy, Air Marshal Khan shared that Pakistan spent USD 9.7 billion on food imports in 2022. He expressed his disappointment that a country with a deteriorating economy, after getting loans from abroad, was spending billions of dollars on food imports due to lack of infrastructure, quality human resource and research in this domain.

Recommendations

President CASS reiterated that the recommendations given by other speakers were noteworthy and merit attention. He emphasised that trained human resource and research and development were extremely important to improve the agriculture sector.

“New techniques should be used to increase output and precision agriculture is one such technique that may be introduced among agriculturists to achieve optimum levels of growth.”

Given the devastating floods in 2022, he supported the idea of risk insurance for farmers to compensate them for climate losses.

Making Food Security a Priority

Referring to the loopholes identified by other speakers, President CASS stressed that governance was one of the major challenges for Pakistan and everything was related to how things were managed.

“Agriculture has never been a priority and governance issues are innumerable. Cartels, influentials and the elite continue to rule the agriculture sector and poor farmers suffer. Governance needs to be a priority to ensure that all sectors run smoothly.”

He agreed with the panellists that it was not the system which was the issue, rather the people who managed it and took decisions according to self-centric and vested interests. President CASS asserted that it was important for the country's National Security Policy to define 'food security' as one of the vital national interests to ensure comprehensive security.

Annexures

I. Profile of Speakers

Keynote Speaker

Syed Fakhar Imam,

***Former Federal Minister for National Food Security
and Research, Government of Pakistan***



Syed Fakhar Imam is an eminent politician who has served as the Federal Minister for National Food Security and Research from April 2020 to April 2022. Earlier, he was the 11th Speaker of the National Assembly of Pakistan, as well as Chairman of Pakistan's Parliamentary Special Committee on Kashmir. Mr Imam was educated at Aitchison College in Lahore and Clifton College in England.

Speakers

Dr Abid Qaiyum Suleri,

***Executive Director, Sustainable Development Policy &
Convenor of National Coordination Committee on Prime
Minister's Agriculture Transformation Plan, Government of
Pakistan***



Dr Abid Qaiyum Suleri is Executive Director of the Sustainable Development Policy Institute. He is also co-chair of the Board of Climate Action Network, South Asia, and serving as a member of the Permanent Organizing Committee of the South Asia Economic Summit; and the Pakistan Climate Change Council. Earlier, he was a member of the Advisory Board of the CAREC (Central Asia Regional Economic Cooperation) Think-Tank Network. He was the lead expert in the World Economic Forum's 'Transformation Mapping' initiative from Pakistan. Dr Suleri regularly writes on sustainable development issues in mainstream print and electronic media; and is Editor-in-Chief of the 'Journal of Development Policy, Research, and Practice.' He did his PhD in Food Security from the University of Greenwich, UK.

Mr Ashfaq Mahmood,

***Former Federal Secretary for Water and Power,
Government of Pakistan***

Mr Ashfaq Mahmood has served as Federal Secretary in the Government of Pakistan. His important assignments included Federal Minister of Water and Power, Planning and Development, IT and Telecom, Science and Technology, Finance (Special Secretary) and Managing Director of the Public Procurement Regulatory Authority. He was also President of the National Engineering Services of Pakistan (NESPAK), and National Power Construction Company (NPCC) and in-charge of the Energy Wing of the Planning Commission for many years. He also served as head of the official delegation on the recent water disputes with India.



Ambassador Shafqat Kakakhel,

***Chairperson Board of Governors, Sustainable
Development Policy Institute***

Ambassador Shafqat Kakakhel is Chairperson of the Sustainable Development Policy Institute's Board of Governors. Earlier, he worked as Deputy Executive Director of the United Nations Environment Programme, Assistant Secretary General of the United Nations, and Permanent Representative to the United Nations Environment Programme and the United Nations Centre for Human Settlements-HABITAT. He also served as President of the United Nations Environment Programme's Governing Council. His overseas postings included Beirut, Cairo, Bonn and Jeddah at junior levels and in New Delhi and Nairobi as Deputy High Commissioner and High Commissioner, respectively.



Moderator

Dr Zia Ul Haque Shamsi,

***Director Peace and Conflict Studies, CASS,
Islamabad***

Dr Zia Ul Haque Shamsi is currently serving as Director of Peace and Conflict Studies at Centre for Aerospace & Security Studies (CASS). He has authored two books, 'Nuclear Deterrence and Conflict Management Between India and Pakistan' (December 2020), and 'South Asia Needs Hybrid Peace' both published by Peter Lang, New York, USA, (December 2021). He also translated Sun



Tzu's 'The Art of War' into Urdu in 2013. He regularly writes opinion articles for Pakistani newspapers, both in English and Urdu, and appears on national TV networks in current affairs programmes. Dr Shamsi did his PhD in Strategic Studies from the National Defense University, Pakistan.

II. Press Release



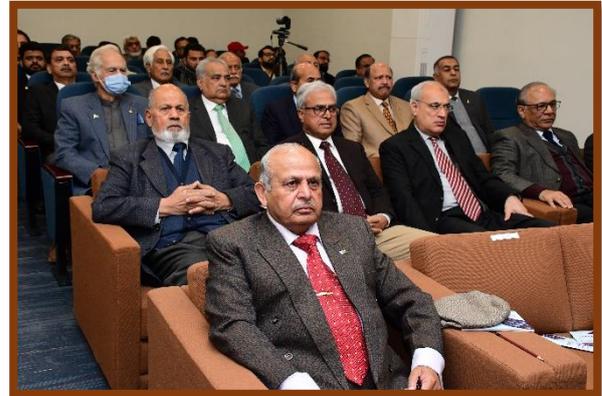
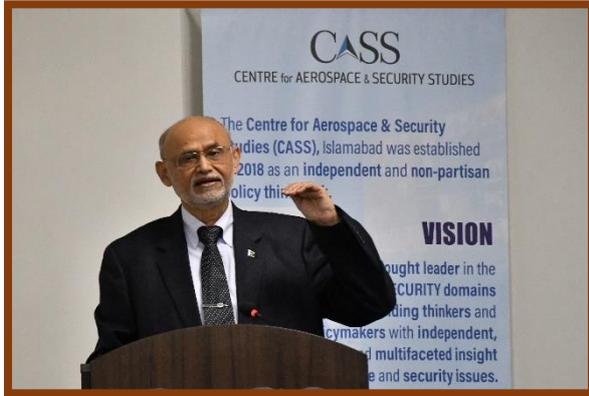
“National security cannot be guaranteed unless there is food security in Pakistan. Urgent attention needs to be given towards reforming and modernising the agriculture sector as well as controlling population growth.”

This was the key message of the eminent speakers at the seminar on **'Food Security for Pakistan'** organised by the Centre for Aerospace & Security Studies (CASS) in Islamabad.



Syed Fakhar Imam, Former Federal Minister, Ministry of National Food Security and Research, Government of Pakistan was the Keynote Speaker, while other eminent speakers included Dr Abid Qaiyum Suleri, Executive Director, Sustainable Development Policy Institute, Islamabad; Mr Ashfaq Mahmood, Former Federal Secretary for Water

and Power, Government of Pakistan; and Ambassador Shafqat Kakakhel, Chairman Board of Governors, Sustainable Development Policy Institute, Islamabad. The seminar was concluded by President CASS Air Marshal Farhat Hussain Khan (Retd), while Dr Zia Ul Haque Shamsi Director at CASS moderated the proceedings.

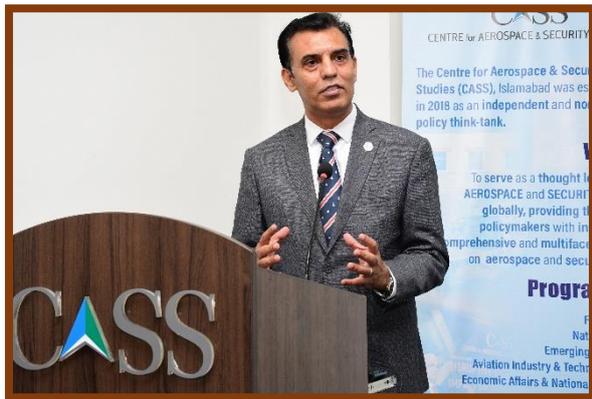


Dr Zia Ul Haque Shamsi, while delivering the *Opening Remarks*, highlighted that Pakistan being the fifth largest state in the world, and a predominantly agri-based society, unfortunately faces serious concerns of food insecurity for various reasons. This was especially concerning because while efforts were in hand to improve farming processes through modern methods, better seeds development, and resource management, Pakistan still had a long way to go in ensuring food security for its growing population at an affordable cost, he said.

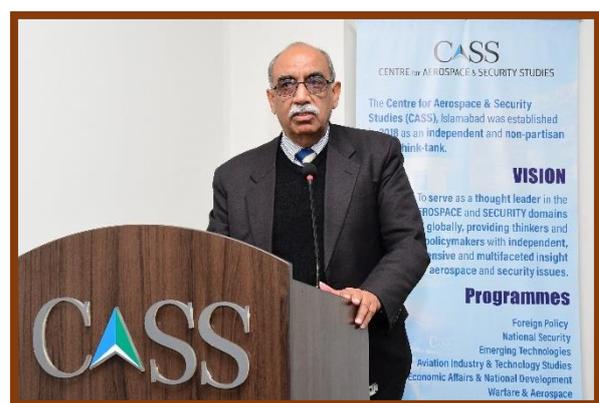


In his *Keynote Address* on 'Role of Agriculture Sector and Food Security in Pakistan', **Syed Fakhar Imam** pointed out that national security, international security, and food security were all interlinked and could not be divorced from each other. He lamented that of the five major crops, wheat was grown on 36% of the land which was where the problem lay. Sadly, Pakistan had failed to evolve high-yield crop varieties. Mr Imam argued that despite having five major agri-universities and affiliated colleges, they were not at par with international standards and had outdated curriculum. In his view, population explosion was also a major reason why Pakistan had become an importer of wheat. According to the speaker, mechanisation, modernisation,

agricultural extension, human resource development and research were key for strengthening the agro-economy of Pakistan.



Dr Abid Qaiyum Suleri underlined that triple C Crises ‘COVID, Conflict & Climate Change’ were forcing states across the globe to question and rethink their healthcare systems, economic policies, and ways of producing and consuming food, but Pakistan, had tetra-C crises given its ‘Complacency’. He pointed out that even before Pakistan’s super floods and Russia-Ukraine war, the country was ranked 9th in the list of countries facing worst food insecurity. In his assessment, the Punjab Food Department released subsidised wheat to flour mills in April 2022, as opposed to its earlier policy of releasing the stocks in September, had resulted in the current wheat flour crisis as it allowed the private sector to hoard its reserves. Dr Suleri warned that future generations of Pakistan faced heightened risk of malnourishment, wasting, stunting as well as low IQ. He urged shifting to precision agriculture technologies; adopting climate-smart agri-practices; integrating social safety nets for farmers, including weather index based insurance; improving agri-institutional arrangements; and offering smart subsidies, among others.



While analysing the availability of water for agricultural needs, **Mr Ashfaq Mahmood** provided an overview of the water resources of Pakistan under the Indus Waters Treaty and transboundary waters. He informed that glaciers, snow melt, and rains were major sources of water for Pakistan. In his view, the effects of global warming and climate change had made it difficult to ensure sustainable water management in the country. He proposed increasing water storage capacity by

building a combination of large, medium, and small dams; harvesting rainwater, particularly in barani areas; rationalising water withdrawals by provinces; conserving and recycling water; proactively addressing transboundary water issues; population control; desalinizing sea water; and promoting information dissemination and rationalisation of virtual water.

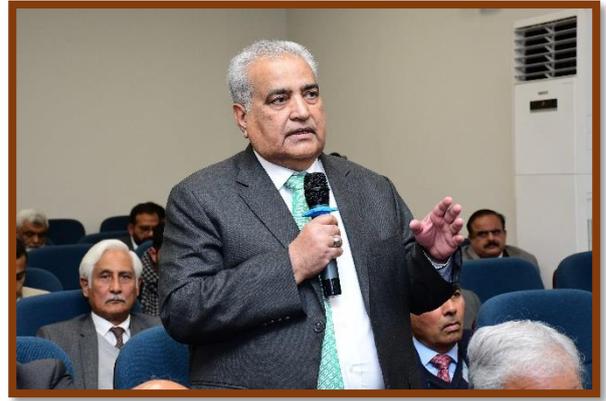


Ambassador Shafqat Kakakhel expressed disappointment that the problem in Pakistan was not the preparation of plans and projects rather lacked implementation as institutional arrangements for translating them into tangible actions was continuously eroding. He warned that the cumulative effects of climate change would not just be on food security but would also increase poverty and slow down poverty eradication efforts. He advised adopting the perennial system of irrigation in the country.



While delivering the *Concluding Remarks*, **Air Marshal Farhat Hussain Khan (Retd)** thanked the speakers for their in-depth analysis of food security, especially its impact on Pakistan's security and socioeconomic development. He stressed that a malnourished population was vulnerable to exploitation by both internal and external adversaries and could not be expected to contribute to nation-building, hence, security of the state was being compromised. He urged that national security should define 'food security' as one of the vital national interests. President CASS recommended that in order to become self-sufficient, more research and development on modernising the agriculture sector and adopting new irrigation techniques was a need of the hour.

Food Security for Pakistan

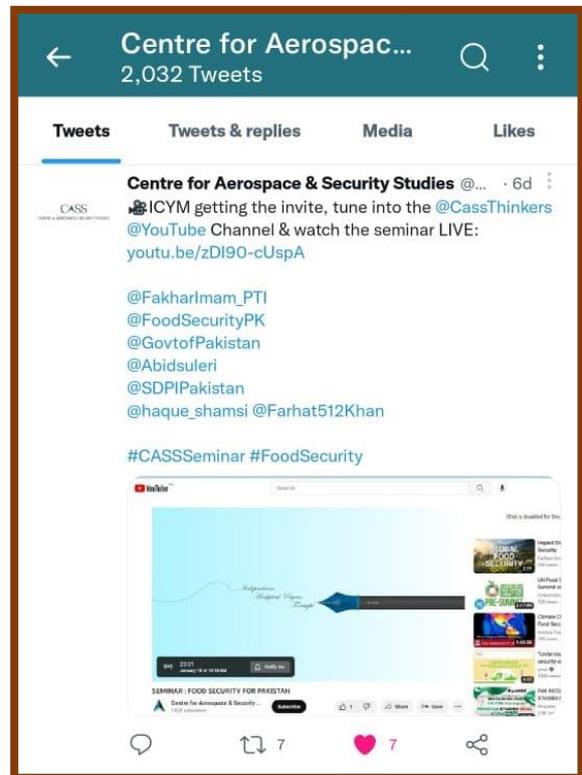
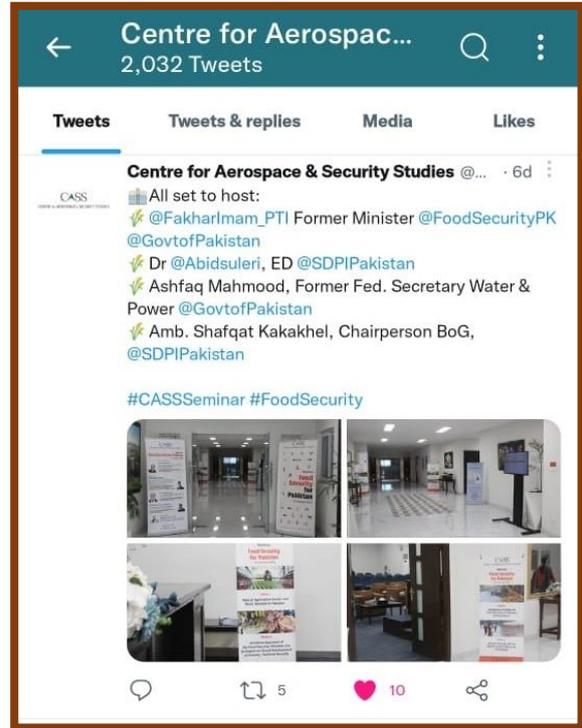


The seminar was attended by retired military officers, scholars from various think tanks, journalists and students, who actively participated in the interactive question and answer session.



III. Social Media Highlights

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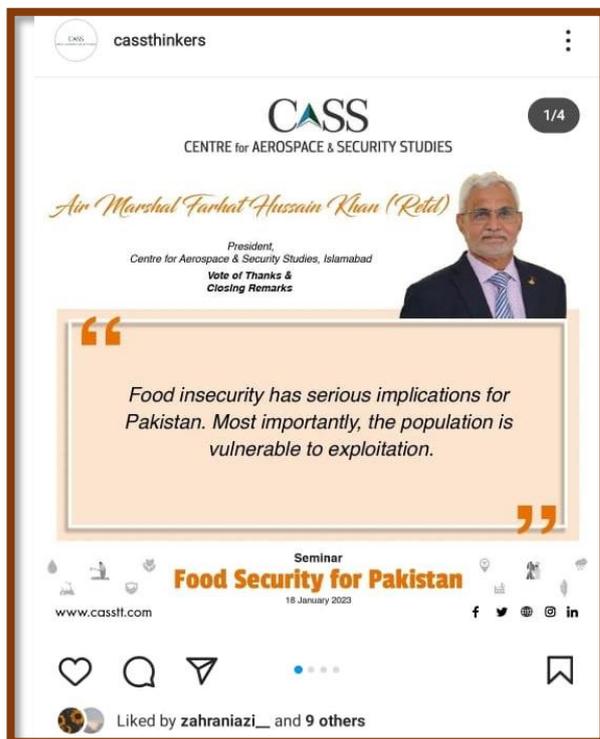
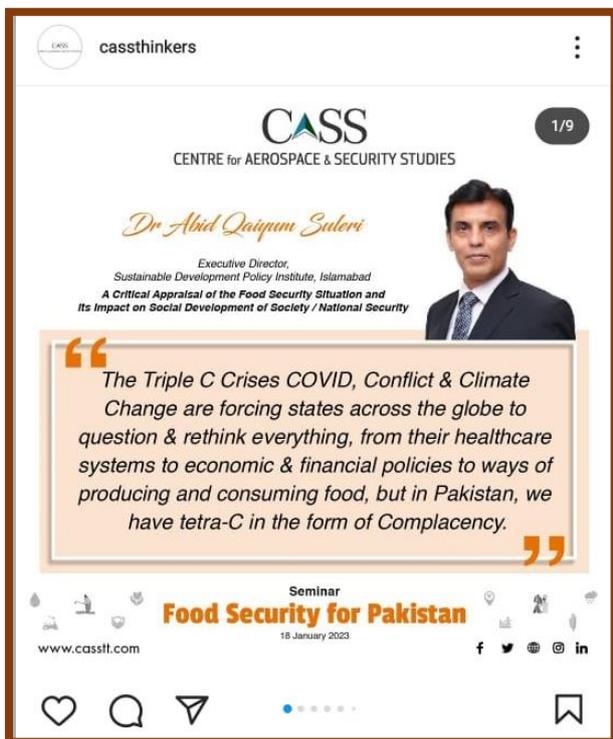
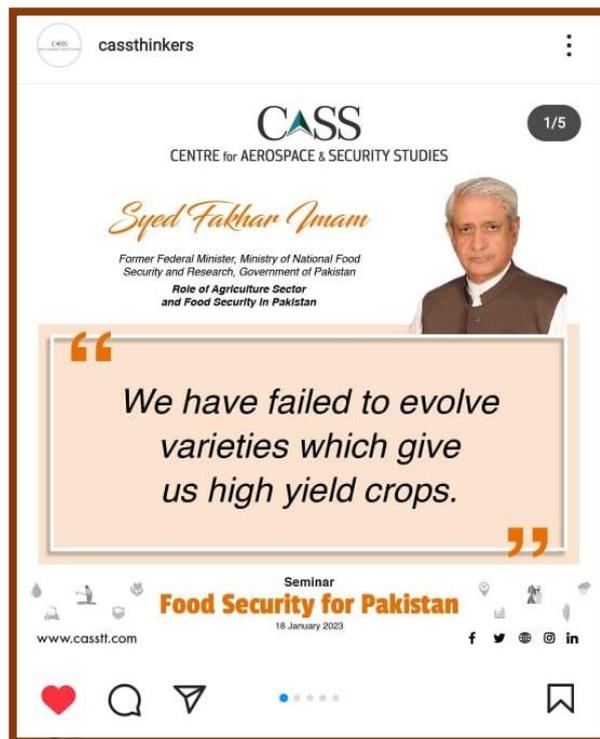
🌐 Food insecurity has serious implications for Pakistan. Most importantly, the population is vulnerable to exploitation... see more



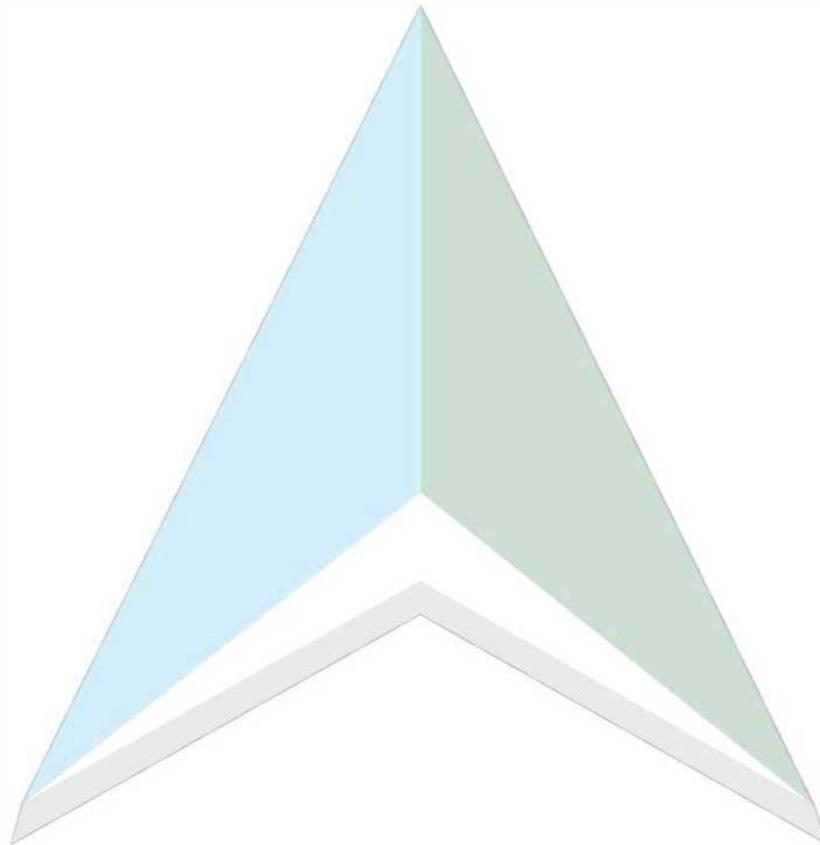
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