

# REVITALIZING THE AGRICULTURAL SECTOR OF PAKISTAN (SESSION 2)

IQBAL  
INSTITUTE  
POLICY STUDIES



WEBINAR – APRIL, 2021



## INTRODUCTION TO IQBAL INSTITUTE OF POLICY STUDIES (IIPS)

To develop into a center of excellence for research, policy studies and constructive dialogue with a view to facilitating policy formulation for sustainable national development



Undertake quality research and policy analyses for sustainable national development



Conduct research on emerging technologies for industrial application



Serve as a collaborative platform for dissemination of research, exchange and dialogue



Support endeavours for socio-economic development through research and analyses



Build capacity and competence to respond to research and policy needs at



Undertake critical impact studies of policies and recommend solutions



Develop viable connectivity between academia and industry for applied R&D

The agricultural sector of Pakistan is facing a looming crisis that needs to be immediately dealt with, as the sector holds a major share in the country's economic landscape. The Iqbal Institute of Policy Studies conducted a webinar on the topic, Revitalizing the Agricultural sector of Pakistan, session-2. The webinar discussed the findings of the first session to help create more refined solutions for revitalizing the agricultural sector of Pakistan.

## SESSION OBJECTIVES

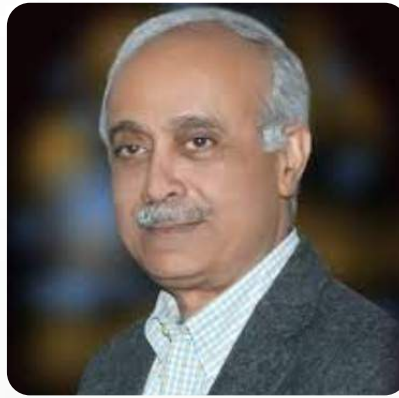
1. What is the role of federal and provincial governments in revitalising the agriculture sector?
2. How to increase the crop yield and achieve optimum utilization of water?
3. What can be the role of technology in uplifting the agriculture sector?
4. How to Facilitate and Enhance the Productivity of the Farmers?
5. What are the dangers of urban expansion to agricultural lands in Pakistan?

## OUR DISTINGUISHED SPEAKERS



**Lt Gen Haroon  
Aslam (Retd)**

President IIPS Advisory Board



**Dr Iqrar A. Khan**

Former Vice-Chancellor,  
University of Agriculture  
Faisalabad



**Dr Yousaf Zafar T.I**

Former chairman PARC



**Rabia Sultan**

Progressive farmer &  
Agricultural expert



**Dr. Shujat Ali**

Member IIPS Advisory  
Board



**M. Qadeer ul Hussnain**

Urban Planner



The details of speakers and video of webinar may be found on:  
<https://www.facebook.com/144287616215098/videos/830619220879581>

Visit us at:  
[www.iips.com.pk](http://www.iips.com.pk)





*The role of federal and provincial governments  
in revitalising the Agri sector*

**DR. SHUJAT ALI**  
**MEMBER OF IIPS ADVISORY BOARD**

According to Dr Shujat Ali, the 1973 constitution of Pakistan did not specifically mention agriculture in the federal legislative list or the concurrent list. Even when the constitution was framed, the interpretation is that agriculture originally was conceived as a provincial subject. But over the years, the federal footprint in the sector grew significantly. By the time the 18th amendment took place, agriculture's role had incrementally grown to a significant level. The very large Ministry of Agriculture reflected this role as it had 39 functions and twelve attached organisations. After the 18th amendment, the general impression was that the federal government acquired the subject as areas of national importance were best left with the federal government. The provinces also agreed to give responsibility in the areas to the centre. Regulation of seeds and fertilisers is an essential part of agricultural growth and is largely under the federal government's jurisdiction. Pesticides and plant protection was also considered a national issue.

After the 18th amendment, the Ministry of Food, Agriculture, and Livestock (MINFAL) was abolished, and a new ministry was created called the Ministry of Food Security and Research. Out of the 29 functions of the previous ministry, 26 were still with this newly formed one, which meant that a large bulk of administrative operations were kept under the Federal government. But in terms of the financial resources, the 7th NFC award declared a majority of the budgetary allocations for agriculture to the provinces. Therefore, real devolution took place on the financial side, while the administrative aspect did not see much change. The downside of all this was that these regulatory bodies in the federal government had become budget starved in face of scarce resources. Due to a lack of comparable resources, the federal government cannot efficiently perform its functions, and the role has become quite ineffective. The law is now in the hands of budget starved regulators who do not have the dynamism and vibrancy needed to facilitate and empower the various actors that are now at play in the growth of the agriculture sector.

**DR. SHUJAT ALI**  
**MEMBER OF IIPS ADVISORY BOARD (CONTINUED)**

Agriculture has grown, changed, and diversified in terms of actors and players. The private sector has now achieved a bigger role. The only way Pakistan can get value in terms of the interests of farmers and the overall sector is through developing mechanisms for cooperation and partnerships between the two tiers of government. If this does not occur, then the arrangement of regulatory and budgetary functions under the 18th amendment does not account for a balanced approach. Given the state of agriculture in the country, where growth rates have fallen to 2.2 percent in the last ten years, there is a need for a bigger mechanism that needs to be chaired by the country's chief executive. There is also a silo mentality that needs to be overcome for working together between the two levels of government. A very important role in agricultural growth is the role of markets, and the subject of markets is large with the provinces. But the existing laws, which were quite outdated and relevant laws have been amended, are not adequate to form markets that are needed for a flourishing agriculture sector. Those markets are still not in place. Technology is another key area in the agriculture sector and is needed for farmers, researchers, and markets. Therefore, to revitalise the agriculture sector of Pakistan, strong interventions and decision making required at the federal and provincial level.



*Increasing the crop yield and optimum utilisation of water*

**DR YUSUF MIRZA T.I  
FORMER CHAIRMAN PARC**

According to Dr Yousaf Zafar, water is the most vital sub-sector of agriculture. Without it, one cannot imagine agricultural productivity flourishing. It is usually seen that water scarcity problems arise in urban areas, and there is much talk on the quality and availability of water in urban cities. But the sweet water that is available to Pakistan, whether it be surface water or groundwater, is 90 percent consumed by agriculture. The remaining 5 percent goes to the domestic and industrial sector.

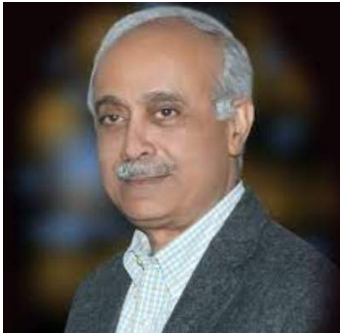
To spare more water for domestic or industrial purposes, Pakistan has to make its agricultural use of water more efficient and sustainable. Storage capacity in Pakistan, including dams, barrages, and reservoirs, is only 9 percent of its annual flow, which is merely sufficient for less than 30 days of survival. The world average is that water storage must account for almost 40 percent of a country's annual flow. The United States has a storage capacity of 2 years. The National Water Policy states that Pakistan will enhance its storage capacity from less than 30 days to 90 days, which is still insufficient.

Multiple reports related to water conservation and efficient use have been published. Still, since the inception of Pakistan, the water and power sectors remain mixed together, and focus on the water remains missing. The Sartaj Aziz report is a comprehensive report on the water situation of Pakistan. Other reports include ones published by the World Bank, the World Wildlife Fund, the Asian Development Bank, and the Planning Commission of Pakistan. Still, it remains to be seen how Pakistan has gotten from surplus to scarce in its water resources. In 1951, 5260 cubic metres of water was available per person. In 2016 however, the minimum water threshold for stressed countries was reached at 1000 cubic metres per person of water availability. And in 2025, Pakistan is expected to become a water-scarce country, with just 860 cubic metres of water per person.

**DR YUSUF MIRZA T.I**  
**FORMER CHAIRMAN PARC (CONTINUED)**

So, what is Pakistan's policy status? Recently, multiple policies have been made related to water conservation in Pakistan, such as National Environmental Policy 2005, National Drinking Water policy 2009, and the National Climate Change policy 2012. The most important among these is the National Water Policy 2018. A basic policy shift was required when it was decided that there should be separate ministries of water and power development. There is a chapter on land and water resources management in the National Food Security Policy. It also emphasises a high-efficiency irrigation system, modern technology, investment in rain harvesting, and legislative and regulatory framework to protect groundwater resources. Pakistan also needs an integrated water management resource to avoid flood irrigation. After 2018, a major shift in the national water policy was seen by the creation of a new federal ministry on water resources. The Pakistan water charter was signed by all the four chief ministers and the Prime Minister. Although the water policy has been passed, the ground realities are contrary to the slogan.

There have been valuable interventions in the form of the National Olive Project, Billion Tsunami Tree project, Ten Billion Tree project, productivity enhancement of oil crops, and GLOF management projects. All these interventions require very less water and help towards optimum utilisation of water in the country. The incumbent Government also mentions a chapter on water conservation in their manifesto. While there is a strong need for better governance and coordination among ministries after the 18th amendment, legislation on water drawing and pumping is also needed. Only Balochistan has drafted a bill regarding the issue. Therefore, it is very critical that the Government pays attention to implementing all the policies related to water management in Pakistan along with forming laws that prevent the misuse of water.



*The role of technology in  
uplifting the Agri sector*

**DR IQRAR A. KHAN**  
**FORMER VICE-CHANCELLOR,**  
**UNIVERSITY OF AGRICULTURE FAISALABAD**

Dr Iqrar put forward the case of 2 crops, wheat and cotton. There has to be innovation at the genetic level for the two crops to become sustainable in the future. For the past few years, the wheat crop has constantly faced many diseases. Seed replacement for the wheat crop does not occur as even if the supplier arranges a new variety, the farmer is not ready to implement it due to costs and familiarity issues. One of the reasons for that is that the seed supply chain is not effective. The government claims that Pakistan has 450 million tons of seed for wheat, whereas the required amount is 1 billion tons. That means that Pakistan has a 50 percent capacity for seed replacement, an optimum amount for seed replacement globally. In 2015, no single acre of land was found of the cotton crop with uniformity of bales. The blame, again, lies on the seed. No country in the world grows any crop with a 50 percent or less germination rate.

There are reasons why cotton production is shifting from high yield to low yield areas, such as pest pressure, residue management, long-duration crop, and eventually cotton becoming uneconomical. There is a case for complete transformation and relocation of cotton. China has implemented new cotton crop technologies, which has allowed them to save 45 percent of their water and increased their yield by 28 percent. If Pakistan is to follow in the same footsteps using genetic seed modification and mechanisation of planting and plucking the crop, it can achieve similar results. Pakistan is a very diverse country. In the 1980s, Pakistan Agricultural Research Council arranged ecological zoning of the country into ten different zones. Four years ago, Punjab province was rezoned considering various variables such as soil, water, climatology, crop norms, topography, irrigation water, etc., and was divided in 12 to 14 zones. The mentality of growing just five crops across the entire province using the same package has to be changed.



**DR IQRAR A. KHAN**  
**FORMER VICE-CHANCELLOR, UNIVERSITY**  
**OF AGRICULTURE FAISALABAD (CONTINUED)**

The process has to become precise in terms of decision making and application of all modern technologies. Strip cropping can be used in areas where farmers are unwilling to adopt different crops or change their farming methods. Soybean and sugar cane can be cropped together. It can also be seen that the local cost of production of crops is usually higher than the international market rate. Farming in Pakistan is either inefficient or is lagging in key technological innovations available to the rest of the world



***How to Facilitate and Enhance the  
Productivity of the Farmers***

**RABIA SULTAN**  
**PROGRESSIVE FARMER & AGRICULTURAL EXPERT**

According to Rabia Sultan, previously formed agricultural policies must be implemented in Pakistan. Farmers face major challenges with water because they are not in control. It may be that farmers are the users of 95 percent of the water, but they do not have control over its use and storage. As it is not a demand-based system, the farmer has very few alternatives when water is low in reservoirs. A second major challenge is the cost of production. As the fertiliser price has increased from Rs. 3500 per bag to Rs. 5600, whereas the output has remained stagnant, farmers cannot achieve balanced use of fertilisers as long as the government does not intervene and subsidise them. The incumbent government has been working on providing fertiliser subsidies, but they have not defined a mechanism for providing subsidised fertiliser to farmers. As long as the farmer is not facilitated regarding his production cost, there can be no question of enhancing productivity because most of the farmers in Pakistan are small farmers.

**RABIA SULTAN**  
**PROGRESSIVE FARMER & AGRICULTURAL EXPERT (CONTINUED)**

Moving on, there is also a gap in mechanisation and its adoption in Pakistan. Farmers cannot afford heavy machinery, and as labour in agriculture is shrinking over time, a shift towards greater mechanisation will be needed. It remains to be asked from all the big Ministries and Organisations in Pakistan as to why such machinery has not been made available to the Pakistani farmer? Why is it not produced here? And what is being done for machinery standardisation? The few vendors who supply machines in Pakistan have no coordination between them, and the farmer is easily exploited. The government should intervene and establish machine accreditation and standardisation. India had a major issue of crop residue burning. They rose to the challenge by producing a machine that allows sowing wheat in rice crop residue. Pakistan does not have to reinvent the wheel, but a direction is needed.

Another important issue is that there has been no study on terms of trade for agriculture. By and large, these terms of trade for agriculture remain negative. Pakistan needs to focus on agriculture in its macroeconomic framework. Availability of quality inputs at a reasonable price is another major issue. Farmers are not acquainted with the quality of seeds they are purchasing. What has kept Pakistan afloat during the COVID19 pandemic is the agriculture sector. Therefore, there has to be a 4 to 5 percent growth rate in the agriculture sector for the next 5 to 10 years, and a roadmap is needed on how to achieve that.



### *The dangers of urban expansion to agricultural land in Pakistan*

**M. QADEER UL HUSSNAIN**  
**URBAN PLANNER**

One of the most prominent problems which the agriculture sector is facing in Pakistan is that of urban expansion. From a global perspective, more than 50 percent of the world population is living in urban areas. Based on research, 90 percent of the future urbanisation will also take place in Africa and South Asia. Pakistan has the fastest rate of urbanisation in the South Asian region, and in less than 10 years, Pakistan will become a predominantly urban living country. There were 235 declared urban populations in 1951, and now there are 624 in 2017. Out of these 624 urban settlements, 83 percent are growing without a plan, which is alarming at many levels. Looking at the overall land cover analysis of the country, 46 percent of the land area is reserved for agriculture, and almost 3 percent is for urban. But at the current growth rate of urban areas at 5 percent, Pakistan will double its urban area by 2040. A study was conducted recently to identify high productivity agricultural lands that are threatened by the expansion of urban areas, and it was seen that these lands are at a stake of conversion from agricultural land use to built-up. This is happening because cities are expanding horizontally. Looking at the built-up area of many cities, there is a settlement which alone is bigger than 182 cities of Punjab. No matter how productive agricultural land is, the farmer is not able to deny urban expansion due to many factors. They are mostly bound to transform their agricultural land into urban land. More than 50 percent of Punjab's urban area consists of only 10 major cities. If urban expansion is controlled in these 10 cities only, Pakistan can reduce the shrinking of its food basket. For solutions to this problem, Pakistan needs to see what the world has done to stop or minimise the urban expansion of their major cities. It can be done by giving preference to natural resources, fixing boundaries of cities, preparing master plans, clear demarcation of highly productive agricultural lands, zoning laws, and geo-mapping. Agricultural plans should be shared with urban planners, and housing schemes must conform to strict regulations regarding expansion into Agri lands. There should also be a focus on vertical development. Lastly, agriculture must be made an attractive option for the youth of Pakistan.

## KEY TAKEAWAYS

- The agriculture sector has become a mismanaged disaster following the 18th amendment as the reins of management are with the federal government and financial resources are held by the provincial governments. This makes implementation of agricultural policies a challenge for Pakistan.
- The only way Pakistan can get value in terms of the interests of farmers and the overall sector is through developing mechanisms for cooperation and partnerships between the federalting units.
- A very important role in agricultural growth is the role of markets. Existing laws are outdated and do not form the adequate basis for forming markets that are needed for a flourishing agriculture sector.
- Pakistan has extremely low water storage capacity. The country can only sustain itself for less than 30 days. A National Water Policy has been drafted, but its implementation has remained dismal. Pakistan must focus on implementing a clearly thought out water policy.
- Pakistan has mostly small farmers who cannot afford the increasing cost of production. As long as the farmer is not facilitated in this regard through government subsidy and intervention, there can be no question of enhancing productivity of farmers.
- Even if the supplier arranges a new variety of seed, the farmer is not ready to use it. One of the reasons for that is that the seed supply chain is not effective.



## KEY TAKEAWAYS

- The sweet water that is available to Pakistan, whether it be surface water or groundwater, is 90 percent consumed by agriculture. Only the remaining 5 percent goes to the domestic and industrial sector. To spare more water for domestic or industrial purposes, Pakistan has to make its agricultural use of water more efficient and sustainable.
- In 1951, 5260 cubic metres of water was available for use in Pakistan, making it surplus in requirement. In 2016, the minimum water threshold for stressed countries was reached at 1000 cubic metres of water availability. And in 2025, Pakistan is expected to become a water-scarce country, with just 860 cubic metres of water per person.
- Pakistan has had only two water-related policies in the past, namely, the Indus Water Treaty 1960 and Water Appropriation Accord 1991. But recently, there have been multiple policies made related to water, such as National Environmental Policy 2005, National Drinking Water policy 2009, National Climate Change policy 2012 etc., and the most important among these is the National Water Policy 2018.
- The crops which require less water, such as wheat, cotton, and sunflower, are being reduced in cropped area. Whereas, the crops which have a high-water requirement, such as sugarcane, rice, corn, and banana, are being increased in harvest area by 20 percent.
- India had a major issue of crop residue burning. They rose to the challenge by producing a machine that allows sowing wheat in rice crop residue. Pakistan does not have to reinvent the wheel, but a direction is needed.

## KEY TAKEAWAYS

- China has implemented new cotton crop technologies, which has allowed them to save 45 percent of their water and increased their yield by 28 percent. If Pakistan is to follow in the same footsteps using genetic seed modification and mechanisation of planting and plucking the crop, it can achieve similar results.
- It can be seen that the local cost of production of crops is usually higher than the international market rate. This shows that farming in Pakistan is either inefficient or is lagging behind in key technological innovations available to the rest of the world.
- Looking at the overall land cover analysis of the country, 46 percent of the land area is reserved for agriculture, and almost 3 percent is for urban. But at the current growth rate of urban areas at 5 percent, Pakistan will double its urban area by 2040.
- Pakistan also needs an integrated water management resource to avoid flood irrigation, which is becoming more and more common.
- Based on research, 90 percent of the future urbanisation will also take place in Africa and South Asia. Pakistan has the fastest rate of urbanisation in the South Asian region, and in less than 10 years, Pakistan will become a predominantly urban living country.
- There were 235 declared urban populations in 1951, and now there are 624 in 2017. Out of these 624 urban settlements, 83 percent are growing without a plan, which is alarming at many levels.