

Revitalizing Agriculture Sector of Pakistan

Outlines

I- Introduction

Thesis statement

Efforts at political, economic, societal and technological efforts are required to uplift the agriculture sector of Pakistan.

II- Challenges Faced by Agriculture Sector of Pakistan.

III- POLITICAL STEPS TO REVITALIZE THE AGRICULTURE SECTOR OF PAKISTAN

1- Adapting climate mitigation strategies

2- Countering water aggression by India

3- Consensus to solve agriculture related issues like Dams and canals

4- Devising Disaster Management strategy to safeguard agriculture sector.

IV- ECONOMIC STEPS TO REVITALIZE AGRICULTURE SECTOR

1- Providing loans at lower interest rate to Farmers.

2- Investing in Research and Technology related to Agriculture

3- Investing in Local Fertilizer Industry and Pesticide

V- STEPS AT SOCIAL LEVEL TO REVITALIZE AGRICULTURE SECTOR

1- Awareness campaign in Farmers to increase the yield

2- Providing agriculture Based education

VI- TECHNOLOGICAL ADOPTIONS TO REVITALIZE THE AGRICULTURE SECTOR

1- Adoption of modern methods like vertical and terrace Agriculture

2- Mitigation of Alien species by Biotechnology

3- Adopting modern Irrigation methods

VII- CONCLUSION

THE ESSAY

For centuries, human have fought wars over states, religion and power maximization. The was dynamic in modern world ~~have been changed~~. These raise a question regarding the dynamics of future wars. Some believe that future wars would be over rare earth minerals, other believe these wars would be over space control and AI domination. ~~There is a school of thought of thought which believes that future wars would be over water and food.~~ This argument is not only a presumption but it is supported by research based evidence. Climate induced food shortage can become a cause of future wars. As the urge to survive respects no limits of humanity so food scarcity can lead to bloodshed. Climate change induced changes in foods have become a threat to agriculture based economies. Pakistan is among such agro based economies whose agriculture sector is declining. Agriculture is the backbone of Pakistan's economy but due to a number of factors it is not performing

well. Pakistan's agriculture sector needs immediate revitalization as Pakistan is expanding its population. Climate induced disasters are a continuous threat to Pakistan's agriculture. Therefore, political reforms, economic spendings and technological advancements are essential to revive the agriculture sector in Pakistan.

Agriculture sector of Pakistan is facing numerous challenges. Growing population is the biggest challenge to agriculture sector of Pakistan. Climate change is another challenge impacting the agriculture in Pakistan. Climate induced disasters destroy the ready crops, cause soil erosion, impact soil nutrients and fertility and cause desertification. Use of old and outdated technology is another issue related to low yield. Likewise, use of outdated irrigation methods is another problem. Lack of awareness regarding advance technology and barren land are other issues costing the efficiency of agriculture sector in Pakistan.

To begin with, one major way through which agriculture sector can be revitalized in Pakistan is to

adopt the climate mitigation policy. Climate change and associated disasters are major threat to crops in Pakistan. For example, agriculture sector in Pakistan faced a backlash when floods in 2008, 2016, 2022 and 2025 hit the ready crops. The temperature changes due to climate change are making the environment unfit for the growth of crops. Furthermore, the crops are becoming more and more vulnerable to new diseases as a result of climate change. Therefore, the climate mitigation strategies are the need of hour to revitalize the agri sector of Pakistan. In this regard, reforestation and afforestation drives must be adopted like Billion Tree Tsunami Project. Carbon cuts and industrial reforms are vital to save the agriculture sector from climate induced calamities. Lastly, the deforestation must be curtailed through strict law and order situations.

Likewise, dealing the water aggression from India is another important way to revitalize the agri sector.

of Pakistan, Pakistan is low riparian while India is higher riparian. Water flows from India to Pakistan. According to IPRD, around 80% of the Pakistan's agriculture in Sindh and Lower Plains of Punjab is directly dependent upon water in Indus basin which flow from India to Pakistan. Water aggression by India has substantially impacted the agriculture in Pakistan. India has built many dams over Indus cutting the water flow to Pakistan. Holding the Indus Water Treaty by India is another form of water aggression by India. India stops water when Pakistan need it and overflows water when there is a risk of flood. In both ways, it hurts the agri sector of Pakistan. So practical efforts by Pakistan are required to stop water aggression by India. Likewise, consensus among political elite is required on essential matters confronting the agriculture sector. There is a lack of consensus among provinces and center at one end and among the political

leaders belonging to different parties at the other end. For example, making of Kalabagh dam is a bone of contention between centre and provinces, likewise, canal issue, which was witnessed in 2015, is another manifestation of lack of consensus among provinces and centre. Impartial, research based and consensus based decisions without a political partiality must be adopted for well being and betterment of agriculture sector in Pakistan.

Likewise, disaster management is another aspect in which government has to perform to enhance and safeguard the agriculture sector. The major aspect of disaster management is preparedness. Government must take proper steps to ensure the minimum loss of agri based products. Pakistan can take advantage of various management policies adopted by other states. For example, Japan, which is vulnerable to earthquakes has successfully decreased its agricultural loss due to earthquakes by proper disaster management technologies. Preparedness to counter the disasters including the

change in agricultural ways can be used by Pakistan to safeguard and revitalize her agriculture sector.

Apart from political efforts, economic initiatives are also required to uplift the agriculture sector of Pakistan. Provision of loans to farmers on lower interest rates is one among many initiatives that must be taken to

ensure the prosper agriculture sector.

most of the rural population in Sindh, KP and Punjab practice the agriculture. As the rural areas in Pakistan lack behind the urban areas in poverty index so most of the farmers are not financially stable.

Therefore, they cannot update the agri techniques to modern one due to financial issues. Therefore, they need funds

and financial support from government.

Government has taken many initiatives to provide loans on easy installements to the farmers but these schemes

are having many problems. The scope of such projects is not extended to all Pakistan but is mostly

limited to either Punjab or the

Sindh. Fed Popism is another issue with

such projects. Lastly, the interest rate is most of such initiatives is not up to the desires of the farmers. Proper measures must be taken to financially uplift the farmers in Pakistan.

Investment in research and scientific studies must be enhanced to uplift the agri sector of Pakistan. As Pakistan faces numerous challenges related to climate change, floods, draughts and pest attacks so investment in research and technology is inevitable to cope with such challenges. History of such investments prove that Pakistan has obtained fruitful results in history as well. For example, due to investment in research Pakistan has been successful to develop the drought resistant wheat crops. Likewise Pakistan has ^{been} also successful in developing rust resistance sugarcane crops. So investment in research is a need to revitalize the agriculture sector in Pakistan.

Similarly, Investment in fertilizers and pesticides can be proved vital in revitalization of agriculture sector in Pakistan. Pakistan imports

a large quantity of fertilizers and pesticides from other countries. Green man based phosphorous fertilizers are widely used in Sindh. These fertilizers, when imported, become expensive for farmers. This is because tariff on these fertilizers are to be paid. Export burden also falls on the farmers. So many farmers do not use the quality fertilizers and pesticides. The use of low quality and substandard fertilizers leads to lower production at one hand and ~~the~~ environmental degradation at other hand. Therefore, investment in fertilizers and pesticides is need of the hour to uplift the agriculture sector and to increase the crops yield. In this regard, tariffs must be reduced by the government. Subsidies should be provided for establishment of standard pesticide and fertilizer industry.

Awareness in farmers must be provided to increase the yield and uplift the agriculture sector. In Pakistan, farmers hesitate to use the modern technology and adoption of new technology becomes a challenge. Rural areas are

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Known for retaining the values, so farmers are reluctant to give up the traditional farming technologies. Similarly, they avoid modern technology due to its initial cost. Initial cost of modern agricultural tools like modern irrigation methods and fertilizers are very high. So awareness campaigns are required to uplift the agriculture sector and to convince the farmers that ^{benefits of} ~~the~~ of modern technology ~~upside~~ ^{its} ~~drawback~~.

~~Inclusion of agriculture based education in curriculum is also required to uplift the agriculture sector of Pakistan. Pakistan is an agricultural state but no agri based education is given at secondary or higher secondary levels. Universities offer the bachelor or master programs but they do not provide research based and up to date knowledge. Old curricula is taught in renowned agriculture universities of Pakistan. So government must take initiatives to fill this gap. Firstly, the compulsory agriculture education must be included in curriculum via inclusion of agriculture~~

based chapters in Biology, English and General Science up to higher secondary level. Likewise introduction of modern curriculum and research based agricultural education must be provided through the platforms of agricultural universities. Adopting modern methods to revitalize the agriculture sector is need of the hour. In Pakistan, centuries old farming and agricultural methods are used with little emphasis on advanced technology. World has gone far beyond the traditional methods. New technologies and methods have been introduced to cope with the food scarcity. For example, vertical agriculture is now used in a number of states through which little portion of land is used to obtain the 3 fold yield. Likewise, terrace farming is another way through which the roof tops can be used for cultivating the vegetables. Media campaigns and awareness drives by government are required to uplift the agriculture through use of these modern technological tools.

Likewise, alien species are another

risk factors for agriculture sector in Pakistan. These alien species grow and compete for nutrient with harvested crops. According to a research based analysis by Peer Mehaz Ali Shah Agriculture institute, 1/3rd loss to the cotton crops in 2022 was due to alien species from Africa. Climate change has provided favourable conditions for rapid growth of alien species in Pakistan. In this connection use of advanced biotechnology and more competitive varieties are required which can compete with these alien species. Genetically modified crops (GMCS) can be developed through research. Pakistan has been successful in first in developing BT cotton varieties of cotton which were resistant to disease. Some modern technology should be used to develop the varieties which can grow even in presence of alien species.

lastly, the modern irrigation methods must be adopted to ensure the uplift of agriculture sector of Pakistan. Pakistan still uses the outdated irrigation system. Flood irrigation, which

is an outdated method is still used for irrigation of crops in vast areas of Sindh and Punjab. ~~Due to use of outdated irrigation methods, water scarcity occurs which impacts the overall agriculture sector of Pakistan, shifting on water saving methods like drip irrigation and springs irrigation system is needed to revitalize the agriculture sector of Pakistan.~~

In conclusion, immediate steps at governmental, societal and individual levels are required to uplift the agriculture sector of Pakistan. Pakistan is endowed with fertile land, seasonal variations and water resources. All these factors make Pakistan an ideal country to become green economy. There are positive signs from state organizations in form of loans and ~~SSE~~ initiatives. These initiatives along with technological development and ~~societal awareness~~ can transform Pakistan to an ideal agricultural based economy.

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