



CLIMATE CHANGE AND ITS IMPACT ON PAKISTAN'S AGRICULTURAL SECTOR

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August 26, 2019

(Views expressed in the brief are those of the author, and do not represent those of ISSI)



The issue of climate change has long been on the fringes of the global development agenda, yet it is only recently that it has been given the importance that its consequences warrant. The advent of the Paris Agreement ushered in a new age of climate control aimed at reducing environmental degradation, consolidating a concentrated effort by the global powers that be in an attempt to decrease greenhouse gas emissions, as well as prevent global temperatures from rising beyond 2°C of the current benchmark.¹

As one of its 196 signatories, Pakistan has made efforts to comply with the standards set by the agreement to curb the economic consequences that climate change has presented. Though efforts have been made to rectify the negative implications of climate change on Pakistan's economy, a lack of proper implementation has resulted in Pakistan performing below-par with regards to its economic output. This brief aims to provide an analysis of sustained efforts by the government in improving Pakistan's position on climate change, as well as using examples from other countries in an attempt to accelerate both environmental and economic growth.

Having established itself as a predominantly agrarian economy, Pakistan finds itself highly dependent on agricultural goods and commodities. Of the revenue generated from yearly export earnings, nearly 70% are obtained from the export of cash crops and other commodities.² These earnings have, however, been on a steady decline since the turn of the decade. According to the

¹ Britannica, The Editors of Encyclopaedia. "Paris Agreement." *Encyclopedia Britannica*. March 19, 2019. Accessed July 26, 2019. <https://www.britannica.com/topic/Paris-Agreement-2015>.

² Program, National Rural Support. "National Climate Change Policy of Pakistan", *National Rural Support Program*. Accessed July 26, 2019. <http://www.nrsp.org.pk/gcf/docs/National-Climate-Change-Policy-of-Pakistan.pdf>.

Pakistan Bureau of Statistics (PBS), there has been a consistent loss of revenue gained from cash crop exportation from the year 2013-14 onwards.³ Commodities such as raw cotton (21,352.5 million rupees in 2013-14) and cotton fabric (285,130.2 million rupees in 2013-14) have experienced major declines in their export earnings, reporting figures of 4,559.0 million rupees and 223,675.4 million rupees in earnings, respectively, for the year 2016-17.⁴ This drop off in revenue can be attributed to the worsening climate conditions which make the productivity of cash crop a pertinent issue. Sudden changes in temperatures, coupled with a lack of rain-water in water-scarce regions make the task of growing crops all the more challenging. Whereas the percentage of arable land in the country has increased from 38.125% in 2010 to 40.266% in 2016, it has not been accompanied by an increase in the number of cash crops exported, mainly due to the deteriorating conditions in which these crops are to be grown. The government has made efforts to protect its most important export commodity with the introduction of the Ministry of Climate Change in 2015. This ministry was tasked primarily with improving Pakistan's position on climate change over the coming years to resemble the global shift towards environmental protection. As of 2017, according to the Long-Term Climate Risk Index (CRI), Pakistan ranks 8th in the countries most affected by climate change, with an estimated \$3.8 billion loss to its GDP.⁵ In an attempt to combat this, the ministry proposed the development of new varieties of the crop which were high-yielding, heat resistant and drought tolerant in order to ensure the value of these cash crops would not suffer as a direct result of the worsening climate conditions. These policies did have a positive effect on revenue, with raw cotton earnings increasing from 4,559 million rupees in 2016-17 to 6,183.6 million rupees in 2017-18.⁶ Similarly, earnings obtained from the export of cotton fabric also increased from 223,675.4 million rupees in 2016-17 to 242,374.4 million rupees in 2017-18.⁷ Whereas such policies have been successful in obtaining revenue that had been lost in previous years, they have done little to allay the root of the problem i.e. of worsening climate conditions.

Another case of an agro-based economy in a similar position to Pakistan is that of Bangladesh. Unlike Pakistan, Bangladesh began its attempts to combat climate change at an earlier stage, with the introduction of the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) in 2009.⁸ By

³ "Exports By Commodities of Last 5 Years." *Pakistan Bureau of Statistics*. Accessed July 26, 2019. http://www.pbs.gov.pk/sites/default/files//tables/14.02_0.pdf.

⁴ Ibid.

⁵ Abubakar, Syed Muhammad. "Pakistan – the 8th Most Affected Country from Climate Change." *The Express Tribune*, December 13, 2018. Accessed July 26, 2019. <https://tribune.com.pk/story/1861497/10-pakistan-8th-affected-country-climate-change/>.

⁶ Ibid.

⁷ Ibid.

⁸ "Updating Bangladesh's Climate Change Strategy and Action Plan." *International Centre for Climate Change and Development (ICCCAD)*, April 11, 2018. Accessed July 26, 2019. <http://www.icccad.net/updating-bangladesh-climate-change-strategy-and-action-plan/>.

setting up the Bangladesh Climate Change Trust Fund (BCTF), funds equivalent to USD 100 million were allocated yearly to fulfill the projects identified by the BCCSAP.⁹ Similarly, Bangladesh has utilized the services of the Green Climate Fund (GCF), an initiative of the United Nations in an attempt to finance UN approved climate projects within the 194 member countries,¹⁰ to carry out 19 new projects worth approximately USD 1 billion.¹¹ The utilization of such projects within the country, in collaboration with organizations such as the UN, has allowed Bangladesh to better its climate rating without having to incur any economic burden. Moreover, in order to increase agricultural productivity in the region, The National Agriculture Policy 2018 introduced the use of nanotechnology in an attempt to counter the threat of crop disease and increase nutrition collection.¹² According to Cabinet Secretary Shafiqul Alam, "the main goal of the policy is to ensure food security and socio-economic development through the productivity of crops."¹³ Despite being increasingly vulnerable to the adverse effects of climate change, Bangladesh has managed to continually develop economically through the advancement of its agricultural sector. In addition to substantial public investment, Bangladesh's agricultural sector has benefited from a sound and consistent policy framework.¹⁴ As a result, Bangladesh has experienced an average of 2.7% productivity growth, a figure bested only by China.¹⁵

To conclude, it has become apparent that the issue of climate change has hindered Pakistan's agricultural progress and, subsequently, its economic progress as a whole. A lack of proper implementation of government policy has resulted in a loss in agriculture commodities which were used to obtain much-needed export revenue. Introduction of more advanced technological methods in farming, backed by a constant source of monetary provision through the establishment of bodies such as Pakistan Climate Change Trust Fund, is required in order to obtain the levels of agricultural productivity that was present before the effects of climate change came to the fore. By allowing for passage through the GCF, Pakistan too can engage in projects for which previously funds could not be allocated. Such projects can be used in order to revive the dam-building projects in the region, which in turn would alleviate the water scarcity problems that have dominated the present day. In order to truly prosper and develop within our agro-dominated economy, it is imperative the state

⁹ Ibid.

¹⁰ Mim, SharminShara. "Green Climate Fund Explained", *Dhaka Tribune*, April 3, 2019. Accessed July 26, 2019. <https://www.dhakatribune.com/climate-change/2019/04/03/green-climate-fund-explained>.

¹¹ Ibid.

¹² "New Policy on Nano-technology for Profitable Agriculture Okayed." *The Daily Star*, July 9, 2018. Accessed July 26, 2019. <https://www.thedailystar.net/country/new-national-agriculture-policy-2018-nano-technology-profitable-agriculture-okayed-1602442>.

¹³ Ibid.

¹⁴ "Arable Land (% of Land Area)." *World Bank*. Accessed July 26, 2019.

<https://data.worldbank.org/indicator/AG.LND.ARBL.ZS?end=2016&locations=PK&start=2008&view=chart>.

¹⁵ Ibid.

take the first step in implementing the use of technological advances in an attempt to increase agricultural productivity as a response to worsening climate conditions. In order to achieve this goal, widespread awareness programs must be introduced, amongst both small-scale and large-scale farmers, in order to educate them on the perils of the changing climate, as well as the benefits of modern-day harvesting techniques. The rural areas of Pakistan, particularly in the provinces of Sindh and Baluchistan, are devoid of modern technology and as such fall behind other parts of the country in terms of production level. By providing these provinces with adequate resources, it is possible to increase their production levels in order that they may resemble that of the more established provinces. Therefore, whether it be through the introduction of technological awareness programs for farmers or the implementation of nano-technology as seen in countries similar, the state must take the steps required to preserve and promote Pakistan's agriculture sector which, in turn, would provide the country with a much-needed degree of economic security.