

## **Abstract**

In this paper, the impact of the COVID-19 on food security in Afghanistan is discussed in terms of water resources, poverty, labor, logistics, and overdependence on the world market, and put forward the corresponding countermeasure to these five aspects. Among them, the high demand for water from the COVID-19 has led to a shortage of water for food cultivation; the Afghans, under curfews and lockdowns, have lost their livelihood and means of earning money, can not afford to buy food, and farmers and laborers are unable to work to maintain their livelihoods or cultivate food. The international food trade market and logistics have been affected by the blockade and trade stoppage between countries, resulting in the inability of Afghan farmers to export and import food. Thus, the food quantity, quality, and availability in Afghanistan are severely influenced by COVID-19, causing food insecurity. Finally, the corresponding measures like establishing a sound food security system, upgrading water systems, setting up charity, and supporting E-trade are proposed.

**Keywords:** COVID-19; Afghanistan; food security

## **Introduction**

As the spread of COVID-19 accelerates around the world, the problem of food security is becoming more and more prominent, and people have gradually begun to pay attention to it. Food insecurity in Afghanistan, one of the world's poorest countries, has been exacerbated by war, water shortages, and climate change in recent years. What impact would COVID-19 have on food security in Afghanistan? This article has carried out the analysis and the elaboration to this and proposed the countermeasure suggestions.

## **Overview of Afghanistan**

### 2.1 Basic information

Afghanistan, a landlocked country at the intersection of Central Asia, South Asia, and West Asia, is one of the least developed and poorest countries in the world. Three-fifths of its territory is inaccessible. Agriculture is the main economic pillar, but less than two-thirds of its arable land has a population of more than 30 million<sup>1</sup>.

Fig. 1 the location of  
Afghanistan<sup>2</sup>

Tab. 1 statistics about

## Afghanistan<sup>3</sup>

### 2.2 Land, poverty, and climate

Plantlife in Afghanistan is sparse. The plains of the north are largely dry, treeless steppes and those of the southwestern corner are nearly uninhabitable deserts. The continental climate makes it dry and rainless. The forest covers an area of 19,000 square kilometers, with a forest coverage rate of only 3%. Most of Afghanistan's rivers are inland, filling deserts and lakes. Farmers and herdsman make up 80 percent of the country's population, however, Arable land accounts for less than 10% of the country's total land area. Less than 50% of the total arable land can be cultivated year after year because the problem of irrigation cannot be solved. Afghanistan is a landlocked country with no outlet to the sea. Transportation is mainly by road and air<sup>1</sup>.

Fig. 2 GNI per capita, Atlas method (current US\$) - Afghanistan

World Bank national accounts data, and OECD National Accounts data files.

According to the data of the World Bank, Afghanistan is one of the poorest countries in the world, with the GNI per capita of 550 dollars. 54% of the population lives in poverty (Afghanistan Living Conditions Survey 2016-2017), and food insecurity is on the rise, largely

due to conflict and insecurity cutting off whole communities from livelihood opportunities.

In the World Factbook, it is said that "Afghanistan is extremely poor, landlocked, and highly dependent on foreign aid. Much of the population continues to suffer from shortages of housing, clean water, electricity, medical care, and jobs. Criminality, insecurity, weak governance, lack of infrastructure, and the Afghan Government's difficulty in extending the rule of law to all parts of the country pose challenges to future economic growth. Afghanistan's living standards are among the lowest in the world."<sup>4</sup>

### 2.3 Water resources & wars

Afghanistan is one of the driest countries in the world, which has become an unfavorable factor for farming. On the other hand, agriculture makes up over a third of Afghanistan's economy and employs about three-quarters of its population. Up to 85 percent of the country's food comes from irrigated farming. Farmers have been relying for centuries on Hari Rud ("Rud" means "river" in Persian) to irrigate their land. But rivers' basins and watersheds have suffered greatly from uncontrolled water exploitation, overgrazing, deforestation and gradual degradation of the environment. Decades of civil unrest have also made it impossible to properly maintain and repair the country's water systems<sup>5</sup>.

### 2.4 The locust plague

A plague of locusts of "almost biblical proportions" is threatening Afghanistan, a country wracked by years of fighting, drought and food shortages. By the hundreds of millions, the locusts are marching across areas of northern Afghanistan, threatening up to 70 percent of crop production and millions of livelihoods. Besides, the international community's lack of interest in Afghanistan's agriculture over the years has starved the fight against locusts of precious resources. The plague of locust in Afghanistan could affect the livelihoods of several million rural households, causing food insecure problems.

### 2.5 Natural disasters

In Afghanistan, natural disasters, like droughts and floods, occur frequently, worsening food security. In 2018, Afghanistan suffered its worst drought in a decade. Many Afghans cannot provide enough food for their families. This has been exacerbated by El Nino, which has caused the worst flooding in all parts of the country in more than seven years. These accumulations of extreme weather have led to the stripping of vital productive assets by

vulnerable farmers. It is estimated that 80 percent of the soil has been degraded and that the land has become increasingly vulnerable and damaged where floods occur.

## 2.6 Food security in Afghanistan

Food security, as defined by the United Nations' Committee on World Food Security, means that all people, at all times, have physical, social, and economic access to sufficient, safe, and nutritious food that meets their food preferences and dietary needs for an active and healthy life<sup>6</sup>.

New shocks related to climate change, conflict, pests (such as locusts and Fall Army Worm) and infectious diseases (such as COVID-19 and African Swine Fever) are hurting food production, disrupting supply chains and stressing people's ability to access nutritious and affordable food, raising fresh concerns for food security in 2020<sup>7</sup>.

Over the coming decades, a changing climate, growing global population, rising food prices, and environmental stressors will have significant yet uncertain impacts on food security. Adaptation strategies and policy responses to global change, including options for handling water allocation, land use patterns, food trade, post-harvest food processing, and food prices and safety are urgently needed.

### **The Pandemic of COVID-19**

Coronavirus disease (COVID-19) is an infectious disease caused by a newly discovered coronavirus. Most people infected with the COVID-19 virus will experience mild to moderate respiratory illness and recover without requiring special treatment. Older people and those with underlying medical problems like cardiovascular disease, diabetes, chronic respiratory disease, and cancer are more likely to develop serious illnesses. The COVID-19 virus spreads primarily through droplets of saliva or discharge from the nose when an infected person coughs or sneezes. At this time, there are no specific vaccines or treatments for COVID-19. However, many ongoing clinical trials are evaluating potential treatments<sup>8</sup>.

On Feb 24, 2020, the first individual confirming COVID-19 from the western province of Herat was reported by the Afghanistan Ministry of Public Health. From then on, the number of COVID-19 cases in Afghanistan started to increase distinctly.

Up to June 14th, there are already 24,766 cases in Afghanistan, with the total death at the number of 471 people. The trend is still increasing, without any signs of stopping<sup>9</sup>.

Fig. 3 COVID-19 Dashboard by the Center for Systems Science and Engineering(CSSE) at Johns Hopkins University(JHU)<sup>10</sup>

Covid-19 raises strong concerns about the inequalities, difficulties, and global health risks that result from collective failure to uphold human rights to water and sanitation. In many communities around the world, the lack of water and sanitation deprives people of the most basic protection against the spread of the virus.

According to the World Health Organization (WHO) pre-pandemic report Safer Water, Better Health, improved water, sanitation, and hygiene has the potential to prevent at least 9.1 percent of the global burden of disease and 6.3 percent of deaths. However, 4.2 billion people lack access to safe health services, and 3 billion lack basic handwashing facilities. Also, diarrhea and poor sanitation caused by water-borne pathogens inhibit the absorption of nutrients, and even those with adequate nutrition are at risk of malnutrition. This means that in places where hand-washing is limited and water-borne diseases are already common,

COVID-19 will not only spread more easily, but its lethality may be magnified.

As an agricultural, underdeveloped, and vulnerable country, food security in Afghanistan may be affected by the pandemic of COVID-19 in many aspects.

### **The influence of the COVID-19 pandemic on Food Security in Afghanistan**

The COVID-19 outbreak affects food security in terms of water resources, poverty, labor force, which results in the quantity, quality, and availability of food become insecure, the influence on logistics, and the over-reliance of the international trade market, which causes Afghanistan unable to import and export food.

#### **4.1 Water resources**

As one of the driest countries in the world, Afghanistan's water resource is scarce. With the COVID-19 outbreak, the demand for water is increasing rapidly, and people need a lot of water to disinfect their hands and prevent infection.

In this epidemic situation when Afghans are quarantined at home, there is less access for them to get water resources to disinfect themselves, wash hands often to keep themselves clean. In that case, restrictions on movement may lessen the ability to access water at all. The scarce of water may harm the quantity and quality of food.

#### **4.2 Poverty & food prices**

Fig. 4 Map of Impact of Food Export Restrictions on Imported Calories<sup>11</sup>

Due to the COVID-19 outbreak, the connections and trades between countries became harder, which lead to the difficulties of transporting cargos and importing food. The shortage of enough food resources caused higher prices as well: Despite its rich reserves, Afghanistan is one of the poorest countries in the world<sup>12</sup>.

Fig. 5 Gallup Basic Needs Vulnerability Index<sup>13</sup>

According to Gallup Basic Needs Vulnerability Index, there are around 750 million people who cannot afford fundamental life spending at present in the world. One in seven adults does not have access to adequate food or safe shelter or does not have access to ask for friends' and



relatives' help. This circumstance appears in almost every country, such people are 1% of the population in countries like Denmark and Singapore, but are nearly 50% in countries like Afghanistan and Benin. As is stated on the website of the World Bank, the food security "hot spots" under the COVID-19 pandemic include the poor and vulnerable, including the more than 820 million people who were already chronically food insecure

6

before the COVID-19 crisis impacted movement and incomes<sup>14</sup>. and Afghanistan is included in the poor and vulnerable countries.

Weak financial support would also lead to food insecurity and malnutrition, especially the worsening of food availability. A good rural credit system can enable farmers to better organize agricultural production, improve technology, and increase output. At present, Afghanistan has not fully established through national financial institutions to provide direct financial support to farmers like other countries yet. Farmers still rely on traditional methods of borrowing money from businessmen, relatives, or friends to sustain their agricultural production.

#### 4.3 Labor force

Afghanistan is dependent more on artificial labor force compared to developed countries that are more mechanized and automated. Under the lockdown, COVID-19 is affecting labor use, because people cannot work or farm. In Afghanistan, there is little machinery for harvesting crops. Most farm work requires farmers to do it themselves, or even to mobilize the whole family to harvest the crops, but under the pandemic situation and lockdowns, it is difficult for farmers to continue their normal farming process. People are locked at home and cannot go out freely under curfew. Even when a family member is infected with the novel Coronavirus, cross-infection will follow. With the misfortune of the whole family, it is an extravagant hope to do farm work and reap a bumper harvest. In this way, food production and supply chains become vulnerable.

#### 4.4 Logistics

The food security hot spots also include countries with significant currency depreciation and countries seeing other commodity prices collapse<sup>13</sup>, just like Afghanistan. A weaker currency would push up the cost of grain imports, while higher prices for other commodities would reduce the ability to import grain.

Many national governments from different countries are restricting food export. During the pandemic, there is little chance to export and import smoothly because of the regular and intensive checks and restrictions of airlines among countries.

The agricultural market and its service system in Afghanistan are underdeveloped. Nevertheless, during the pandemic, most of the transporting resources change into the use of transferring medical supplies.

The lockdowns may also influence the farmers' agricultural cycle, disrupting supplies of inputs. Peasants are away from fields, while workers are away from food-processing factories, so the food systems are interrupted. Fewer people are receiving enough food supplies in Afghanistan. What is more, farmers' loss of income in selling their crops, which causes a decreasing amount of money for food. The shortage of money and food leads to hunger problems. It is a fact that hunger can harm people's immune systems. The process of hunger is originally an "autophagy" process that consumes fat, sugar, and healthy cells in the human body. This Coronavirus is also a test of the immune system of the infected person, so when the virus attacks, the body in the state of hunger will not have enough energy and healthy cells to fight against it. The whole process will be a vicious circle that will lead to more Afghans infected with the COVID-19.

#### 4.5 Over-reliance on the international market

The high agricultural subsidies given by developed countries contorts the international agricultural products market severely, making a great number of developing countries rely on low-price food in the international market unable to develop their agricultural sector. The food security problems were not solved fundamentally. When international food prices go up, the developing countries may get into

7

some crises like famine. To date, many developing countries still do not have effective agricultural development strategies, and their food security fundamentals are weak. Therefore, if later speculative capital speculation leads to a spike in international food prices and a global food crisis, the food security of developing countries like Afghanistan will be endangered inevitably, directly threatening the livelihoods and feeding of hundreds of millions of poor people in developing countries<sup>15</sup>.

### **Measures on the Problems**

#### 5.1 Establishment of a sound food security system

To resolve the structural contradiction between food supply and demand, one must properly address the strategic and tactical issues of ensuring food security. We should steadily increase our comprehensive grain production capacity, protect the interests of food and agriculture, and

ensure that national grain reserves are at an appropriate scale. Excessive supply of ordinary grain and large scale of rice stocks are tactical problems encountered in the implementation of the national food security strategy, which need to be solved by effective measures.

## 5.2

### Water

How can we respond to these problems? In the short term, governments and international organizations should work to ensure access to safe and reliable water supplies and sanitation. This includes emergency provision for underserved communities and taking care to protect women and girls responsible for fetching water from exposure. To address potential supply disruptions, we also need a clear understanding of where and how municipal or rural water infrastructure is coping with pandemic-related spikes in demand. In Ethiopia, IWMI has research underway now to assess the implications of mitigation measures in rural communities<sup>16</sup>.

To address the current situation, the government can work to restore and upgrade the irrigation canals, change the intake structure, making the water resources permanent, with farmers getting much water and fewer costs.

## 5.3 Poverty & charity

As one of the poorest countries in Eastern Asia, who also suffered from the COVID-19, food insecurity, and poverty, Iran has done a lot to help the poor, where Afghanistan can learn from. Iranian charity has helped 20,000 vulnerable families during the pandemic since February 25, 2020, according to CGTN. The closure of the service center and the transportation center caused by the epidemic has made the life of poor families insecure while making people lose their jobs. Iranian charity identified these groups from information provided by the Building Workers Association, urban workers at recycling centers, and so on. After removing supported people and duplicate names, the total came to 20,000 families. These families could receive a card distributed through 15 tourist offices in different parts of the city, which have extensive connections with citizens and the Iranian charity offered the families' personal information to. What is more, the distribution process is monitored directly. 7,000 people were paid via credit card, and 8,000 people through bank deposits. At the beginning of the coronavirus outbreak, research showed the most important need is a mask. In this case, the Iranian charity applied for a mask workshop license agreed by the University of Medical Sciences. 300,000 packages of masks have been prepared to help citizens in need.

Afghanistan governments can learn from the Iranian government to set up charity, in order to help the poor and vulnerable families in need. They may encounter some problems like a shortage of funds, and they can turn to international organizations such as the World Bank for help. Moreover, there is a website

in Britain called Afghanaid. People can make donations on the website and its slogan is from aid to empowerment. The existence of the website shows that Britain is concerned about poverty in Afghanistan and advocates helping the country to lift itself out of poverty and become financially independent.

As for different types of charities, two of them deserve consideration by the Afghan government. The first is direct charitable assistance. Like the successful case in Iran, Afghan charities can provide financial assistance in the most direct way to help vulnerable families who have lost the ability to work and earn money. The second is to provide jobs for the poor to lift them out of poverty. For example, "Afghan Action" is a local relief website in Afghanistan, on which there will be equal employment opportunities and a fair market, so that poor people who are able to work can earn money to alleviate poverty. According to their website, they offer simple jobs that do not require expertise or technology, like carpet weaving, clothing making, bridge constructing projects.

#### 5.4

##### E-trade

Under the epidemic, farmers are restricted from leaving their homes, but farmers living in the Internet age can choose to make money by buying and selling food online. The sudden outbreak of COVID-19 has brought huge challenges for the global farming industry. Fruit farmers in Xichuan County, central China's Henan Province, also found it hard to sell their produce before it rots. Live-streaming shows on e-commerce platforms were organized by the local government to promote farmers' sales. Even the party secretary of the county participated in the live stream to aid the effort. So far, farmers in Xichuan County have received orders for more than 10,000 tonnes of fruits. Some fruit processing factories have also signed contracts for the next few years<sup>17</sup>. The action taken by the government of Xichuan County set an excellent example for the Afghan government. The government of Afghanistan should build Internet infrastructure as quickly as possible, ensuring the smooth operation of food trade. With the E-trade platform, the coronavirus outbreak would do less harm to food security in Afghanistan.

#### 5.5 Improving the purchase and storage system

Sufficient grain storage capacity and scientific management are important bases to ensure food security. The shortage of grain storage capacity and backward equipment in Afghanistan are long-standing problems. Therefore, it is suggested that the state increase investment and improve the purchase and storage system. The government should make investment policies to improve the purchasing and storage capacity, and strengthen the scientific management of

grain storage facilities. At the same time, grain processing enterprises should establish their own storage facilities to reduce the storage pressure of government. With the improved storage system, the food safety in Afghanistan would be secured.

## **Acknowledgments**

I would like to give my sincere gratitude to my mentors Sheng Yue, Shi Shuoting, Liu Yi, and Jia Zhifeng, for their valuable suggestions and help. Without their strong support, this paper could not be the present form.

## **References**

1. Statistics of Afghanistan. (n.d.). Retrieved from: [www.afghanistans.com/](http://www.afghanistans.com/)

2. Afghanistan. (n.d.). Retrieved from <https://www.worldatlas.com/webimage/countrys/asia/afghreg.htm>

3. Statics about Afghanistan. (n.d.). Retrieved from: <https://www.who.int/countries/afg/en/>

9

4. <https://www.forbes.com/places/afghanistan/#6fa551c15731>

5. Afghanistan: where water means food: Rebuilding centuries-old water systems for better food production and lives, 27/03/2018. Retrieved from: <http://www.fao.org/fao-stories/article/en/c/1111046/>

6. Victor R. Squires. Mahesh K. Gaur, Food Security and Land Use Change under Conditions of Climatic Variability, Springer, p6. <https://doi.org/10.1007/978-3-030-36762-6>

7. Overview of food security (Apr 10, 2020). Retrieved from: <https://www.worldbank.org/en/topic/food-security>

8. Definition of COVID-19. (n.d.). Retrieved from: <https://www.who.int/health-topics/coronavirus>

9. Coronavirus disease (COVID-19) Situation Report – 146 Data as received by WHO from

national authorities by 10:00 CEST, 14 June 2020. Retrieved from:  
[https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200614-covid-19-sitrep-146.pdf?sfvrsn=5b89bdad\\_4](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200614-covid-19-sitrep-146.pdf?sfvrsn=5b89bdad_4)

10.COVID-19 Dashboard by the Center for Systems Science and Engineering(CSSE) at Johns Hopkins University(JHU). (14 June 2020). Retrieved from:  
<https://www.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>

11.Map of Impact of Food Export Restrictions on Imported Calories. (n.d.). Retrieved from: <https://www.ifpri.org/project/covid-19-food-trade-policy-tracker>

12.Agricultural Situation in Afghanistan,(03 November 2005). Retrieved from:  
<http://af.mofcom.gov.cn/article/ztdy/200511/20051100712574.shtml>

13.Food Security and COVID-19,(May 28, 2020). Retrieved from:  
<https://www.worldbank.org/en/topic/agriculture/brief/food-security-and-covid-19>

14.The food security hot spots. (n.d.). Retrieved from:  
<https://www.worldbank.org/en/topic/agriculture/brief/food-security-and-covid-19>

15.Cheng Guoqiang, ZHU Mande. Impact of COVID-19 on Food Security: Trends, Impacts and Response [J]. China Rural Economy,2020(05):13-20.

16.Water in the COVID-19 crisis: Response, recovery, and resilience June 4, 2020, by Claudia Sadoff and Mark Smith. Retrieved from:  
<https://www.ifpri.org/blog/water-covid-19-crisis-response-recovery-and-resilience>

17.Live-streaming facilitates sales for China's rural fruit farmers, 22-Jun-2020, by Xia Ruixue  
<https://news.cgtn.com/news/2020-06-22/Live-streaming-facilitates-sales-for-China-s-rural-fruit-farmers-RwTCzImuZi/index.html>

