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Food Insecurity: The Next Pandemic

The country of Iran, previously known as Persia and officially known as the Islamic Republic of Iran, is the second largest country in the Middle East, with a population of around 83,992,949 people (World Bank, 2020). Iran is a primarily hot and arid country with long dry summers and cool but short winters. The whole country is around 1.75 million square kilometers (675,678 square miles), making it slightly smaller than the state of Alaska. Iran is bordered by Afghanistan, Armenia, Turkey, Turkmenistan, Azerbaijan, Iraq, and Pakistan, as well as the Gulf of Oman, Caspian Sea, and Persian Gulf. It has a very rough terrain, with about 52% of the country having mountains and deserts and much of the country standing above sea level (FAO, 2008). Iran was previously a primarily agrarian society, but due to rapid urbanization and economic development during the 20th century, it has shifted to a mixed and transition economy containing a large public sector. Around 74.9% of Iran's population lives in urban areas, while 25.1% lives in rural, undeveloped areas ("Iran Demographics," 2018). Only around 10% of Iran's land area is arable due to the rough topography, and the agricultural sector consists mostly of small farming units that are dispersed around the country, with more than 80% of these farms being smaller than ten hectares, which is considerably small (The World Bank, 2016; FAO, 2008). Being a net importer of agricultural products such as corn, rice, and soybeans, Iran is highly dependent upon trade to feed its population. Other imports include machinery, iron and steel, and chemicals. The main crops grown in Iran are wheat, rice, and barley, and the main trade partners are China, the United Arab Emirates, Turkey, Japan, India, and South Korea. Iran's main exports mostly consist of industrial products such as crude and refined petroleum, ethylene polymers, semi-finished iron, acyclic alcohols, and natural gas (OEC, 2018). The economy revolves around oil revenue, which affects everything from food prices to the stock market.

After the Islamic Revolution in 1979 that overthrew the Pahlavi Dynasty and resulted in the fall of the monarchy, Iran became an Islamic Republic with a theocratic government, currently ruled by Supreme Leader Ali Khamenei and President Hassan Rouhani. The official language is Farsi, which has evolved into several different dialects that are unique to each province, but many other languages such as Azerbaijani and Kurdish are also spoken. Iran has 31 provinces, or *ostans*, that are governed by a governor, or *ostandar*. The capital, Tehran, is the most populated city, with a population of around 9.1 million people ("Tehran, Iran," 2020).

The typical family size is 3.5 people and the average fertility rate is around 2.126 births per woman (United Nations, 2019; "Iran Fertility Rate," 2020). People in more urbanized areas of the country tend to live in apartment buildings or flats, whereas housing in rural areas is typically styled more traditionally with a small one or two story house. The everyday Iranian diet consists of combinations of rice with meat, stew, vegetables, herbs, and spices. Aside from the traditional diet, Iranian food consumption has shifted dramatically over time from more crop-based home cooked meals to cheap fast food options due to excessive price inflation and widespread unemployment. This has led to higher

rates of obesity and cardiovascular problems, with around 65% of the Iranian population being overweight or obese (Tehran Times, 2018). Job types vary, but are closely similar to jobs in other countries around the world, with engineers, doctors, accountants, teachers, lawyers, and store clerks, as well as various informal jobs and wage workers. The labor force consists of around 16.3% in agriculture, 35.1% in industry, and 48.6% in services (Central Intelligence Agency, 2017). The

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average wage varies due to the unstable economy, although it is estimated to be around 537,600,000 IRR, which is around \$12,768 (“Average Salary,” 2020).

Iran is classified as an upper middle income country, which means that most people have access to basic living necessities such as clean water and toilets. According to a study done by the World Health Organization, around 99% of the urban population has access to a potable water source (WHO, 2015). Despite this, due to uneven development and formidable wealth gaps between urban and rural areas, there are still a large number of people who do not have clean water, toilets, or electricity readily available to them. These disparate living conditions are evident in areas such as the Sistan and Baluchestan province that has an estimated headcount poverty ratio higher than 80% (Einian & Souri, n.d.). Access to education and healthcare follows a similar trend, as most families in urban and more developed areas have various educational opportunities and access to healthcare, although it often poses a financial burden, while children in rural areas are not educated and do not have access to medical care. With a 96% literacy rate among Iranians of ages 10-49 compared to the global rate of 86.3%, Iran is known as a highly educated and knowledgeable society (“Iran Literacy Rate,” 2020; The World Bank, 2018).

One of the biggest issues in Iran is the high levels of air pollution. The city of Ahvaz is known as the world’s most polluted city due to heavy industrial pollutants and oil refinement byproducts such as sulfuric acid, which shows how air pollution is a major public health issue in Iran. The water crisis is another large issue affecting the whole country since an extreme water shortage brought about by mismanagement and climate change is endangering Iran’s future. In addition to the high levels of air pollution and water scarcity, the lack of job opportunities and mass unemployment is a major problem Iran is facing, at a rate of 10.6% as of 2019 and a rate of 26% for those between 15-24 years (The World Bank, 2020; “SCI Reports,” 2020). The tight job market has worsened over time as a result of poor economic and political policies in addition to global sanctions imposed on Iran that have crippled the economy. These economic restrictions and heavy regulations put on Iran have resulted in extreme food inflation that poses a major barrier for families trying to earn a living and feed their family. Food inflation has fluctuated over the years, but has consistently put a strain on the cost of living, with food prices rising as much as 230% sometimes (“Iran Food Prices,” 2019).

Iran’s dire state has been exacerbated by the recent global outbreak of the Coronavirus, also known as COVID-19 or SARS-CoV-2. COVID-19 is a disease caused by a newly discovered type of coronavirus that causes acute respiratory failure. Symptoms of this virus include fever or chills, dry cough, shortness

of breath, fatigue, sore throat, nausea, congestion, and unexplained loss of taste or smell, although it has a different effect on each person (CDC, 2020). Some people who are infected experience extremely mild cold-like symptoms that they quickly recover from, while others, in specific older people or those with underlying medical issues such as cardiovascular disease, cancer, and diabetes, are more susceptible to much more serious illnesses with a high possibility of death. One of the most distinguishing features of COVID-19 is its two to fourteen day incubation period, with an average of five to six days in most people. This highly infectious disease was first spotted during December of 2019 in Wuhan, which is the capital of China's Hubei Province. COVID-19 was originally thought to be a simple flare of pneumonia cases, although it soon proved to be much more. This sudden outbreak was later classified as a virus with a zoonotic origin, most likely bat-to-human infection. COVID-19 was declared to be a pandemic on March 11, 2020 after spreading all over the world at an alarming and fatal rate. This virus has spread at a rapid rate across almost every continent, led to more than 844,000 deaths, and has forced over a 100 countries to institute nationwide lockdowns and stay-at-home orders, but it has had profoundly disproportionate effects on Iran.

The first case of COVID-19 in Iran was confirmed on February 19, 2020 in the city of Qom, which is around 140 km south of Tehran. Two patients were declared to be SARS-CoV-2 positive, and after

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that, the virus spread rapidly throughout the country “in adjacent provinces near Qom, such as Tehran, Markazi, Isfahan, and Semnan provinces, and shortly thereafter in all 31 provinces” (Abdi, 2020). Despite the public announcement of the first cases emerging in February, the government's lack of transparency regarding the COVID-19 crisis has caused people to believe that coronavirus had existed and killed people in Iran even prior to this confirmation. Various members of the government and even the Deputy Health Minister continuously denied the existence of any coronavirus cases in Iran. In addition to this, cyber police threatened to arrest and punish people for spreading rumors about the existence of COVID-19, while doctors were forbidden to reveal true statistics for the number of COVID-19 cases and deaths. Iran currently has around 374,000 cases, with around 21,000 deaths, although these statistics are unreliable due to the government's lack of transparency (“Iran Coronavirus,” 2020). COVID-19 has had a drastic effect on Iran since it is the hardest hit country in the middle east as well as being one of the earliest epicenters of the outbreak. In addition, Iran has had one of the highest mortality rates in the world and consistently exceeds the typical mortality rate of around one to three percent. At one point, “Kianush Jahanpur, an Iranian health ministry spokesman tweeted that 50 people on average contract the virus in Iran almost every hour, and the fatality rate is one person every 10 minutes or six people per hour.” When an emergency director from the World Health Organization visited Iran in March, he claimed that the “actual overall COVID-19 toll could be five times higher than official statistics” (Behraves, 2020).

COVID-19 has proven to be so much more than solely a public health crisis - it is a disaster that has left its adverse mark on every sector. The COVID-19 crisis has worsened Iran's economy, adding onto the burden caused by U.S. sanctions and President Trump's Maximum Pressure Campaign, which was created with the purpose of squeezing the Iranian economy to regulate their actions and minimize their

power. Due to the economic pressure caused by the virus, unemployment is expected to increase, “from around 20 percent now to more than 35 percent” in a couple of months (Mohseni-Cheraghrou, 2020). It is estimated that there will be around three to four million job losses due to the severe economic contraction, which provides a great threat to several factors, including food security in a country where many people already do not have fixed salaries or insurance coverage. The roughly 25% of Iran’s working population that works in daily wage jobs in the informal economic sector is impacted the hardest since they are forced to continue working, even with the great risk of infection, since they lack a steady income. Initially, the Iranian government attempted to provide a solution for the plunging economic conditions by offering loans or cash transfer subsidies known as *Yaraneh*, but the insignificant size of these loans (under \$65 or equivalent to the monthly income needed for a family of two in Iran to remain just above the extreme poverty line), shows how these actions were in no way effective in tackling the matter (Mohseni-Cheraghrou, 2020). Even when Iran requested a five billion dollar emergency loan from the International Monetary Fund, they were not successful due to the United States’ opposition towards this request, which was perceived as an effort to further strain the Iranian economy. In addition, U.S. sanctions have worsened conditions during this pandemic since they have caused Iran to be economically ostracized from the international financial system, which hinders their ability to import essential resources such as medicine and protective gear. The dire situation has even pushed other countries such as Russia and China to request for the United States to ease these restrictions, to no avail.

On top of the economic crisis that has emerged, COVID-19 is also exacerbating food insecurity in Iran. With a currency depreciation of 10% less than a month after the first cases were confirmed in Iran and continuous GDP contraction, Iranians are facing many more difficulties in providing food for their families (World Bank, 2020). According to university professor and economic analyst Saeed Leylaz, COVID-19 will “place enormous strain on people of modest means and the working class, particularly self-employed laborers and non-union workers in urban areas”, which shows how a large portion of the population will become vulnerable to food insecurity due to the economic aftermath of this virus (“COVID-19,” 2020). Due to the restrictions on movement and multiple border closures

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during the pandemic, agricultural production, processing, and purchasing have been severely impacted. These restrictive border measures coupled with crippling sanctions have put Iran’s trade networks at risk and have put an immense amount of pressure on the global food supply chain due to labor shortages, transportation issues, and supply-chain disruptions. These problems are causing disturbances in the regional agricultural value chain, threatening household food security throughout the country since Iran is not agriculturally self-sufficient and has a largely import-oriented economy. In 2016, the import dependency ratio for cereal, a staple for the entire Iranian population, was 36.6%, and has risen since then (FAO, 2018). This high level of dependency means that food insecurity will widely increase as a result of the virus, as global trade has stagnated.

In addition to affecting Iran’s ability to import, the large-scale lockdowns in efforts to contain the spread have hurt the availability of manpower due to illness as well as fear of contracting the virus. Since Iran’s

agricultural sector mostly revolves around small farms that are labor-intensive due to a lack of mechanization, the farmers have an extremely high risk for contracting COVID-19. In addition, the general decline in income means that less money will be available for purchasing food and that people's ability to buy food will be greatly reduced. This results in lower incomes for food producers, who are already facing problems due to COVID-19 since there is a decline in compensation for food production efforts. These labor shortages have a profound effect on production, processing, trading, and transportation efforts in food supply chains, which endangers the availability of food. It is estimated that COVID-19 "has [already] inflicted losses worth 39,500 billion rials (\$243 million) on the consumption and export sectors of Iran's food and agriculture industry" ("Iran: Coronavirus," 2020). In addition, although business in the last month of each year is typically booming for agrifood retailers, with a 10% increase in prices, the price increase was a mere 2.2% this year with a revenue loss of about 32,500 billion rials (\$200 million) due to decreases in sales. Financial insecurity during the coronavirus outbreak is resulting in a decrease in food purchasing, which is why it is approximated that "red meat suppliers will see an estimated loss of 34,990 billion rials (\$215.98 million) by May 20, nuts and dried fruits suppliers 14,370 billion rials (\$88.7 million) and poultry supplier's losses will amount to 13,110 billion rials (\$80.92 million)" ("Iran: Coronavirus," 2020). According to the United Nations World Food Programme, it is likely that around 265 million people are going to experience acute food security in 2020, especially in countries with significant currency depreciation and a fragile economic state. These dire conditions along with the political issues plaguing Iran lead to uncertainty and instability in the future of food security in Iran in the coming months and even after the COVID-19 crisis comes to an end, which is why Iran needs to acknowledge their current issues and actively work towards addressing the complications that COVID-19 has provoked.

It is crucial for Iran to be cognizant of COVID-19's drastic threat to food insecurity as well as the urgency for a tangible solution. Iran must take concrete steps to consolidate their agricultural efforts in order to guarantee food security and work towards achieving a state of self-sufficiency as a net exporter even during this time of crisis. They must mitigate the high level of dependency on imports they have developed over the years and work to strengthen their country from within. Although there are multiple efforts across the globe working to protect trade and provide resources to countries in need, these endeavors are simply focused on short-term responses to the COVID-19 crisis. Iran must focus on solutions that target long-term impacts and the increasingly fragile food system. A crucial short-term solution would be to ensure the availability of labor by providing PPE such as masks, face shields, and gloves for farmers as well as adjusting future policies to address challenges they are facing. Although there is a high exposure risk among agricultural workers and employers due to close contact while working, a prolonged duration of close contact, shared transportation, and inadequate access to clean water for hygiene purposes while working, there are many measures and precautions that can be implemented into their workplace in order to protect them (CDC, 2020). For example, workplace coordinators can be designated and trained to screen workers for any symptoms and

enforce social distancing guidelines. In addition, all workers should be educated about methods of

transmission and prevention techniques in order to make sure the workplace is as sanitary as possible. Another important factor in COVID-19 protection is handwashing, so mobile handwashing stations or handwashing bags and hand sanitizer can be distributed to farms around the country in a manner that limits cross-contamination between users to prevent infection (UNICEF, 2020). Portable handwashing stations have been implemented in communities in other parts of the world such as Ethiopia, and studies have shown that they have been very effective in combating disease transmission, so this could be a tangible solution for Iran (Husain et al., 2015).

Furthermore, by promoting the agricultural sector through increased financial incentives and funding for widespread agricultural mechanization, agricultural production can be advanced. In Iran, more than 90% of the already limited water source is used in agriculture since farmers still rely on traditional and largely inefficient methods that are outdated and were used centuries ago, such as flooding irrigation, “which wastes around 65 percent of the water used” (Mirzaei et al., 2019; Amerian, 2018). In order to combat food insecurity, Iran must enhance its agricultural sector, and an important first step in doing this is to get rid of outdated farming methods that agriculture currently depends on in order to implement large scale agricultural mechanization. In Iran, the traditional farmer community is largely disconnected from the scientific agricultural community, which means that although many newly advanced methods have been researched and proven effective in improving agricultural efficiency and output, they are never successfully implemented into farms.

The best solution to address the emerging food insecurity in Iran is a long-term three-tiered approach that addresses food availability, affordability, and accessibility. In order to ensure the availability of food during the COVID-19 crisis and in future years, Iran needs to invest in mechanizing agriculture throughout the country as well as adopting new agricultural techniques. Farmers must first and foremost be educated about sustainable farming techniques in order to improve their yields while preserving resources. This is a highly effective method since many previous agricultural efforts by organizations such as the Iranian High Council of Health and Nutrition Security have failed to have a tangible impact due to “weak operationalization of recommended strategies, lack of an organized response system of monitoring and evaluation, weakness of intersectoral coordination, and deficiency of peripheral capacities” (Damari et al., 2018). To combat these inhibitory factors, a series of decentralized initiatives must be enforced to train farmers with water management methods and sustainable agriculture practices. In 2010, a similar project was initiated where nine different agricultural and water management techniques were introduced to 25 village farmers from Ghaleh Narenji village, in hopes that they would implement these sustainable approaches into their own agricultural activities (Chowdhury, 2018). This project was successful since farmers gained an understanding of alternatives for outdated and unsustainable practices like flood irrigation and chemical fertilizing through theoretical classes and hands-on experiments. The results were very important since

“...the traditional flood irrigation method requires farms to be irrigated for days at a time. Conversely, through adopting the techniques promoted in this project, crops would need only five hours of water. These techniques save 4400 cubic meters of water in the region” (Chowdhury, 2018).

This project had very promising results since the yield was doubled for common crops and ended up being around 148 tonnes for one hectare, which means that farmers also profited much more off of these alternatives. The results of this program prove that a decentralized, community-based approach is highly effective in advancing Iranian agriculture practices. Due to the small scale of this project, it has not yet reached its desired impact, but if this idea was adapted and funded at a larger scale, tangible

improvements in the agricultural sector would be inevitable based on the results of the study. 5

In addition to teaching sustainable farming techniques, convincing farmers to implement cropping pattern systems is another effective way to significantly increase crop yields. Cropping pattern systems strategically develop a yearly rotation plan for the spatial arrangement and timing of sowing and fallow periods in farms. Organizing an efficient and successful crop pattern has been a major challenge in Iran, so working on developing a crop pattern that can be used in agriculture across the country in collaboration with the Jihad Agricultural Ministry can increase food availability and address the food insecurity problem before it worsens. Crop pattern agricultural techniques have been used in several other countries such as Indonesia and China with corn and potato row-intercropping, and have proven to be very effective in promoting increased production. Although Iran has vastly different agricultural and economic conditions, the adaptable nature of this method still makes it a viable option for improving crop yield. Adopting cropping patterns is a plausible solution that would be greatly beneficial to fortifying the agricultural sector since it increases the crop yield, maximizes sustainability, protects against disease and pest cycles due to constant crop rotation, and decreases labor dependency, which is especially beneficial during COVID-19, while promoting mechanization (FAO, 2020). Since Iran has many different agro-ecological zones, cropping pattern implementation could be a great way to address the food security. In addition, this solution is easily feasible through support from the government and the Food and Agriculture Organization of the United Nations, which has collaborated with the Iranian government before and provided support for times of crisis and various issues the country has previously faced. The government could promote this solution through financial incentives and the provision of subsidies, as well as providing direct funding for agricultural mechanization.

The next step in this solution would be to work towards adopting new agricultural methods in order to shift towards a more effective and efficient agricultural style on a long-term basis. In addition to implementing agricultural mechanization, educating farmers about sustainable alternatives, and utilizing crop patterns, Iran should also focus on embracing a gradual widespread transition to hydroponics. Hydroponics is a horticulture method where crops are grown using nutrient and mineral solutions in a water solvent rather than soil. Iran's first hydroponic greenhouse was developed in Markazi Province, which lies in central Iran ("First Hydroponic," 2018). Although hydroponics has been tried out in areas like Markazi and Yazd Province and proven successful, the efforts were very small-scale due to a lack of proper funding and effective leadership management and prioritization to properly implement this approach on a wider scale, which is why it did not have a big impact on agriculture in Iran. Hydroponics is an excellent answer to the emerging food insecurity and underdeveloped agricultural sector in Iran, as it is one of the most sustainable agricultural practices. Adopting a hydroponics system will allow farmers to have more control over the conditions of their crops in general since they can regulate pH levels and nutrients to ensure plant health, as well as controlling the temperature and energy source due to the indoor

conditions. In addition, working in hydroponics will allow farmers to mitigate the high water wastage rate that Iran has due to inefficient agriculture since the system allows farmers to recycle their excess water. This process results in “up to 90% more efficient use of water”, which is a vital factor for Iran’s ongoing water crisis (“Benefits of Hydroponics,” n.d.). Hydroponics greenhouses can be implemented in areas where climate and soil conditions are inadequate for supporting traditional agriculture, which makes it a perfect fit for Iran since one of the biggest problems the agricultural sector is facing is the limited availability of arable land due to the rough terrain. This cultivation method even maximizes production to three to ten times the yield from traditional agriculture while speeding up the rate of production up to two times the typical duration (“Benefits of Hydroponics,” n.d.). Hydroponics also eliminates the need for chemical fertilizers or pesticides and makes plants less vulnerable to crop diseases and pests.

Hydroponics systems have been implemented successfully in other countries such as Jordan before in order to address water scarcity issues, which suggests that this agricultural practice is a completely plausible solution for the country of Iran (FAO, 2020). Even with challenges such as requiring

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technical knowledge and having a high initial cost, hydroponics is still a solution worth investing time and resources in. Farmers could be trained by the Food and Agriculture Organization representatives in Iran or organizations such as Nexus that are already trying to implement such sustainable solutions in Iran. In addition, although the initial investment in hydroponics will be high, proper government fund allocation should be able to address this since food insecurity is a growing problem in Iran that needs to be addressed by the leaders. Iran should be cognizant of the fact that this investment is aimed to support long-term development goals and the implementation of sustainable practices that will strengthen Iran as a whole in the future, so funding this initiative should be a high priority. A variety of factors including inadequate climate conditions, water scarcity, obsolete production methods, and underinvestment have inhibited progress in Iran’s agricultural production, but with the implementation of these sustainable practices, the agricultural sector will become much more capable and efficient.

Affordability is another major component that needs to be addressed in any type of solution proposed to establish a strong agricultural system that maintains food security in Iran. This solution is a plausible response to mitigating the emerging food insecurity, but consistent funding and affordability measures are imperative for its success. During COVID-19, with unemployment on the rise and food inflation rising rapidly, as well as no financial support for the people, Iran is facing wavering household food security. One way to combat this would be through a strategic reallocation of funds to provide stimulus checks to the population during this unprecedented time of crisis. Implementing this support in the community, as well as more funding for testing and public sanitation, will be a very effective means of sustaining a basic level of food security during the pandemic. Data collected on stimulus payments in the United States showed that a large portion of the population used the checks on food, with around 80% of people claiming that the money is vital to their financial stability, which illustrates the importance of providing stimulus checks (Foster, 2020). In addition, the government should work with economic analysts to establish a provisionary regulation on food prices and make policies to prevent retailers from

excessive price gouging, which is a big problem during times of economic instability. These measures should be put in place immediately, and should be solidly developed over the years to create a more structured relationship between the government and individual retailers in order to ensure affordability to the general public. Overall, although a significant amount of funding will be necessary for this three-tiered solution, it is a fundamental approach that Iran can and should invest in, as it concerns the future of the entire country.

This proposed solution is multifaceted, so after ensuring the availability and affordability of food for Iran's population, the pressing issue of accessibility needs to be addressed. Due to COVID-19's effect on trade and transportation, food access and distribution has been an issue that is endangering household food security. Disruptions in regional supply chains have hindered the dissemination of resources, which will have a profound effect on the future of Iran's food security. A tangible approach that can ensure access to a food source is utilizing an app to track distribution of food to people in need who are living in more underdeveloped and rural regions such as the Sistan and Baluchestan Province, as well as other outskirt provinces that are suffering from a lack of decentralization of resources. This would also greatly benefit the high refugee population residing in Iran, who are one of the most vulnerable populations during the COVID-19 crisis. Collaborative efforts between the United Nations Refugee Agency and the Agricultural Ministry of Iran could aid food distribution efforts while also eliminating large amounts of food waste. The distribution tracking app should work in conjunction with a grassroots movement and an interconnected volunteer network in order to connect farms, supply chains, and restaurants with surplus produce to food banks, and ultimately, communities in need. Incorporating surplus into food security efforts is crucial to Iran's future since they have one of the highest food waste rates in the world, a rate that is equal to ten European countries, or around 35 million tons annually ("Iran's Annual Food Waste," 2017). The implementation of an app would be an optimal way to address the food waste issue since it is a widely 7

accessible and effective method for organizing data and receiving requests that will allow food surplus sources to be connected to people in need. Similar models have been adapted in countries all around the world such as India, with the *No Food Waste* app that organizes the transfer of food surplus from different donation sites and connects them with identified hunger hotspots. This approach proved to be very successful, since it has fed people across ten cities in India and eliminated over a hundred tons of food waste, emphasizing the feasibility of utilizing an app (No Food Waste, 2020).

Through adopting this complex approach, Iran can resolve its currently emerging food insecurity crisis, as well as develop a sustainable and feasible method for ensuring a strong agricultural sector and a stable model of self-sufficiency for the future. Consolidating the agricultural efforts is essential to ensuring food security and enabling Iran to provide for its people without having to depend on imports. Developing a successful agricultural sector will also improve the economic conditions in the long run, which will allow the country to secure a more prosperous and stable future. Although the COVID-19 crisis is not over and many future impacts are uncertain, implementing immediate solutions is vital for preventing an escalation of food insecurity, among other problems. Looking forward, this comprehensive solution will also allow Iran to properly address and endure crises similar to this one in the future, and its plausibility makes it a very promising and relatively optimal option for Iran to partake in. Since we are currently living through

the COVID-19 crisis, it is absolutely imperative for our global community to work together in the battle against COVID-19 to prevent the world from spiraling into a severe food insecurity crisis — the next potential pandemic.

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