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Moldova, Population

Can Population Growth Result in More Food Security?

It does not take an expert in the field of food sustainability to realize the world is facing a problem, and not a minor problem either; the world's population is expected to increase by 2 billion people in the next 30 years (United Nations, 2019), yet already 690 million people go to bed hungry every night (Action Against Hunger, 2020). The United Nations; however, reports that the world already produces enough food to feed the world's populations. This is not a food production issue, but rather a severe discrepancy in the distribution of the world's food resources. It is imperative that before the growth of the global population continues to increase, action is taken to ensure food security for the current populations.

Wealth has a direct influence on the distribution and ability of consumers to purchase food, and thus on food security. This issue is not only seen when comparing countries, but also when comparing individuals in a country. In Moldova, located in the Balkan region of Europe, the population is only 3,364,496 people (CIA World Factbook), but the inconsistencies between the wealth of its citizens is still staggering; many of Moldova's citizens lack monetary wealth, and thus are extremely food insecure.

Only 13,068 square miles in size (CIA World Factbook), modern day Moldova has undergone much turmoil to develop into the country it is today. Until the nineteenth century, this region, originally known as Bessarabia, was a part of the Ottoman empire under the Romanian Principality of Moldavia. In 1812, the sultan of the Ottoman Empire ceded the land to the Russian empire; Bessarabia remained under the control of the Russian Empire until the empire's loss in World War One. Bessarabia did not remain on their own—they became a part of Greater Romania which remained independent until the start of World War Two when Russia took over control again. After the war, Bessarabia joined the Soviet Union, and became the Moldavian Soviet Socialist Republic. Upon the collapse of the Soviet Union in August 1991, the Moldavian Soviet Socialist Republic declared independence and the region adopted the current name of Moldova which was officially recognized as a country by the United Nations in 1992. Bordering Ukraine and Romania, the new Moldova became a Parliamentary Republic. A big shift from the previous form of government, authoritarian rule under the hand of the Soviet Union, Moldova has struggled with developing a constitution and finding leaders with no connections to their former dictators. (BBC News 2021). Another major issue Moldova has faced as the result of switching government forms, is the switching from a controlled economy to a free market system. As a result of these issues, Moldova is one of the poorest countries in Europe. As the economy stands now, Moldova does not have the money to provide food security for all its citizens. Agriculture fields are not yielding enough nor the right crops to satisfy the nutrition needs of the population forcing people to leave the country in search of higher paying jobs. Programs and initiatives need to be implemented to grow the economy further and stabilize it.

Twenty three percent of Moldova's population sits below the poverty line (World Bank, 2018) compared with 12.03% of Americans whose income is below the poverty line (United States Census Bureau 2018). Although 23% is a large portion, this is an improvement from the 2000 reporting that 68% of Moldovians were below the poverty line (World Bank, 2018). The Majority of Moldova's citizens inhabit rural farmland (57.2%) while the remaining citizens live in urban areas (42.8%). Private homes, row homes,

and apartments with basic electric, and plumbing houses accommodate families of on average 2.9 people (CIA World Factbook). Moldova's small families might seem like models of sustainable reproduction to hinder population growth, but in reality it is hindering Moldova's ability to prepare for a sustainable future. The average salary of \$15,690, (CIA World Factbook) is not enough to support a family, so to make more money, citizens of working age will move out of Moldova and into a neighboring country looking for job opportunities. This is creating disastrous effects on Moldova's population. A small population to start with, the Balkan Insight states that the population has shrunk by a third since 1989 and the United Nations Population Fund and Moldova's Centre for Demographic Research reports the population, without change, will shrink to 2.08 million. Although the population abroad sending money back to their families helps stimulate the economy, it is crucial to encourage migration back to Moldova to help foster the growth of the economy from within instead of relying on jobs outside of the homeland.

One third of the job force in Moldova is agriculture. According to the CIA World Factbook, 74.9% of the country is considered agricultural land. This is significantly higher than the average agricultural land percentage of European countries: 45% (MDPI). Moldova's extremely high percentage of farmable land can be attributed to its moderate climate; it boasts mild winters and summers. Average annual temperatures in the mid-high 40s; average annual precipitation is 20 inches. Though landlocked, a well developed network of streams and rivers cross over the terrain. 2,000 natural springs underground provide ample water sources to satisfy domestic, industrial, and agricultural needs. Water scarcity during summer droughts as a result of climate change have slowed food production in recent years. Three-fourths of the republic are covered in a nutrient rich black soil called chernozem. Growing in the chernozem, Moldova's top crops are grapes, grain, tobacco, and sugar beets—a relatively new crop introduced (CIA World Factbook).

During soviet control, overuse of fertilizers and pesticides left pollutants in the ground water as well as in the soil. Extensive deforestation has also caused the soil to erode. Under Soviet rule, the agricultural economy had been built up of state owned and collective farms (amalgamation of smaller farms). After independence was gained, no longer an authoritarian state, farms were broken up and split among individuals. Farm plots were given out to citizens between 1.5 to 2 hectares, or 1.5 to 2.5 average sized sports stadiums. As a study in environmental and social sustainability development from the World Factbook finds, 50% of current farmland is still in the hands of individual families. The majority of these family owned farms produce Moldova's top crops, and enough food is needed for the farmer's families. Typical Moldovian meals consist of vegetables and a meat product, which with the proper tools and land, is attainable for some citizens to provide on their own. For the urban populations, markets can be found around the city supplied by farmers. Since the farms were distributed during a time of corruption, uniform regulations are not set, meaning not all farmers are using sustainable farming practices.

Moldova is faced with two vital issues hindering its wealth accumulation and thus its food security: emigration and inconsistent farming distribution. It sounds counterintuitive to solve the problem of a growing global population to further grow the population, but in the instance of Moldova, population needs to be brought back to fill jobs that directly add to the economy, and more farms need to be sanctioned for citizens to privately farm. Both the urban and rural populations of Moldova are suffering from a bad economy. If sustainable farming practices are standardized and farmland is made available with subsidies, Moldovians who had to move abroad for money will have an incentive to return. Currently many men have left for Russia and the women have left for jobs in Ukraine (Balkans Insight, 2020). Without both parents home, kids are being left alone to fend for themselves, living only on money sent from afar. Moldova public schooling typically stops around age twelve, except for upper-income members of society, thus the majority of the working population is not highly educated. To encourage migration

back into the country, the government needs to disband and redistribute the remaining 50% of farm land from large-scale corporations into the hands of the people and regulate farming practices. Farming requires skills that can easily be taught to unskilled workers. Initial assumptions about the production efficiency of larger corporations could make this solution at first seem ridiculous, yet in a study done by the World Bank, it was concluded that 70% of total agricultural output was from individual farms meaning on the same amount of land the non corporate farms were able to grow crops more effectively and efficiently than their counterpart.

The first step in appropriating new farmland, requires the Moldova government to purchase the farmland in the hands of larger corporations. For this project, any farm bigger than 50 hectares will be considered a large corporation. As a 2017 report from the CIA World Factbook reports, Moldova was \$602 million dollars in debt. Buying back the farms will not be a cheap processes, as the government will have to satisfy the companies, but if the purchasing was to progress in waves, the economy should stretch enough so the financial repercussions from buying the land then reselling it to new people counteract each other until the long term economic advantages of having more food to export as well as a boosted economy from more jobs starts to increase profit. The point of this project is to bring people back to the country by providing jobs, so the farmland bought back cannot be sold at an extortionate price.

Roughly 489,396 square miles of land will be bought and divided into hectare plots for leasing (This is equal to 126,752,982 hectares of land). 35% of this land should be repurposed to further aid afforestation efforts. Previous efforts have resulted in an increase in plant and animal diversity (Encyclopedia Britannica). 35% of the amount of land left over, approximately 82,389,438 should be used for industrial development, such as manufacturing and shipping factories. An increase in exportable crops will need a way to be processed to be sold otherwise their production will not aid the economy. This leaves roughly 53,553,135 acres to lease to the public. 1,785,104, 30 hectare plots will be leased for a combined cost of 60% of the total amount of money it cost Moldova to purchase the land back from corporations. Since this program will have to roll out in waves, the price per lot might have to adjust as more and more land is acquired. Prices need to be low to entice Moldovans abroad to come back and work within the country boundaries, but not so low that the government does not make some money. In the long run, between increasing the price tag of the land as popularity grows, and taxes on the land the government's deficit spending from the purchase of the land will significantly lower and balance out.

In order to maximize profit from crop production certain crops need to be grown. Tobacco and grapes are two of Moldova's major exports. Tobacco, however, is particularly disastrous to the environment as it erodes the soil, and runoff from the plants pollutes local waterways. In order to increase economic profit, and lower the amount of tobacco grown, farmland sold from the government will be required to grow grapes at a minimum of 15% of the land. Sales from the 15% of land will go to the government for 5 years. The remaining 85% of the land can be used for whatever the family desires.

The last part of the redistribution of farmland is the availability and education of sustainable farming methods. 50% of farms remain in total private ownership; the Moldovan government should not force farms to only follow sustainable practices, but instead offer a subsidy to any farm that agrees to be included in a sustainability education and action plan. 10% of money the government earns from crop exports should be used to purchase sustainable farming equipment and to cover the cost of program workers who can lead seminars on sustainable farming practices. The equipment will be able to be bought for a fraction of the cost by the farmers in the program and another 5% of profit earned from crop exports

will be used to cover the cost of the subsidies. Any new land purchased from the government will already be a part of the sustainable farming “plan” and have to follow the regulations.

In the short run Moldova will experience economic loss as it goes further in debt to purchase the farmland and then sell it for less. Cost will also build up from the subsidy and educational resources, but the government will start making profit from the increase in exportable crops along with income from the industries built on the land set aside for factories. These implementations in the long run will boost the economy as citizens and the government will have more money to spend. A loss in the short run is worth the increase in the amount of jobs available. The availability of farmland will entice Moldovans to come home and take up jobs. New jobs will also be created by the programs as a workforce will be needed to divide up the land and manage it.

Building up Moldova’s population and economy is essential. By increasing crop production through the creation of more private farms that produce food and cash crops, Moldova will not only be close to self sufficiency, but also in a position of power to help other countries. Within Moldova, previous poverty stricken and food insecure citizens will be given the opportunity and the resources needed to improve their life and wealth, while also helping the economy as a whole. Wealth discrepancies and the related challenge of hunger are not easy to fix, but by having a stable population, Moldova will be able to share their fortune and help bridge our world together one step at a time. Although counterintuitive in nature, in the case of Moldova, increasing population will indeed lead to a future of sustainability.

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