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Moldova, Factor 2: Water Scarcity

Water Scarcity in Moldova, A Pressing Issue

Known for its vineyards, the Republic of Moldova is a country located in Eastern Europe (*Republic of Moldova...*). The Republic of Moldova, also referred to as Moldova, is an agriculturally dependent country as 85 percent of the 4,320,490 residents of Moldova are somehow connected to agriculture (“Population of Moldova”). In 2012, Moldova experienced a harsh drought. This drought affected all Moldovans, but was particularly severe for those who depended on agriculture to make a living such as agricultural workers, farmers, and rural households in general. Due to this severe drought, food security in Moldova worsened greatly. Thus, making life difficult for citizens in Moldova in many aspects. Due to the drought, many farmers were forced to give up their small holdings and became unemployed. The unemployment rate of Moldova reached 13 percent in the first quarter of 2006 and currently 12.7 percent of Moldova’s citizens are in poverty (*Moldova Household Food...*). Once problems such as water scarcity and food security are solved, Moldova will be able to grow and flourish in many ways.

An average rural household in Moldova consists of three to five members. As small farms are common, the average agricultural landholding is only 1.8 hectares. However, plots of land often vary from being 1 hectare to 30 hectares. Rural areas in the Republic of Moldova are poor and residents of these areas often find themselves depending on social services, social benefits, and agriculture for subsistence. A large magnitude of citizens living in rural areas are elderly. These citizens are often found living either alone or with young children as most middle-aged citizens, parents, often go abroad in search of employment and steady incomes, leaving children with grandparents. As elderly often lack the ability to take care of the land, it is common for rural families to lease out their land and live off the revenues that come from leasing. Close to all rural households, 99.6 percent, maintain kitchen gardens. Kitchen gardens are often used to assure the food security of individual households. The average size of a kitchen garden of an average household is 0.21 hectare. Forty-one percent of the rural population of Moldova has private wells (*Moldova Household Food...*). However, maintaining a private well is expensive and few can afford such luxury.

Education in Moldova consists of kindergarten, primary school, secondary school, and technical and professional schools. Primary education in Moldova consists of four years while secondary school takes seven to eight years to complete (“Education in Moldova”). The last two years of one’s time in secondary school is spent in institutions and universities. Most universities are owned by the state, but there are also some that are privately owned. However, the traditional path noted above is not the only path students in Moldova are offered. Many students participate in vocational courses. There are also many schools for the handicapped.

In general, the standard of healthcare in Moldova is fairly low. However, the Ministry of Health Care oversees that every citizen has access to a certain amount of healthcare for free (“Healthcare in Moldova”). Challenges include shortages of workers in the healthcare field and lack of finances. Out-of-pocket (OOP) payments have become common when dealing with the cost of pharmaceuticals in Moldova. This critical financial problem is slowly improving due to reform efforts by the government. Another important problem is the poor distribution of the small amount of health care workers. Seemingly most of the health workforce is located in urban areas of Moldova, leaving much of Moldova with a lack of adequate healthcare.

Although rural households are predominant in the Republic of Moldova, there are many corporate farms, as well. These corporate farms often produce the staple crops of Moldova. The main crops produced in Moldova are wheat, maize, a variety of fruits, tobacco, sugar beet, and soybeans (*Moldova Household Food...*). These corporate farms, which are well funded by the government, inadvertently cause small rural farms to go out of business forcing small farm owners to use their land for subsistence farming. These farmers struggle to find a reliable occupation and often fall into bankruptcy. Many of these farmers end up dependent on social services and pensions. Services and pensions are the main source of income in rural Moldova ("Healthcare in Moldova"). As the rural community in Moldova is fairly poor, it has been difficult for rural farmers to adopt good agricultural practices. However, the government identifies with this and is promoting environmentally friendly agriculture by introducing demonstration plots on nutrient management, crop rotations, and irrigation to inform the rural community of the benefits of good agricultural practices. The national average for monthly wages of Moldovans in 2000 was 2271.15 Moldovan Leu, 571.60 U.S. Dollars. However, recently due to improvements in the economy, the average monthly wage in Moldova has reached an all time high of 5227.70 Moldovan Leu, 1315.71 U.S. Dollars ("Moldova Average Monthly...").

There are many barriers to improving agricultural productivity. However the most pressing issue is water scarcity. There is too little agricultural input such as water and fertilizers available to rural farmers in Moldova. An increased exposure to new pests and diseases have also been affecting the growth of agricultural crops. A contributing factor in causing these problems seems to be the increase in temperature in Moldova. Climate projections show that it is likely for Moldova to be subject to a 3.4 °C increase in temperature. The greatest temperature increases were in autumn and winter. Another factor is reduced precipitation in times of need. Increased temperature and decreased precipitation cause moisture deficits and seems to notably shift the country to a semi-arid climate ("Climate Change Moldova"). Thus, leading the once completely agriculturally dependent country to a sudden decrease in employment and agricultural productivity.

Water scarcity is evident in Moldova. Droughts are a big concern for Moldova. From 1990 to 2007, nine droughts have occurred in the country ("Climate Change Moldova"). A severe drought in 2003 had a noteworthy negative impact on rural households in Moldova. Many poor rural households could not find a way to water their crops as they had access to little water other than rainfall. Rising production costs also affected rural farmers negatively. Another drought in 2007, caused the poverty rates in Moldova to increase due to stocks of agricultural products being unavailable due to the drought (*Moldova Household Food...*). There were significant losses in the economy of Moldova due to this drought as close to 1 billion US dollars were lost ("Moldova Unemployment Rate"). Due to the several droughts, many rural Moldovans were forced to migrate to other countries for employment. Rural migrants mostly moved to Russia ("Moldova Unemployment Rate"). Migrants, who were parents, were forced to leave their children with their grandparents in Moldova, while they tried to find employment. The average household in Moldova consists of the elderly and young children partly due to this reason.

From 1990 to current times, there does not seem to be much change in Moldova. However, new approaches to water management are beginning to be introduced to Moldovans. Only recently have farmers had the ability to be in charge of their own irrigation water resources. The Millennium Challenge Corporation has been working with the government of Moldova to reconstruct laws and policies that allow local communities more control of water resources. Until recently, Moldova has also had an issue with inadequate manure management. The lack of management has resulted in polluted water and contaminated groundwater resources across the country. This causes the already scarce amount of water in Moldova to be reduced even further. Other factors have contributed to this problem as well, such as unregulated waste disposal and inadequate management of sewage from human settlements (*Moldova Household Food...*). However, recently there have been policies put in place to better manage pollution of

water. These policies are positively impacting the water health of Moldova, bettering the issues of water scarcity and more.

Solving the issue of water scarcity in Moldova would allow for many farmers, who lost much of their harvest every year, to regain their harvest and be able to financially support their families without relying on social allowances. This would also help preserve the rich soil of Moldova by letting plants have better access to water. Many people who either lost their farms due to not being able to keep it financially or not able to let their farm reach its full potential due to financial reasons may now be able to regain and polish their farms. Farmers of smallholding farms would benefit greatly from this, as well. Due to droughts, rural farmers were unable to have a solid source of income for their family. As agriculture is the most common occupation in Moldova, this would create a huge impact on the agricultural aspects of Moldova. The small percent of the population that are not direct farm holders have jobs that are often related to services (*Moldova Household Food...*). These service jobs are commonly connected to the agricultural field, meaning that jobs in general would increase and the overall economy of Moldova would get better.

There are many issues that affect water scarcity. Along with water being scarce in Moldova, a lot of the water available is victim to pollution. Of the sub-surface water reserves, only 50 percent meet water quality requirements. Thus many people turn to groundwater to meet their needs. However, water from these wells is limited. There is a high risk of water overexploitation that comes with using wells. Also, water quality in wells does not always meet the standard of drinking water (*Moldova Household Food...*). The polluted water is mostly due to families raising livestock in their households. Human and economic activity determine the abundance or lack of unpolluted water resources. Climate volatility is also an issue that affects water scarcity in Moldova. Many droughts have affected Moldova's history. Eighty percent of Moldovan territory was impacted by the 2007 drought ("Climate Change in Moldova").

To improve water security for rural families in Moldova, many issues must be addressed. More measures should be taken to decrease water pollution in Moldova. As farmers have recently have been given more control of water resources, conferences and meetings should be held in order for them to understand the impact of their actions on their land and their country (Experts Name the...). Also, more government funds should go to small farms instead of corporate farms allowing small holding farmers to get back on their feet. In addition to these issues, another issue is water distribution. Water is scarce in Moldova and it has been noted that Southern Moldova has less access to water than Northern Moldova. Better distribution of water should be addressed in conferences and these plans should be made in cooperation with outside organizations. Water is scarce in Moldova. However, with help from other governments, the World Bank, research agencies, and more, the severity of this issue can be decreased.

The key to solving or reducing the water scarcity in Moldova lies with Moldova's citizens. Without the help of communities affected by this issue, no efforts to reduce or solve this problem will succeed. Thus, the role of communities in implementing solutions to water scarcity is vital. Citizens should come together and form communities where citizens can share information with each other. There seems to be a lack of communication between the government and the people of Moldova. So, these communities should better plan the distribution of water between families. Farmers of these communities should be required to attend government conferences that will teach them of good agricultural practices. The farmers can then take the information shared in these conferences and put them to use. In addition to sharing the information with each other, communities should elect officials to communicate their findings and decisions on the issue of water usage. These officials will attend meetings as representatives of their respective communities. These meetings will allow elected officials to communicate directly with the government. Elected officials should inform the government of any issues that occur and things such as water wastage rates. Ideally, the government will then propose solutions to their problems. Officials will then share opinions and proposed solutions of the government with their respective communities.

Communication and interaction between Moldovan citizens and the Moldovan government is key to solving the issue of water scarcity.

It has been noted that the government of Moldova has been working on improving Moldova's agricultural economy by investing money in corporate farms. However, because of these investments, many farmers seem to be going out of business. Although Moldova's economy has bettered considerably with these investments, Moldova's agricultural economy could be bettered even more by the government investing in smaller farms. It is also vital for the government to effectively address pollution and water distribution problems. The governmental conferences that I proposed earlier for farmers, will allow them to understand the value of distribution and preventative measures for pollution. It is the government's responsibility to do everything they can for the people of Moldova that will allow them to have a better understanding of water scarcity. Thus, the government should do their best in teaching farmers how to improve crop yields by implementing efficient irrigation strategies. A strategy that they can introduce in conferences is to consider the timing of watering crops. If crops are watered in the morning, a lot of water is lost due to evaporation. Thus, it is advisable that crops be watered at night. Finding smarter ways of using water and fertilizers as well as improving crop protection are areas where the government could help the agricultural economy. It is the Moldovan government's responsibility to give their best effort to better the lives of the citizens of Moldova through teaching them.

Moldova's government is already trying to find solutions to the water scarcity problem in many ways. The government has partnered with the World Bank to strengthen property rights and improve access to finance, knowledge, and technology. The Persistent Organic Pollutants (POPs) Stockpiles Management and Destruction Project's objective was to protect the environment and human health by disposing of stockpiled POPs, pesticides, and more safely. Over twelve million US dollars were used for this project. Over 19 million U.S. Dollars were used to accelerate agricultural growth in rural areas of Moldova. The national Economic Growth and Poverty Reduction Strategy Paper (EGPRSP) focuses on water resource management; solid waste management; and raising public awareness. The EGPRSP talks about solid waste management through the National Program for Household and Industrial Waste Management Convention. This program and convention call for destruction of tons of pesticides and POPs, decontaminating oils and equipment, and studying waste disposal sites. All of these programs either directly or indirectly help solve the pressing issue of water scarcity in the Republic of Moldova (*Moldova Household Food...*). With the help of these programs Moldova is improving constantly.

If the problem of water scarcity is solved in Moldova, many things will change for the better. Moldova's agricultural economy will flourish and farmers will be able to produce better crop yields, allowing them to make their living and feed their family. If the agricultural economy gets better, many parents or middle-aged citizens will return to Moldova and be reunited with their children and elders. The key to Moldova's happiness lies with solving the problem of water scarcity and implementing conferences and more will allow Moldova to be closer to reaching its full potential.

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