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Romania, Mechanization of Farm Tools and Irrigation

**România: Agriculture as a detriment made into a benefit.**

When I was younger, I thought Romania was the capital of Rome. Thinking back on my confusion as a child, I realized how fecacious that assumption was. After some research, I realized that Romania obviously was not the capital of Rome. Instead, Romania is a developing country that was more successful compared to the other countries surrounding it (such as Ukraine). With a population of 19.64 million people in 2017, Romania has a stable political system and government, universal health care, free public education for citizens, affordable minimum wage, and many more aspects that show that Romania is close to being a fully developed country (5). This aspect of Romania is also reflected by the lifestyle of a typical family that lives there. The average family in Romania consists of 3 family members per household (8). Families who live in an urban setting, which is roughly 53.04% of the population (8), have access to clean bathrooms, water, electricity, roads, sanitized markets, etc. The typical diet of a family is heavily based off meats, namely pork, lamb, beef, chicken, fish, and different soups, with “bread basket” crops (wheat, barley, rye, etc.) and a few vegetables incorporated into their meals (1). Families get their food from local supermarkets and stores, and cook it anyway the family desires as there are many styles of eating different Romanian dishes (1). After further research, however, I learned that Romania’s success forms a shadow over some of the country’s internal issues. Shining light on these problems, as well as solving them, will help Romania get one step closer to becoming a First-World Country.

Romania is an economically successful nation, with it being the forty-first largest economy in the world (7), and the largest electronics producer in both Central and Eastern Europe (14). Its top ten exports are vehicles, machinery, chemical goods, electronic products, equipment, and transport, pharmaceuticals, rubber, and plastic (14). It is desirable to draw emphasis on the fact that Romania is Eastern Europe’s regional leader in both Information Technology (IT) and motor vehicle production, with the production of automobiles, among other infrastructure, being accountable for 32% of Romania’s GDP and responsible for 26.4% of Romania’s workforce (9). While the economy of Romania is successful in most sectors, it is failing in one sector: Agriculture.

The agriculture of Romania accounts for a low 6% of Romania's GDP, but this would not be an issue if 30% (about 3 million people) of Romania's workforce was not employed in the agricultural sector. These statistics can be compared to the U.S's economy, with agriculture accounting for 0.9% of the U.S's GDP, and 1.5% of the workforce (3.2 million) being employed in the agricultural sector (11). As of 2015, Romania has a total of 13.3 million hectares of land allocated to the use of farming (13). A hectare is equivalent to a 2.7 acres, and for simplicity's sake, 13.3 million hectares is equivalent to about 24.9 million football fields. With this much land dedicated to farming, and a third of the country's workforce working in the agricultural industry, the inefficiency of Romania's agricultural practices is proven to be detrimental to the economy. This inefficiency is due to three factors: poor mechanization of farm tools, inadequate irrigation, and deficient use of land.

Ironically, while Romania is one of the leading car manufacturers in Eastern Europe by producing and manufacturing popular brands such as Dacia, the mechanization of agricultural tools in Romania is extremely penurious, namely tractors. Romania has about one tractor for every 54 hectares, while the European average is one tractor for every 13 hectares, and 80% of Romania's tractors are outdated (6). Furthermore, tractors in Romania are used for over 12,000 hours (500 days) while the European average for using a tractor before it is replaced is 3000-4000 hours (6). With approximately 170,000 tractors in poor condition, Romanian farmers have to use old-fashioned farming tools that rely on animal power, contributing to the failing agricultural sector (6). Romania's failure in agriculture is also due to the poor irrigation systems responsible for hydrating farms. Due to droughts, Romania has never donated the resources to an adequate project to solve their irrigation problems, although attempts have been made in the past with slow progress (11). Not all the land allocated for the uses of agriculture are used by Romanian farmers. Reports say out of the 13.3 million hectares, 40% are not used (13). With nearly 5.32 million hectares of available farmland not being used, it is expected for Romania's agricultural sector to be inimical to Romania's economy.

A proposed solution to these problems lies in the passage of government mandates integrated with economic policies. In Romania, there are numerous compact farms, each one being privately owned due to the lack of investments in the Farming Industry. A desirable action would be to first consolidate

these smaller farms into more larger ones. Consolidation is the economical practice of collecting numerous small companies (or in this case, farms) and merging them into a larger one. To understand how this will benefit farming when comparing one large farm with one tractor to a number of smaller farms with one tractor each, which option will have fewer resources dedicated to it and yield the most crops? The larger farm will consume less resources due to the fact that only one tractor is needed to farm the plot of land, and the larger farm will produce more since all the crops will grow at a uniform rate. The consolidation of farms reflects the concept called “economics of scale”, which means that the profits of an enterprise are directly proportional to the level of production. Therefore, the bigger the farm, the bigger the profits. This will be accomplished by the government “generously” buying these privately owned farms, incentivizing the owners to combine their farms with others to make larger ones. With the consolidation of farms solving the inept use of land that Romania is plagued with, the poor mechanization of farming can now be addressed.

The concept behind the impact of consolidation on the mechanization of farming techniques is that with larger farms, more mechanized tools will have to be produced due to the larger areas of arable land that need to be farmed. With the poor quality and relatively small number of tractors, the government will need to incentivize the numerous car companies to allocate their resources to a division that manufactures tractors through the government paying them subsidies. This arrangement is convenient for car companies since being paid subsidies will either produce the product, tractors, at a lower cost (leading to more profits made by the car company), or the car company will not have any significant changes in profits by making a new product since the government will be paying for the production of the tractors. Therefore, it is primarily the car company that will benefit from this agreement with the government, further incentivizing the car companies to agree with this plan. The amount of assets that have to be directed to the production of tractors does not have to be substantial. A common economic theory is that over time, as the mechanization of farming techniques increases, fewer farmers will be needed to cultivate the land. Therefore, if the government incentivizes the car companies to direct large amounts of their resources towards the production of tractors all at once, mass unemployment of the agricultural industry will occur, and the car companies are likely to decrease the profits they contribute to Romania through the production of cars. That is why only a small amount of resources should be directed to the production of tractors from each car company, causing a slow, but gradual, change in Romania’s mechanization problem.

As stated before, as time passes, and the mechanization of farming techniques increases, more farmers will not be needed to cultivate the land. Therefore, these farmers can be used for an alternate purpose. Similar to Franklin D. Roosevelt's New Deal programs that helped those without jobs with a way to earn money to support themselves and their family, the Romanian government can employ policies that enable ex-farmers to work on an improved irrigation system. By hiring the unemployed farmers, the government can capitalize on the unintended side effect of the mechanization of farm tools. The support for such a program should be high, with the unemployed farmers given a guaranteed opportunity to earn money that will sustain themselves and their families instead of having to go through the struggle of finding a job. The beauty to this solution is that it will be an ongoing cycle until the mechanization of farm tools is completed: The car companies will produce tractors, the increased amount of tractors will lead to the unemployment of farmers, and finally these farmers will be employed by the government and paid to work in a program that will improve Romania's irrigation system. This solution effectively kills three birds with one stone by making the agricultural sector more optimal, which in turn will contribute more to Romania's GDP.

This plan, however, will not be possible without adequate funding from the government. It would be absurd to assume that the Romanian government can miraculously fund such a large scale operation due to "spare funds", so two solutions have been created to help with this issue. The first solution is to apply the concept of Deficit Spending to Romania's economy. Deficit Spending is when a government spends more money on their country, and overtime, the government's spending will be compensated by the improved economy (3). If the Romanian government simply spends more money on the proposed plan, then they will be repaid overtime by the improved agricultural sector. This may seem like a lackluster idea, but it has proved to work when Franklin D. Roosevelt implemented it during the Great Depression, effectively bringing the country out of the depression because of its application. If this concept can be used during a time of wide-spread poverty, then it should be able to be applied in this situation as well.

In addition to Deficit Spending, taxing certain corporations can aid in the funding of this proposition. Over the years, foreign corporations, have bought over 1 million hectares of land collectively due to loopholes left in the Romanian Government because of corruption (2). This has forced individual

farmers to either sell their land and move to the city to find a new job, or accept the challenge that the invading companies pose and “navigate a life of increased rural poverty.” (2). Both options affect the farmer’s need to provide for his/her family since profits from both pathways are minimal (2). While affecting these farmers on a personal level, this negative situation can be turned into a more positive one by taxing these foreign companies. The profits gained can be used to fund the proposed operation. These corporations have already established a base of operations, shops, etc. in Romania, and gone through the trouble of illegally (most of the time) acquiring land. Therefore, while taxing these corporations may aggravate them, the rational option for these companies would be to pay the taxes instead of completely removing themselves from a country that consumes their products. With both these solutions, Romania’s Government should have minimal issues when it comes to funding the proposed plan.

Romania has shown its potential in the world economy through its success in the automobile and technology industry. In the shadow of the success of both those sectors, the agricultural sector has proven to be a detriment by only committing 6% to Romania’s GDP while employing 30% of Romania’s workforce. Through the consolidation of farms, subsidization of car companies to improve the mechanization of farms, and a policy that employs laid off farmers to work on an improved irrigation system, Romania’s agricultural issue can be addressed efficiently.

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