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Romania, Sustainable Agriculture

Increasing Economic Productivity of Small Farms in Romania

Romania is a country in Eastern Europe that was formerly a Soviet Satellite Nation; during this period Romania followed the Soviet socialist model from 1945-1989, in which the majority of farms were state run cooperatives (Aceleanu, 129). The transition of Romania's economy in the 1990's following the Romanian Revolution led to wide scale land fragmentation and thus many small subsistence farms which are not as efficient in terms of productivity compared to those of Western European nations (Popescu, 567). Romania's agricultural situation is unique because it has the largest rural population in the European Union as well as the 5th most arable land (Aceleanu, 126), however the nation's commercial agricultural output is 4 times lower than the EU-15 ("Subsistence Agriculture a Socio-Economic Reality"). The low agricultural output can be attributed to Romania's high reliance on subsistence farming, with 86% of all farms in Romania being considered subsistence farms, which are farms that produce less than 4,000 euros per year ("Subsistence Agriculture a Socio-Economic Reality"). Romania has a lot of potential to increase its agricultural economy as it has the geographic means to do so, however its many small farms, a lack of investment in agriculture from the government, an inability to compete with other European markets due to decreased crop quality, and a cultural resistance to land consolidation are all obstacles.

Romania is ranked fifth out of all countries in the EU in terms of most arable land, at 9.4 million hectares (Aceleanu, 126). As of 2013 Romania has 3.36 million farms, and the most holdings in the European Union making up 33.61% of all holdings in the EU-28 (Popescu, 566). These farms are relatively small, with 97% of all farms in Romania being less than 10 ha (Popescu, 567). Over a third of farmers living in the EU are from Romania, however the nation's agricultural production value is a tenth of all agricultural production in the EU (Aceleanu, 126). Additionally, in 2012 farmers in Romania saw the largest agricultural income per worker percent decrease out of all nations in the EU-28, at -16.4% due to a reduced demand for agricultural products (Aceleanu, 127). Romania is ranked last in the EU-28 in terms of standard output of agriculture vs amount of farms (Popescu, 566). Most of these farms are family owned and are unable to compete with industrial agriculture prices, as they lack efficiency due to their small sizes. The small farms can be attributed to the wide-scale property fragmentation that took place in the 1990's when state run cooperatives were regranted as Romania transitioned into a Democratic-Capitalist nation following the Romanian Revolution. Land regranting policies were not clear and did not encourage collectivized land use, which led to wide scale fragmentation of Romania's agricultural lands (Aceleanu, 2015).

One might assume that an easy solution to increase agricultural productivity in the nation would be to simply consolidate or collectivize all of the small farms into larger and more efficient farms, however there is a large cultural resistance to doing so among the nation's rural communities (Popescu, 575)**.** About half of all crop consumption on subsistence farms in Romania goes to the families that own them (Aceleanu, 126). Consolidating farms would require farmers to sell their lands and force many families out of their livelihoods while requiring the formation of new jobs for former farmers as well as large investments in the industrial economy of small villages throughout the country. The shift to an industrial economy in many rural parts of the nation would also increase pollution levels. Romanians are also hesitant to collectivize farms due to the nation's socialist history, as collectivization is a pinnacle point of socialism. Therefore, a viable solution will have to be one that does not disrupt the farming culture of rural Romanians while also bearing with the laws of the 1990's that caused so much of the nation's farm land to become fragmented.

As the world population continues to increase, the need to produce more food to sustain our growing population has become increasingly important. It has also become necessary to find sustainable agriculture methods in order to support the growing world population while also staying within planetary boundaries, as agriculture is a leading cause of pollution worldwide (Eyhorn, 2019). Romania has the geographic means to provide for the world's growing need of viable crops, however it will need major transformation in the rural parts of the country in order to do so. Romania will need to transform its agricultural economy to support the need for sustainable crops, as a lack of technical and financial resources for Romanian farmers has led to decreases in arable land within the country (Aceleanu, 126). In 2012 alone the country saw a decrease of more than 7,315 hectares of arable land (Aceleanu, 126), which could have been used to provide for increased demand for sustainable agriculture.

A possible solution is for Romania to take advantage of the growing global market for organic goods. According to the European Parliament, The EU-28 consumed about 40 billion euros worth of organic goods in 2018. Between 2012 and 2018 organic food sales increased by 79.8% and organic farmland increased by 33.7%. The market for organic agriculture has increased dramatically in the past decade as the public has become more aware of the negative environmental effects associated with inorganic fertilizer and pesticide use, such as increased water pollution and soil degradation. Organic farming can not only decrease pollution and maintain soil quality, but also help to increase biodiversity and the incomes of farmers (Eyhorn, 2019). Additionally, approximately 70% of Europeans view organic goods as being safer and of higher quality than non-organic goods ("EU's Organic Food Market"). Romania has potential to tap into the growing organic food market before it becomes saturated (Aceleanu, 135). So far, only about 2% of farms in Romania are organic farms, ranking Romania as 27th out of the EU-28 in terms of proportions of agricultural land ("EU's Organic Food Market"). Organic farming not only has many sustainability benefits, but can play a vital role in increasing the economic viability of the agriculture sector in Romania (Aceleanu, 135). Romania already uses inorganic fertilizers far less than its EU counterparts, so a transition to organic markets would not be difficult due to the need to phase out fertilizer use. Growing organic goods can be done on subsistence farms without needing to greatly change the structure of the farms, as consolidated farms practicing industrial agriculture on a wide scale has not been very popular. Additionally, many Romanian farmers might not need to rely heavily on inorganic

fertilizers as crop rotation is already common practice due to the inability to afford inorganic chemical fertilizers, and inorganic fertilizer usage overall in the country is much lower than the EU's average (Aceleanu, 135). As of 2015 the organic market was estimated at 40 billion dollars worldwide (Aceleanu, 135). As this market continues to grow it can play a major role in transforming Romanian agriculture and dramatically increase the standard of living of Romania's small family farms.

In order to keep up with the demand for organic products the government will need to provide infrastructure that will increase facilities that can process organic goods in the country and provide irrigation systems in rural areas. While the demand for organic goods in Romania is increasing, the majority of organic goods grown inside the country are exported due to the lack of processing facilities. At the same time that these organic goods are being exported, the demand for organic goods among Romanian citizens is increasing due to an increase in the economic situations of many Romanians living in urban areas, which leads to organic goods needing to be imported from other nations in order to satisfy the demand. If the country had better processing facilities then it would be much easier for Romanians living in urban areas to purchase produce from farms within the country, without the need for importing organic goods from other European nations. Romania also needs better irrigation systems that will allow farmers to grow crops regularly, as weather dependent farming in the county is still a major factor in the low productivity of small farms (Aceleanu, 133). Many of the nation's subsistence farms still depend on the weather for the watering of their crops, causing low performance that hinders farmers' abilities to compete with more industrialized agricultural markets. Many irrigation systems in the country were destroyed in 1989 when the nation transitioned from a communist dictatorship to capitalist democracy, because of this over half of the rural population in Romania still does not benefit from public water supplies (Aceleanu, 130). Irrigation systems will be very important to attract agricultural business while also allowing for investment in rural parts of the country (Aceleanu, 133). Developing better agricultural infrastructure in rural parts of the country will not only benefit farmers, but also spur economic activity, generating many more jobs for rural Romanians (Aceleanu, 133).

The Romanian government will also need to provide education to farmers in Romania on the benefits of cultivating crops organically, as there is still a lack of knowledge in rural parts of the country about the benefits of organic agriculture. Additionally, while there is a large amount of farmers in the country, many farmers would need to be trained on how to transition from a subsistence farm to a more modernized farm model that export goods, as most subsistence farms in Romania produce crops for self consumption (Aceleanu, 132). Romanian farmers will need to follow modern European agricultural practices in order to compete economically with its Western European counterparts. A good transition model could be one like the United State's Department of Agriculture Transition to Organic Partnership Program, which assists farmers across the country with transitioning to organic farming practices through the use of farmer training, education, and workshops that teach farmers about organic production practices, organic certification, business development, and organic regulations ("Transition to Organic Partnership Program"). The program plans to invest 100 million dollars over a five year period in order to achieve these goals in the United States. Of course, the United States is a much larger country than Romania and would need much more funding for its larger scale.

Subsidies from both the European Union and Romanian government will play an important role in incentivizing farmers to practice organic farming. Between 2004 and 2005 the Romanian government implemented subsidies that would help farmers increase their production of organic crops. After these subsidies were passed, the number of firms registered in organic agriculture in the nation increased from 3409 operators in 2006 to 15,544 operators in 2012 (Vasile, 260). The use of subsidies will play an important role in funding rural areas of Romania in order to provide the necessary infrastructure and education needed to transform the country's agricultural economy into one that is more modern and sustainable (Aceleanu, 135). Increasing government subsidies can help to increase the agricultural productivity of subsistence farms in the nation by increasing the ability to export organic goods into the growing organic food markets in Europe. This would help to better utilize the large amounts of farms in Romania by increasing profits of small Romanian family farms while also preserving the subsistence style culture of rural communities.

We can increase the economic productivity of small farms in Romania by transitioning to organic farming. The greater income from organic products would facilitate the utilization of the large amounts of arable land and farms throughout the country. In order to make this transition, subsidies from both the Romanian government and European Union will be needed to provide for the necessary farm-to-market infrastructure and education required to modernize rural parts of the country. Romania has great potential to increase the productivity of its many small farms and by doing so the nation can potentially become a leader in sustainable agricultural practices.

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