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A SMART VILLAGE APPROACH FOR THE REVITALIZING THE ALBANIAN AGRICULTURE

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Abstract:
This paper focuses on Albania's issues as a country aiming the membership in the European family. The article first presents European policies for rural areas revitalization and then the challenges Albania has to overcome to become an EU member. The revival of Albanian rural areas demands investments in ICT and intensive collaboration between the public and the private sectors. The backbone of the smart village approach is innovation and the use of ICT to assure sustainable agricultural production. Smallholding size is a significant concern as it does not stimulate cooperation amongst farmers. The current land legal issues are another problem that needs to be addressed to open the door to improvements in the agricultural production process.

Keywords*: smart village, ICT, simulation, GIS, Growth.*

Résumé :
Le présent document se concentre sur les problèmes de l'Albanie en tant que pays visant l'adhésion à la famille européenne. L'article présente d'abord les politiques européennes de revitalisation des zones rurales, puis les défis que l'Albanie doit relever pour devenir membre de l'UE. La relance des zones rurales albanaises exige des investissements dans les TIC et une collaboration intensive entre le secteur public et le secteur privé. La clé de voûte de l'approche village intelligent est l'innovation et l'utilisation des TIC pour assurer une production agricole durable. La petite exploitation est une préoccupation importante car elle ne stimule pas la coopération entre les agriculteurs. Les questions juridiques foncières actuelles constituent un autre problème qui doit être réglé pour ouvrir la voie à l'amélioration du processus de production agricole.

Mots-clés *: smart village, TIC, simulation, SIG, croissance.*

Classification JEL*: O.*

Introduction

For historical reasons, there is a difference between urban and rural development levels. The lack of rural development has become the weak point in achieving balanced growth and development in many countries (Wang et al., 2020). Such a gap between the urban and rural areas has economic consequences and, if not addressed in time, could become the root of profound social, political, and educational issues. Several serious studies have underlined that the most relevant point is providing to rural areas quality utility services like power, water, and sanitation (Aldo et al., 2006). In addition to those services, other essential services such as education, healthcare, transportation, and infrastructure (roads, railways, buildings, equipment) must be the priority in the strategy development of every village (Joginder, 2017).

The development gap between urban and rural areas, consequences in the field of education, has been studied by (van Maarseveen, 2021). The authors point out that students living in the urban areas have better chances of succeeding in school and university than their mates from rural areas. In some places globally, originating from rural areas means having fewer chances for kids to get the right and necessary immunization vaccines (Ameyaw et al., 2021). The development gap between urban and rural areas could explain the factors associated with rural-urban gaps in severe acute malnutrition among under-five children in low- and middle-income countries (Fagbamigbe et al., 2020). The urban/rural economic inequalities are considered to be the cause of the discrepancies in physical growth among Chinese children over three decades of urbanization (Hu et al., 2020). The consequences of the socio-territorial inequalities are traditionally addressed using the criterion of access to productive resources and material opportunities (Camarero & Oliva, 2019). The authors suggest that a more comprehensive approach is needed to address the rural gap: the difference between living conditions and living expectations in rural areas compared to urban ones.

The gap between the rural and the urban areas has been present, and it is a problem of concern for Europe. In September 2016, more than 340 rural stakeholders gathered in Cork, Ireland, intending to develop a vision for the future of EU rural areas (European Commission, 2017). Under the heading "A Better Life in Rural Areas", the Cork Declaration 2.0 sets out the expectations and aspirations of rural areas (Commission, 2016). The document calls for policymakers to narrow the digital divide between rural and urban areas to develop the potential offered by connectivity and digitization of the rural regions. This topic was discussed at length to find the best way to address it. In the end, it was agreed to pay particular attention to the need for **integrated approaches** and the interaction between different policy fields because of increasing complementarity and coherence (European Network for Rural Development, 2016).

As Albania is paving the path to enter Europe, the number of the issues to be addressed rather urgently and the size of challenges to overcome are of noticeable relevance. One of the most profound challenges is the revival of Agriculture, as it is one of the most significant economic sectors of the country. Albania does not have to have its original development path in the agricultural sector. Albania must closely follow the European efforts to unravel the agricultural economic revival issue as a country is inspired to be part of the European family.

ICT and Economic Growth

For many years, there has been considerable debate about whether the IT revolution was paying off in higher productivity. Surfing the specialized literature studies on the impact of ICT in the landscape of socioeconomic development, one could find several attempts by researchers to address this issue (Elena et al., 2018), (Qiang & Pitt, 2004), (Jalava & Pohjola, 2007). Furthermore, efforts to make an inventory of existing frameworks or models that analyze the connection between the use of ICT and economic development show a small list of such studies (Roztocki et al., 2019). The contribution of information technology (IT) to economic growth and development is seen as an important factor underlying the pace of development in many countries (Tallon & Kraemer, 2000).

Studies in the 1980s found no connection between IT investment and productivity in the U.S. economy. Most of the evidence in this area confirms that the positive effect of ICT on economic growth is not apparent before the mid-1990s. Nowadays, it would be difficult to consider prosperity and economic growth without the presence of serious investments in ICT.

Thus, policymakers need to consider that the economic revival of Agriculture is strongly related to ICT use. The European Commission sees the use of ICT as one of the deciding factors for revitalizing Agriculture (European Network for Rural Development, 2016). From IOT (Internet of Things) concept to Smart Agriculture, the rational use of ICT is one of the most predominant factors for restoring rural areas.

The " smart cities " initiative is an example of a successful combination of IT investments and economic growth. This initiative showed that without solid support in IT investments, cannot be achieved economic growth (Musa, 2017), (Kim et al., 2021), (Bonte, 2018). A smart city is a municipality that uses information and communication technologies to increase operational efficiency, share information with the public, and improve the quality of government services and citizen welfare (Yigitcanlar, 2021). The United Nations definition of the Smart City initiative is "*A smart, sustainable city is* ***an innovative city that uses ICTs and other means to improve quality of life****, the efficiency of urban operation and services, and competitiveness while ensuring that it meets the needs of present and future generations concerning economic, social, environmental as well as cultural aspects."*

Based on the success of the smart city initiative, there are solid arguments that the smart village approach, a similar initiative aiming at agriculture revival, should be successful.

Agriculture in Albania

Albania has a total land area of 28,750 square kilometers, of which 24% is agricultural, 36% forest, and 15% pasture or other types of land. While agriculture no longer dominates the Albanian economy, it contributed around 21% to national GDP in 2019. In 2020, imports of agricultural products were slightly more than $1 billion, almost the same as in the previous year. Exports have continued to rise, reaching about $365 million in 2022, a 10% increase from 2019 (*Albania – Country Commercial Guide.*, 2021). As of today, Agriculture will remain a main economic activity for Albania.

In its path towards Europe, Albania has to address some issues that are mainly Albanian. One of these issues that need to be addressed sooner rather than later is the minimal size of holdings (average of 1.2 ha - compared to 14 ha in EU-28). The main economic structure is the family-based organization type (family members, one cow, two dogs, and a cat!!) Thus, it isn't easy to apply any substantial form of organization that would be the basis for serious development.

The reminiscence of paranoia of communist cooperatives makes people very uncomfortable trusting each other and cooperating. The typical situation is the distrust among villagers and lack of cooperation of any kind. This issue is a significant obstacle to sustainable development and growth.

In addition to its structural problems, Albania needs to address many severe social issues, such as a massive migration from rural areas towards cities. As a result of this migration, few people are available to work in fields (Lerch, 2016), (King & VULLNETARI, 2003). The most severe human resources-related issue remains the difficulty of finding technologically inclined people. The massive use of ICT in Agriculture will need many savvy people to address the technical problems in front of them (Hanninger et al., 2021).

Implementing The Smart Village Approach in Albania

There are discussions about the best way to implement the "smart village approach " (Martinez & McEldowney, Juan. McEldowney, 2021), (Stojanova et al., 2021). , (Komorowski & Stanny, 2020). The best, quickest, and most efficient way is to build up from the bottom, as suggested by Mahatma Gandhi. According to this philosophy, every community has to address its own issues to become a self-sufficient unit. To address the philosophy issue does not require brave resolutions; it requires bold, corporate, intelligent work.

Collect community efforts and strength of people from various streams and integrate them with information technology to benefit the rural community (Aggarwal et al., 2018). To our best knowledge, there is no Master Plan to address rural revitalization (Atkočiūnienė & Vaznonienė, 2019). Government should undertake concrete steps for solving land property problems. The land issue is and will remain a fundamental problem for the country's development.

Another direction where government should focus its attention is education for increasing the trust amongst farmers to cooperate. There is an urgent need to create a smart village ecosystem. An ecosystem requires the coordination of work of several actors of different nature, national and local, and public and private efforts (Atkočiūnienė & Vaznonienė, 2019), (Hanninger et al., 2021).

The concept of the smart village should be based on local geographic conditions, infrastructural availability and utilization of potential resources base along with potentialities of communicating with nearby urban areas (Kim et al., 2021), (Hanninger et al., 2021) (Atkočiūnienė & Vaznonienė, 2019).

Agriculture and the environment occur in space and time. Results need to be displayed using maps. Layers of information are required to make the results visible using maps. In this context, it is vital to combine ICT and geographic information systems (GIS) to design and implement such systems successfully. (Papajorgji, Jones, Peart, et al., 1994), (Papajorgji, Jones, Hoogenboom, et al., 1994).

Such an initiative requires a lot of studying to be undertaken well ahead of the implementation time, but the simulation techniques could help substantially (Papajorgji & TARTARAJ, 2019). Universities could play an essential role in this effort.

Conclusions

The smart village approach has been used by many countries in the world and is becoming the way to revitalize rural areas. Countries with a huge rural population, such as China and India, have given this approach the right consideration and are using it as the only way to diminish the digital gap among cities and villages.

Serious educational efforts must be put in place. A large number of people must be trained and educated to use technology as an everyday tool. Nowadays, technology is a necessary part of economic growth.

These efforts must be directed by the government and universities.

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