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Sustainable development of rural settlements. Role of EU funds in managing territorial disparities

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Abstract. The paper aims to perform an up-to-date radiography of the rural settlements in Romania, focusing on the main dysfunctions related to: employment, social exclusion and risk of poverty, education, health and infrastructure. Based on the overview, the article is developing scenarios for reducing the above dysfunctions, setting the scene and involving the proper actors for improving the quality of life in rural settlements, together with the potential funds dedicated for the present and future programming period.

Keywords. rural settlements, territorial disparities, quality of life, rural development, local development strategies, rural dysfunctions

1. Introduction

The quality of life for any rural settlement is given, among others, by the quality of the roads, quality of water supply, the existence or non-existence of the public sewerage network. The quality of life of the villagers depends also on several vital institutions such as school and health network, but also on the degree of employment of the active population and the level of poverty and social exclusion. In order to revitalize the rural settlements, it is necessary that the quality of rural life to become sustainable, but to be modernized as well, promoting responsible long-term management of natural and human resources.

2. Materials and methods

The authors studied the scientific literature in the field of rural settlements' development, especially on the topics of interest for the paper: employment, social exclusion and risk of poverty, education, health and infrastructure. The figures were elaborated by the authors, based on the data extracted from the Romanian and European databases (TEMPO and EUROSTAT). The sketches for the next Operational Programmes in Romania, available on the websites of the Ministry of European Funds and Ministry of Agriculture and Rural Development were considered as well.

3. Results and discussions

Almost half of the population (45% in 2018) [1] lives in rural areas, the rural settlements occupy more than 90% of the country area and the agricultural area represents 55% from the country land (Figure 1.a). These figures are eloquent, bringing into to the attention of different specialists the complex issue of rural development in Romania [2].

In Romania, there is pronounced gap between urban and rural settlements in terms of physical availability of infrastructure and basic services, rural communities being in an extremely disadvantaged position from this point of view [3].

In the recent years, the "re-ruralization" phenomenon of Romania happened, being determined by the migration from urban to rural areas. This phenomenon has both economic causes (rising cost of living in cities and job losses) leading to a significant number of long-term unemployed citizens, low-pension retirees, unemployed people moving to the rural settlements, as well as social causes (the tendency of young families to settle in the peri-urban areas, in rural settlements with a good urban infrastructure). It should be noted that this phenomenon does not affect the whole rural area, the demographic forecast for the rural settlements remaining pessimistic (Figure 1.b).

The next sub-chapters are outlining the main dysfunctions in rural areas completed with the most important disparities between urban and rural settlements.

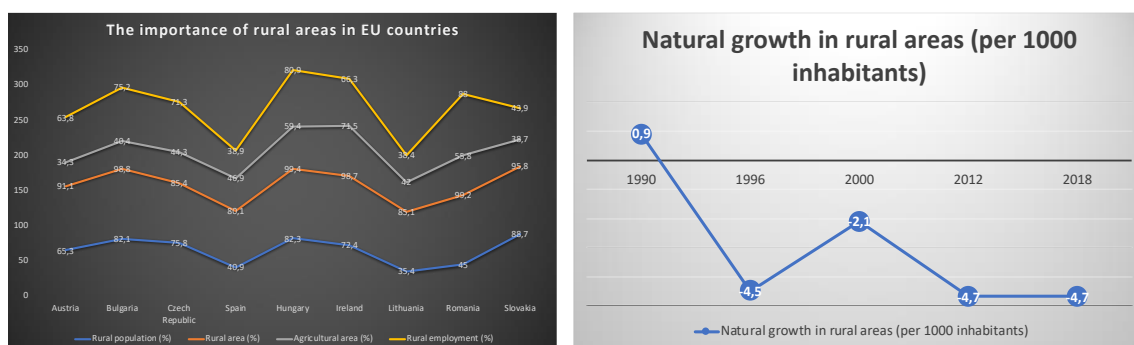


Figure 1.a. The importance of rural areas in EU [5] Figure 1.b Natural growth in rural settlements [1]

3.1. Employment

The number of employees in urban areas between 2009 - 2010 was comparable to that of employees in rural areas (Figure 2). However, the number has decreased systematically in rural settlements, emphasizing the tendency to deepen the employment inequality by area of residence, in the sense that the rural population has become increasingly affected by the phenomenon of unemployment in the labor market (4.768.719 employees in urban areas compared to 3.919.819 in rural areas in 2018) [1].

The economic development specific to the urban environment is attracting the active population in cities, therefore the migration of the young people in rural settlements, together with the aging of the rural population, is leading to the decline of the available labor force in the rural area.

One solution for this challenge is represented by the public-private partnerships in rural areas, which can provide, for the non-agricultural fields, opportunities to develop productive activities. For example, the strategic partnerships, with direct involvement in rural human resource development and diversification of the rural economy, can facilitate access to training

programs, but also promote entrepreneurial culture, encourage business and self-employment in various fields.

Currently, the measure 19 "LEADER Local Development" aims to encourage rural development initiatives aiming to reach an improved level of territorial economic and social integration.

3.2. Poverty and social exclusion

Poverty in Romania is three times more widespread in rural than in urban settlements, and in the case of people affected by persistent poverty, the various dimensions of exclusion tend to support each other and be perpetuated from one generation to another. A large part of the population living in rural settlements is disadvantaged in terms of income, lack of infrastructure and basic services. These difficulties are exacerbated by low access to finance and poor entrepreneurial skills among the rural population [4].

In 2018, the risk of social exclusion is 45% [1], almost double than at EU 28 level (Figure 3) [5]. Most of the marginalized communities include young families with children, with low incomes predominantly obtained from agriculture, informal workers (daily workers) and social assistance beneficiaries (child allowances, guaranteed minimum income and agricultural pensions). In some communities of this type, access to drinking water is poor, sanitation services are lacking, and the potential for natural hazards (floods, landslides) is high.

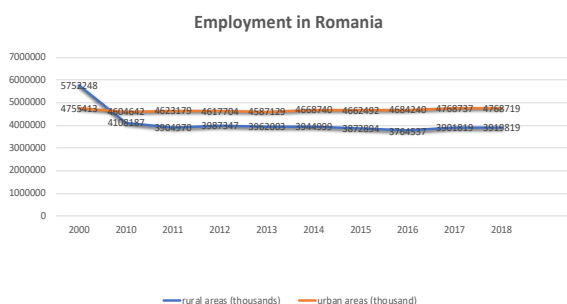


Figure 2. Employment in rural areas [1]

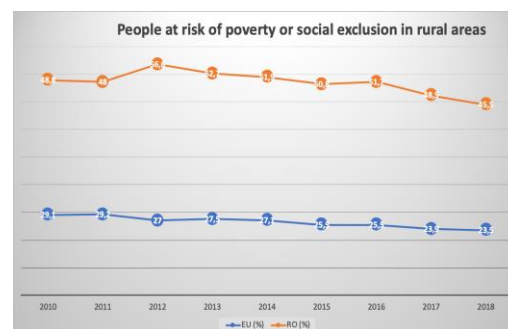


Figure 3. People at risk of poverty [1]

Poverty in rural settlements often overlaps with areas where the Roma community is strongly represented. The social exclusion of Roma and vulnerable groups has been addressed often through simplistic interventions, without an in-depth assessment of the local context, specific needs and potential of communities [6].

The European Fund for Agriculture and Rural Development 2014-2020 has the potential to reduce rural poverty and social exclusion through a bottom-up approach to local development under the responsibility of the community (Community Local-Led Development - CLLD). This is implemented by the Local Action Groups - LAGs (LEADER axis from Rural Development Programme), which in the current programming period have established, at the level of strategy, among their priorities, the socio-economic inclusion of vulnerable groups.

3.3. Education

In terms of education units, the total number of the public schools decreased significantly in both rural and urban areas, although the decline was much more pronounced in the rural settlements. Between 1996 and 2018, the number of urban education units decreased by 54%,

while the number of rural ones decreased by 85% (Figure 4). In contrast, the number of pupils decreased by only 21% in urban areas and by 31% in rural areas during the same period, demonstrating that the decisions on educational infrastructure have been made on the basis of an uncoordinated and decentralized model, driven by current needs and limited funding, and not on the basis of a strategic approach [1].

Even if the number of Romanian population followed a general downward trend, and the number of pupils followed this trend, the decrease did not exceed 15% in relation to the 1996 population (Figure 4). The decline in the number of educational units was much more impetuous. Nevertheless, it can be noticed there is a good numerical ratio between students and teachers and there are no significant disparities between urban and rural settlements, at least in pre-university education level.

The schools in marginalized rural areas in Romania need the highest investments in the country, as pupils studying in these schools are doubly disadvantaged. They come mainly from low-income families in rural settlements, attending poorly equipped schools. For example, 72% of rural high schools do not have science laboratories, and almost 40% of these high schools have outdoor toilets [7].

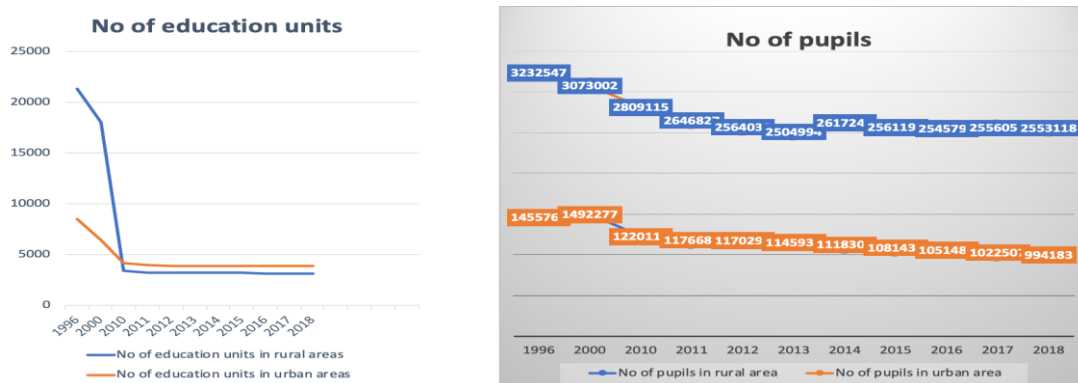


Figure 4. No of education units, compared with the no of pupils in rural and urban areas [1]

The early school leaving rate is 27.1% in rural areas, compared to the national average of 18.1% and the EU average of 10.6%. The level of this indicator is far from the target assumed by Romania for 2020, which is 11.3%. Poverty and social exclusion are twice as high in rural settlements than in cities, the children are struggling to have school access, although primary needs such as food security or minimum living conditions are not met and most of them do not have parental support [7].

The rural education continues to face major difficulties, related to the investment in physical infrastructure, the number of qualified teaching staff, staff turnover, determined by the degree of isolation of settlements and their development, limited access to vocational training and continuous training of the rural population programs, all these leading to an unsatisfactory efficiency of the educational process in the rural and / or disadvantaged areas.

The main financing source for improving the education situation in rural villages consist in RDP 2014-2020 measure 07 "Basic services and renewal of villages in rural areas", which is contributing to the expansion and modernization (including endowment) of higher secondary education institutions and vocational schools in agriculture. By improving the education infrastructure, a solid foundation can be built for the provision of knowledge and services to ensure the education of the next generation in agriculture.

As the SARS-CoV-2 virus has turned the sporadic online activities of the population into daily necessities, many of the pupils living in rural settlements have been virtually “disconnected” from the chance of a normal life, especially in terms of education. Despite the economic progress of the last decades, the basic aspects of the “connected” life (stable internet access, wireless routers, laptops or smartphones) are still unavailable for large segments of the rural population in Romania.

The access of pupils from rural settlements to education through the Internet, from their homes, is influenced not only by the degree of possession of the necessary computers (directly dependent on the parents financial resources) but also by the technical possibilities offered by the main Internet providers. All these are causing additional disparities between urban and rural settlements in Romania.

The number of households with internet access in rural areas however, increased two times between 2013 – 2019 (Figure 5), reaching 66.7%, at a distance of only 15.8% from urban areas [1]. This creates a good starting point for increasing the digital skills, much needed in the context of global pandemics.

Another critical point is the level of technical training of teachers in rural settlements. Analyzing the main characteristics of the Romanian teaching staff, it can be concluded that, on the “front” of the digitalization of rural education, most of the teaching staff seems to be overwhelmed by the situation, because of lack of knowledge (at a satisfactory level) of the necessary electronic equipments and the existing software applications in the field. Either due to old age or due to lack of access to information or specialized training in computer science at the time of their professional training, teachers in rural Romania are not prepared to move to contemporary learning means, which are closely related to technology.

In addition, the number of teachers in rural settlements is far below the needs of a modern education system, compared to the number of pupils (more precisely, about 19 pupils per teacher in primary education system and 11 pupils per teacher for the middle school education), the situation becomes even more difficult.

Moreover, we can add the acute lack of available teaching materials, especially digital ones, absolutely necessary in such an approach, to move to e-learning solutions. Last but not least, the efficient management of the phenomenon of school dropout, a phenomenon already difficult to control in rural Romania even under normal conditions, is another mandatory critical factor to be considered.

3.4. Health infrastructure

The number of medical units in Romania has experienced an extremely negative trend, as has the number of medical staff (Figure 6). The decline of units in rural areas (38.9% from 2005 to 2018) was faster than at national level (17%).

In addition to poor infrastructure and insufficient staffing in rural settlements, financial constraints are limiting the access to health services. In this regard, there are no significant differences between urban and rural residents, 75.8% and 74.2% respectively stating that they can not afford such services [8]. However, there is a noticeable difference between the two types of settlements in terms of physical access, due to the very long distance or lack of public transport to medical services - 5% compared to 8.2%, leading to necessity of improving transport infrastructure and expand the network of health units in rural areas.

Mortality in rural settlements is much higher than in urban areas, although it has fallen over the past five years from 14.6% to 13.9% per thousand inhabitants [1]. The amount of medical services provided in rural areas, where most people are living from subsistence agriculture, is

inversely proportional to mortality. There is a direct correlation between poverty and access to medical services, which are precarious or even non-existent in low-income communities in rural settlements.

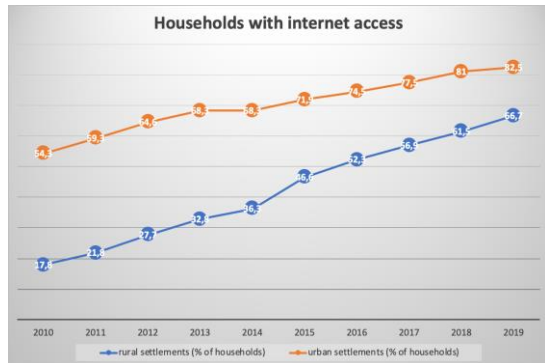


Figure 5 – Households with internet access [1]

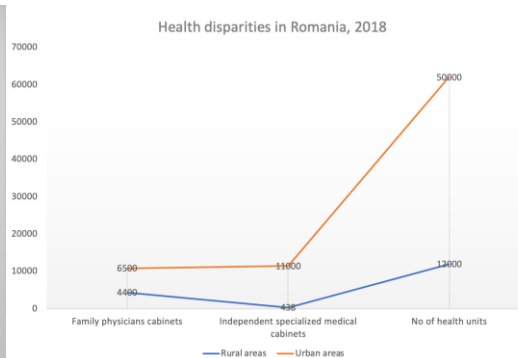


Figure 6. Health disparities in Romania

In 2018 there are 328 communes with 559,611 inhabitants which do not have any family doctor (the need calculated according to the population of these localities being 376 family doctors), this meaning 2, 52% of the Romanian population, do not have access to a family doctor in the commune where they live [9].

Currently in Romania the funds from National Rural Development Programme (NRDP), Regional Operational Programme (RDP) and Competitiveness Operational Programme are available for improving the health measures in rural settlements, aiming to change the occupational structure of rural areas and create equal opportunities between rural and urban populations, by providing adequate living conditions, including in the field of education, health services and social services.

3.5. Infrastructure (access to modernized roads and main utilities)

Rural settlements in Romania are affected by the lack or deficiency of infrastructure, with a negative impact on economic development and quality of life.

3.5.1. Road network. Only half of the communes have direct access to the national road network, which means that the current road network serves only three-fifths of the total rural population. This attracts a major gap in access (Figure 7). In the case of rural roads, lower quality is an even greater inconvenience than availability or physical access. Communal roads are in a much worse condition than the national and county roads. In case of heavy rains or snow, many of these roads become impracticable, blocking the population's access to vital supplies and services and disrupting the economic activities.

The statistics emphasize the trend of decreasing the percentage of non-modernized communal roads in the period 2010-2018, reaching from a percentage of 5.54% modernized roads in 2010 to 17.01% in 2018, however, a total of 20,433 km (61.16% out of the total communal roads) is still earth or gravel surface [1].

In recent years, through RDP 2014-2020, 507 projects with a total of approximately 3454 km of modernized/ built roads (106 km new roads and 3348 km of modernized roads) was financed, however, it still remains poorly developed and of inadequate quality. Therefore the investments in this sector are more than necessary, in order to ensure better conditions for the access of the

inhabitants from the rural area, as well as the creation of the premises for increasing the attractiveness in the economic sectors in the rural areas.

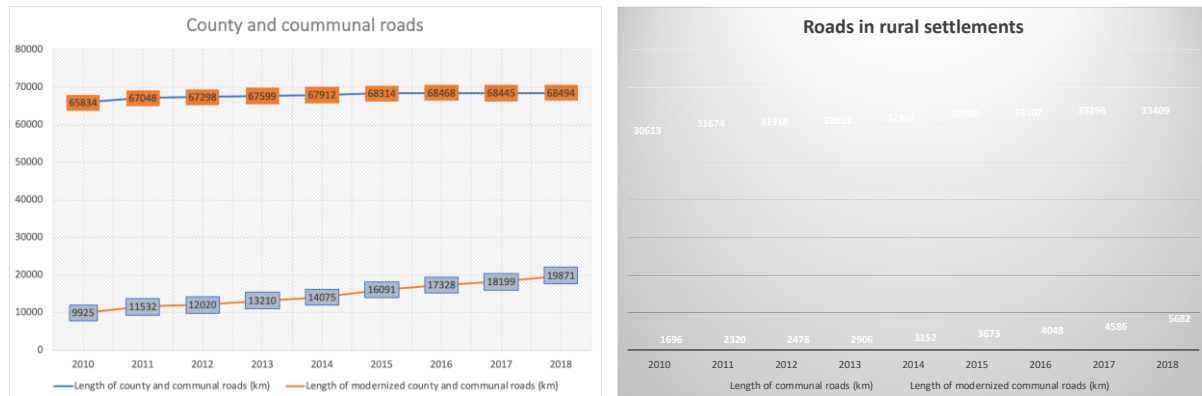


Figure 7. Modernization of the roads in rural areas is financed through the NRDP and National Local Development Programme for the communal roads and ROP for the county roads [1]

3.5.2. Main utilities. Rural settlements lag far behind urban ones in terms of the availability of basic utilities, such as water supply, sewerage, thermal energy and natural gas supply, with the important exception of power supply, which is available in all rural housing. For instance, only 4% (697) of communes and villages had access to the natural gas distribution network, as opposed to 95% of urban dwellings [1].

Most part of the existing physical infrastructure is in great need of repair or reconstruction. The level of quality and reliability of water supply and sewerage services in Romania is generally low in rural areas, where water quality does not always meet the minimum hygienic standards. The evolution of the degree of connection of the population to wastewater collection and treatment systems is depending on the type of treatment process applied, indicating a steady increase in the number of people benefiting from water collection and treatment services, as a consequence of the expansion and construction [10].

The investment needs in the field of water supply and wastewater treatment infrastructure are high, requiring contributions from several sources. Romania has a significant deficit in terms of infrastructure in these areas (partly due to the large population living in small rural areas). On the same time, the requirements set by the EU in the water and wastewater sector through specific Directives are very strict, thus doubling the pressure on Romanian authorities in terms of allocating resources for such investments. Establishment of a collecting system is not always justified, because it would not produce significant environmental benefit or it would involve excessive cost, therefore EU recommends using the individual systems or other appropriate systems which achieve the same level of environmental protection.

Nevertheless, the coverage of rural settlements with basic infrastructure increased between 2014-2020. Through NRDP 315 projects were financed, aiming at the construction / extension / modernization of approximately 1750 km of water supply pipes and about 3990 km of sewerage pipes [11].

However, the basic infrastructure is still deficient and underdeveloped, which means that allocation of additional resources for the development of these services in rural settlements is needed.

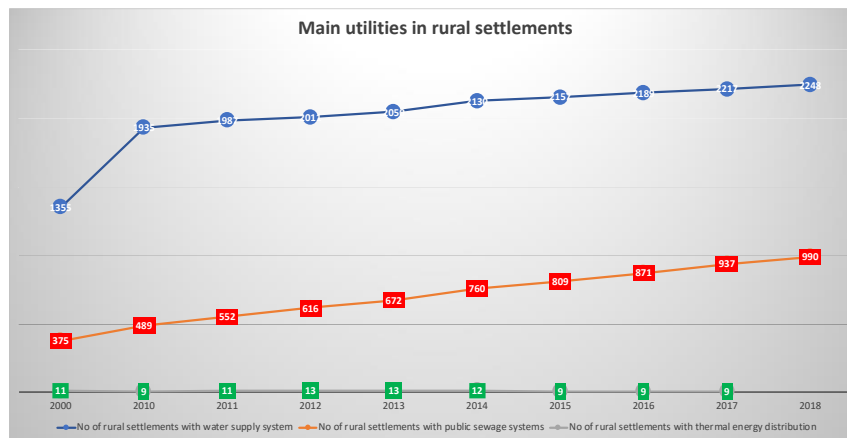


Figure 8. Main utilities (water supply, public sewage and thermal energy) in rural settlements [1]

3.6. Potential scenario for reducing the dysfunctions and improving the quality of life in rural settlements

The Ministry of European Funds published the sketches of the Operational Programmes for the future programming period. Based on these, the authors summarised the relationships between the stakeholders, scenes and potential available funds taken into account in the scenario for reducing the dysfunctions in rural areas in terms of employment, poverty and social exclusion, education, health and infrastructure.

Detailed description of a possible scenario is presented hereby:

Objective: reducing the dysfunctions in rural areas and the disparities between rural and urban settlements

Location: rural areas (communes)

Scenes (eligible activities):

- General activities
 - Integrating the Local Development Strategies of the LAGs in the Development Strategy of the rural settlements
 - Ensuring the complementarity of national programs with european funding (National Rural Development Programme, Human Capital Operational Programme, Competitiveness Operational Programme, Regional Operational Programme) in order to achieve the estimated impact in the rural areas

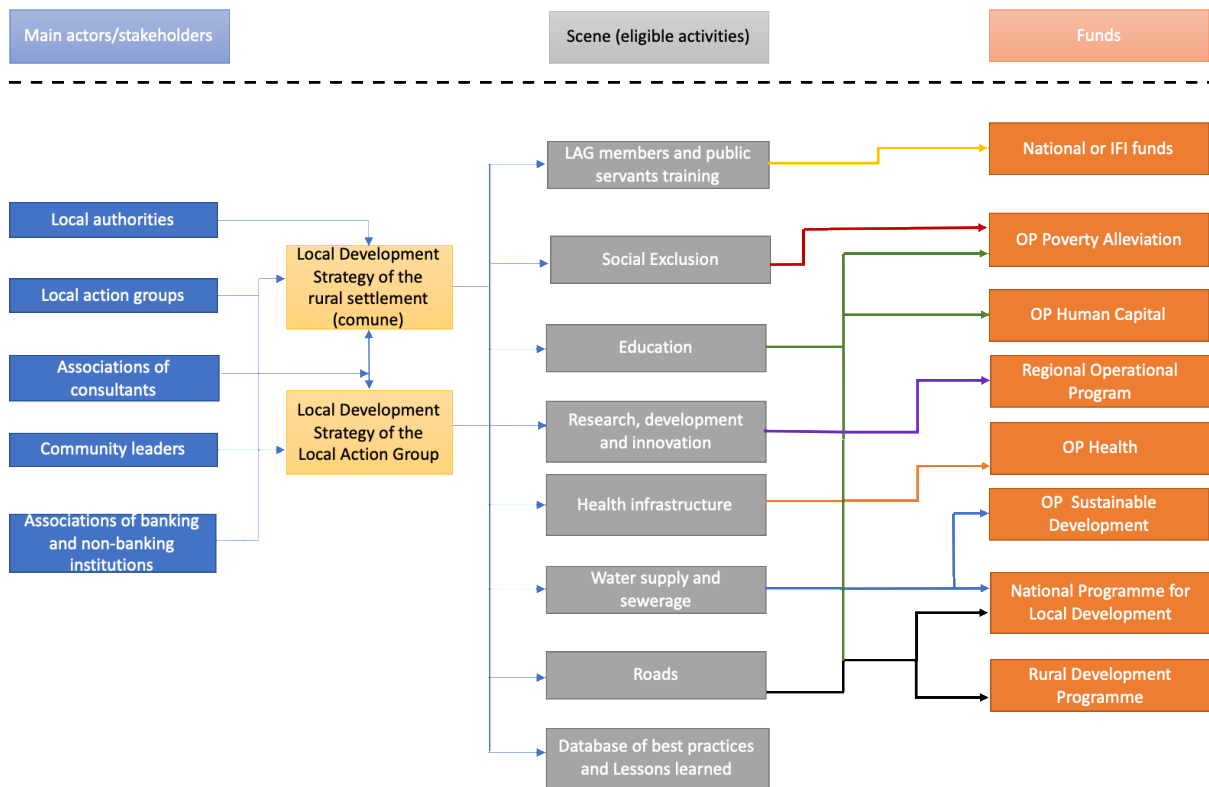


Figure 9. Relationships in the Scenario for reducing the dysfunctions in rural areas

- Employment and social exclusion
 - Supporting business in non-agricultural economic fields, improving the entrepreneurial knowledge of the rural inhabitants
 - Integrated National Program for Youth Unemployed / Vocational Training (NEETS)
 - Vocational education and training in agricultural fields
 - Socio-professional insertion of young people in the special protection system
 - Home care for the elderly
 - Strengthen the capacity of civil society organizations in rural areas, with a special focus on those that provide social services, specialized in education and facilitating the access of vulnerable groups to the labor market.
 - Dedicated programs for specialized human resources trainings for rural NGOs
- Research, development and innovation
 - Research infrastructures in the agricultural field
 - Public and private innovation projects in rural areas
 - Digitization for agricultural activities (drones and process automation)
 - clusters in the agricultural field
- Education
 - Extension and financial support of the programs " School after School" at the national level, in order to increase school attendance and reduce functional illiteracy.

- Teacher training programs for rural schools (including use of information technology) leading to improved quality of education and equitable access to education for children at risk.
- Parental education programs that result in parents who understand the importance of education for the child's future.
- Digitization of schools, in order to make education more attractive, adapted to current times, both for students and teachers
- School infrastructure adequate to the needs of the child: schools with running water and electricity, rehabilitated schools, with toilets inside, thermal comfort, proper hygiene, schools to operate in safe buildings.
- Health
 - Ensuring the minimum infrastructure for health services in rural areas
 - Extra training for rural doctors
 - Providing compensation for family doctors in rural areas
- Road infrastructure and utilities
 - Modernization of the transport infrastructure of secondary importance for increasing the accessibility of rural localities to the national transport infrastructure
 - Improving the technical-urban infrastructure of rural localities (modernization of communal roads and streets, development of local environmental infrastructure)

Pre-financing actors involved in programming with the managing authorities and intermediate bodies (the principle of partnership in funding programming):

- Local Public Authorities in rural areas
- Local Action Groups in rural areas
- Farmers' associations
- Associations of consultants
- Professional associations, unions and employers
- Community leaders
- Research institutes, cluster associations
- Associations of banking and non-banking financial institutions
- Direct beneficiaries (inhabitants)

Post-financing actors:

- Designers and approval organisms;
- Quality checking entities;
- Construction companies;
- Research institutes and clusters;
- Farmers and non-agricultural companies from rural area;
- Banking and non-banking financial institutions
- Direct beneficiaries (inhabitants).

Benefits after project implementation (cost-benefit analysis) in rural settlements:

- Reduced poverty and social exclusion;
- Decreased long-term unemployment;
- Increasing qualification of the labor force

- Positive demographic influence;
- Positive trend in education;
- Improved health indicators
- Increased economic activities;
- Increased accessibility;
- Improved quality of life;
- Increasing digitalization, research and innovation
- Emergence of investments that would grow existing economic activities or start new activities.

4. Conclusions and implications

The data presented above could be included in a possible scenario for improving quality of life in rural areas of Romania. They allow us to present the model for practical application (see picture) which can be used by the local administration in any rural settlement. However, the funds presented above do not cover the whole range of existing problems, motivating us to search in a future study new financing option.

The starting point is however difficult, especially because of lack of any start-up database, the experts elaborating applications requests are insufficient or not interested in attracting European funds for solving the problems of inhabitants living in rural areas.

However, the involvement of different actors/stakeholders in the financing programming, based on the real needs and expected impact, as well as in the structuring of the complementary interventions, represents the premise of the correct development of the rural space. Moreover, in the context of financing 2021-2027 which will be conditioned by reaching the targets of the impact indicators, the role of stakeholders in the elaboration of future operational programs is significant, both for the identification of the adequate interventions at the territorial level and for the early knowledge of the programmes which contribute to reducing delays in the absorption of funds.

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