

Public Health, Recovery And Economic Resilience In Romania

Diana Loreta Păun
Constantin Sorin Păun
Laurențiu Alexandru Chiotoroiu
Silvia Chiotoroiu
Ioan I. Gâf-Deac
Anca Alexandra Toma
Bogdan Gabriel Buzescu
Teodora Buzescu

Abstract

Until the outbreak of the pandemic crisis (March 2020), Romania, like the other EU Member States, was subject to rules, requirements, conditionalities, impositions, restrictions, etc. regarding financial behavior and development directions. Noting the "fall" of the EU into crisis, the Commission, the Council and the EU Parliament advanced the financing fund worth 1824 billion euros for the EU Member States for the period 2021-2027. Romania has the amount of 79.9 billion euros for the financial year 2021-2027, of which 63.2 billion euros are non-repayable and 16.7 billion euros are loans with advantageous interest rates and easier repayment conditions. The article presents options for medical/health defense, recovery and economic resilience in Romania, as well as elements of the Strategic and Tactical Program for Romania's involvement in activities and actions continuing with 2025 in the context of the National Recovery and Resilience Plan (NRRP). The vision of the NRRP Plan can be extrapolated to other countries facing exceptional economic, health, pandemic or disruptive situations, seeking scenarios, alternatives, and financing formulas for recovery and resilience.

Keywords: economic recovery and resilience, budget deficit reduction, medical and health defense, traceability for immunoprophylaxis in disruptive pandemic situations

Date of Submission: 24-10-2025

Date of Acceptance: 04-11-2025

I. Introduction

Since 2020, globally, especially in Europe, the disruptive pandemic situations, the increase in the budget deficit, the moderate economic advance have affected: a) health, b) the economy, c) social, at regional and national levels, in the EU member states. [15; 16]

Until the outbreak of the pandemic crisis (March 2020) like the other EU member states, Romania was subject to rules, requirements, conditionality, impositions, restrictions, etc., financial behavior and development directions. [7; 8; 9]

Examples: budget deficit of maximum 3%; armament costs; violations in various fields and fines, country rating that allowed or not advantageous external loans; liberalization of the presence of transnational companies on Romanian territory and granting tax facilities; respect for the rule of law, etc. [6]

The pandemic crisis caused a real "earthquake" in the EU, in the Parliament, the Council and the European Commission.

Officials in Brussels and Strasbourg were forced to give up, - to relax the aforementioned taxes.

Thus, it is allowed to overcome the budget deficit, it is allowed to purchase medical supplies from anywhere in the world (masks from China, equipment, vaccines, etc.), it is allowed to adjust the budgets of each country as it sees fit for all kinds of expenses, or pay aid, unemployment, special benefits in the medical sector, etc.

In some situations, the budget deficit can be overcome, other national deficits are noted and accepted only at the EU level.

The EU approves programs, credits and funds of all kinds at the individual request of each country.

Moreover, noting the "fall" of the EU into crisis, the Commission, the Council and the EU Parliament advanced the financing fund of 1824 billion euros for the EU member states for the period 2021-2027. [4; 5]

The distribution by country was made after negotiations, but essentially the following were taken into account: 1) the severity of the pandemic/economic damage, 2) the total population and 3) the surface area of the country.

However, for Hungary and Poland, to which Slovenia and the Czech Republic were added, certain allocation quotas were conditioned on “respect for the rule of law”.

The countries in question reacted (vetoed), and the EU was able to resolve these conditions. [2]

Romania has the amount of 79.9 billion euros for the financial year 2021-2027, of which 63.2 billion euros are non-repayable and 16.7 billion euros are outstanding loans with advantageous interest rates and easier repayment terms.

II. Medical Defense, Public Health, Recovery And Economic Resilience Options In Romania

Mainly, the first measures and actions with the declaration of the pandemic situation in EU countries, implicitly in Romania, - as a case study for this article, referred to countermeasure and control processes in the field of public health (in the system, the national health structure).

Essentially, aspects regarding the optimization of occupational diseases and accidents, the medical evolution of the population/pandemic diseases were analyzed, the conception/idea being formulated that a specific vaccine is necessary which, based on the traceability of infections, would contribute to immunoprophylaxis. (Fig. 1)

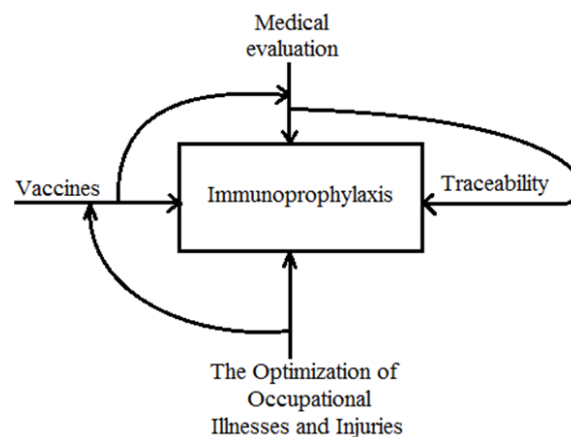


Fig. 1. Traceability for Immunoprophylaxis
(Source: Authors, 2024)

A true global flow of searches on virological biodiversity has emerged to identify virus families, standards of practice for combating and types of human protective equipment in the face of this disruption.

As such, the systems that represent the support for this pandemic dysfunction have been delineated, processes and action programs have been suggested taking into account the primary barriers, the secondary obstacles that had to be overcome, naturally through financial support for related expenses. (Fig. 2)

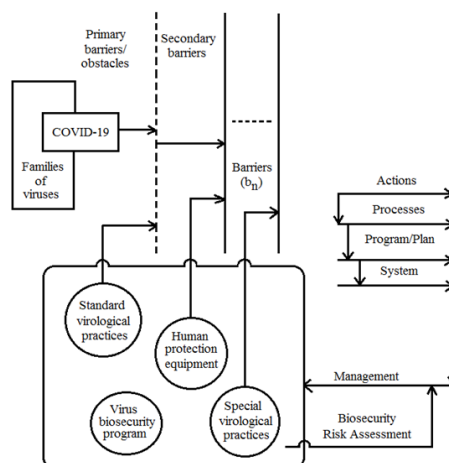


Fig.2. Formalization of virological biodiversity programs
(Source: Authors, 2024)

The first requirement for formalizing a biosecurity framework was the identification of infectious agents (risk group I).

The second risk group aims to delimit the typology of groups of people/individuals susceptible to pandemic agents.

The most important risk category proved to be the conceptualization of the precautionary, defense and healing system that would serve the global action for biosecurity. (Fig. 3)

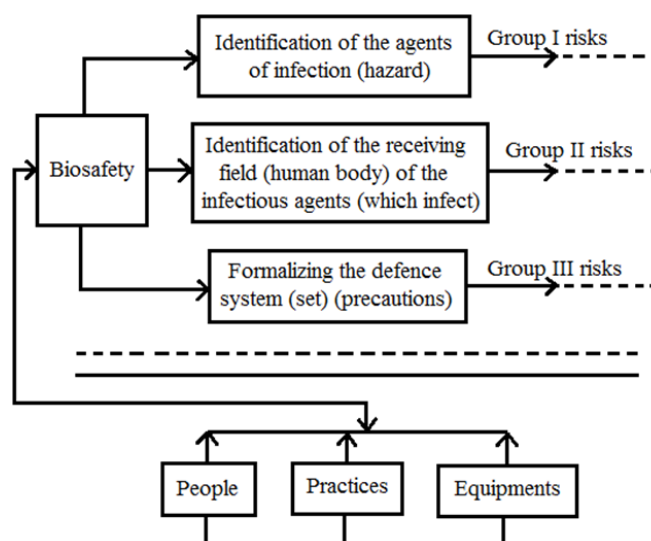


Fig.3. Global Biosecurity Action Framework
(Source: Authors, 2024)

On this basis, the framework/picture of financial expenditures emerged that proved to have significantly affected national economies, including that of Romania.

It is evident that traceability and the induction of the effective requirement for the widespread use of vaccines determined notable influences in the financial and economic operational systems of the countries.

The declaration of the pandemic state as a disruptive factor generated waves of damage on floors, in sectors and in the depth of the national economies that until then had been operating in an operational regime assumed by each government.

It was expected that all this dysfunction/deviation/disruption of a pandemic nature would also affect the constructive-functional ensemble of the EU, which is why non-compliant economic situations, operationally uncomfortable and unwanted changes for results/outputs appeared in the member countries.

Strategic thinking did not prove to remain isolated, focused only on the desire to restore the medical and public health system.

Intervention with new strategic and tactical tools was necessary to overcome the pandemic situation and the consequences/damage caused by it.

In this context, 1) the European Commission, 2) the European Council and 3) the European Parliament considered a joint intervention, support and action plan that is currently operating at regional (EU) and national (each EU Member State) levels, namely the National Recovery and Resilience Action Plan (NRRP).

III. Strategic And Tactical Program For Romania's Involvement In Activities And Actions Of The National Recovery And Resilience Plan

The health (medical-sanitary) system in Romania, especially since it proved to be affected by the pandemic, but also as a result of the consequences spread by this disruption throughout society and especially in the economy, had a strict, imperative need for financial support for resilience and functional recovery.

Resilience actually means establishing a characteristic dimension for behavior, - property, power, capacity, potential to withstand shock/shocks.

Equally, digitalization is added to this behavioral dimension.

In fact, digitalization means the transformation of analog signals into digital signals via mobile internet, mobile phone, USB sticks for laptops, internet tablets, data of health structures/ companies, to be converted into information, hospital/company websites, transfer to the beneficiary of decisions related to the services to be accessed, use of IT and telecommunications information technologies (for example, Emergency Ordinance of the Government of Romania no. 38/2020 on the use of electronic documents at the level of public authorities and

institutions, electronic document defined by Law no. 455 of 2001 on electronic signatures: eGovernment, Interoperability, Cybersecurity, Cloud Computing, Open Data, Big Data and Social Media - ICT in Education, Health, Culture and eInclusion, eCommerce, Research, Development and Innovation in ICT, Broadband and Digital Services Infrastructure, etc.).

In November 2020, Romania's National Recovery and Resilience Plan was launched, a document on the basis of which the EU's collective decision-makers officially approve the country's financial support from the general fund of 1824 billion euros for EU member states. [1; 3]

With the launch of this Plan (NRRP), healthcare structures, economic and productive agents in the Romanian economy resorted to evaluations and the submission of expressions of interest for financing.

The basic questions are:

- What is the National Recovery and Resilience Plan (NRRP),
- What vision can each public health structure/company have in relation to the provisions of the National Recovery and Resilience Plan,
- What are the areas (public health), sectors of activity (health-medical system), places in the activity market where entities/companies could focus, concentrate, have expressions of interest and profitability,
- What kind of strategic, tactical, investment, technological, commercial, production and service (health, medical, public health) behavior, projects and tenders could medical (health) structures/companies have with the opportunities offered by the National Recovery and Resilience Plan (how can they take advantage of the NRRP money that is being allocated),
- What could be the advantageous, concrete, successful connections/relationships with administrative and political factors (local, county, regional, central), with the major individual and collective decision-makers (Parliament, Government, Ministries, Presidency), with other structures, entities and companies in the field, from the country and abroad.
- How to move from "comparative advantage" (being at the same level of performance as other very good operators) to "competitive advantage" (being the best in relation to other operators in terms of performance level, among the best).

To obtain the money in question, each country is required to develop a National Recovery and Resilience Plan (NRRP), approved and assumed by the EU (to find out what these allocations are spent on).

There are 2 other funded Programs for EU Member States: 1) the Cohesion Policy and 2) the Agricultural Policy.

Romania is committed to development with the help of European Funds in which 1) the National Public Budget participates, in a complementary manner, and 2) Foreign investments, 3) Private financial sources and 4) loans at the national level.

Therefore, Romania can and must imperatively consume/spend the allocations for Recovery and Resilience.

The National Recovery and Resilience Plan (NRRP), starting with 2021 in Romania, had a total of 30.44 billion euros allocated, structured on 3 pillars and 12 priority areas.

The PNRR plan has 3 strategic objectives: Improving Romania's economic situation following the pandemic crisis, Strengthening resilience, Ensuring long-term economic growth.

For example, the 3 pillars within the NRRP are:

Pillar 1: Transport and climate change: [sustainable transport (budget of 9.27 billion euros), climate change (6.5 billion euros), green energy and transition (1.55 billion euros), energy and thermal efficiency (1.80 billion euros).]

Pillar 2: Public services, urban development and capitalization: [Mobility and urban regeneration, valorization of heritage (3.6 billion euros), Health (1.85 billion euros), Education (1.05 billion euros).]

Pillar 3: Economic competitiveness, digitalization and resilience: [Business environment / Entrepreneurial ecosystems (3.8 billion euros), Research and innovation (0.27 billion euros), Digitalization and cybersecurity (0.31 billion euros), Increasing resilience (0.31 billion euros).]

Specifically, in Romania, it was foreseen that European money will be spent in 2 directions: a) Reforms and b) Investments. [13; 14]

The reforms [10] will be:

- Horizontal (strengthening the rule of law, financial sustainability of public finances/including compliance with the established level of annual budget deficit, an aspect that is of great acuteness even now, in the years 2024-2025, Romania's financial stability, social cohesion and the labor market);
- Sectoral / Structural (modernization and improvement of the quality of public services offered to the population, increasing the degree of access to services made available to citizens, including medical-sanitary, public health services).

Investments will be:

- in infrastructure (transport, energy, energy efficiency, environment, infrastructure specific to local communities, transport connectivity, combating climate change risks, modernizing public services including medical and sanitary, public health for the population: water supply, sewage, energy efficiency, access to renewable resources);
- in the business environment (access to business, innovation and technology transfer, to sources of financing, creation of entrepreneurial ecosystems, new jobs and attracting investments);
- in digitalization and the transition to green (digitalization of large public services, intelligent systems for monitoring technical parameters, in emergency situations to be able to intervene operatively); [11]
- increasing resilience (resistance to crises, shocks / state reserves for medicines and food, cybersecurity).

IV. The Case For Complementarity For Public Health Impacts Due To Environmental/Waste Issues With Potential For Funding From The NRRP

The presence of waste in the environment, its inadequate management represents a potential danger of eroding public health.

In 2024, the amount of municipal waste generated per capita in Romania continues to be well below the EU average of approximately 487 kg/capita.

In fact, this sub-domain of the country's general economy is showing itself as a significant anthropogenic impact on the medical and healthcare sector, which through the 7.5-8 million tons of municipal waste generated annually becomes a complementary factor disrupting societal life.

The PNRR provides for investments in solid waste storage, biological treatment of solid waste and waste incineration.

The Environment Chapter provides for the Strengthening of the circular economy, by preventing waste generation and reducing it, efficient use of resources, reuse, repair and recycling or other operations, as a priority at national level.

The 2024 country report states that waste management continues to be a major challenge for Romania, with a low recycling rate of municipal waste (12%) and high waste disposal rates (60%).

The total investments needed at national level to comply with national and European legislation, including the provisions of the Circular Economy Package (CEP), are estimated at 2 billion euros.

Of this, approximately 1.3 billion euros represent the value of investments for the improvement and expansion of the 32 Integrated Waste Management Systems (IWMS) projects.

The difference, of approximately 0.7 billion euros, represents the value of investments needed to comply for the 9 counties and the city of Bucharest, which have not yet implemented an IWMS project.

The main challenges identified in the field of environment versus resilient national health are:

- Insufficient and inadequate water and wastewater infrastructure to ensure the quality of life in agglomerations with over 2,000 equivalent inhabitants;
- Low access to drinking water in agglomerations;
- High number of potentially contaminated and polluted sites and increased risk to human health and environmental factors;
- High level of waste generated and disposed of, high rate of exploitation of natural resources and low recycling rate.

As such, investments in recycling are needed for the waste collection, sorting and treatment system.

The total investments needed at national level to comply with national and European legislation (reuse and recycling of municipal waste is 55% by 2025 and 60% by 2030) are estimated at 2 billion euros.

Investments in mechanical treatment plants (MTP) are mandatory for compliance, which, on the one hand, contributes to increasing the recycling rate by sorting recyclable materials and ensuring compliance with the criteria in the field, as well as the objective of reducing the amount of waste deposited in landfills.

TMB facilities can be complemented with other types of investments on the same site to achieve recycling objectives.

The purpose of the specific reform in the field is to ensure a specific environmental infrastructure to facilitate the population's access to water supply and sanitation services, as well as a clean and healthy environment for the population: a specific, sustainable, intelligent and ecological environmental infrastructure.

This conceptual alignment envisages the development and approval of the National Strategy for the Circular Economy (SNEC) and the implementation of the necessary infrastructure for waste recycling in accordance with European Union directives.

Landfills in Europe are about to close sooner or later.

EU environmental policies are extremely clear, with municipal waste being the last resort for all Member States.

It is necessary to comply with the conditions for treating waste before landfilling - a provision regulated by Law no. 211/2011 and in the National Waste Management Plan. Equally, high-efficiency cogeneration in district heating can be significantly supported. [12]

V. Climate Neutrality, Green Transition, Public Procurement Reform, - Positive Complementarities For Healthcare/ Public Health Resilience

The areas of intervention set out in the NRRP contribute to climate neutrality and the reduction of greenhouse gas emissions as follows:

- Green transition and climate change, infrastructure investment plans, green transition and digitalisation, increasing resilience to climate change.
- The pillar relating to public services, urban development and valorisation of heritage, aims at the accessibility of the population to the main public services, improving the standard of living, increasing the quality of life of the population. Investments include: urban mobility, urban regeneration, valorisation of local heritage, health, education (their contribution to the European Green Deal).

In the field of Environment, investments are planned in contaminated sites, as well as in waste management to support the transition to a zero-carbon economy and a cleaner environment.

The aim is to establish a flexible, transparent and debureaucratic implementation system for environmental issues: flexible, transparent, simplified and debureaucratic framework, increasing the role of county public authorities in project implementation, monitoring framework for Romania's strategic investment projects by establishing the Centralized Unit for the Management and Monitoring of Strategic Projects.

Formulas are needed to improve the quality control of administrative acts at the institutional level and to improve effectiveness and quality.

The PNRR shows that the Public Procurement Reform will take place as an imperative step to streamline actions in the field.

It is recognized that Public Procurement Procedures (including medical-sanitary, public health) are an essential component of the entire process of implementing public investment projects and often represent a time-consuming obstacle for funding beneficiaries.

The public procurement reform aims to achieve a flexible, transparent and user-friendly public procurement system.

The main categories of reforms proposed in the field of public procurement, in accordance with the EU Directives, are:

- Development and approval of the Public Procurement Code to ensure the uniform implementation of the EU Directives on Public Procurement;
- Improvement of the legal framework for resolving complaints;
- Digitalization of the entire process of exercising ex-ante control carried out by the National Agency for Public Procurement;
- Updating / amending / approving the legal framework for the simplification and development of an electronic catalogue for simplified public procurement procedures;
- Creation of organizational structures within the Managing Authorities of Operational Programmes;
- Creation of the legal framework and incentive system to strengthen the capacity of beneficiaries to implement public procurement procedures.

The plan proposes environmental investments in all components of the circular economy (research in product/process innovation, experimental product, production/execution, distribution and transport, consumption and recycling/reuse).

In this way, the resilience and adaptability of economic activities to climate change is ensured, through the eco-efficient use of all resources involved.

The digital transition is supported by investments in artificial intelligence systems in specific infrastructures in the field of sustainable transport, climate change, energy, environment, mobility and urban regeneration.

VI. Conclusions

- It is necessary to have in-depth and continuous knowledge of the NRRP, of the updates, of the measures and of the moments of opening of the financing (which projects, how they are drafted, which partners are recommended for investments).
- The vision related to the NRRP Plan can be extrapolated to other countries that are facing economic, medical-sanitary, public health dysfunctions or that are looking for financing formulas for recovery and resilience.
- The practical implementation of the NRRP provisions is linked to the need to have advantageous, concrete, successful connections/relationships with 1) administrative factors, with 2) political factors (local, regional,

central), with 3) major individual and collective decision-makers (Parliament, Government, Ministries, Presidency), 4) with other entities and companies in the field, in the country and abroad.

- It is imperative to involve the entire economic and social society in a process of "digitalization", as much as possible and according to the profile and present and future activities.
- Lists of potential measures can be drawn up to modernize and improve the quality of medical and sanitary services, public health services offered to the population, increasing the degree of access to services made available to citizens.
- It is useful to participate with concrete proposals in the development of the Public Procurement Code.
- Actions and proposals are needed to improve the legal framework for resolving complaints and concrete, active links with the Managing Authorities of the Operational Programs, in order to methodologically benefit from non-reimbursable external funds.
- In government management structures, it is useful to establish Circular Economy / Waste Industrialization Departments.

References

- [1]. National Recovery And Resilience Plan, EUR 30.4 Billion Through The Recovery And Resilience Mechanism, Ministry Of European Funds, Bucharest, 26 November 2020
- [2]. 2020 European Semester: Country-Specific Recommendations. Online
<https://Eur-Lex.Europa.Eu/Legalcontent/EN/TXT/?Qid=1591720546579&Uri=CELEX%3A52020DC0500/04.09.2020>
- [3]. Assessment Of The 2018 Convergence Programme For Romania. European Commission,
://Ec.Europa.Eu/Info/Sites/Info/Files/Economyfinance/23_Ro_Cp_Assessment_2018.Pdf/01.09.2020
- [4]. Commission Staff Working Document - Guidance To Member States Recovery And Resilience Plans (Part 1). European Commission,
://Ec.Europa.Eu/Info/Files/Guidance-Member-States-Recovery-Andresilience-Plans_En/10.10.2020
- [5]. Commission Staff Working Document - Guidance To Member States Recovery And Resilience Plans (Part 2). Comisia Europeană. Online: https://Ec.Europa.Eu/Info/Files/Commission-Staff-Working-Drafttemplate-Recovery-And-Resilience-Plans_En,01.09.2020
- [6]. Council Conclusions On The Recovery Plan And Multiannual Financial Framework For 2021-2027. European Council. Online: <https://Www.Consilium.Europa.Eu/Media/45109/210720-Euco-Finalconclusions-En.Pdf,21.07.202>
<https://Eur-Lex.Europa.Eu/Legalcontent/RO/TXT/?Uri=CELEX%3A32016L1148/26.09.2020>
- [7]. Government Emergency Ordinance No. 43/2020 For The Approval Of Some Support Measures Settled From European Funds, As A Result Of The Spread Of The COVID-19 Coronavirus, During The State Of Emergency. The Government Of Romania. Online: http://Legislatie.Just.Ro/Public/Detalii_Document/224714,01.10.2020
- [8]. Government Emergency Ordinance No. 52/2020 For The Amendment Of Art. 29 ^ 3 Para. (2) Of The Government Emergency Ordinance No. 40/2015 On The Financial Management Of European Funds For The Programming Period 2014 - 2020, As Well As For The Adoption Of Measures On Beneficiaries Of European Funds In The Context Of The Spread Of COVID-19. The Government Of Romania. Online: <http://Legislatie.Just.Ro/Public/Detaliiidocument/224934,01.10.2020>
- [9]. Government Emergency Ordinance No. 64/2020 For The Amendment And Completion Of Art. 8 Of The Government Emergency Ordinance No. 43/2020 For The Approval Of Some Support Measures Settled From European Funds, As A Result Of The Spread Of The COVID-19 Coronavirus, During The State Of Emergency. The Government Of Romania. Online: http://Legislatie.Just.Ro/Public/Detalii_Document/225503,01.10.2020
- [10]. Council Recommendation On The National Reform Program Of Romania For 2020 And Which Includes An Opinion Of The Council On The Convergence Program Of Romania For 2020. Council Of The European Union. Online: <https://Eur-Lex.Europa.Eu/LegalContent/EN/TXT/?Qid=1591720698631&Uri=CELEX%3A52020DC0523,02.09.2020>
- [11]. Digital Agenda For Romania 2020. Ministry Of Communications And Information Society. Online: <https://Www.Comunicatii.Gov.Ro/Agenda-Digitalapentru-Romania-2020/26.09.2020>
- [12]. Report On The Assessment Of The National Potential For The Implementation Of High-Efficiency Cogeneration And Efficient District Heating And Cooling. The Government Of Romania. Online: <https://Ec.Europa.Eu/Energy/Sites/Ener/Files/Documents/Raport%20privind%20evaluarea%20potenialului.Pdf,01.10.2020>
- [13]. National Investment And Economic Recovery Plan. The Government Of Romania. Online: https://Gov.Ro/Fisiere/Programe_Fisiere/Planul_Na%C8%9Bional_De_Investi%C8%9Bii_%C8%99i_Relansare_Economic%C4%83.Pdf,01.10.2020
- [14]. National Reform Program 2020. Government Of Romania. Online: https://Ec.Europa.Eu/Info/Sites/Info/Files/2020-European-Semesternational-Reform-Programme-Portugal_Pt.Pdf,03.09.2020
- [15]. Post-2020 CAP Strategic National Plan. Ministry Of Agriculture And Rural Development. Online: <https://Www.Madr.Ro/Planul-National-Strategic-Pac-Post-2020.Html,23.10.2020>
- [16]. National Health Strategy 2014-2020. Ministry Of Health. Online: <http://Www.Ms.Ro/Strategia-nationala-de-sanatate-2014-2020/23.09.2020>