



ASDE-ECOREGIONS- OPERATIONAL EXPERIENCE

PRELIMINARY OF THE EUROZONE AND FOR THE BENEFIT OF STATE AND LOCAL ADMINISTRATION

I. INTRODUCTION

The inclusion of Bulgaria in the group of member states of the so-called Eurozone, in addition to the transition from the national currency - the Bulgarian lev - to the common European currency - the euro, also requires national governance in a much more direct connection with the common rules and regulations imposed by the European Commission and other European institutions.

In this regard, AURE-ECOREGIONS begins publishing short materials related to the established operational capacity, in accordance with the introduced or upcoming mandatory European regulations, especially in the field of territorial planning, risk management, combating climate change, and the protection of natural and cultural-historical heritage.

In this short publication, we offer to the attention of the state and local administration, our comment and proposal, on the need for constant monitoring of vulnerability to subsidence of earth layers or landslides, mainly for urbanized territories in the Municipality of Ruse in Bulgaria. The development is also in line with the requirements of the Thematic Strategy for Soil Protection of the EU and the Guidelines for Mapping Areas at Risk of Landslides in Europe, which provide a framework for mapping areas susceptible to landslides, through common methodologies, recommendations, including preventive monitoring of dangerous trends.

In 2023–2025, the European Union adopted the first pan-European soil law – the so-called Soil Monitoring Law, which creates a framework for monitoring, assessing and managing soil health in all Member States. Although the law is not entirely focused on landslides, it covers key processes such as erosion, degradation and compaction of soil layers, which are directly linked to the risk of landslides and terrain instability. Specific engineering and preventive measures against landslides remain a national competence, but fit into the general framework for sustainable soil management introduced by the EU.

Our operational capacity is built on the basis of a number of projects under programs such as the 7th Framework Program, HORIZON 2020, INTERREG and ESA-PECS for Bulgaria - in this case - monitoring of vulnerability to subsidence of earth layers or landslides, mainly for urbanized development zones, implemented in the general development plans in each municipality.

II. STRATEGY

The main position of the expert team of ASDE-ECOREGIONS, when developing intelligent high-tech solutions, is that they should be maximally linked to real management practice, as well as to the operational capacity of the end user. On the other hand, we believe that there can be no sustainable and modern management of territory, resources, infrastructure and population without constant monitoring of mandatory priority indicators for the individual elements of territorial planning, such as the state of the natural environment, maintenance of environmentally friendly agriculture and, above all, sustainable management of the urban environment. For this type of monitoring to be meaningful, it must be linked to indicators that are monitored and complied with by local authorities, which leads us to the so-called general development plans of municipalities (GDPs), mandatory for municipalities in accordance with the Law on Territory. As mentioned above, the European Union adopted the first pan-European law on soils – the so-called Soil Monitoring Law, which creates a framework for monitoring, assessing and managing soil health in all member states. An important condition is to monitor the condition and vulnerability to subsidence and landslide processes for important territorial units, such as urbanized development zones, directly related to the health and life of people, as well as the protection of the building stock and critical infrastructure. A mandatory condition for such monitoring is that it be carried out regularly and on the basis of objective data, which combine remote and ground-based methods based on internationally accepted standards. In our opinion, this can be done on the basis of data received from satellite constellations, which should be supplemented with data from the site. In this case, the most suitable is the European COPERNICUS program, which provides free data from the satellite group - SENTINEL 1 and 2, which can be processed in accordance with the global standards ISO 19144 and 19178. With the help of external experts, an algorithm was established, including partial artificial intelligence for rapid processing of large data sets.

It is particularly important not to conduct only momentary studies but to track trends in the process of subsidence or landslides of land surfaces for as long as possible. Therefore, we used the maximum of the SENTINEL 1 database, collected for the period 2017-2023 within the framework of the European Ground Motion Service (EGMS) from the Copernicus Ground Motion Service portfolio of the European Environment Agency. The analyses show subsidence trends and potential occurrence of landslide processes for certain parts of the urbanized territory of the Municipality of Ruse, using legally adopted units - the so-called development zones. In certain places, there is also difficult-to-understand data on subsidence and simultaneous uplift of the land surface. In order to explain the results of the primary analyses, the expert participation of specialists from the municipal administration of the city of Ruse, representatives of civil protection, as well as consultations with the National Institute of Geophysics, Geodesy and Geography at the Bulgarian Academy of Sciences should be sought. - <https://www.niggg.bas.bg/>.

As an example, on the attached map we can present the results of an application for monitoring trends in land subsidence/landslide processes in the urbanized territories of the Municipality of Ruse. This application was developed within the framework of a project **NBSINFRA– 101121210 “Nature-Based solutions (NBS) to safeguard critical urban infrastructure against both natural and human-induced hazards”**, under the European Program HORIZON 2020. Data from the European Ground Motion Service (EGMS) from the Copernicus Ground Motion Service portfolio of the European Environment Agency were used. The development was carried out with the kind assistance of the Municipality of Ruse - Directorate "Economy, Investments, International Cooperation and Projects", local and external experts.

EXAMPLE - MAP OF TRENDS IN VULNERABILITY TO SUBSIDENCE OF EARTH LAYERS OR LANDSCAPES, FOR URBANIZED AREAS IN THE MUNICIPALITY OF RUSE, FOR THE PERIOD 2017-2023.

(developed within the framework of the NBSINFRA project under the European HORIZON 2020 Program)

Preliminary information from the Master Plan of Ruse Municipality: The main types of functional (or development) zones in the General Development Plan (GDP) of Ruse Municipality are 8. They are:

- o **Residential areas** - with subcategories:
 - RI — low-rise development; Rm — mid-rise building; Rh — high-rise building; Rc — complex development - [Ruse Municipality](#)
- o **Production areas — with subtypes:**
 - Mostly a production area (Pm); Pure production area (Pp)
- o **Mixed multifunctional areas** - with subtypes: Mmf, Mmf 1, Mmf 2
- o **Public service areas** — e.g. "Ps" and "C" (mixed central zone)
- o **Recreational areas** — e.g. villa areas Rv, holiday, resort areas, etc. (recreation / rest areas)
- o **Sports and attractions areas** — sports areas, coastal areas, attractions, etc. (Sa)
- o **Green systems / landscaping** — greening areas, areas for cemetery parks and green areas, green systems (G,T)
- o **Nature conservation areas and protected areas** — areas covering protected areas, natural areas, areas with ecological/protection regime, etc. (N)

Note: MUNICIPALITY OF RUSE - total area 570,624 km²; according to the website of the Municipality of Ruse - <https://obshtinaruse.bg/obsht-gradoustroystven-plan>

Other functional (or development) zones have been introduced separately, but they refer to non-urbanized territories, such as - "Agricultural" and "Forest territories (AT, FT), or territories with special purposes - "Special regime zones" (SZ) or "Transport and engineering infrastructure zones" (T, I).

Monitoring of trends in the percentage of green areas is mainly focused on the urbanized territories of the municipality of Ruse, because other types of territories - natural environment and agricultural areas require other monitoring methods. In addition, green areas in the urban environment are of fundamental importance for preserving the quality of habitation, the necessary standard of infrastructure, the health status of the capital's residents, as well as providing a major factor for risk prevention.

Within the framework of the NBSINFRA project, a comprehensive analysis of the vulnerability to subsidence of the earth layers / landslide process on the territory of the Municipality of Ruse was carried out. For this purpose, European Ground Motion Service (EGMS) data from the Copernicus Ground Motion Service portfolio of the European Environment Agency were used and processed, based on radar interferometry of source data from the SENTINEL-1 satellite constellation for the period 2017 - 2023. Based on this study, it was established that the majority of the territory of the Municipality of Ruse is not subject to subsidence or landslide processes, with the exception of a few areas in the urbanized part of the city of Ruse near the Danube River.

A map of the state of ground subsidence for the territory of Ruse Municipality is given in Fig. 1.

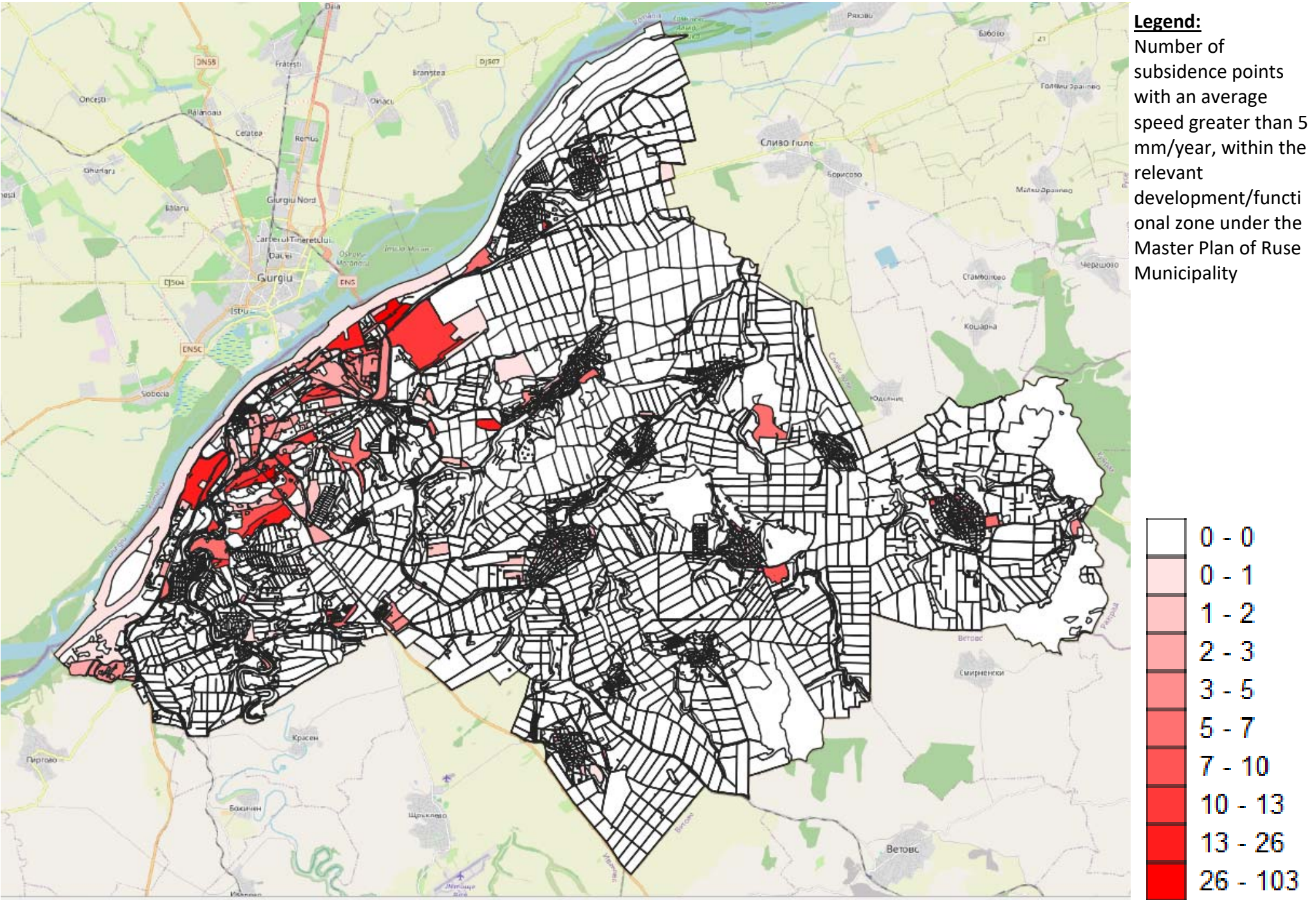


Fig. 1. Overview map of potential trends in land subsidence in the development/functional zones of urbanized territories in the Municipality of Ruse (period 2019-2023) <https://egms.land.copernicus.eu/> - European Union's Copernicus Land Monitoring Service Information.

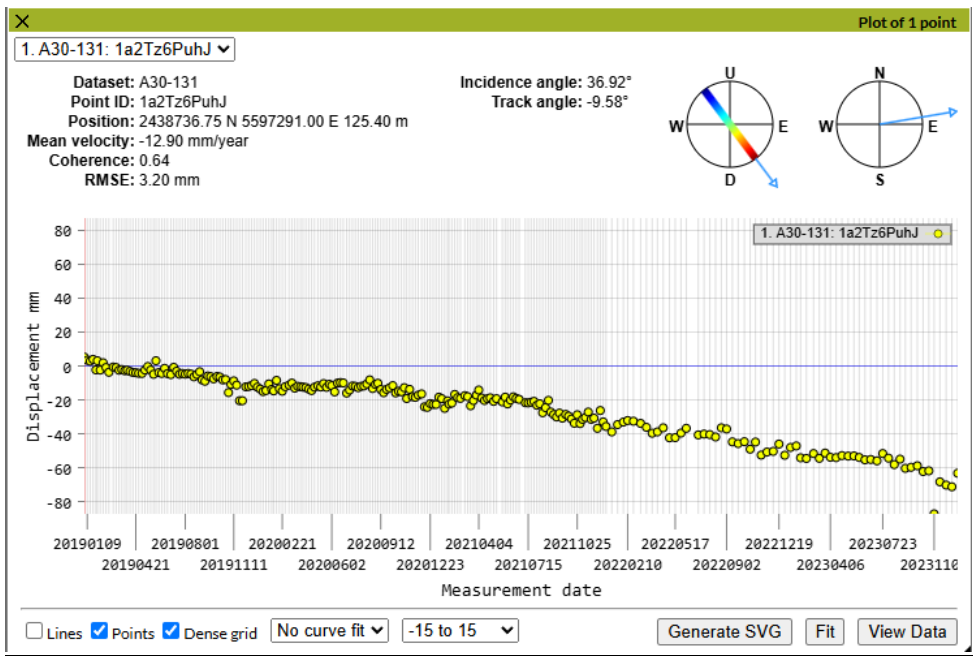


Fig. 2. Graph showing the trends in land subsidence in the city of Ruse for the period 2019-2023, based on data from the European Ground Motion Service (<https://egms.land.copernicus.eu/>)

The GIS analyses include an algorithm using partial artificial intelligence and based on data from the COPERNICUS Program and local data. Period – 2019 to 2023. The limited resources of the NBSINFRA project do not allow for a more detailed study of the state of the development zones under the Master Plan of the Municipality of Ruse, but the AURE - ECOREGIONS team, with the assistance of external experts, conducted additional studies for some areas in the urbanized part of the city of Ruse, where there are worrying trends in the subsidence of the earth layers or the presence of landslide processes.

Fig. 3 presents a more detailed map of the urbanized functional zones in the city of Ruse, which show similar worrying trends.

The data from **Example 1 - for the development zone Rm** - east of the intersection of Vasil Levski Blvd. and Gotse Delchev Blvd. - is of particular concern.

Legend:

Number of subsidence points with an average rate greater than 5 mm/year within the relevant functional area

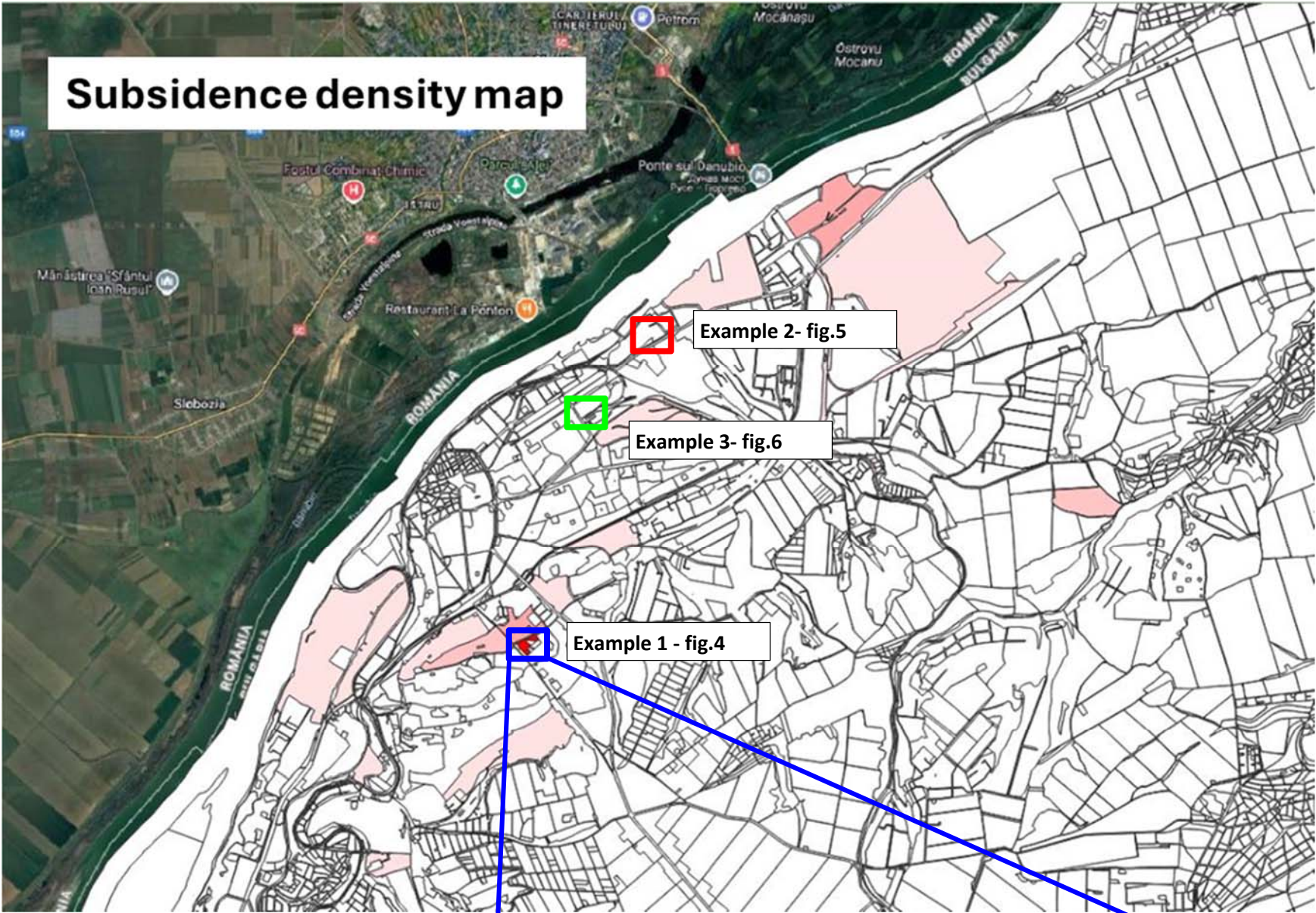
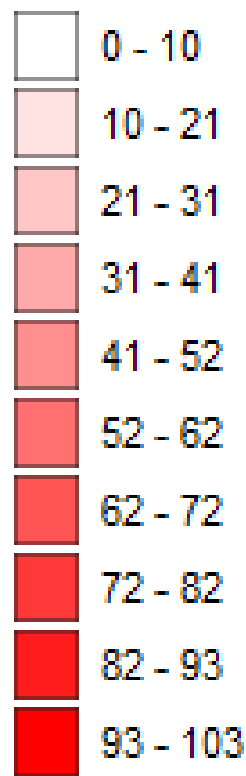


Fig.3. Map of trends in land subsidence or potential landslide processes in urbanized development zones of the city of Ruse (period 2017-23) - according to the Master Plan for the Municipality of Ruse. 3 examples from the urbanized territory are given separately

Sustainable subsidence of 13 mm per year

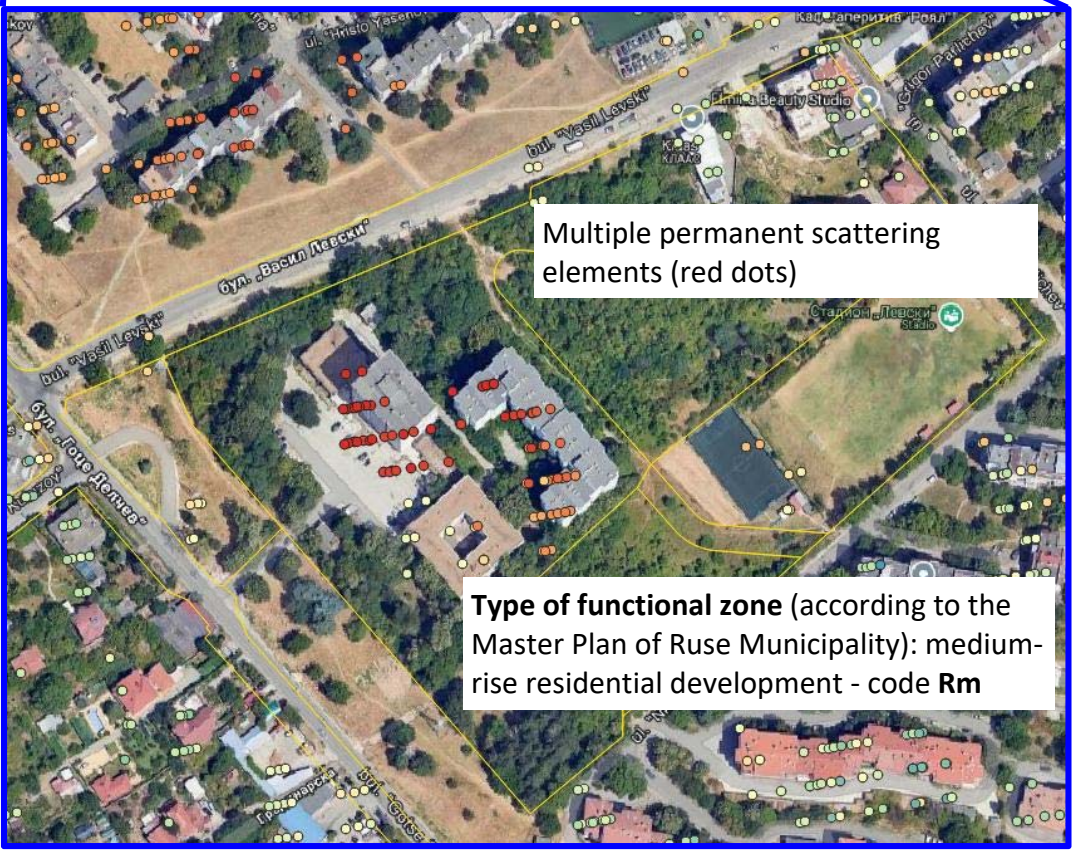
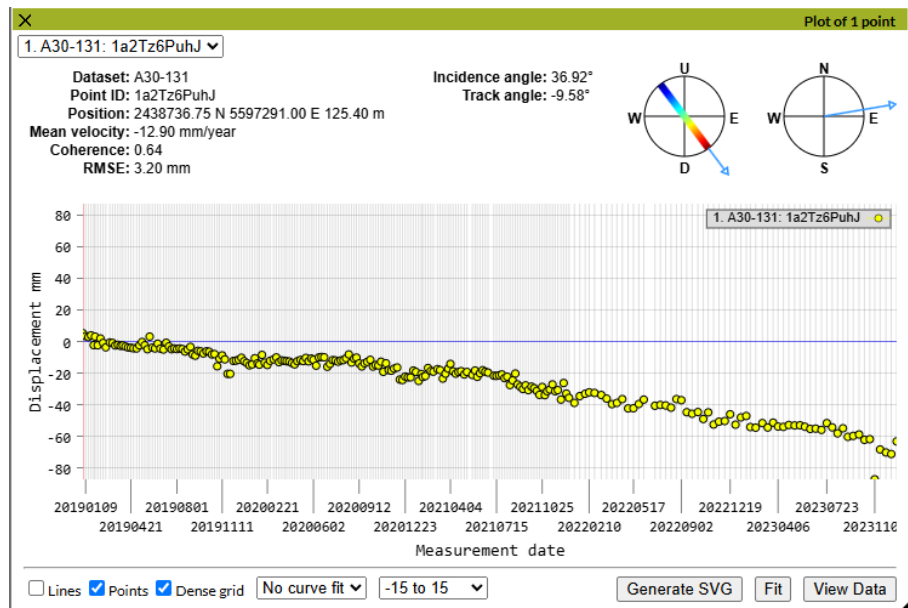
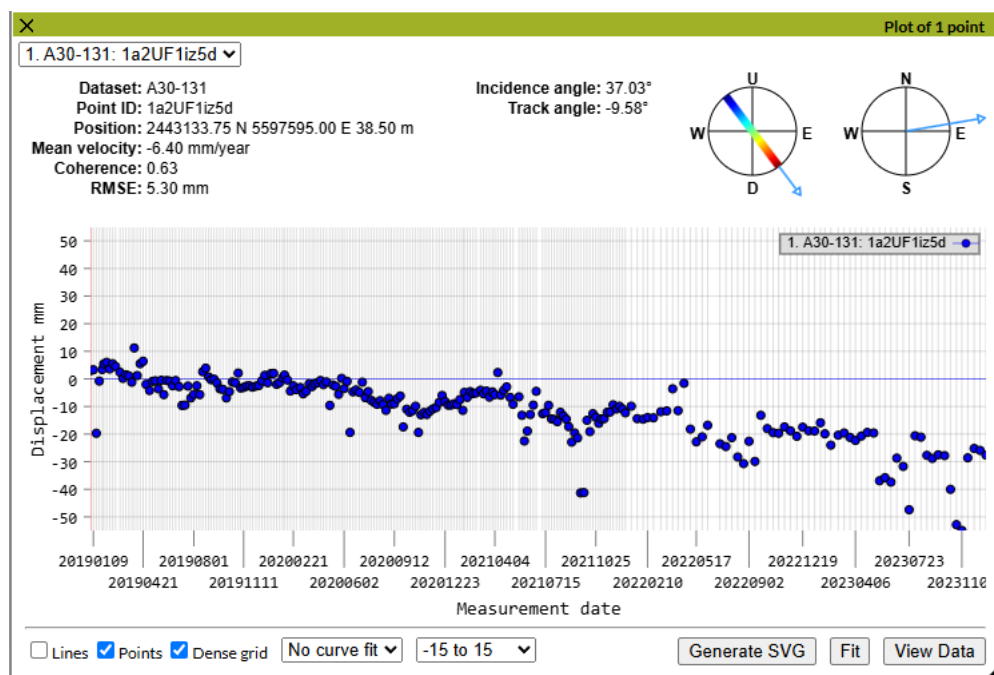


Fig. 4. Example of an identified "hot spot" – an area with significant subsidence of the earth's layers and the occurrence of landslide processes

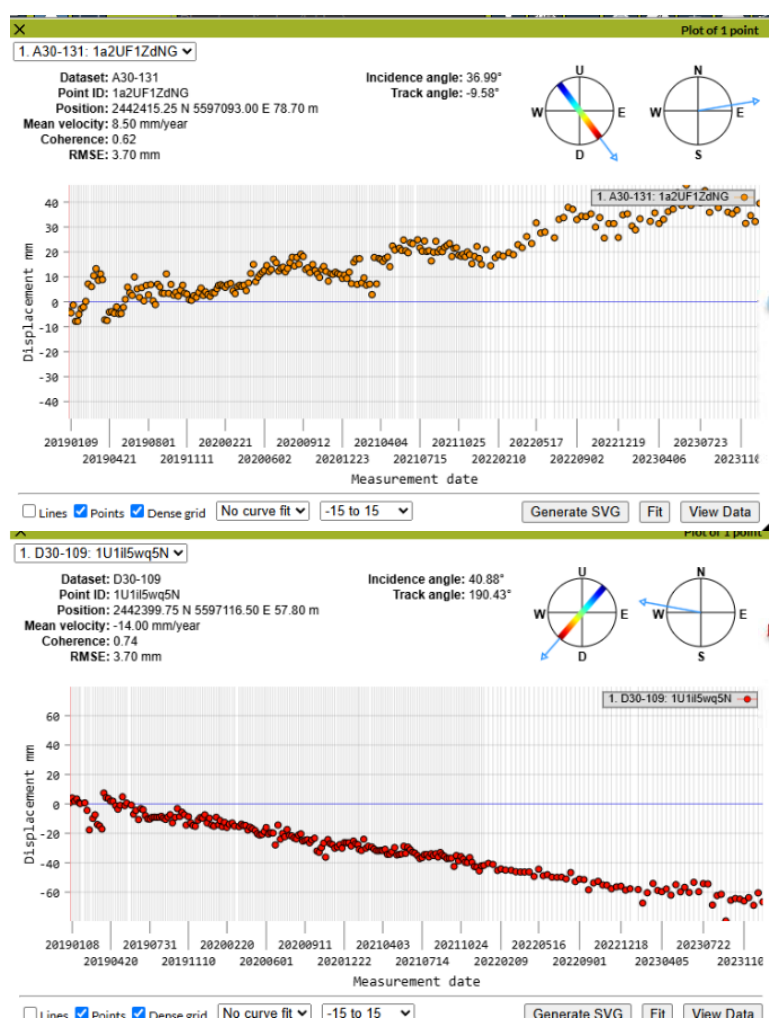
The maps and graphs presented above show a steady trend towards subsidence of the earth layers in some areas of the city of Ruse within **13 mm per year**. It is necessary to hold a discussion with specialists and representatives of various structures in the field of urban construction, infrastructure, civil and fire protection in order to assess what preventive measures are needed, to establish more regular monitoring and in what form.

A second example of alarming vulnerability to subsidence of the earth's surface, including the occurrence of landslide processes, is presented in Fig. 5.



Type of development zone: mainly industrial. Dangerous trend - Subsidence is turning into landslide.

Fig. 5. Second example - Subsidence of the earth layers, found in an industrial zone in the city of Ruse. There is a dangerous tendency for the subsidence to turn into a landslide.



Development zone: mixed residential area;
Ground surface heave and subsidence determined for the same building foundation

Fig. 6. Third example of a complex condition of the ground surface – subsidence and uplift of soil layers, established in a mixed residential area in the Ruse district - intersection of Yarebichina Street and Vazrazhdane Alley.

In parallel with the analysis of land subsidence data, a partial analysis of the risk of an earthquake in the center of the city of Ruse was carried out. The red circle in Fig. indicates an area of the city center where a methodology for assessing the seismic risk and potential damage from the destruction of buildings and infrastructure in a settlement has been applied. The assessment is that a constant trend towards subsidence of the earth layers is observed in the area. It requires constant monitoring by installing local sensors for land subsidence and landslide processes. The work was carried out within the framework of the NBSINFRA project under the European Program HORIZON 2020 - and with the support of the Bulgarian Spatial Data Infrastructure initiative - <http://bsdi.asde-bg.org>.

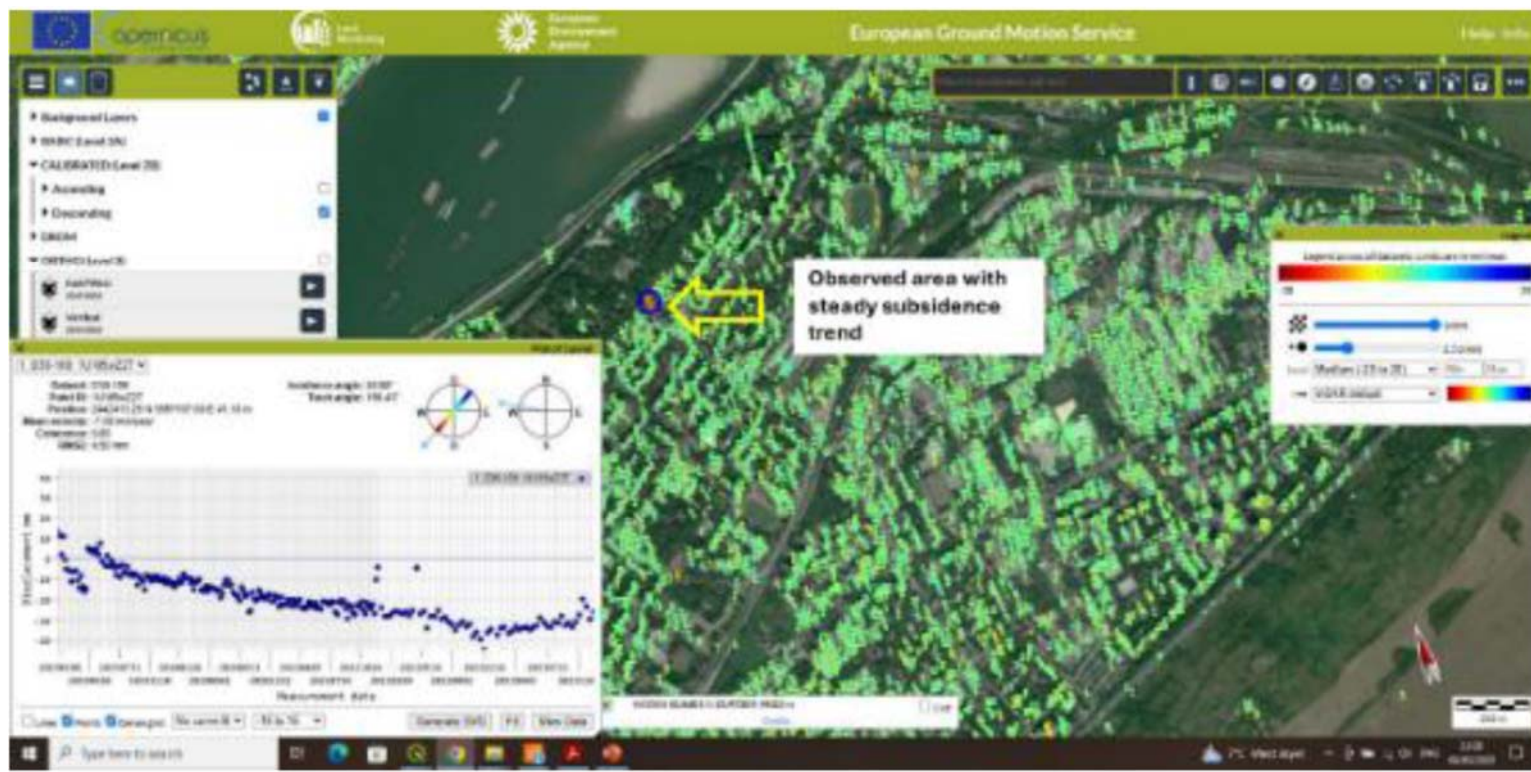


Fig. 7. Parallel monitoring of subsidence of the earth's layers, using data from the Copernicus European Ground Motion Service (<https://land.copernicus.eu/en/products/european-ground-motion-service>)

Important preliminary note: The presented map and data are an intermediate stage of development and should not be considered as a final product. In addition to completing the analysis of the satellite data, coordination with on-site data should be carried out, as well as discussions with experts from the Ruse city administration, civil protection specialists and representatives of the National Institute of Geophysics and Geophysics (BAS) <https://www.niggg.bas.bg/> to identify possible errors or possible other interpretations, as well as possible explanations for the changes that occurred and trends observed.

III. INPUT DATA FROM THE SENTINEL SATELLITE CONSTELLATION PROVIDED UNDER THE EC'S COPERNICUS PROGRAMME

The current maps are the result of applying the mechanism of regular monitoring of changes - CbM (Change by Monitoring), in accordance with the best European and global practice. Data from the SENTINEL satellite constellation, under the European COPERNICUS Program, were used. The analysis is combined - human expert analysis, with the application of artificial intelligence algorithms. Data from the radar and optical sensors of SENTINEL-1 satellites and products from the Copernicus Land Monitoring Service, for the period 2017-2023, were analyzed. The results show the trends in land subsidence, noticeable mainly in the urbanized territories of the Ruse Municipality. This is one of the main indices of sustainability, primarily for the protection of critical infrastructure, constructed buildings and facilities. Of course, subsidence and landslide processes are also important for the protection of the potential of agricultural lands and the natural environment. For compliance with the adopted legal forms of governance, the analyses were made based on the adopted development/functional zones under the General Development Plan of the Municipality of Ruse. Mainly urbanized territories were studied.

As the most visible and significant result for the sustainable management of the Municipality of Ruse, the obvious presence of vulnerable to subsidence and even landslides in urbanized territories of the Municipality of Ruse, especially important on the territory of the city of Ruse, should be declared. Since the lower reaches of the Rusenski Lom River, reaching the confluence with the Danube River, is part of the leading pilot area of the NBSINFRA project, we should note that in the lower reaches of the Rusenski Lom River, trends towards subsidence of the earth layers are observed. This process should be discussed with local experts, because it can be explained by recent construction or other activities and a slowdown can be expected. Another interesting result is the observed opposite movement of the ground base for the same region - on the one hand subsidence, and on the other hand elevation. Subsequent detailed analyses of the vulnerable territories should be carried out with the participation of representatives of the local administration and local experts, as well as experts from the Bulgarian Academy of Sciences, in order to be as objective and effective as possible. We would be happy to participate in detailed analyses of each of the municipal development zones.

The development is related to applied projects of ASDE-ECOREGIONS, implemented under the PECS Program of the European Space Agency, as well as under the European Program HORIZON 2020. Partners of ASDE-ECOREGIONS on the Bulgarian side in these developments are specialists from the Municipality of Ruse.

IV. INPUT DATA FROM SITE AND ADOPTED ALGORITHMS

The main source of information on the type of development/functional zones is the Law on Territorial Development (LTD), REGULATION 7 on rules and regulations for the development of individual types of territories and development zones, and the general development plan (GDP) of the respective municipality. The AURE-ECOREGIONS team has worked on the trends in land subsidence for urbanized development zones, using data from the published GDPs presented on the website of the Municipality of Ruse - <https://obshtinaruse.bg/obsht-ustroystven-plan-na-gr-ruse-2020>. Unfortunately, we did not find information on the number, individual and total area of the relevant development zones, according to the table of development regimes and the rules and norms of the individual types of territories (under REGULATION 7 of 22.12.2003). This makes it difficult to make a quantitative comparison with the relevant data from the SENTINEL satellite constellation and products from the Copernicus Territory Monitoring Services. For the needs of the analysis related to the Municipality of Ruse, an algorithm was developed, combining the expert work of the expert with the help of artificial intelligence. The number of development zones and their individual and total area were derived using this algorithm. In our opinion, the data needs to be checked and agreed upon by the experts from the Municipality of Ruse, in order to ensure relevance and reliability. This is also necessary due to the operational work of the planning mechanisms of the Ruse Municipality, responsible for territorial development, planning and building permits, where relevant updates and changes are made, as long as they are subject to the law and the adopted rules and regulations.

V. INCLUSION OF THE POTENTIAL OF ARTIFICIAL INTELLIGENCE IN THE DEVELOPMENT OF DATA ANALYSIS ALGORITHMS

In its developments, ASDE uses methods for the standardization of in situ data, according to the principles of the ISO 19178 standard. This is crucial for increasing the effectiveness of AI-based land monitoring systems that use remote sensing (RS) data. By providing a consistent framework for data collection, integration and interpretation, ASDE solutions aim to facilitate reliable interrelationship between in situ measurements and remote sensing data. This synergy enables more accurate environmental assessments, improved land use planning and timely detection of changes in urban areas and in contact areas with other land uses. This ultimately leads to better and more informed decisions in the field of sustainability and resource management. Through data standardization, ASDE contributes to the fact that different data sources can be seamlessly integrated, maximizing the potential of AI technologies in the monitoring and analysis of land dynamics.

VI. CONCLUSIONS

Some of the **basic principles for territorial development**, enshrined in the General Development Plan of the Municipality of Ruse (GDP-Ruse), as well as general principles of spatial planning that the plan follows, are:

- **Sustainable and integrated development** - The Plan is a strategic document that sets the guidelines for the social, economic and spatial development of the municipality, with the aim of ensuring balanced growth, sustainability and high quality of the environment and standard of living;

- **Clear territorial definition and zoning according to purpose** - The territory is divided into zonal categories - residential, mixed, industrial, public service areas, green systems, etc. This allows for a clear definition of the functions and regulations of each zone;
- **Compliance with legislation and regulations** - Ruse Urban Development Plan is implemented in accordance with national laws (e.g. Spatial Planning Act), as well as with additional rules/norms for spatial planning, which specify permissible parameters of development, purpose, protection, etc.;
- **Protection and integration of the natural environment and green systems** - The plan provides for zones for green systems, recreation and nature conservation areas, as well as regulations aimed at preserving natural, ecological and landscape qualities;
- **Flexibility and opportunities for gradual regulation and development** - The OUPO sets strategic guidelines, but the implementation of development measures is carried out through detailed development plans (DDP), which allows for phased and tailored development;
- **Preservation and integration of historical and cultural heritage** - The planning provides for special regimes for territories with cultural and historical value, in order to protect them during new development and construction;
- **Publicity, transparency and an orderly administrative process** - Through zoning, regulations and rules for development, predictability and transparency are guaranteed in investments, regulation, privatization and control over the territory.

In this regard, as well as a result of the analyses of trends in the mandatory indicators for green spaces, recorded in the Law on Territorial Development and in the Master Plan of the Municipality of Ruse, the following conclusions can be drawn:

- The application for monitoring trends in the percentage of green spaces promotes the enhancement of urban resilience and risk prevention through integrated decision support systems (DSS) and advanced modeling tools;
- The results are objective as objective data from the satellite segment are used, combined with local environmental data and local geospatial data to monitor trends in urban green spaces and monitor compliance with local regulations;
- Most functional areas have maintained and some have improved their percentage of urban green spaces. • However, a significant number show a downward trend, especially in certain parts of the wider center of the city of Ruse;
- Further review by local experts and general discussion is needed, as some of the observed trends could be due to: unpublished zoning changes, updates to parcel plans and noise in the processing of satellite data.

VII. NATIONAL MANDATORY REGULATORY REQUIREMENTS

As stated in Article 2 of the Law on Territorial Development (LTD), it "regulates public relations related to territorial development, investment design and construction in the Republic of Bulgaria, and determines the restrictions on ownership for development purposes"-

<https://www.mrrb.bg/bg/zakon-za-ustrojstvo-na-teritoriyata-84665/>. In turn, each municipality is obliged to develop, approve and comply with the so-called General Development Plan, which should be the basis for municipal development for a long period of time - an average of 15-20 years. Of course, during this period, necessary changes may occur in the indicators and content of certain territories and development zones, but this should be done in accordance with the relevant legal order. Therefore, it is necessary to regularly monitor compliance with the municipal development plan, as well as the relevant indicators for sustainability of each of the development/functional zones.

These indicators are determined by both the LTD and the accompanying Regulation 7 on rules and regulations for the development of individual types of territories and development zones. - <https://www.mrrb.bg/static/media/ups/articles/attachments/>

The proposed innovative application for monitoring land subsidence in urbanized functional/development areas is a necessary tool for national and local administration, in order to ensure objective control and preventive measures on changes and trends in preventing the risk of vulnerability and destruction of critical infrastructure, buildings and facilities and protecting human health and life. In addition, proactive measures for vulnerable territories reduce financial, resource damage and human casualties.

The examples shown include indicators for degrees of subsidence of the earth's surface, but other important indicators can also be included, for example - percentage of built-up area, percentage of sealed area, etc.

LEGAL BASIS—DESIGNATION ZONES, according to REGULATION 7 of December 22, 2003 on rules and regulations for the development of individual types of territories and development zones. The indicators in the relevant table from the Master Plan of Ruse Municipality are presented at the following internet address:

<https://obshtinaruse.bg/obsht-ustroystven-plan-na-gr-ruse-2020>

POSSIBLE DISCUSSION ON FORECASTS AND OFFERS FOR REGULAR MONITORING AND SUPPORT BY ASDE-ECOREGIONS:

1. Following the market behavior of users of a particular product, they would probably be most interested in getting a product at extremely low shipping prices and, if possible, without subsequent data maintenance fees. We are ready to have a free trial period. It is possible to discuss a high one-time license price with a longer validity period, for example 3 or 5 years with free maintenance. More subscription options should be provided, similar to mobile operators. Higher interest can only be caused by a proven and obvious superiority of the platform over the competitors.
2. The option for self-maintenance and updating of the data and the possibility of integration, transfer (migration) or at least one-way data exchange with an existing GIS would be of interest, if this is considered possible. The interest of the municipalities is related to the provision of a free version for at least one year, possible reduction/optimization of the costs of mandatory insurance for non-threatened sites (those outside the risk zones), with possibilities for relevant amendments to the applicable laws and regulations.
3. This Annex supports REGULATION (EU) 2024/1991 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 24 June 2024 on nature restoration.
4. Other innovative applications are in development.
5. Specialists from the Municipality of Ruse could also use data from European Ground Motion Service (<https://egms.land.copernicus.eu/>)

VIII. EUROPEAN REGULATION

There is no specific EU regulation that deals only with "landslide protection/slope subsidence/slope stability" as a separate, comprehensive legislative instrument. One reason is that the risk of landslides is **very local** - geology, climate, relief, human intervention (development, erosion, drainage). These factors vary greatly at regional and national level, which does not allow for a single general law that is effective everywhere. Therefore, protection, zoning, monitoring and prevention measures are usually set out in national legislation, spatial development plans, local regulations and standards - not at European level. Nevertheless, there has recently been increased activity at the EC level regarding land surface problems. On **5 July 2023**, the European Commission proposed a **Directive on Soil Monitoring and Resilience (Soil Monitoring Law) – Proposal for a Directive on Soil Monitoring and Resilience**. Its aim is to create a **pan-European framework for monitoring the condition of soils**, to define indicators for "soil health", to identify degraded/contaminated terrain and to introduce restoration measures. This law is **not "about landslides" per se itself**, but includes topics related to:

- soil sealing, land take;
- degradation and erosion;
- monitoring of soil risks, which indirectly affect landslide processes.

The current study of the trends in land subsidence processes within the urban development zones of the city of Ruse (under the Urban Planning Plan - Ruse Municipality) for the period 2019-2023 is in line with good European practice and, above all, with the requirements being discussed under the new **Soil Monitoring Law** - the first comprehensive EU law on soils by the **European Parliament and the Council**. According to information from the Council of the EU, in **September 2025**, legislation for healthier and more resilient European soils was adopted, which creates an EU-wide system for monitoring soil health and managing degraded land. For Bulgaria, which has a Law on Territorial Planning and the accompanying ORDER 7 of December 22, 2003, which require each municipality to prepare and adopt a general development plan for the management of urbanized, agricultural and natural territories, it is appropriate and natural to implement a **system for regular monitoring of trends towards subsidence or landslides of the earth's layers, through the relevant development zones and to carry out regular monitoring of the trends**.

The EU Cohesion Policy and the European Structural and Investment Funds (ESIF) promote integrated, sustainable urban development through strategic planning, such as Urban Development Plans (UDPs) or Green Space Plans (GSPs). For Bulgaria, these correspond to the General Spatial Plans (GSPs). Key frameworks include:

- **Regulation (EU) 2021/1060** – lays down general provisions for the ESIF for the period 2021–2027 and includes requirements for integrated territorial development, which may include the Rural Development Plan.
- **Objective 5.1 of the Cohesion Policy** – promotes the integrated and sustainable social, economic and environmental development of urban areas, which may include strategic planning requirements, such as the Urban Development Plan.
- **European Urban Initiative (EUI)** – supports innovation and sustainable urban development by encouraging local authorities to develop integrated strategies that may include UDP.

Although no EU directive obliges the LMP to be financed, strategic planning is strongly emphasized. In Bulgaria, the Law on National Spatial Planning (LSP) requires municipalities to adopt LMPs as part of the national legal framework. Each plan and its implementation need regular monitoring of the implementation and compliance with basic and accepted parameters for sustainable development and risk prevention.

It is logical that this monitoring is carried out by a relevant independent team of specialists based on objective data from European sources, such as the COPERNICUS Programme, Copernicus Land Monitoring Service, and accepted standards, such as ISO 19144.

We are ready to share our experience and knowledge, which have been improved in continuous contact with European structures that provide independent, evidence-based knowledge and science, supporting EU policies for a positive impact on society.

ASDE-ECOREGIONS TEAM AND PARTNERS / 1998-2025