SmartParcel System: A Geospatial Platform for Enhancing Cross-Fertilisation Between Spatial Planning and Territorial Cohesion Policies in Serbia

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Abstract. Building on the experience of Cohesion Policy (CP) implementation in the 2021–2027 programming period, the European Commission has proposed adjustments for 2027–2034 aimed at enhancing its flexibility and strategic alignment. Recent policy discussions emphasise the need to strengthen cross-fertilisation between CP and national spatial planning systems, particularly at the strategic (national) level, where integration capacities proved to be the highest. At the same time, the ongoing digitalisation of spatial planning practices across Europe offers new opportunities to improve policies coordination, data integration and evidence-based decision-making.

In this context, Serbia, as an EU candidate country, is advancing reform towards a more transparent, data-driven and participatory spatial planning system. As part of these efforts, the Republic Geodetic Authority, in partnership with Lantmäteriet, developed the SmartParcel system within the SIDA-supported project "ePlan4eSpace – SmartSDI". This geospatial platform integrates multiple planning-related datasets through a Serbian National Spatial Data Infrastructure (NSDI) environment, enabling improved coordination among stakeholders and supporting the alignment and integration of spatial planning with sectoral policies and future CP instruments.

The paper presents the SmartParcel system as a digital enabler of cross-fertilisation and discusses its potential to support a data-driven, place-based approach to cohesive territorial development in Serbia.

Keywords: spatial planning · territorial cohesion · geospatial platform · cross-fertilisation · SmartParcel system

1 Introduction

Responding to the progress achieved to date, as well as the identified strengths and weaknesses in the implementation of Cohesion Policy (CP) during the 2021–2027 programming period, and considering that development activities aimed at territorial cohesion are still ongoing across all Member States and the European Union (EU) as a whole, the European Commission has recently proposed several adjustments to this key "leave no one behind" development instrument for the 2027–2034 period.

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Among the proposed changes is a refinement of the *shared management model* between the EU and Member States, which is expected to become more flexible, results-oriented, and focused on regional partnership [4]. In addition to improvements within CP itself, a recent ESPON Policy Brief highlights the need to strengthen national sectoral policies and their territorial instruments, particularly by enhancing their cross-fertilisation with spatial planning policies, while respecting the "do no harm to cohesion" principle [11]. Compared to sectoral policies, spatial planning systems in Member States have already established well-defined legal and institutional frameworks that support such cross-fertilisation. These frameworks have also proven to be effective in facilitating stronger integration of CP instruments into the spatial planning policies, including their incorporation into national development budgets.

Furthermore, experience from previous CP implementation periods indicates that spatial planning systems have supported cross-fertilisation more effectively than other territorial cohesion policy systems, particularly at the national –strategic- level. This suggests that institutions operating at the strategic development level are generally more responsive and flexible in integrating CP instruments than local-level institutions, which tend to have more regulatory roles. In pursuit of a more integrated approach to achieving territorial cohesion across Member States, experts have therefore proposed seven steps to enhance cross-fertilisation between spatial planning and CP at the national level [7]. This also reflects an anticipated shift in the next programming period from a bottom-up and middle-up approach towards a more top-down approach in coordinating national territorial instruments.

At the same time, since 2011, spatial planning practices across Europe have increasingly focused on the digitalisation of planning data and processes, driven by the need to improve efficiency, transparency, innovation capacity and accessibility of planning information, often through the establishment of centralised plan registers and national platforms [9]. Beyond supporting *vertical* (across governance levels), *horizontal* (across sectors and stakeholders) and *territorial/jurisdiction* coordination, the digitalisation of spatial planning systems also has significant potential to enhance cross-fertilisation between CP and spatial planning at the national level [2], particularly by enabling the implementation of the identified seven improvement steps [7].

In line with the broader trend of the "Europeanisation of spatial planning" [2], driven by various territorial initiatives (such as Interreg programme, CP, EU sectoral policies, the Territorial Agenda, and ESPON) and governance processes, Serbia, as a candidate country, is undertaking reform aimed at digitalising its spatial planning system [31]. This reform seeks to address existing system weaknesses while establishing a more sustainable, transparent, and participatory planning framework capable of effectively supporting present and future EU investments. As a first step towards the so-called eSpace reform, the Republic Geodetic Authority, in partnership with Lantmäteriet, developed and launched in 2025 the SmartParcel systems within the SIDA-supported project "ePlan4eSpace – SmartSDI" [13, 14].

The SmartParcel system currently comprises three data catalogues -Catalogue of Legal Acts, Catalogue of Planning Documents, and Catalogue of Entities Accredited for Issuing Land Use Conditions- and a planned land use (PLU) database alongside a geospatial platform that enables the integrated visualisation and use of these datasets in

combination with other relevant spatial and thematic data. This data integration capability positions SmartParcel as a key geospatial platform for supporting cross-fertilisation and coordination between spatial planning, sectoral policies and planning stakeholders [15], as well as for enabling future integration with CP. Moreover, it provides the foundation for a data-driven, place-based approach to sustainable territorial development in Serbia.

The aim of this paper is to present the SmartParcel system and analyse its potential to enhance cross-fertilisation between spatial planning and other territorial cohesion policies in Serbia. Following this introduction, Sect. 2 examines the current state of CP implementation in Europe, including opportunities and mechanisms for strengthening its integration with spatial planning, as well as recent trends in the digitalisation of planning practices. Section 3 provides an overview of the current spatial planning and urban development system in Serbia. Section 4 presents the main components and functionalities of the SmartParcel platform and its role in addressing existing spatial planning system limitations. The paper concludes in Sect. 5 with key findings and directions for future development.

2 Towards Territorial Cohesion in Europe

The Cohesion Policy (CP), reformed following the Barca Report in 2009 towards a place-based approach focusing on green, digital, and social transition interventions, represents today the main EU investment strategy aimed at reducing social, economic, and territorial disparities across European regions [11]. It supports regional growth and competitiveness in coordination with national, evidence-based territorial policies, strategies, and their instruments. By mobilising EU funds through specific place-based territorial instruments (e.g. ISUD, CLLD, ITI, Interreg), CP investment decisions are directed towards achieving the five key policy objectives (PO) through projects grouped into corresponding intervention areas [3, 11].

Despite significant efforts invested in CP implementation and the delivery of targeted economic and social benefits across Member States through various territorial mechanisms and investments (Fig. 1), territorial cohesion outcomes in Europe remain uneven [7]. The literature identifies multiple reasons for these mixed results, ranging from cultural differences and variations in planning traditions, regulatory frameworks, and tools, to insufficient cooperation between national institutions responsible for CP implementation and territorial policies [6, 17]. A growing body of research emphasises that, with regard to territorial cohesion, the degree of cross-fertilisation between CP and spatial planning policies, particularly at the national level (Fig. 2), plays a decisive role in differentiating between lagging and non-lagging regions, as well as between resilient and more vulnerable territories.

Recognising the responsiveness and suitability of comprehensive national spatial planning systems and policies for enhancing cross-fertilisation with CP and other territorial instruments, a recent ESPON Policy Brief proposes seven practical steps to strengthen this interaction [7]. These recommendations are particularly relevant for countries where CP constitutes a significant share of public investment. Among them, the step "Champion (or support) joint working" is especially pertinent, as it promotes voluntary

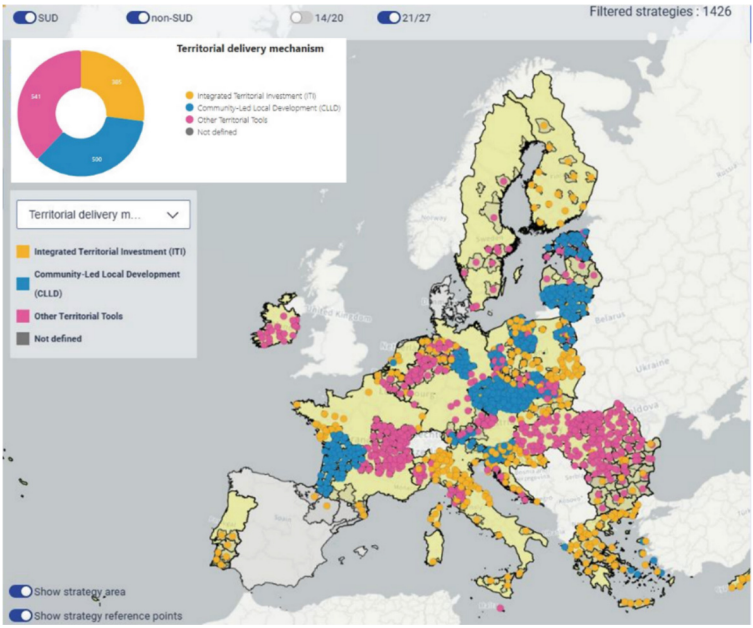

Fig. 1. EU Cohesion Policy's territorial delivery mechanisms have been applied towards the cohesive development investments in a number of strategies adopted and implemented by the Member States during 2021–2027 programming cycle [3]

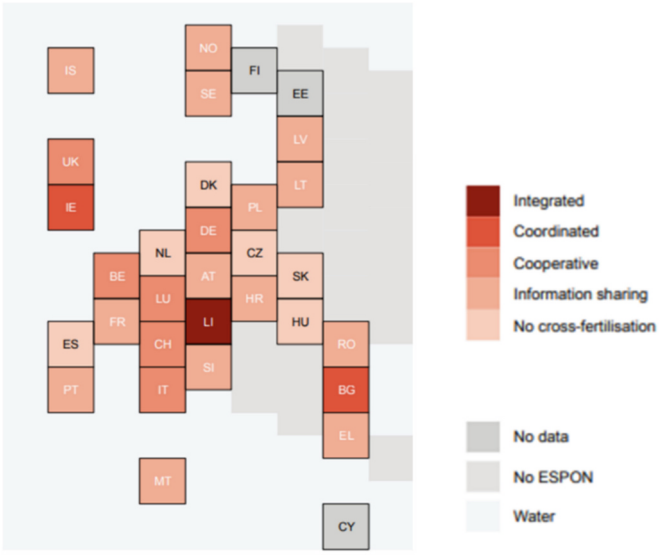

Fig. 2. Overall evaluation of cross-fertilisation between cohesion policy and spatial planning [7]

cooperation through the establishment of more formal and permanent platforms bringing together national and subnational authorities, agencies and stakeholders to guide strategic spatial planning, particularly in functional regions [1, 7].

At the same time, in pursuit of greater efficiency, innovation capacity, transparency, and integration of planning and related data, Member States have been actively advancing the digitalisation of spatial planning systems since 2011 (Fig. 3). [9] This process is grounded in common European frameworks, notably the (simplified) INSPIRE Directive and related strategies, which enable integrated access to and analysis of the spatial planning and sectoral data both within and across countries [34]. In addition to improving coordination, digitalised spatial planning systems provide a foundation for enhanced cross-fertilisation among territorial policies and instruments, including CP. Furthermore, centralised registers of planning documents and associated geospatial platforms support transparency, communication, and stakeholder participation [1, 15], while also facilitating the implementation of recommended steps for strengthening cross-fertilisation and reinforcing the conditions for future cohesive territorial development in Europe [7, 9].

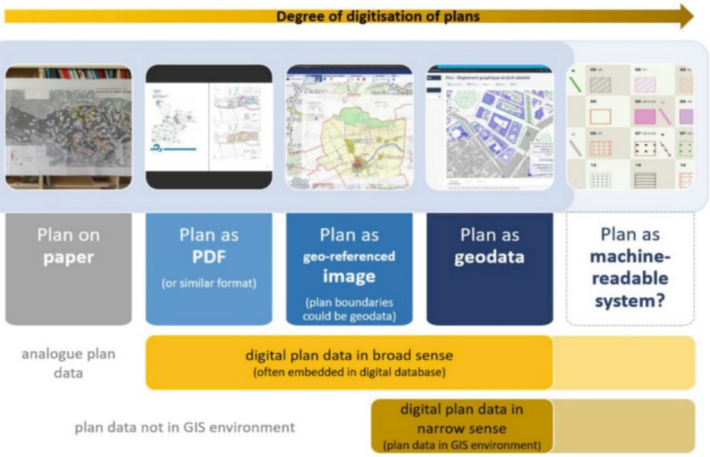

Fig. 3. Degree of digitalisation of plans in Europe: in the majority of surveyed countries plan data are in form of geodata, i.e., representation of the actual binding analogue plan [9]

3 Spatial Planning System in Serbia

Today, Serbian cities are home to approximately 60% of the country's population. However, rather than driving green, sustainable and resilient growth, they face a range of challenges, including population decline (with the exception of Novi Sad and Novi Pazar), uneven spatial development, environmental degradation and inadequate communal infrastructure and services. In addition, they are increasingly vulnerable to extreme weather events and climate change (e.g. floods, heat waves and droughts, seismic hazards, and risks associated with informally constructed buildings) [33]. At the same time, local spatial planning practices remain suboptimal, resulting in inefficient land use and limited investment capacity [8, 27–29].

In response, the Serbian Government has adopted the Sustainable Urban Development Strategy [18] and upgraded related national policies and regulations in areas such as spatial planning, public finance, service delivery and infrastructure management. These efforts have created a more favourable policy framework for environmental management and climate action, aligned with the EU Green Deal and other European and global initiatives. However, these policy objectives have not yet been sufficiently translated into concrete actions at the local level. This gap limits improvements in urban livability and performance, and constrains efforts to address inefficient land management, weak spatial planning practices and the lack of strategic, well-informed investments essential for the green transition.

To support the Government in translating national development priorities into effective local policies and investment portfolios, the World Bank, in its recent Western Balkans and Croatia Urbanization and Territorial Review, recommends the "3C" framework (Fig. 4).



Fig. 4. 3C framework for strengthening important role of cities for modern economy, sustainable development and green transition of Serbia, i.e. cohesive development [29]

Regarding local spatial planning practices, current weaknesses significantly hinder necessary reforms (e.g. achieving the "No Net Land Take by 2050" objective [5, 8, 17]). Although Serbia has a long tradition in spatial planning, its system remains complex and insufficiently coordinated [27]. It requires reform, streamlining and adaptation ("fit for purpose") to effectively respond to contemporary social, economic and environmental challenges. At the local level, the large number of mandatory and recommended strategic, sectoral and spatial planning documents places a significant burden on administrative capacities. Limited human, technical, and financial resources constrain local authorities' ability to ensure sectoral integration, cross-fertilisation, and alignment of local and national policies and investment instruments within planning documents (spatial and urban plans).

In the context of Serbia's EU accession process, these challenges also affect the integration of European CP instruments and territorial mechanisms. Capacity-building efforts are already underway in Serbia through initiatives such as the EU INTEGRA Programme [10] and the GIZ-supported COHPOL 2 project [12]. In addition, local spatial planning systems need to strengthen participatory processes and establish stronger links with strategic investment prioritisation and decision-making frameworks at both

national and EU levels, including CP, as envisaged in the draft Spatial Plan of the Republic of Serbia [19].

The World Bank also highlights the need to improve local spatial planning through enhanced data quality and the development of GIS-based systems and geospatial platforms to support inter-agency coordination (Fig. 5) [28]. Currently, geographic information systems (GIS) are used in approximately one-third of Serbian cities and municipalities, primarily for internal purposes such as plan preparation and analysis. Their use for external purposes, such as interactive data sharing with stakeholders and the public, remains limited. Although the Law on Planning and Construction [35] requires the establishment of geospatial information systems at the local level, most municipalities have not yet implemented such systems or developed centralised databases and geospatial platforms, largely due to the insufficient coordination among their sectoral departments and public enterprises.

CHALLENGE	RECOMMENDATION
PLANNING: Capacity constraints to meet urban planning obligations and to support climate and disaster-risk informed planning	• At the national level, streamline the planning system by simplifying administrative requirements for mandatory and optional planning documents, adjusting to realities on the ground (at the LSG level); • Support horizontal and vertical cooperation to ensure alignment between national and local plans (including spatial, urban development and sectoral plans); • Improve capacity of LSGs to integrate land use and sectoral plans to promote sustainable development through coordinated investments; • Develop and implement climate resilient and risk-informed urban plans (for all identified significant hazards, e.g., landslides, earth-quakes, floods for category II rivers); • Develop and maintain updated disaster risk assessments, disaster risk reduction plans and contingency plans to ensure the continuity of critical infrastructure in the event of disasters; and • Improve the quality of data, to support evidence-based planning and investment decision-making and to monitor performance indicators. This includes developing and enhancing GIS systems and developing a digital platform for inter-agency coordination to improve service planning and delivery.

Fig. 5. 5 recommendations for overcoming the current spatial planning practice challenges in Serbian cities and municipalities (i.e. local self-governments, LSGs) [28]

Establishing centralised geospatial databases and platforms would not only improve public service planning and delivery but also support cross-fertilisation and integration of policies and investment instruments across governance levels [1]. As part of ongoing efforts to strengthen investment planning capacities, Serbian cities and municipalities have identified and registered infrastructure projects under the World Bank/AFD-supported "Local Infrastructure and Institutional Development" (LIID) project, aimed at enhancing capacities for sustainable and climate-smart infrastructure development [20].

In line with broader European trends in the digitalisation of spatial planning, Serbia has also launched the so-called eSpace reform [31], which envisions the establishment of an integrated geospatial platform to support spatial planning as a transparent, participatory, and data-driven process - from plan preparation and adoption to its implementation.

This reform, conceptually introduced in 2021 and formalised through the Law on Planning and Construction in 2023, includes two main components: ePlan and eSpace [31]. The first development phase focuses on establishing a central, legally reliable register of planning documents, along with the registers of key spatial planning stakeholders and datasets related to land use and development. These registers are expected to support -in the second phase- development of a comprehensive national geospatial platform – eSpace- for place-based, data-driven decision-making and territorial policy management at both national and local levels.

4 SmartParcel System

As a first step in the reform of the spatial planning system in Serbia, and the beginning of its digitalisation in line with relevant INSPIRE thematic specifications, the recommendations of the ESPON DIGIPLAN project [9], and the eSpace reform, the Republic Geodetic Authority (RGA), in partnership with its Swedish counterpart Lantmäteriet, established the SmartParcel (or ПаметнаПарцела) system in 2025.

Being the main outcome of the SIDA-supported project "ePlan4eSpace – SmartSDI" [32], this system's concept was developed in accordance with the recommendations of the UN Framework for Effective Land Administration (FELA) [25]. The system architecture and functionalities are based on European best practices in the digitalisation of spatial planning systems and practices, while also reflecting requirements collected from Serbian cities and municipalities through an online survey conducted in late 2024 [24].

The aim of establishing the SmartParcel system is to create a geospatial platform that brings together all relevant spatial planning stakeholders in Serbia and integrates authoritative information on each cadastral parcel in a single environment. In this way, the system provides an integrated platform that supports a place-based approach to the sustainable management of land and other resources, as well as preparation and implementation of local and national plans and policies in a transparent, participatory and inclusive manner [13, 14].

The objectives of the SmartParcel system respond to the requirements of a modern spatial planning and land management system by ensuring the availability of accurate, comprehensive and reliable information for each cadastral parcel, in line with the European and international best practices and specific local needs.

In the context of rapidly evolving economic, social and environmental conditions, evidence-based decision-making supported by high-quality geospatial data has become essential. Whether for strategic projects, public or private investments, or individual decisions by landowners, users increasingly require fast and reliable access to relevant information on the current status and development potential of specific cadastral parcels and real estate assets, and this is where the SmartParcel system emerges as a enabler, providing a comprehensive, integrated and user-oriented solution.

4.1 System Concept

As already mentioned, the SmartParcel system concept is grounded in the UN FELA, which promotes the establishment of modern and efficient land administration systems

capable of supporting the implementation of the Agenda 2030 and the Sustainable Development Goals (SDGs). In this context, land administration systems are expected to integrate and provide four key types of information related to land or cadastral parcel: *value, ownership, use and development potential,* and *technical characteristics.*

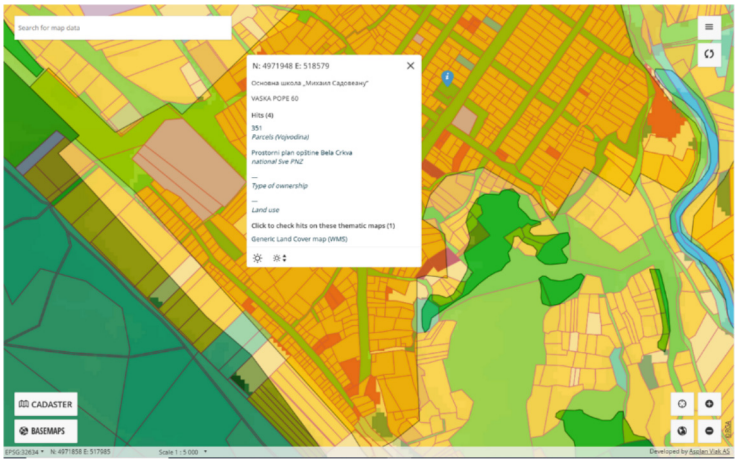

Fig. 6. SmartParcel system concept is in line with UN FELA requirements

To enhance its capabilities and evolve towards a modern land administration system that delivers authoritative public data and user-oriented services (for citizens, businesses, and public sector entities), the RGA is improving the quality and availability of existing cadastral information, such as data on *parcel value*, *ownership*, *boundaries* and *existing land use*, while also establishing the SmartParcel system to collect and provide information on *planned land use* as defined in planning documents (spatial and urban plans) (Fig. 6).

Established within the Serbian National Spatial Data Infrastructure (NSDI) [23], the SmartParcel system builds upon existing infrastructure and integrates additional RGA datasets and services to provide comprehensive information on the development potential of cadastral parcels (Fig. 7). On the production side, the system consists of a Web platform (landing page) and data collection tools supporting the three new data catalogues (No. 1) and Knowledge Base. These catalogues are populated by authorised stakeholders and made publicly accessible through NSDI distribution services, together with other relevant RGA datasets and services for sustainable land management (e.g. eCadaster, Disaster Risk Register, and other GeoSrbija registers), as well as geospatial datasets on planned LU developed during the project (No. 2).

In addition, the SmartParcel system is connected via Web services to environmental and other relevant land-use regime datasets (e.g. sectoral plans and policies data) (No. 3), which are maintained by the responsible authorities in accordance with the sector-specific regulations and the Law on NSDI.

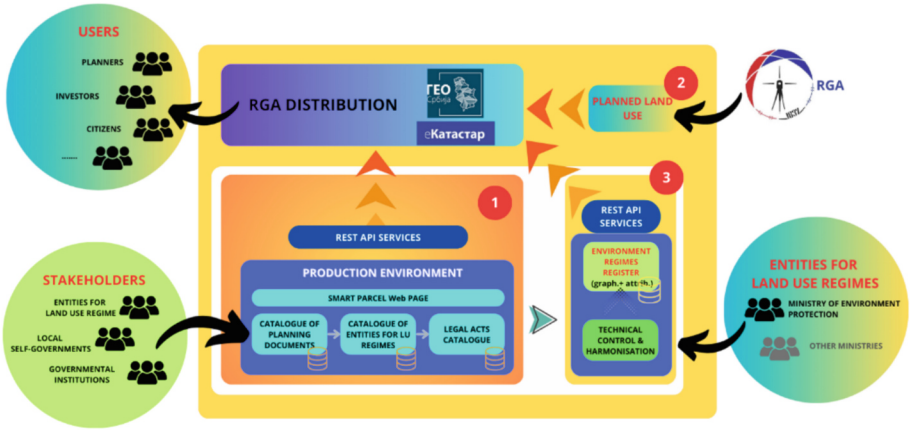

Fig. 7. SmartParcel system concept: system structure presents integration of a Web platform for data production and access; a data collection tools and a REST API services

The SmartParcel system concept reflects best practices in geospatial data management and service provision. At the same time, it fosters stakeholder ownership, which is essential for the system's long-term sustainability, scalability and further development.

4.2 System Components

The SmartParcel system consists of several key components: a Web platform (landing page), a Knowledge Base, a planned land use (PLU) database, and three data catalogues, namely the Catalogue of Planning Documents, the Catalogue of Legal Acts, and the Catalogue of Entities Accredited for Issuing Land Use Conditions (hereafter referred to as land use regimes).

While the Web platform, Knowledge Base and PLU database are publicly accessible, the access to catalogue applications is restricted to authorised stakeholders, including cities and municipalities (i.e. local self-governments), ministries and other public authorities. These users are granted controlled access to the catalogue databases within the system's production environment, where they operate under defined roles (Editor or Supervisor) to enter new data and update existing records related to planning documents, land use regimes and associated legal acts.

Catalogue of Planning Documents

The Catalogue contains key information on each spatial and urban plan (or planning document) adopted in Serbia, including their planning areas (defined as polygons representing the spatial extent covered by each plan), associated metadata, as well as their textual and graphical parts, in accordance with the Law on Planning and Construction.

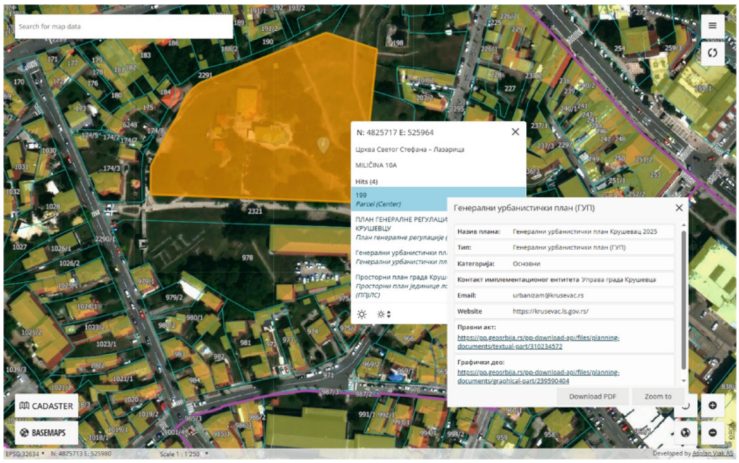

Fig. 8. Overview of data in the Catalogue of planning documents



Fig. 9. The SmartParcel system' home or landing page, and Catalogue of planning documents' editor and data collection interface (dialog boxes)

The availability of geospatial data on planning areas enables the identification of applicable plans for each cadastral parcel through simple spatial selection within the Overview map. As a result of selecting a cadastral parcel, the system generates a list of

all plans applicable to that parcel, together with access to the corresponding textual and graphical parts' documentation, which users can download and search (Fig. 8).

Access to the data collection tool of this and other Catalogues is restricted to authorised users, who can create new records or edit and update existing entries within the Catalogue database (Fig. 9).

Catalogue of Entities Accredited for Land Use Conditions Issuing

The Catalogue contains essential information on entities responsible for issuing conditions related to land use and development (e.g. nature protection, water management, cultural heritage protection and access to infrastructure systems). Similar to planning documents, the jurisdictions of these entities are spatially defined in the Catalogue through geospatial data (polygons).

This enables users of the SmartParcel system to identify, through simple spatial selection of a cadastral parcel, which public authorities—at the local and/or national level—have jurisdiction over its use, as well as the corresponding legal basis for such jurisdiction (Fig. 10).

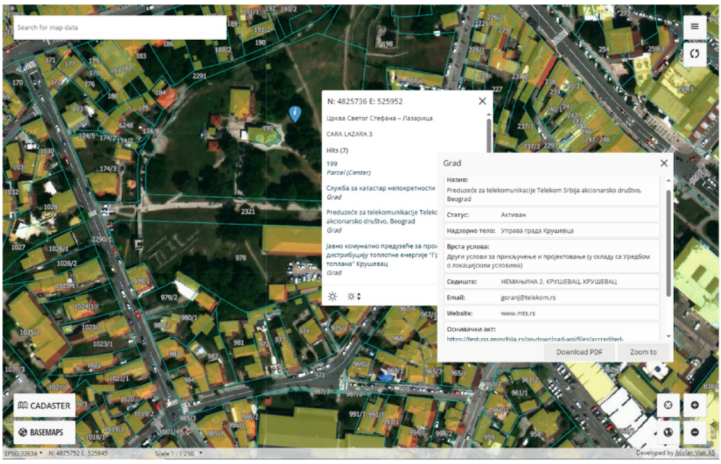

Fig. 10. Overview of data in the Catalogue of entities accredited for land use conditions issuing

Catalogue of Legal Acts

This Catalogue complements the previous two and contains all relevant laws, by-laws, decisions, and regulations that constitute the legal basis for planning documents and land use regimes applicable to a selected cadastral parcel. Each legal act is linked to the institution that enacted it, as well as to the corresponding planning document, and includes information on the official gazette in which it is published.

In this way, the system enables users to access both geospatial and legal information related to the development potential of each cadastral parcel within a single platform.

Knowledge Base

As an integral component of the SmartParcel system, the Knowledge Base provides

experts, institutional staff, investors and the general public with access to information on system functionalities, as well as professional and educational content. It also facilitates the exchange and advancement of knowledge and professional practice in the fields of spatial planning, land management and sustainable development in Serbia.

Database of Planned Land Use (PLU)

The initial national database of planned land use (PLU) data has been developed based on valid spatial plans from 18 pilot cities and municipalities, in accordance with the INSPIRE Specification for the Land Use theme and the relevant national rulebook [21]. The database includes five primary land use categories -construction, agricultural, forestry, water, and other purposes (e.g. mining, recultivation and remediation, and defence)- identifiable at the level of individual cadastral parcels (Fig. 11).

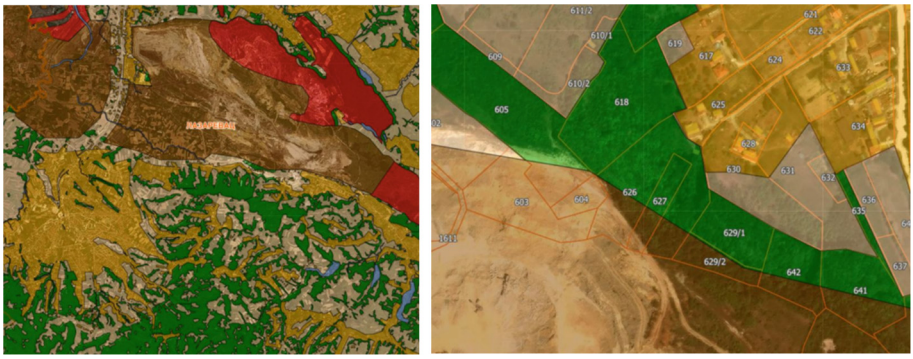

Fig. 11. Overview of data stored within the national Planned Land Use (PLU) database

Although the PLU database currently does not provide more detailed classifications within these general land use categories (e.g. residential, public, commercial, and others), when combined with data from the three Catalogues, it provides users with a sufficiently comprehensive understanding of the development potential of each cadastral parcel.

4.3 Towards Geospatial Platform for Enhancing Cross-Fertilisation Between Spatial Planning and Territorial Cohesion Policies

Despite their complementary roles, the degree of cross-fertilisation between spatial planning and national territorial cohesion policies (e.g. agriculture, environment, natural and cultural heritage protection, transport, telecommunications) remains limited and inconsistent. This is largely due to shifting political priorities, a lack of transparency, misaligned timeframes and, most importantly, insufficient integration -and in some cases absence- of sectoral geospatial data.

According to Serbian regulations, the preparation of spatial and urban plans includes, as a mandatory step, the collection of sectoral requirements (policies, strategies and plans), along with related geospatial and other data from relevant sectoral authorities (institutions and agencies) and public utility providers [22]. These inputs form the

basis for comprehensive thematic (spatial and non-spatial) analyses and the development of thematic planning solutions, followed by a cross-thematic synthesis that defines development priorities for the planning area.



Fig. 12. The SmartParcel system support integration of geospatial data from different sectors, thus efficiently and effectively enhancing their cross-fertilisation for balanced and cohesive territorial development: integrated view of disaster risks (cadastre of landslides and unstable slopes) [33] and planned land use data within city of Kragujevac area (top); integrated view of protected natural and cultural heritage data on the cadastral parcel level downtown city of Belgrade (bottom)

However, this process is often time-consuming and is conducted with limited use of geospatial technologies, which could otherwise enhance efficiency and support transparency, improve the quality of spatial analysis, and enable data integration for better insights. In this context, the SmartParcel system -conceived as a comprehensive NSDI-based geospatial platform- has the potential to provide a central, reliable and permanent collaborative environment. It enables a transparent and shared workspace for spatial

planning stakeholders, ensuring continuous access to and visibility of spatial and sectoral plans, as well as their standardised datasets on planned and ongoing developments across all governance levels.

Although the uploading of sectoral datasets and the population of the three Catalogues are still ongoing, the SmartParcel system already demonstrates functionalities that can facilitate and enhance cross-fertilisation between territorial development data and policies. This is particularly relevant for achieving cohesive, sustainable, resilient and balanced territorial development in Serbia.

Even though the currently available datasets are not yet fully integrated into ongoing plan preparation processes, the platform enables their dynamic integration and visualisation. This supports future cross-fertilisation, for example, between disaster risk reduction strategies and spatial development strategies, or between nature and cultural heritage protection policies and land use planning at the cadastral parcel level (Fig. 12).

In addition to strengthening cross-fertilisation between spatial planning and national territorial cohesion policies, the SmartParcel platform also provides a foundation for future cross-fertilisation and integration with the European CP. Its functionalities align with the approaches and recommendations outlined in Sect. 2 of this paper, highlighting its potential to support more effective, data-driven and place-based policy coordination.

5 Conclusions and Next Steps

By providing integrated geospatial data and related information, the SmartParcel system represents a significant step towards more transparent, efficient, and legally secure land management in Serbia. Furthermore, it supports sustainable, territorially cohesive, and risk-informed decision-making and policy design for land and urban development, in line with modern societal needs and grounded in established global and European geospatial standards and best practices.

As demonstrated in other European countries, the digitalisation of national spatial planning system and practice can substantially improve efficiency, transparency and the quality of planning data and development decisions. In this context, geospatial platform such as SmartParcel provides not only technological advancement but also essential support for cross-fertilisation and the integrated coordination of strategic territorial cohesion policies and instruments, thereby contributing to balanced territorial, social and economic development.

Looking ahead, and in support of improved understanding of territorial dynamics and development opportunities in Serbia, the SmartParcel system will be further developed as part of the continuation of the SmartSDI project. In addition to the anticipated changes in the upcoming Cohesion Policy programming period 2027–2034, future development of the SmartParcel system will also take into account expected updates related to the simplification of the INSPIRE Directive and the adoption of regulations under the GreenData4All initiative [34], within the framework of the European data strategy.

In addition, further research and development of the SmartParcel system (towards the future development of the ePlan concept) will focus on enhancing its positive social impact, particularly in addressing existing gaps between urban and rural areas and promoting the participation of non-expert users in spatial and urban planning processes in

Serbia. This will build on the system's inherent openness, enabled by its technological design, which provides location-independent access and communication advantages.

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