



UN-IGIF implementation in Serbia: Framework for improving NSDI for sustainable development

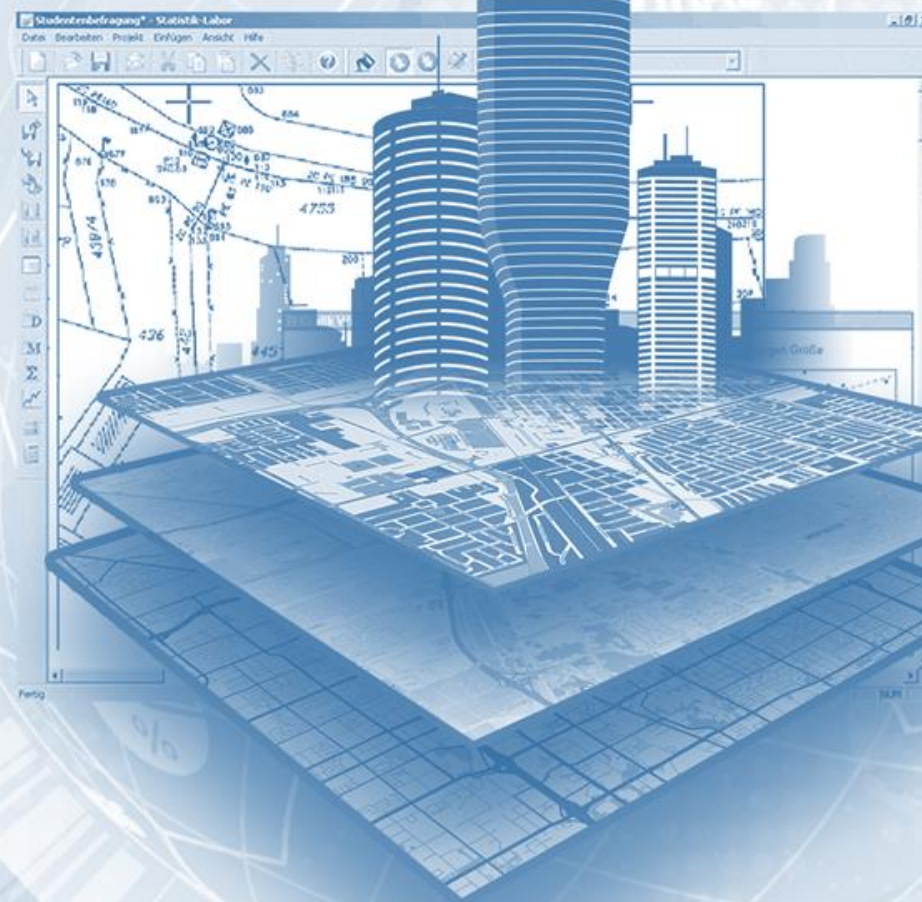
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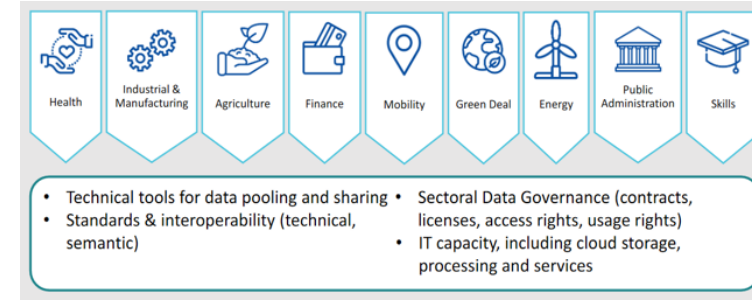
Content

- Establishment of NSDI in Serbia
- Implementation of UN-IGIF recommendations
- Way forward

NSDI and its role evolution

U.S. National Research Council first established **SDI** as a term in **1993**

UN adopted **2030 Agenda for Sustainable Development with 17 SDGs** adopted in **2015** recognises importance of geospatial information and related technologies, like NSDI, for supporting sustainable development globally



Following the EU Green Deal and targeted green transition, **Strategy for data** from **2020** assumes digital transformation and improved NSDIs as part of a common *European Green Deal data space*

In **2007** EC adopted **INSPIRE Directive** as general framework for establishing NSDI aimed at national environmental policies coordination and management towards sustainable development in Europe

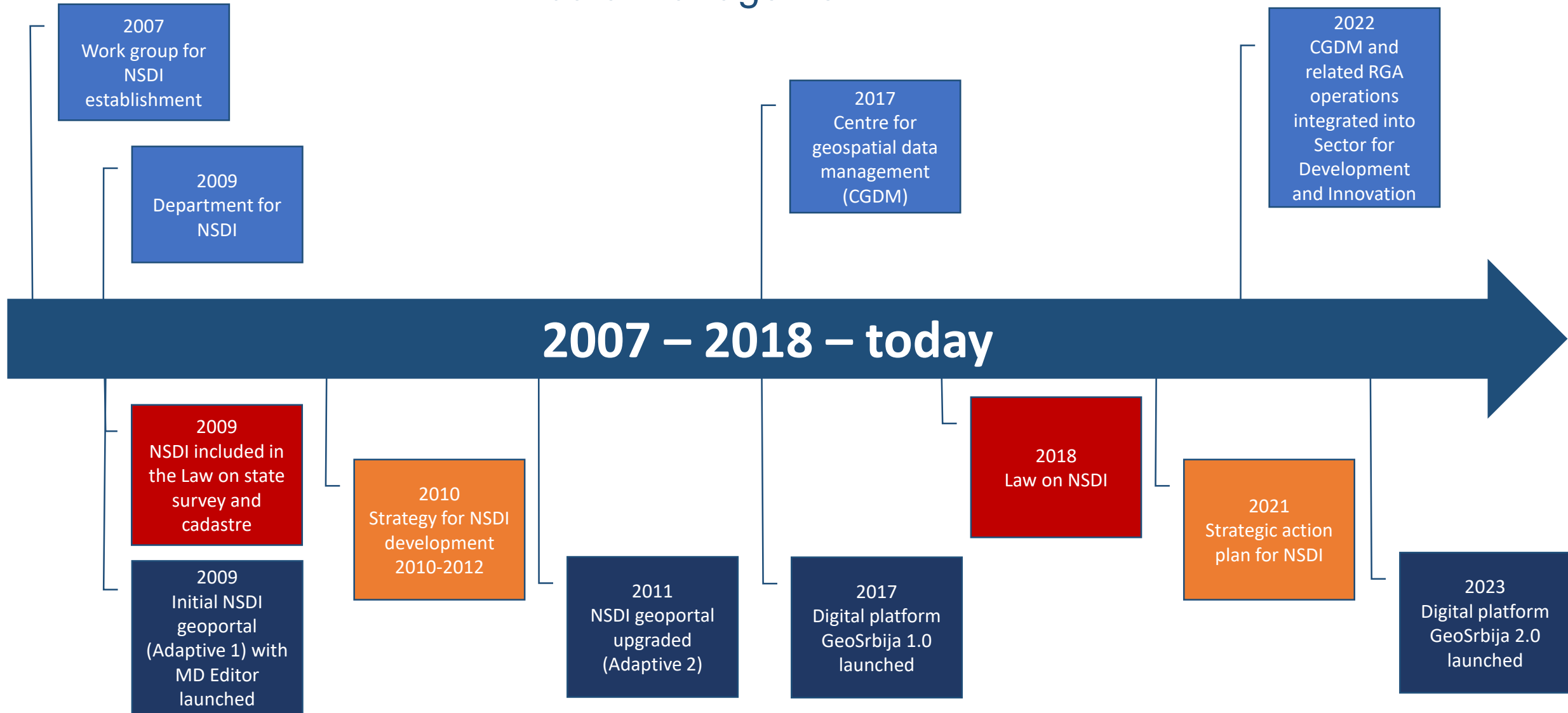


UN-GGIM IGIF is launched in **2018** for improving geospatial data management globally by establishing modern NSDIs as part of future *data spaces* and *data ecosystems*



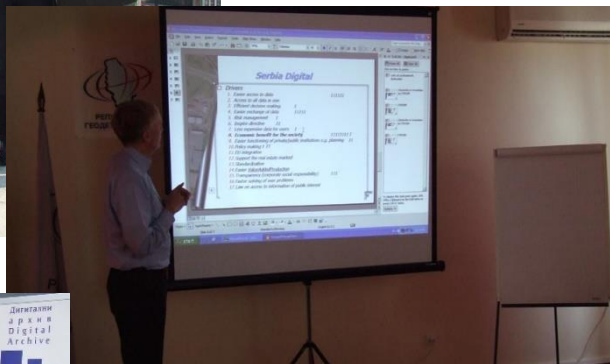
Relying on the INSPIRE Directive success and NSDIs development, in **2023** EC prescribed **Implementation Act for High-Value Datasets (HVDs)**

Serbian NSDI **legal**, **organizational** and **technology** frameworks evolve around European and global initiatives and local needs in domain of geospatial data management





Work group for Serbian NSDI establishment held an inception meeting in RGA back in 2007



Development of NSDI in Serbia (2007-2018)

- Several capacity building and knowledge sharing projects for NSDI establishment implemented
 - International projects – Twinning with Statens Kartverk (NOR), INSPIRATION (EU/Umweltbundesamt), IMPULS (SIDA/Lantmäteriet), ...
- First NSDI Council established
- Preliminary NSDI stakeholders identified and INSPIRE awareness campaign launched
- Thematic work groups established
- Initial GeoSerbia portal launched
- First Strategy for NSDI development in Serbia brought
- First Law on NSDI enacted



NSDI DIAGNOSTIC TOOL 2016 – assessment of the Serbian NSDI development status against 8 evaluation dimensions (World Bank methodology)



THE WORLD BANK

- ☒ Data exist on national level
- ☒ No clear definition of responsible institutions for some core data sets

Core Data I

(DOP, administrative units, addresses, cadastral parcels, elevation, geographical names...)

- ☒ Data exist on national level
- ☒ Outdatedness of some data sets

Core Data II

(stat. units, buildings, land cover, utilities...)

- ☒ Underway usage of NSDI for decision making in areas of planning and construction and environment protection
- ☒ No incentive in usage of NSDI in other areas
- ☒ Generally Public decision making is not based on usage of NSDI
- ☒ „Crowd-sourcing“ solutions still not introduced

Use of NSDI/Applications

- ☒ Developed capacities through development projects
- ☒ No clear strategy on CD within NSDI
- ☒ Insufficient engagement of educational sector
- ☒ Unsatisfactory capacities in public sector

Capacity Development

- ☒ RGA Strategy adopted
- ☒ New NSDI Strategy under development
- ☒ NSDI in line with e-Gov
- ☒ No clear „Open Data“ policy

Policy and Strategy

- ☒ Established NSDI Council, and TWGs
- ☒ Support and Access to data and services provided
- ☒ No estimation of realtion : NSDI – SDGs
- ☒ Unsufficient participation of other institutions

Governance arrangements

- ☒ New Law on NSDI under adoption
- ☒ Laws on Information, Intellectual rights and Personal data Protection exist
- ☒ Inadequate legal basis for data sharing and exchange and data licencing
- ☒ No link between Laws on on data protection in case of geospatial information

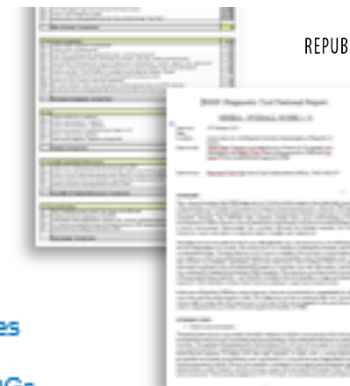
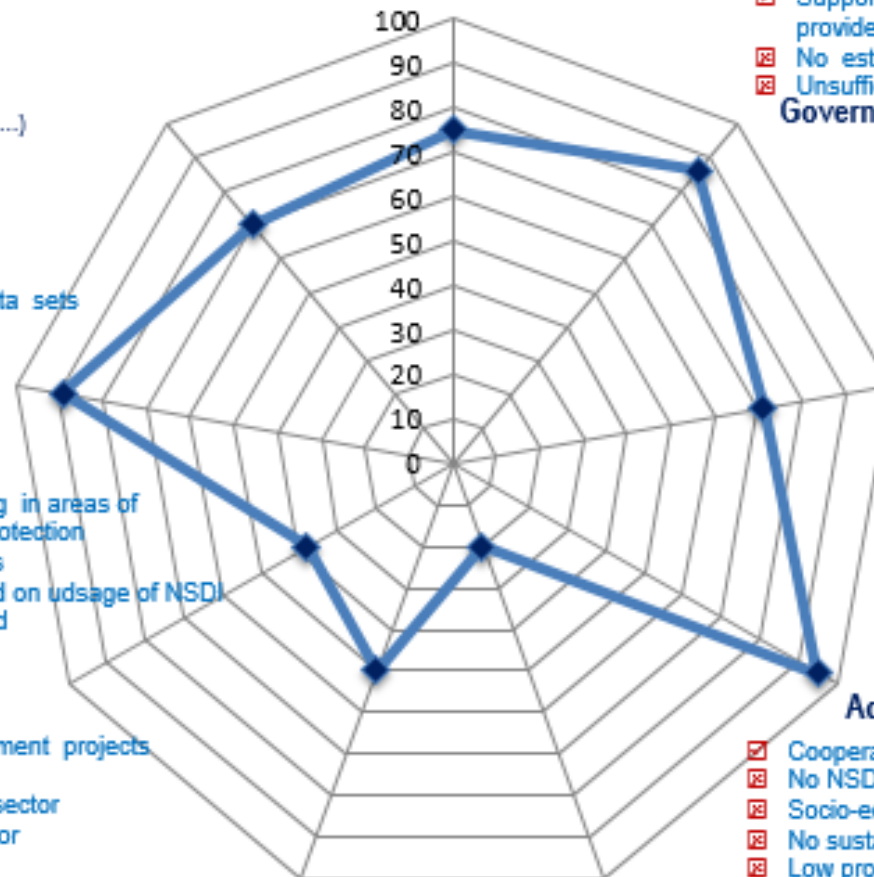
Legal framework

- ☒ Spatial reference system and ICT infrastrucuter established
- ☒ Standards on data , metadata and services exist
- ☒ National geoportal provided
- ☒ Technical performances of National geoportal low
- ☒ Transformation of data into unique coord.system to be done
- ☒ Low degree of spatial data access by internet technology

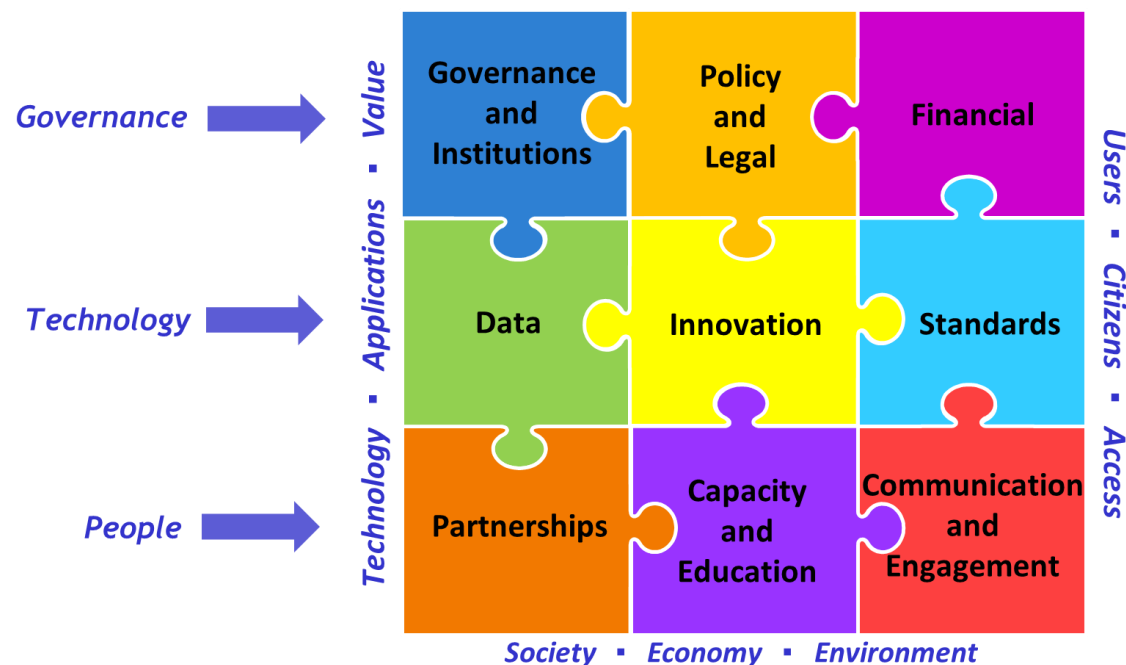
Accessibility and Technical Infrastructure

- ☒ Cooperation with other institutions improved through agreements
- ☒ No NSDI business model
- ☒ Socio-economic impact never estimated
- ☒ No sustainable system of spatial data pricing and licencing
- ☒ Low provision of data and services based on NSDI by private sector

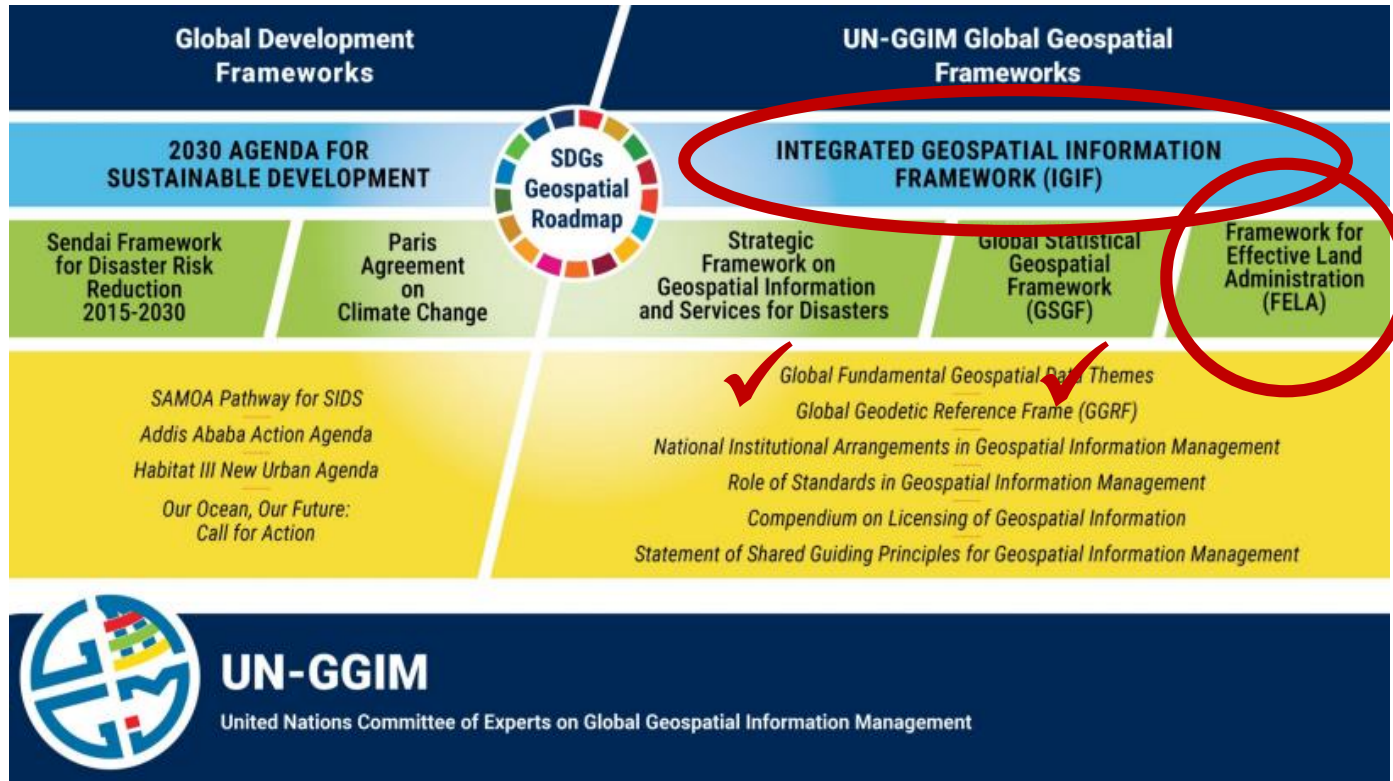
Socio-Economic impact



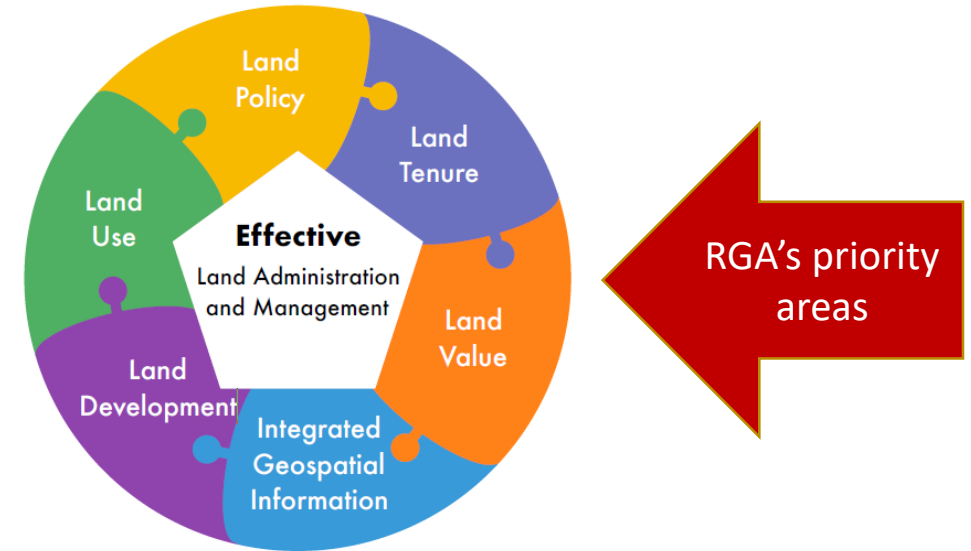
UPGRADED NSDI DIAGNOSTIC TOOL 2019 – assessment of the “as is” position of geospatial information and spatial infrastructure in Serbia using the UN-IGIF 9 Strategic Pathways (World Bank methodology)



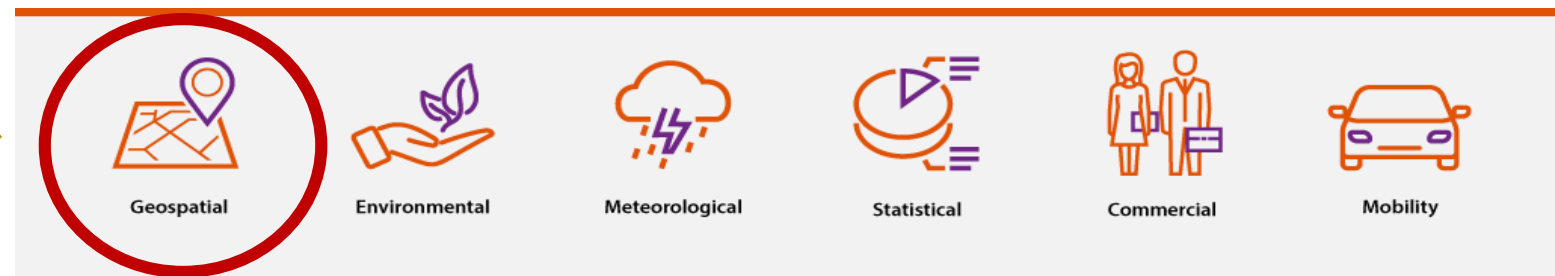
• Governance	score: 100
• Policy & Legal	score=90
• Financial	score=71
• Data	score=91
• Innovation	score=75
• Standards	score=75
• Partnerships	score=80
• Capacity & Education	score=81
• Communication & Engagement	score=81
• Overall Score	score=83



Serbian NSDI development framework
(2018-today):
UN-IGIF, FELA and Open Data/HVDs



HVDs
for European Green Deal
dataspace



Serbian Country-level action plan (CAP) by UN-IGIF: Strategic Action Plan for NSDI improvement in Serbia (2021)

<https://ggim.un.org/UN-IGIF/part3.cshtml#NationalCAPS>

- Vision, goal and sub-goals (5) for NSDI improvement in line with UN-IGIF recommendations
- **Key Action Points (KAP) for each of 9 IGIF Strategic Pathways**
- General recommendations, Current and Future actions and Key Performance Indicators (KPI) for each KAP

UN-IGIF

Overarching Strategic Framework

Why?

Part 1

UN-IGIF

Implementation Guide

What?

Part 2

UN-IGIF

Country-level Action Plans

How, when, who?

Part 3

VISION

To establish a value-based “SMART SDI” that strongly facilitates the access, sharing and use of geospatial data and services, responds to the current and future stakeholders needs for geospatial information, enables to apply the most relevant modern (smart) solutions, strengthens the national/regional cooperation and economic development, and enhanced quality of living conditions

GOAL

Implement a modern, advanced, well-equipped, financially stable and sustainable NSDI and re-establish the National Geospatial Data Centre, mandated for dealing with all NSDI related issues in order to create a value-based “SMART NSDI”

SUB-GOAL 1

Strengthen NSDI governing bodies and partnerships through increased institutionalization, co-creation and collaboration among all sectors and an improved governance model, supported with strong policy documents adopted by the Government

SUB-GOAL 2

Improve NSDI financing model, structure and opportunities and achieve alignment of the NSDI legal framework with international regulations, policies and global agendas and develop licensing and pricing policies

SUB-GOAL 3

Invest in improvement and promotion of geospatial data integration, usage and management for decision making, economic development, innovation purposes and development of new information systems

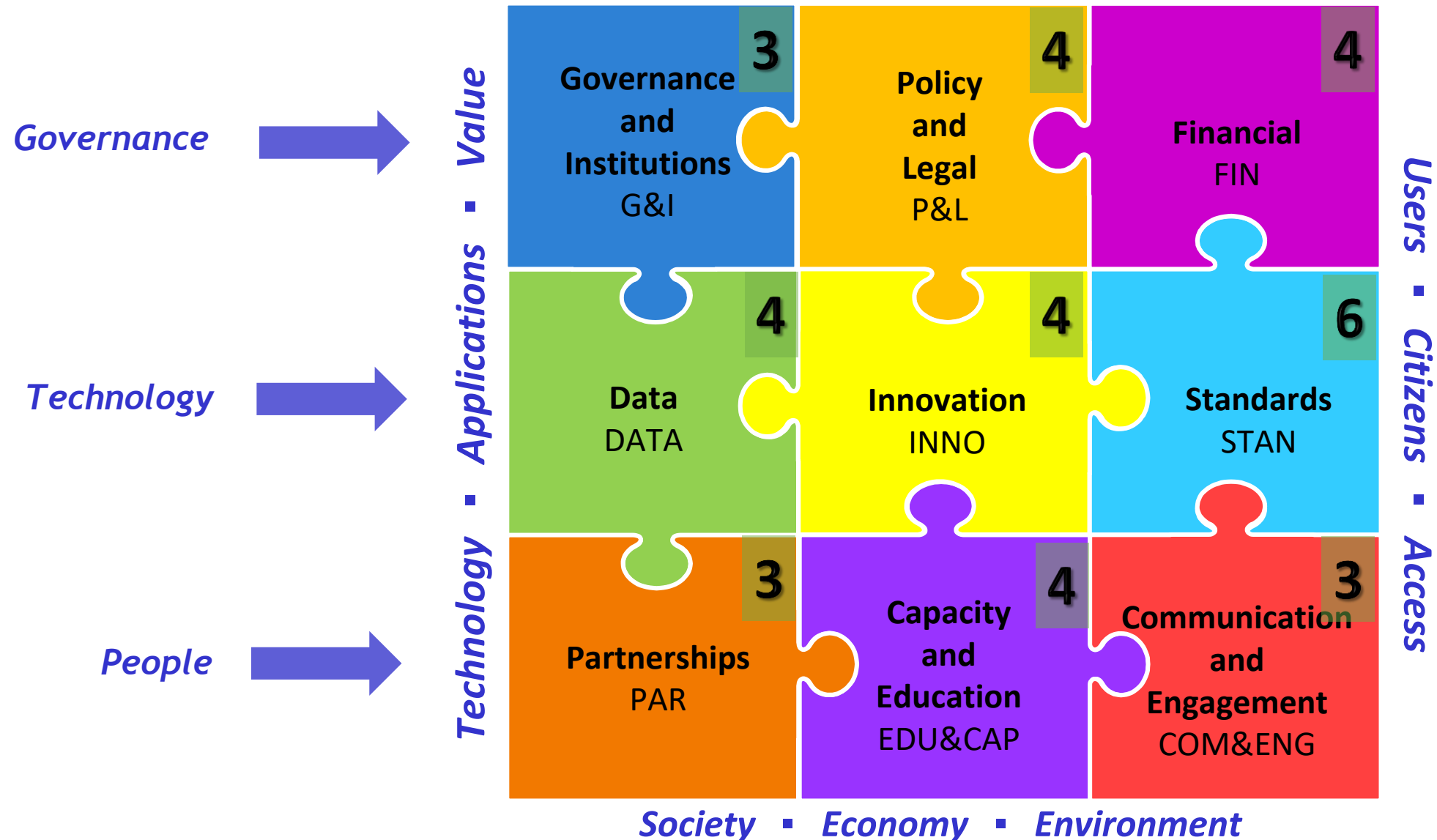
SUB-GOAL 4

Enhance geospatial data standards conformance, interoperability, harmonization and security while avoiding and removing data, software and service duplication

SUB-GOAL 5

Build capacities for all relevant NSDI Actors and Stakeholders, on all levels, invest in formal education for acquiring necessary knowledge and skills and develop communication and engagement on the NSDI level

35 Key Action Points for 9 UN IGIF Strategic Pathways



UN-IGIF CAP implementation (2021-today): RGA Flagship Projects



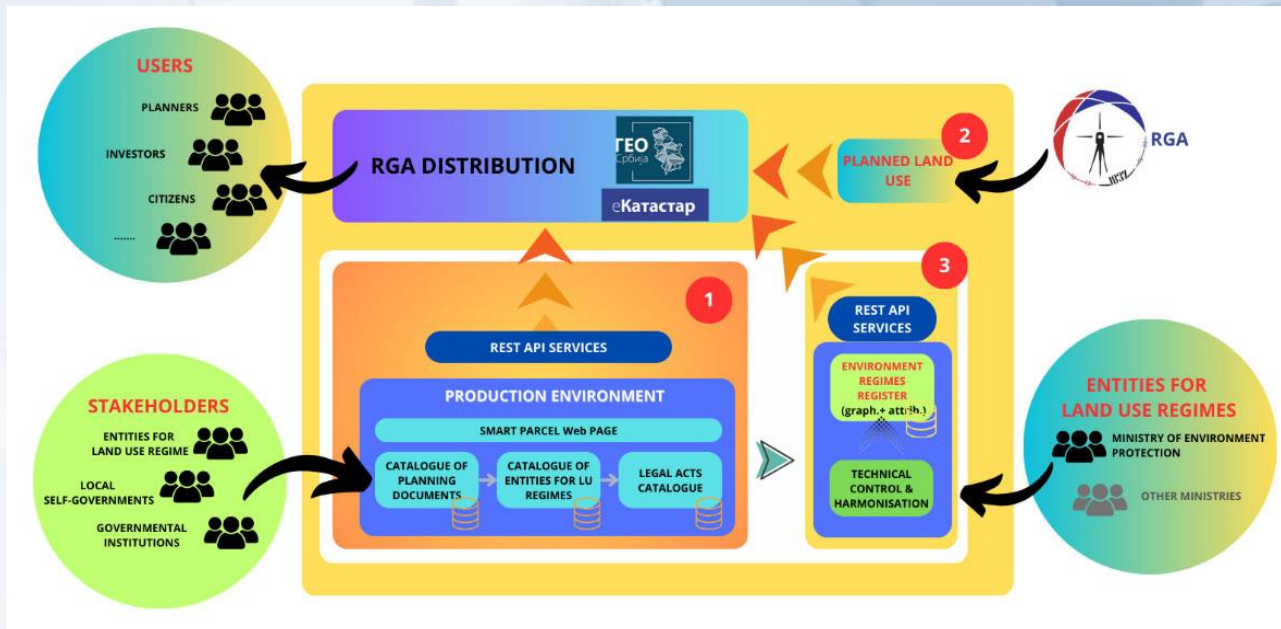
Project name	Targeted KAPs - directly	Targeted KAPs - indirectly
GeoSrbija (ГеоСрбија) 2.0 (NSDI data distribution platform)	INNO2	DATA1, G&I2, FIN3, STAN1
RGA ID	INNO2	DATA1, G&I2, STAN4, PAR1, PAR3
National Register of Investment Locations	INNO2	DATA1, EDU&CAP4, G&I2, PAR3
ePlan4eSpace – SmartParcel system	INNO2	DATA1, EDU&CAP4, STAN2, PAR3, COM&ENG2
eLearning	EDU&CAP4	G&I1, PAR2, PAR3, COM&ENG2
IS for Mass Evaluation	FIN4	DATA1, G&I2, FIN4
Disaster Risk Register (DRR)	INNO2	DATA1, P&L3, PAR1, COM&ENG2
IS for Infrastructure and Utility Cadaster	INNO2	DATA1, PAR2
ISO standards implementation: 9001, 27001, 27701 and 37001	STAN4	STAN1
...		

ePlan4eSpace – SmartParcel system (INNO2)

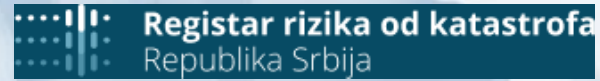


Project ePlan4eSpace and its SmartParcel system is just a one step towards improving Serbian NSDI and eSpace platform establishment

- Digital transformation of multidisciplinary territorial planning and development process in Serbia
- Capabilities for creating the new geospatial insights and contextual knowledge for the decision-making and policies management towards the green transition
- Simple access and enhanced usage of the public sector geospatial datasets and related services on-demand and in accordance with the end-users need



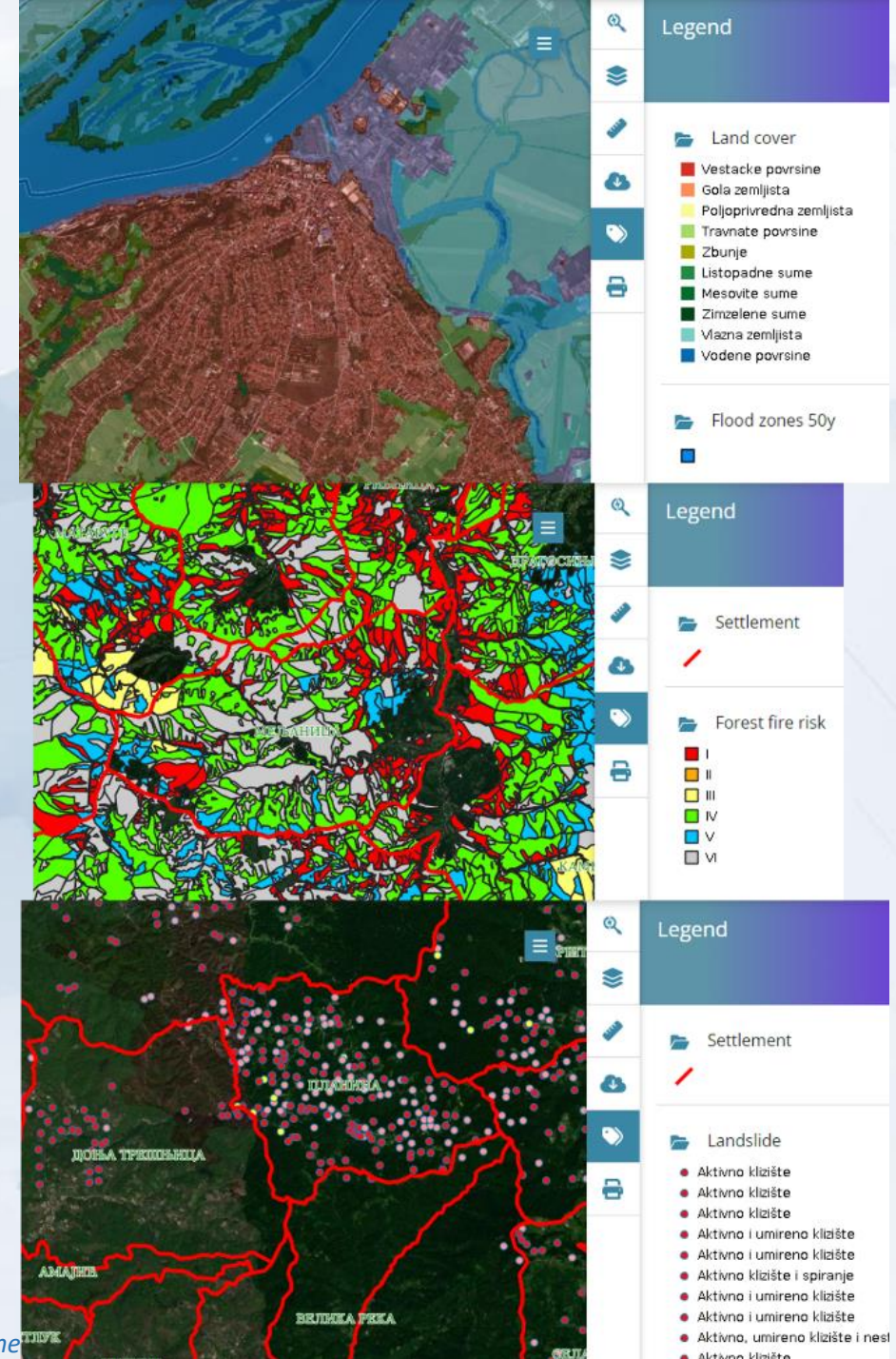
DRR (Phase 2) (INNO2)



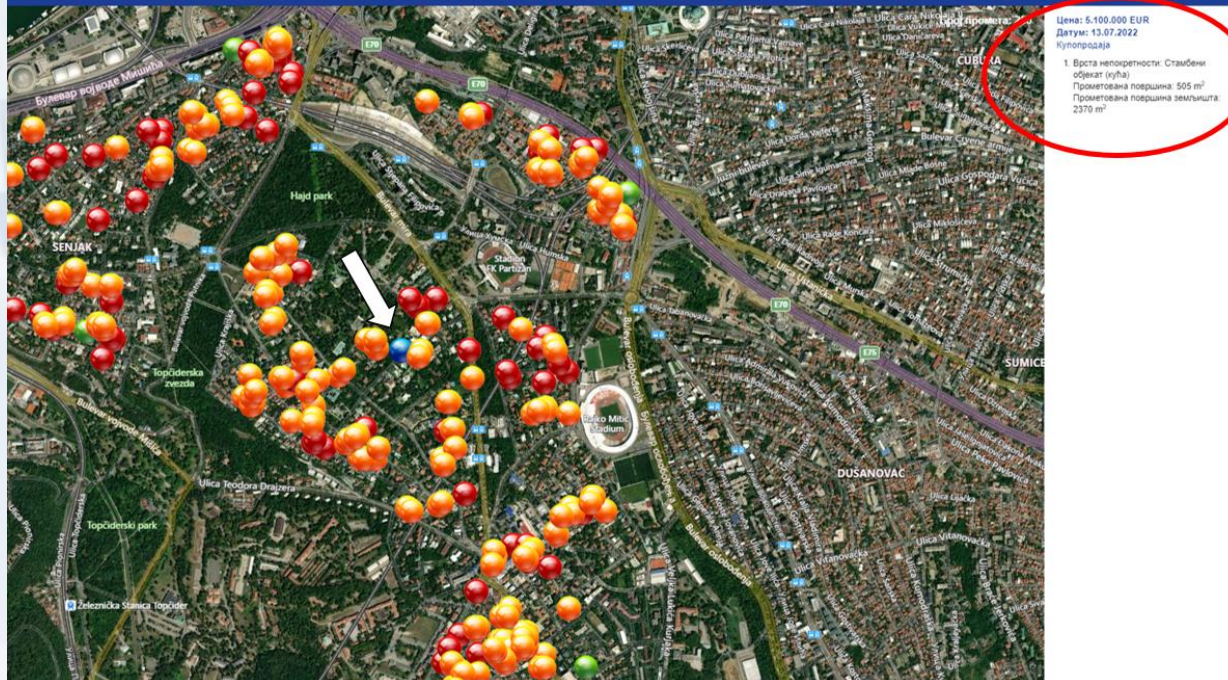
- As the subsystem of the NSDI, the national DRR for Serbia is today the main source of quality and interoperable geospatial information for building the common understanding and decision-making about the disaster events among the multisectoral stakeholders community
- DRR provides basic risk maps and other reference information that are crucial inputs for the DRM plans preparation, but also preparation of other strategic documents in Serbia, like spatial and urban plans
- There are needs and plans for future development for enhancing this national register applicability for the effective DRM process establishment, especially on the local level



#EY
ЗА ТЕБЕ



IS for Mass Evaluation (FIN4)



- As the subsystem of the NSDI and developing IS REC, the national Property Price Register already established, and continually develops in line with RE market in Serbia and mass valuation process needs
- Based on geospatial data, pilot data model for mass valuation for future IS in development, targeting needed tax policy reform
- With WB experts, RGA investigates possibilities and approaches for applying different new technologies, like Machine learning and AI, for mass evaluation system

UN-IGIF implementation in Serbia: Lessons-learnt and future steps



- Finding synergy between KAPs/projects for reaching organisational resource efficiency and effectiveness of outputs
- Staying flexible and monitoring NSDI stakeholders' needs
- Close cooperation with national and international partners and relevant initiatives participation
- Continuing promotion of geospatial data role and power
 - Serbia is member of the UN-IGIF Translation Team
- Keep searching for NSDI financial sustainability



Thank you for your attention!

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