ESPON

EUROPEAN UNION

Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

TARGETED ANALYSIS //

DIGIPLAN – Methodological background

Annex 9 of final report

Final delivery // June 2021

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1 Introduction

This report is a collection of methological background information to the ESPON DIGIPLAN project. The work on DIGIPLAN was organised into three tasks: an overview on digitalisation of plan data in 15 ESPON countries (Task 1), insight information from case studies in 6 countries (Task 2) and thematic practice papers (Task 3), synthesizing the state of the art in topics related to digital plan data and digital plans.

In DIGIPLAN, we analysed approaches across different planning systems in Europe. We structured our analysis by three main questions:

- the scope of digitalisation of plan data – what is digitized and what is it digitized for?
- the organisation and financing of the digitalisation – how is it digitized?
- the current and potential future uses of digital plan data – how is it/can it be used?

The Annex provides background information on communication and dissemination in the project (Section 2), the selection of cases (Section 3) and the approach in the three tasks (Section 4, 5 and 6). Section 7 is a list, which was produced in the very beginning of the project. It shows examples of national or regional digital plan data online platforms with information on local/municipal planning.

2 Communication and dissemination

Kick-off meeting in Copenhagen, 14 January 2020

DIGIPLAN is a targeted analysis, i.e. a project developed in close cooperation with stakeholders. DIGIPLAN stakeholders represent national planning agencies or ministries from Denmark (Danish Housing and Planning Authority), Norway (Ministry of Local Government and Modernisation) and Switzerland (Swiss Federal Office of Spatial Development). Four regular meetings with the steering committee, which includes the stakeholders, the researchers and ESPON EGTC have been scheduled. When we met at the kick-off meeting in Copenhagen in January 2020, we did not have any imagination of what would happen a few weeks later.

During March 2020, the continent locked down and COVID-19 has since changed our everyday life. All physical meetings have been cancelled. Interviews have been conducted online. Some members of the project team have been hit hard, including reduced work capabilities because of child care duties, limited home office possibilities and/or shifting working conditions, e.g. in regards to constantly changing requirements in university teaching. Despite being proud of what we have achieved including the extensive empirical material we collected, we want to stress that the absence of physical meetings has limited our abilities to unfold, debate and develop the topic in dialogue.

Discussion of thematic papers over Zoom, 18 November 2020

Table 2.1 lists the meetings with the participation of the steering committee. Besides the four regular meetings (kick-off and one meeting after each delivery), also some shorter meetings were organised to discuss and develop the thematic papers. DIGIPLAN stakeholders, researchers and ESPON EGTC were also represented at the DIGIPLAN workshop during the #EURegionsWeek 2020. The Swiss stakeholder organised an open online workshop with DIGIPLAN researchers, stakeholders as well as guests from the other case countries. Besides these the researcher team hold online meetings about every second week, summing up to about 30 meetings in the project year. Three internal e-mail newsletters on the current status of the work were sent out during the project to update the wider group.

Table 2.1
Meetings with the participation of the steering committee

Date	Meeting	Place
14 January 2020	Kick-off meeting	Danish Business Authority, Copenhagen, Denmark
18 February 2020	Steering Committee meeting to discuss Inception Delivery	University of Copenhagen, Denmark
2 July 2020	Discussion of topics for thematic papers	Online
3 September 2020	Steering Committee meeting to discuss Interim Delivery	Online
18 November 2020	DIGIPLAN workshop at #EURegionsWeek 2020	Online
18, 19, 24 November 2020	Discussion of thematic papers drafts	Online
25 November 2020	Open DIGIPLAN workshop organised by Swiss Federal Office for Spatial Development ARE	Online
17 February 2021	Steering Committee meeting to discuss Final Delivery	Online
Autumn 2021	Informal follow-up meeting (planned)	Online

Some short notes on the project were published especially in the beginning of the project:

- Norwegian researchers' association review: https://forskning.no/nmbu-norges-miljo-og-biovitenskapelige-universitet/forskere-bidrar-til-mer-forstaelig-digital-arealplanlegging/1675060
- NMBU's website: https://www.nmbu.no/fakultet/landsam/sentre/sitrap/aktuelt/node/40164
- Danish Town Planning Laboratory's magazine "ByplanNyt" (Issue 1/2020, page 6): https://www.byplanlab.dk/sites/default/files/2020-03/Byplan%20Nyt%201%20-%202020.pdf
- News on ESPON's homepage: https://www.espon.eu/denmark-norway-and-switzerland-show-way-digital-plan-data-spatial-planning
- Nordregio projects: https://nordregio.org/research/espon-digiplan
- WSL projects: https://www.wsl.ch/de/projekte/evaluating-spatial-planning-practices-with-digital-plan-data.html

A few articles on specific topics have also been published, more are expected to come succeeding the final delivery:

- Fertner, C., Grunfelder, J., Hersperger, M. A., Grønning, M., Folvig, S., Schlegel, O. P., Bakken, H. J., & Jost, S. (2020). **Scope and use of digital plan data platforms in Europe**. *Territoriall. the ESPON Magazine*, 2020(1), 46–47. - DIGIPLAN in ESPON's magazine TerritoriALL: https://www.espon.eu/territoriall
- Fertner, C., Folvig, S., & Petersen, H. S. (2020). **Indblik i planlægning på tværs af kommuner med digitale plandata [insight in municipal planning with digital plan data]**. *Videnblade Planlægning Og Friluftsliv*, 07.00-02. - A short article building on some of the work done for the Danish case, was published by UCPH: https://videntjenesten.ku.dk/planlaegning_og_friluftsliv/planlovsystemet/generelt/07.00-02_videnblad - you need to be a paying subscriber to access it. The series has about 1,000 subsribers.
- Hersperger, A. M., & Fertner, C. (2021). **Digital plans and plan data in planning support science**. *Environment and Planning B: Urban Analytics and City Science*, 48(2), 212–215. https://doi.org/10.1177/2399808320983002 - A comment on the role of overseen (potential) role of digital plans and plan data in planning support science.

3 Case selection

ESPON DIGIPLAN provides an overview on digitalization of plan data in 15 ESPON countries (Task 1) and insight information from case studies in 6 countries (Task 2). Besides Denmark, Norway, and Switzerland, which are selected by default since they are DIGIPLAN stakeholders, the research team selected 12 additional ESPON countries for Task 1, three of them also for Task 2. The selection is based on the following criteria:

- The country must have an up and running digital portal containing plan data. The research team has done an online search on national (or regional) portals. The most advanced portals, i.e. containing a diversity of plan data and offering a number of interactive possibilities for the users, were selected since they are considered as the most interesting cases.
- The selected countries should represent countries having diverse territorial administration (different types of unitary countries as well as federal countries) (Magone, 2011). The digital portal reflects the differences between countries, i.e. a federal country having a digital portal at the provincial/regional level whereas it would cover the entire national territory in a unitary country.
- The selected countries should have a diversity of administrative levels (Nadin et al., 2018). The number of administrative levels could have an incidence on the complexity of the digital portal to develop.
- Last but not least, the language skills within the research team are an important criterion since some of the digital portals and related documents to be investigated are only available in their national languages; so are most of the legislation that would also be analysed. Finally, it would contribute to get more precise information out of the interviews.
- For the in-depth cases in Task 2, it is furthermore important to have sufficient knowledge of the cases' planning systems within the team.

Table 3.1 lists the case study countries selected in ESPON DIGIPLAN. The geographical balance was not a criteria. In that sense, the list has an under-representation of countries from the eastern part of Europe, which is explained by the lack of digital plan data portals (or only in a very basic form), and the team's insight (language and planning) in these countries. However, in a desk screen at the very beginning of the project a list plan data portals from all ESPON countries was elaborated. The list is added at the end of this Annex (Table 7.1).

Table 3.1
Selected countries in Task 1 and 2

	Country name	Territorial administration	Gov. levels	Example of digital plan data portal (URL)
Stakeholder countries	Denmark	Decentralised	2	kort.plandata.dk
	Norway	Decentralised	3	kart.geonorge.no/seplan
	Switzerland	Federal	3	map.geo.admin.ch
Task 1 + 2	Austria	Federal	3	maps.tirol.gv.at
	France	Decentralised	3	geoportail-urbanisme.gouv.fr/map
	Germany	Federal	4	geoportal.bayern.de/bayernatlas
Task 1 only	Belgium	Federal	3	geoportail.wallonie.be/walonmap
	Ireland	Centralised	3	https://viewer.myplan.ie/
	Italy	Regionalised	4	https://servizimoka.regione.emilia-romagna.it/mokaApp/apps/PSC

	Country name	Territorial administration	Gov. levels	Example of digital plan data portal (URL)
	Lithuania	Decentralised	2	map.tpdr.lt/tpdr-gis/index.jsp?action=tpdrPortal
	Luxembourg	Decentralised	2	map.geoportail.lu
	Malta	Centralised	2	geoserver.pa.org.mt/publicgeoserver
	Portugal	Centralised	4	portalsnit.dgterritorio.pt/portalsdisnit/full.aspx
	Slovenia	Decentralised	2	storitve.pis.gov.si/pis-jv/informa-tivni_vpogled.html
	The Nether-lands	Decentralised	3	ruimtelijkeplannen.nl/viewer

Source: Levels of governance relevant for spatial planning (Nadin et al., 2018); Territorial administration (Magone, 2011)

The first three countries listed correspond to the stakeholder countries that are default cases for both tasks 1 and 2. The following three countries, namely Austria, France and Germany, correspond to countries with an up and running digital portal that contains plan data. Interesting aspects include, for instance, the digital portal of Bavaria (Germany) which has specific layer for the green areas that is included in the regional planning document or the portal for Tyrol (Austria), which includes the maximum possible extent of ski areas defined by the regional spatial planning program. The “geoportal” of France highlights the territories covered by “territorial coherence programme” (Schéma de cohérence territoriale) and allows an access to the relevant planning documents. Equally important here are the team’s language skills in these cases (native or fluent), enhance a good collection of information through the desk study and interviews. Furthermore, the research team has experience and knowledge in the planning context of these three selected cases, which is crucial for Task 2.

The next nine countries correspond to countries with an up and running digital portal that contains plan data with information in English or for which the team of researchers have language skills (native or fluent) to enhance a good collection of information through the desk study and interviews. Native level in the French language contributes to analyse the rather advanced digital portal in Belgium (Wallonie) and Luxembourg that contains a variety of plan data, such as local and mobilities plans in Wallonia and sectoral plan for transport in Luxembourg. Similarly, fluent level in Italian and Portuguese enable the analysis of a regional digital portal in Italy such as in Sardinia or Emilia-Romagna, and the nation-wide portal in Portugal that contains plan data at several governance levels. Finally, the use of English is the working-language for the analysis of the digital portal in Ireland, Lithuania, Malta, Slovenia and the Netherlands. For instance, the digital portal in Malta includes a number of plan data layers such as urban conservation areas and areas of containment, among others. The digital portal in Ireland is of interest due to its inclusion of historical plan data, among others. The case of Lithuania is interesting, among others, because since 2014 all plans have to be registered in the online portal in order to become valid. The digital portal in Slovenia contains plan data at both national and municipal level, but also goes down to the level of building permits. Finally, the case of the Netherlands is of interest thanks to its possibility to search plan data by type of planning documents.

4 Task 1 – Overview

The overview of the digitalisation of plan data in 15 countries (Task 1) includes a desk research and follow-up phone/online interviews, which were guided by a joint questionnaire. The questions were planned and created prior to the actual interviews for facilitating the cross-case analysis since all the interviewees answer the same questions which eliminate potential interviewer bias. It covered mainly covers the scope of the digitalisation of plan data (e.g. what kind of plan data has been digitalised in what period of time?) and the current uses of digital plan data (e.g. who has access to the digitalized data?). An advanced draft version of the questionnaire has been tested with Danish and Swiss interviewees, which allowed to fine-tune the phrasing and the order of the questions before finalising the questionnaire. The final version of the questionnaire has been sent to the interviewees prior to the actual interview to give the possibility to the respondents to get familiar with the questions. The majority of the interviews have been conducted online, whereas a limited number have been face-to-face. Each interview lasted between one and two hours. Follow-up questions were sent by e-mail.

The selected interviewees correspond to a national, regional, or local contact person in charge of spatial planning and knowledgeable with the digitalisation process, the uses and the foreseen developments of digital plan data at a specific territorial level depending on territorial administration structure in each case. In short, a national stakeholder was the main source of information in centralised and decentralised countries, whereas a regional (and/or local) stakeholder was the main source of information in federal and regionalised countries (e.g. Wallonia in the case of Belgium).

The results are summarized in a synthetic and up-to-date overview on the digitalisation of plan data in the 15 countries as well as 15 country fact sheets (Annex 2).

However, some of the questionnaires element turned out to be difficult to answer. E.g the level of digitalisation (Question 3.a/3.b) was a concept developed by the research team. Digitalisation efforts are though difficult to put into clear categories as a very complex context plays in (planning system) and the digitalisation of different elements related to planning practice is very diverse. E.g. within the same planning systems, some plan types can be fully digital, while others are still ‘analogue’ or at least not related to digital portals.

4.1 Questionnaire guide

4.1.1 1. Background information (mostly desk-study)

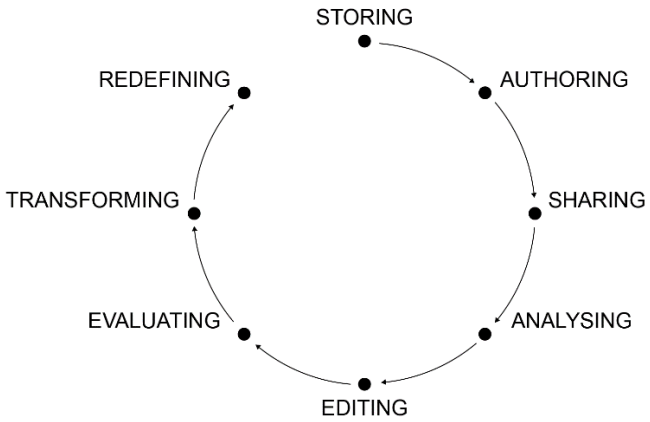
1. Name and URL of national/regional digital platform(s) containing plan data for which this interview is based on
2. Name the stakeholder(s) owning and maintaining the operation of the digital platform(s) (Name in English; specific if it is national/sub-regional/local if it is not explicit)

3.a Identify the current level of digitalisation of the platform containing digital plan data
(based on your own assessment of the digital platform)

- ***Basic****: the user can only see plan data in digital form (e.g. visualisation of the master plan). It corresponds to storing, authoring and sharing in the wheel of digitalisation.*
- ***Intermediate****: the user can make a limited number of simple operations based on the available plan data (e.g. request for permit; customised the available information to his/her need). It corresponds to analysing and editing in the wheel of digitalisation.*
- ***Advanced****: the user interacts with the planning authority and the digital plan data (e.g. online participation or evaluation). It corresponds to evaluating, transforming and redefining in the wheel of digitalisation.*

3.b Identify the **Level of digitalisation of the platform** containing digital plan data by completing the following sentence *(based on your own assessment of the digital platform)*

Currently, the platform allows …
(add the all the relevant words included in the wheel below).
(e.g. Currently, the platform allows storing, authoring and sharing digital plan data)



4.1.2 2. The scope of the digitalised plan data: the digitalisation process

4. What is the **main purpose** behind the digitalization of plan data?
Let the interviewee talk. If needed, use elements from the list below

- *Data availability in digital format*
- *Demand driven*
- *Digital hearing and/or digital participation*
- *Digital planning permit processes*
- *Ease of cooperation among planning actors*
- *Efficiency (public sector)*
- *Open governance*
- *Standardised evaluation*
- *Other? If so, specify.*

5. What are the **broader and the more specific purposes/rationales** of the digitalization of the plan data mentioned in the previous question (question 4)?
Let the interviewee talk. If needed, use elements from the list below

- *Data availability in digital format*
- *Demand driven*
- *Digital hearing and/or digital participation*
- *Digital planning permit processes*
- *Ease of cooperation among planning actors*
- *Efficiency (public sector)*
- *Open governance*
- *Standardised evaluation*
- *Other? If so, specify.*

6. What are the **added values** of the digital plan data?
Let the interviewee talk. If needed, use elements from the list below

- *Cost reduction*
- *Improve data flow and automatize updating of geodata and transformation data*
- *Improve planning practises*
- *Create space for intelligent planning processes (Geodesign)*
- *Create a basis for taxation*
- *Other?*

7. Were there any **obstacles** behind the digitalization of plan data?
Let the interviewee talk. If needed, use elements from the list below

Legal obstacles:

- *In general for digital plan data?*
  - *Data ownership?*
  - *Liability for data quality or webpage defect?*
  - *Legal processes slowing down the digitalisation process or/and the update of digital plan data?*
  - *Other?*
- *For a specific type of plan data?*

Technical obstacles:

- *Lack of capacity in small municipalities?*
- *Others?*

8. Were there any **drivers/enablers** behind the digitalization of plan data?
Let the interviewee talk. If needed, use elements from the list below

Legal drivers/enablers:

- *In general for digital plan data?*
  - *Modernisation of the services of the planning authority*
  - *Other?*
- *For a specific type of plan data?*

Technical drivers:

- *Software development*
- *Ease of/technical skills of potential users*
- *User-interaction tools (e.g. measuring, drawing, selecting parcels, etc.)*
- *Others?*

Others, e.g.:

- *Education/expertise*
- *Working culture/habits (of planners)*

9. What **methods** have been used in order to digitalize different kinds of plan data?

9.a. Who enters the plan data into the digital platform (planner? Consultant? Other?)? And how (manually, processed with algorithms?)

9.b. Who creates and what are the (main) standards that are applied to the digitalized plan data (including quality, symbology, presentation and visualisation aspects)?

10. Are the digital plan data assessed? If yes, how and by whom?

4.1.3 3. The scope of the digitalised plan data: the current digital platform

(Fill in the table that can be found at the end of the questionnaire).

11.a. Which planning instruments/plan data have been digitalized in what period of time and how long did it take? (mostly desk-study) **See appendix with desk study of existing planning instruments in the country/region of investigation, specifying which ones are at national, sub-national and municipal level and which has been digitalised (reference document: ESPON Compass volume 1 of Final report – pages 27 to 32)**
11.b. Which version of digital plan data is included in the digital platform? *- Current data only?* *- Possibility to check archive/historic digital plan data?*
12. What is the legal status of the **digitalized plan data** included in the portal? *List all types of digital plan data that are legally binding. If possible, add information about date of change in legal status and process.*

4.1.4 4. The current uses of the digital plan data

13. Do you have a system allowing to monitor the uses/users of the platform containing plan data? If yes: continue with questions 14a If no: ask what are the target groups? (and skip questions 14b, 17a and 17b)
14.a. Who has access to the digitalized plan data? - *Anyone with an internet connection* - *Access requiring log-in* - *Access requiring permission by the planning authority* - *Other?*

14.b. Are there specific **type of users** using the platform containing the digitalized plan data?

Let the interviewee talk. If needed, use elements from the list below

- *Local/regional/national planners (specify)*
- *Local/regional/national authorities (specify)*
- *Private sector (specify)*
- *Civil society (specify)*
- *General public*
- *Others?*

14.c. Are there any **outreach activities** of **training** to get to know and use digital plan data for planners? For a wider audience?

15. Are digital plan data used to **evaluate** planning practices and inform policymakers and experts at local, regional and national levels?

If yes, specify

16. Are digital plan data used to increase **participation** of third parties in spatial planning (inhabitants, business etc.)? How can the users know about the actual platform?

If yes, specify

17.a. How do you **monitor** the use of digital plan data? What kind of information do you get from this monitoring?

17.b How many **visitors**/users do you have (each month)?

17.c Do the users have **other options** for doing their work, if they do not want to use digital plan data?

18. Can all or some user modify/customise the digital plan data? If yes, specify (e.g. refine categories, customise/edit plan data, formulate guidelines or framework for digital plan data production or use.)
19. Are there any examples of innovative use of the digital plan data?

4.1.5 5. Foreseen developments

20. Are there concrete decisions/plans to digitalise additional plan data within the **next two years**? Also, are there decision/plans to remove (unused) digital plan data?
21. Are there deliberations to digitalise additional plan data within the **next five years**?

4.1.6 Table for questions in section 3

	Name of planning instruments in (name of the country)	**Name of the responsible stakeholder (add name of the authority)**	**Geoportal(s) of (name of the country + name of the geoportal(s))**					
			Planning instruments included on the geoportal? (yes/no)	**Plan data digitalised in? (add the year)**	**Duration of the digitalisation process (estimation in number of months/years; from the start of the process to the actual publication of the digital data)**	**Is there only the current and finalised plan data available? (yes/no)**	**If no to previous question: what other plan data is available (e.g. historical data, feasibility studies/preparation, etc)**	**Is this digital plan instrument legally binding? (yes/no). If yes: since when (add the year)?**
National level	(name of the planning document at national level)							
	(name of the planning document at national level)							
	(name of the planning document at national level)							
	(name of the planning document at national level)							

Sub-national level	(name of the planning document at sub-national level)							
Local level	(name of the planning document at local level)							
	(name of the planning document at local level)							
	(name of the planning document at local level)							
	(name of the planning document at local level)							

4.2 Fact sheets

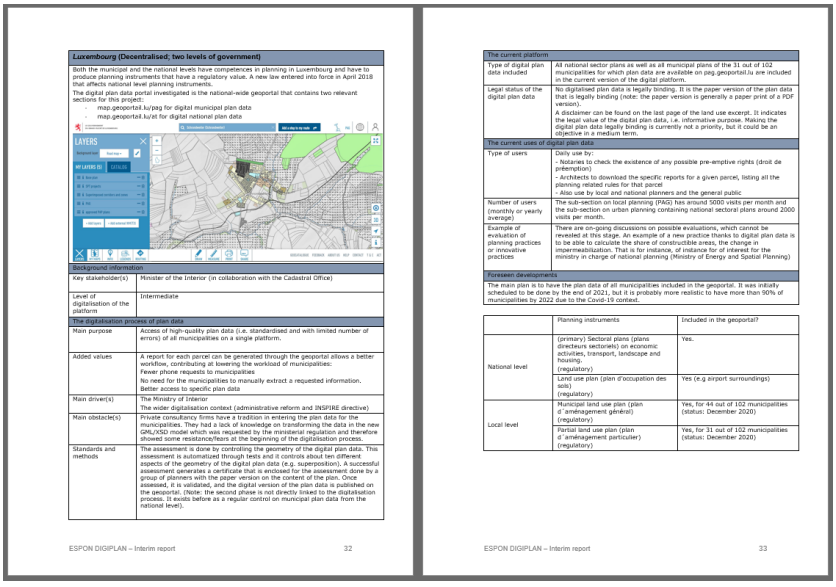
A fact sheet is a short document synthetising information on a particular issue. The goal of the fact sheet is to provide facts and key points in a concise and clear way. In the exercise, each fact sheet provides an overview of digital plan data in one of the investigated countries or regions. Its content is based on inputs collected in the interviews and thus corresponds to the views of one or several experts involved in the digitalisation process of plan data for a specific geoportal. The content should therefore be considered as a synthesis of an explorative examination, for which inputs might have been different by interviewing other key stakeholders. The fact sheets are compiled and available in Annex 2 and each of them follows the same structure as the one in the questionnaire guide.

Each fact sheet starts with a brief description of the administrative and planning structures. It also clearly indicates which geoportal has been investigated by including both an URL and a screenshot. This introduction is followed by a short background information box informing the reader on both the stakeholder for the development and the level of digitalisation of the geoportal that has been investigated. The level is either basic (the user can only see plan data in digital form), intermediate (the user can make a limited number of simple operations based on the available plan data) or advanced (the user interacts with the planning authority and the digital plan data).

The next four sub-sections of the fact sheet mirror the main sub-sections of the investigation done through interviews, namely the digitalisation process of plan data, the current platform, the current uses of digital plan data and the foreseen developments. Synthesised information on the digitalisation process of plan data highlights key points on the main purpose(s), the added value(s), main driver(s), main obstacle(s) as well as on standards and methods. Synthesised information on the current platform indicates which type of plan data can be found on the geoportal and what is its legal status. Synthesised information on the current uses of digital plan data informs on the type and number of users of digital plan data; it does also include an example of evaluation of planning practices (or innovative practice) enhanced by the digital format of plan data. The sub-section on foreseen developments summarises the planned improvement of the geoportal within the next two to five years.

Finally, the fact sheet ends with an overview table listing all the existing planning instruments at national, sub-national and local levels; and informs the reader about which instruments are includes in the investigated geoportal.

Figure 4.1
Example of a fact sheet (Luxembourg)



Luxembourg (Decentralised; two levels of government)

Both the municipal and the national levels have competences in planning in Luxembourg and have to produce planning instruments that have a regulatory value. A new law entered into force in April 2018 that affects national level planning instruments.

The digital plan data portal investigated is the national-wide geoportal that contains two relevant sections for this project:

- map.geoportail.lu/pag for digital municipal plan data
- map.geoportail.lu/et for digital national plan data

Background information

Key stakeholder(s)	Minister of the Interior (in collaboration with the Cadastral Office)
Level of digitalisation of the platform	Intermediate

The digitalisation process of plan data

Main purpose	Access of high-quality plan data (i.e. standardised and with limited number of errors) of all municipalities on a single platform.
Added values	A report for each parcel can be generated through the geoportal allows a better workflow, contributing at lowering the workload of municipalities: Fewer phone requests to municipalities No need for the municipalities to manually extract a requested information. Better access to specific plan data
Main driver(s)	The Ministry of Interior The wider digitalisation context (administrative reform and INSPIRE directive)
Main obstacle(s)	Private consultancy firms have a tradition in entering the plan data for the municipalities. They had a lack of knowledge on transforming the data in the new CAN/SIG model which was requested by the ministerial regulation and therefore showed some resistance/fears at the beginning of the digitalisation process.
Standards and methods	The assessment is done by controlling the geometry of the digital plan data. This assessment is automatized through tests and it controls about ten different aspects of the geometry of the digital plan data (e.g. superposition). A successful assessment generates a certificate that is enclosed for the assessment done by a group of planners with the paper version on the content of the plan. Once assessed, it is validated, and the digital version of the plan data is published on the geoportal. (Note: the second phase is not directly linked to the digitalisation process. It exists before as a regular control on municipal plan data from the national level).

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The current platform

Type of digital plan data included	All national sector plans as well as all municipal plans of the 31 out of 102 municipalities for which plan data are available on pag.geoportail.lu are included in the current version of the digital platform.
Legal status of the digital plan data	No digitalised plan data is legally binding. It is the paper version of the plan data that is legally binding (note: the paper version is generally a paper print of a PDF version). A disclaimer can be found on the last page of the land use excerpt. It indicates the legal value of the digital plan data, i.e. informative purpose. Making the digital plan data legally binding is currently not a priority, but it could be an objective in a medium term.

The current uses of digital plan data

Type of users	Daily use by: - Notaries to check the existence of any possible pre-emptive rights (droit de preemption) - Architects to download the specific reports for a given parcel, listing all the planning related rules for that parcel - Also use by local and national planners and the general public
Number of users (monthly or yearly average)	The sub-section on local planning (PAG) has around 5000 visits per month and the sub-section on urban planning containing national sectoral plans around 2000 visits per month.
Example of evaluation of planning practices or innovative practices	There are on-going discussions on possible evaluations, which cannot be revealed at this stage. An example of a new practice thanks to digital plan data is to be able to calculate the share of constructible areas, the change in impermeabilization. That is for instance, of instance for of interest for the ministry in charge of national planning (Ministry of Energy and Spatial Planning)

Foreseen developments

The main plan is to have the plan data of all municipalities included in the geoportal. It was initially scheduled to be done by the end of 2021, but it is probably more realistic to have more than 90% of municipalities by 2022 due to the Covid-19 context.

	Planning instruments	Included in the geoportal?
National level	(primary) Sectoral plans (plans directeurs sectoriels) on economic activities, transport, landscape and housing. (regulatory)	Yes.
	Land use plan (plan d'occupation des sols) (regulatory)	Yes (e.g airport surroundings)
Local level	Municipal land use plan (plan d' aménagement général) (regulatory)	Yes, for 44 out of 102 municipalities (status: December 2020)
	Partial land use plan (plan d' aménagement particulier) (regulatory)	Yes, for 31 out of 102 municipalities (status: December 2020)

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Source: Annex 2

5 Task 2 – In-depth case studies

Opposite to Task 1, which is mainly descriptive in terms of what is digitized and how, Task 2 goes into depth with trajectories of digitalization in spatial plans and planning practice. Point of departure is still digital plan data (digital version of plans) and the related infrastructure identified in Task 1, not digitization in general. However, this does not exclude more general perspectives related to digital plan data and digital plans.

The case studies are structured broadly into the following sections:

Section 1: Scope of digital plan data – introductory part

- The current state of digital plan data
- The historical background
- Illustration of plan data

Section 2: Organisation

- Organisation
- Financing
- The role of different actors in digitization, standardisation…
- Relation within different levels of government
- Relation between governmental and not-governmental actors

Section 3: Use in planning process and practice

- Use of digital plan data
- Digital plan data on different levels
- Accessibility
- Process change
- Purpose / added value
- Digital and analogue
- Challenges
- Future use scenarios

Section 4: Synthesis

- How does the availability of digital plan data empower different actors - within different levels of administration, between various actors?
- How does the availability of digital plan data change collaboration within the administration and between administration and stakeholders? Does it make it more efficient, transparent, does it foster innovation?
- How does the driver (e.g. efficiency, need for transparency, need for control) and funding source of digital plan data affect planning practice?
- Can we identify typical trajectories? “Pattern recognition”: drivers, orientation, rational, spatial representation, certification method…

A tracing on the level of spatial plans will show how digitalization is reflected in maps and documents used in planning, the impact it has on spatial representation, on the availability of information related to plans, and on the purpose of information sharing, as well as on the production process of planning documents themselves and the actors involved in it. We will mainly focus on municipal and more local spatial plans with varying purpose (strategic, land-use/zoning). Beyond policies and plans, one can also trace the impact of digitalization at the level of interaction in deliberative processes of spatial planning; on the procedures and practices of participation and information sharing, but also the coordination of production, gathering, and distribution of location-based information in network governance situations. When collected for each case, these timelines provide a powerful mapping of how digitalisation is anchored in regulations and legislation.

Besides the planning documents, the main source for information are interviews with key stakeholders in each Task 2 case. The interviews will be structured by guiding questions (see above). Furthermore, we discuss simple indicators based on digital plan data. Indicators could reflect the digitalisation process, show the diversity of planning in the cases or also be input for the evaluation of planning practice. However, the idea is not to use the indicators to compare across cases, but to discuss the feasibility of those – in a technical as well as in a comparative perspective.

6 Task 3 – Thematic papers

The thematic practice papers are based on the empirical work in DIGIPLAN, i.e., the overview from 15 countries and the in-depth studies from 6 countries, but also on a review of the literature. Themes and contents were also discussed within the steering committee group at a couple of dedicated online meetings. The five papers focus on the following topics:

1. What is digital plan data?
2. What are the drivers of the digitisation of plan data and what is its purpose?
3. Who can access digital plan data and does it change involvement?
4. Are digital plans and plan data legally binding?
5. Future technical developments and opportunities

Except for paper 1, which is defining and discussing key terms, all papers provide some policy recommendation. The papers are not meant to represent an exhaustive summary of all the findings, but instead present important aspects of digital plans and plan data, which we encountered during the project.

Figure 6.1
Example of a thematic practice paper

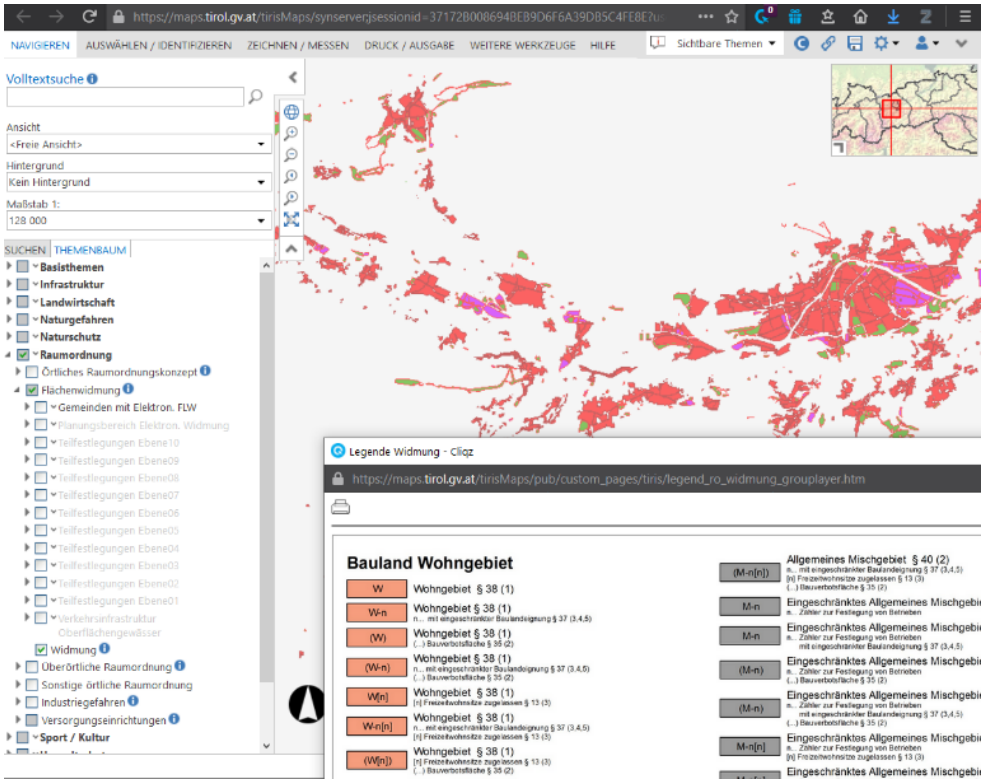
Source: Annex 1

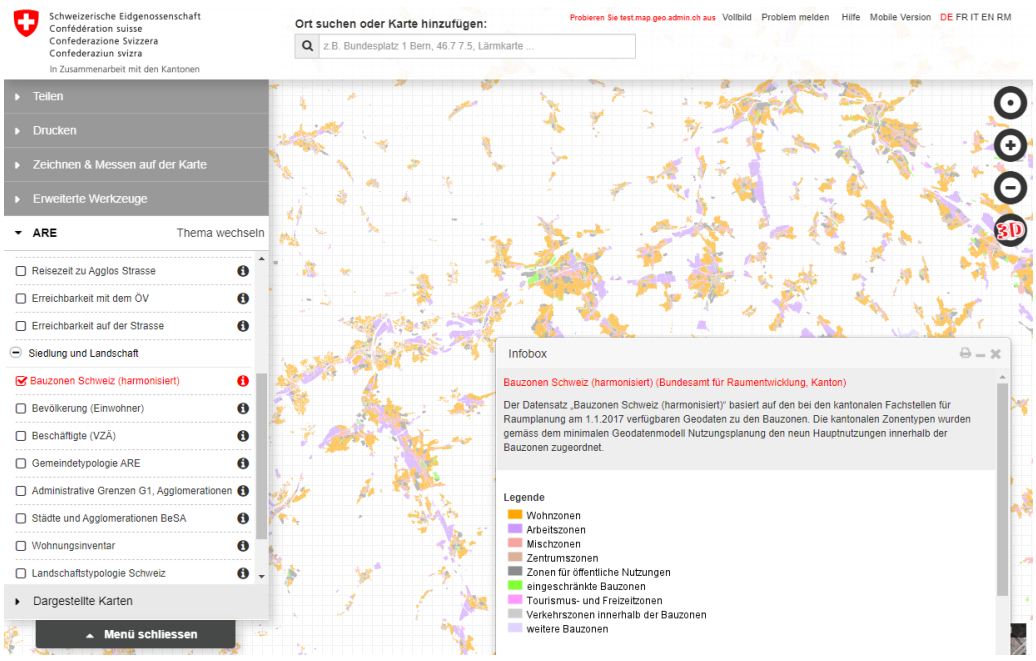
7 Plan data portals in ESPON countries

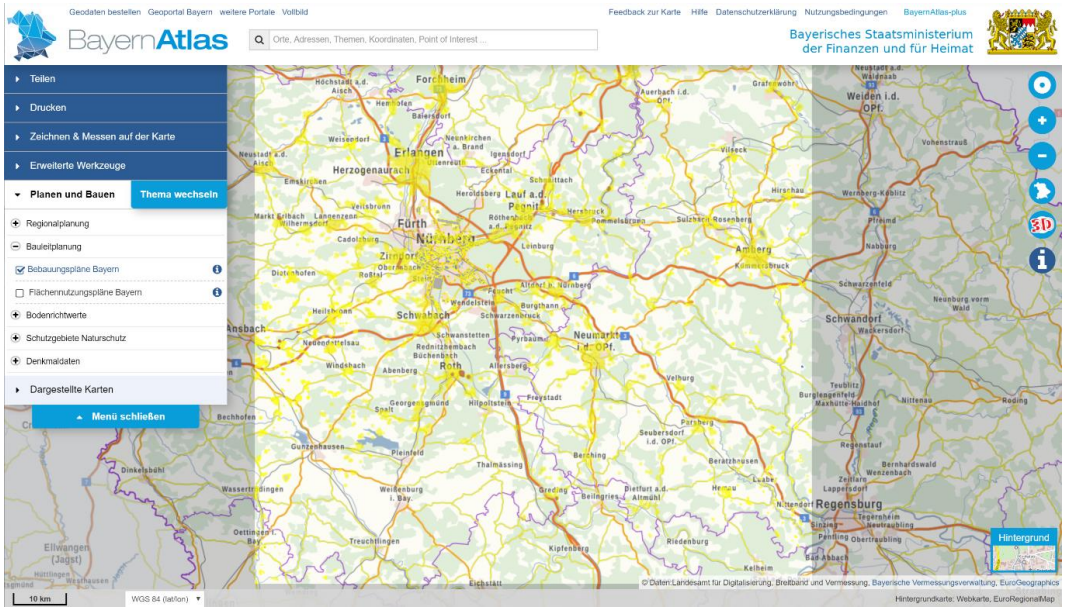
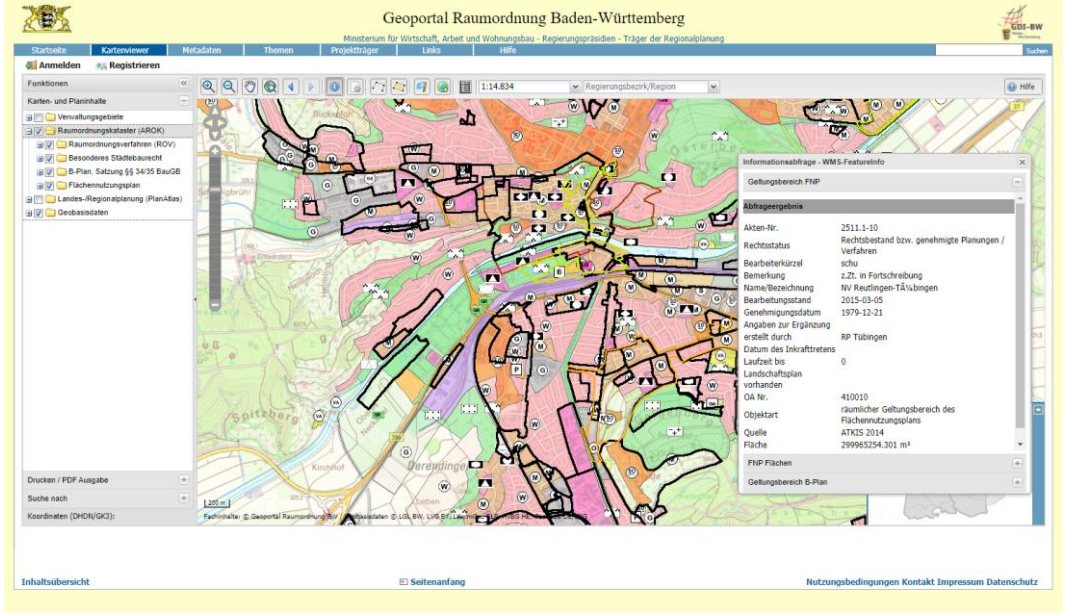
The following list was produced in the very beginning of the project, by a quick desk study screening. It shows examples of national or regional digital plan data online platforms with information on local/municipal planning. The table includes a link and a screenshot. Some webpages were translated with Google translate to English for the screenshot. Examples are sorted alphabetically by country code (CC).

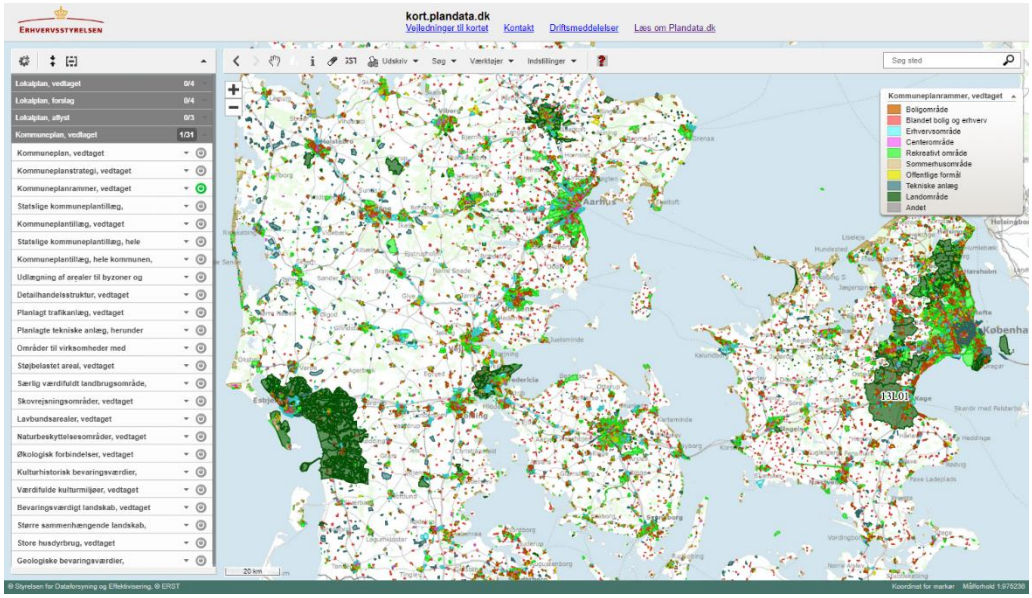
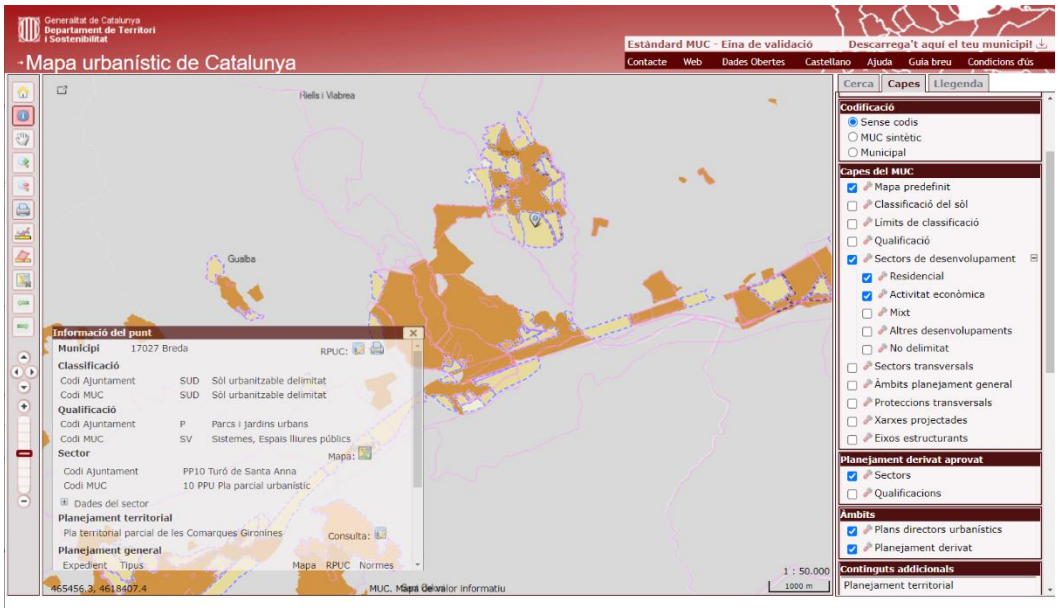
Not all ESPON countries were investigated. In some countries, regional examples are shown in lack of national platforms. However, the table shows the diversity of portals available in February 2020.

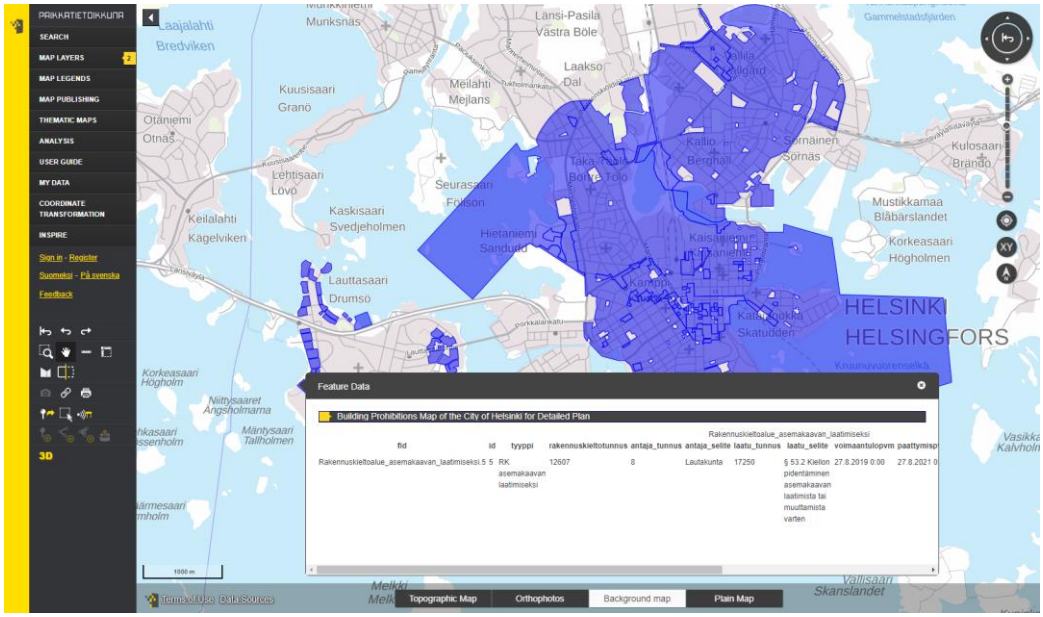
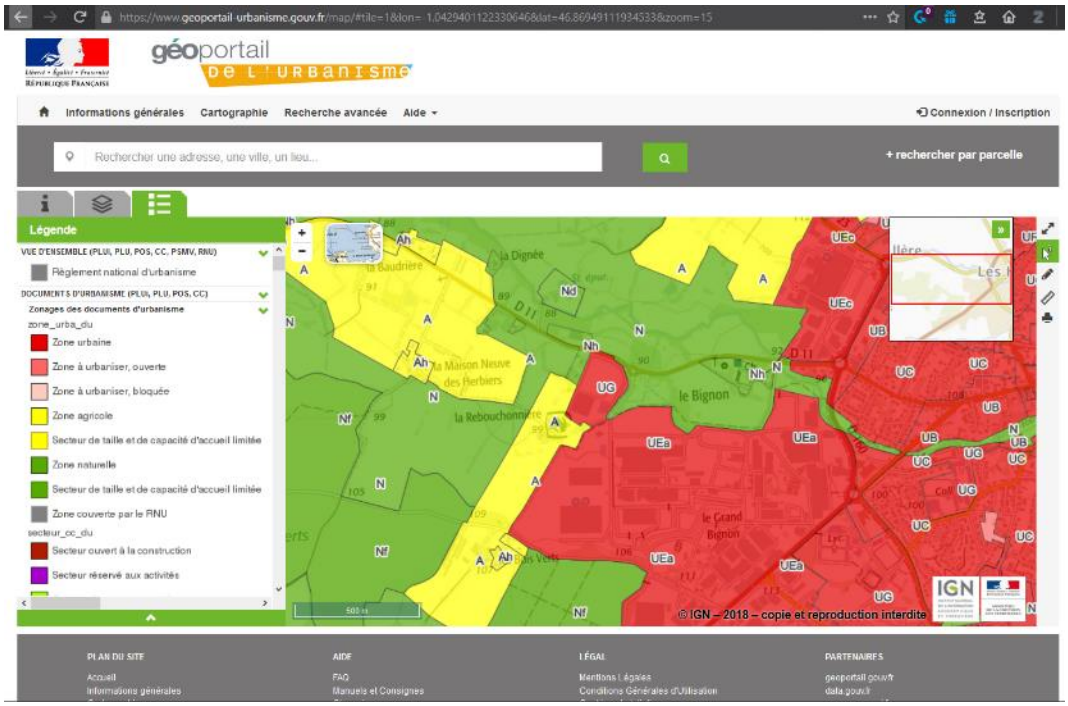
Table 7.1
Plan data portals in ESPON countries

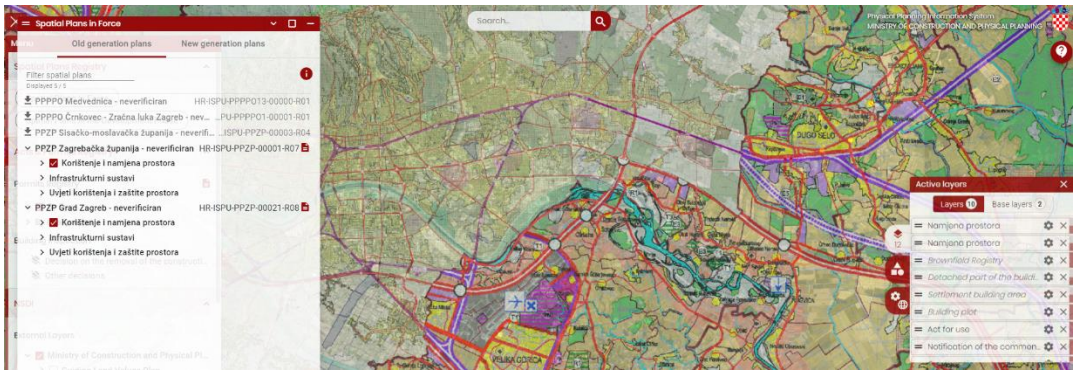
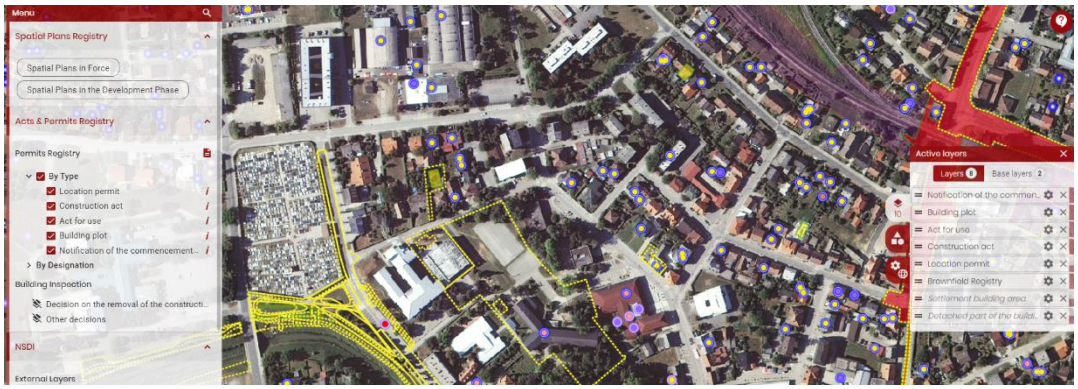
CC	Country-wide digital plan data portals (alternatively regional example)
AT	https://maps.tirol.gv.at/tirisMaps/login_pvp.jsp?user=guest&project=tmap_master (Tyrol) 

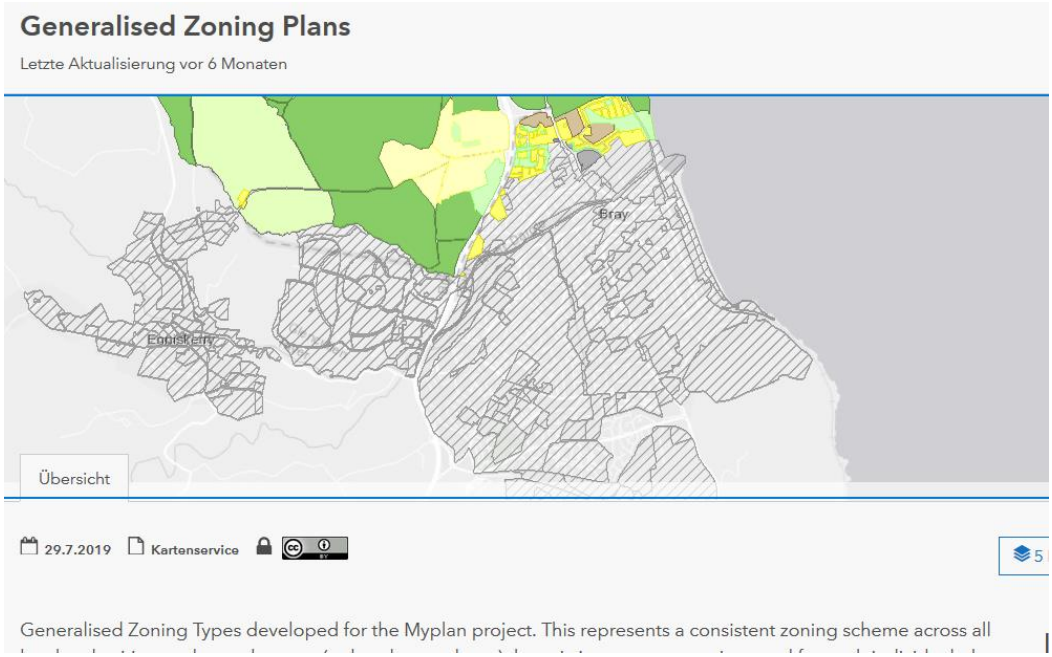
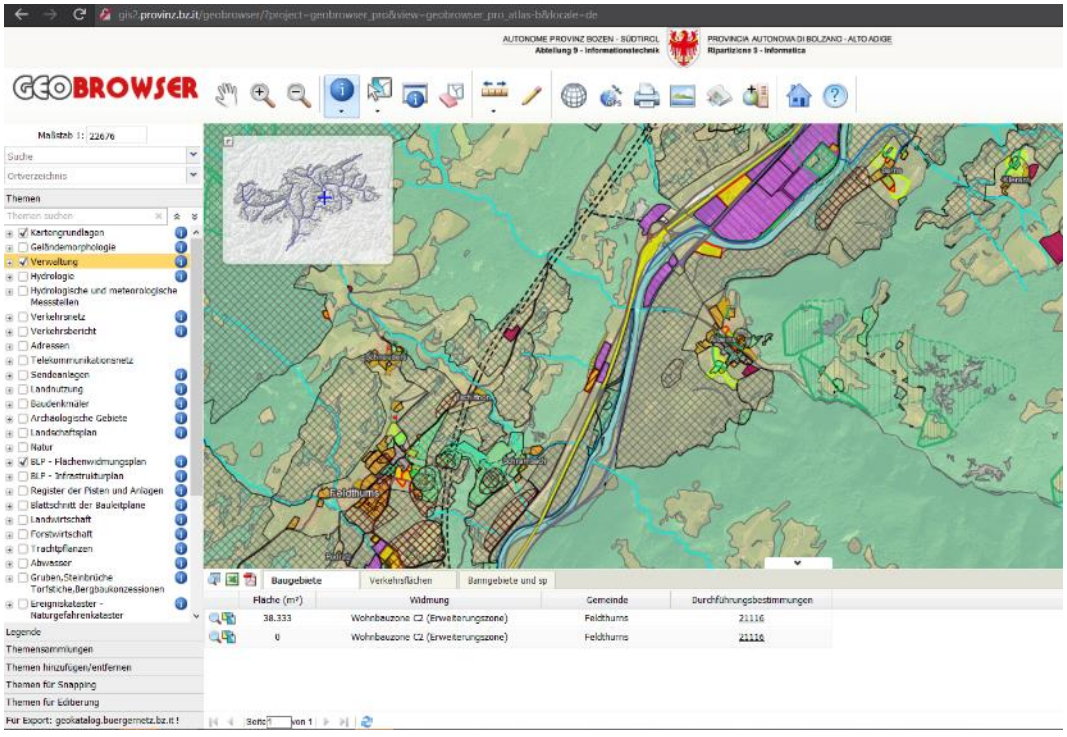
CC	Country-wide digital plan data portals (alternatively regional example)
BE	https://geoportail.wallonie.be/walonmap (Wallonia) www.geopunt.be (Flanders) https://mybrugis.irisnet.be/brugis/#/ (Brussels)
BG	(Not investigated)
CH	http://map.are.admin.ch/ 

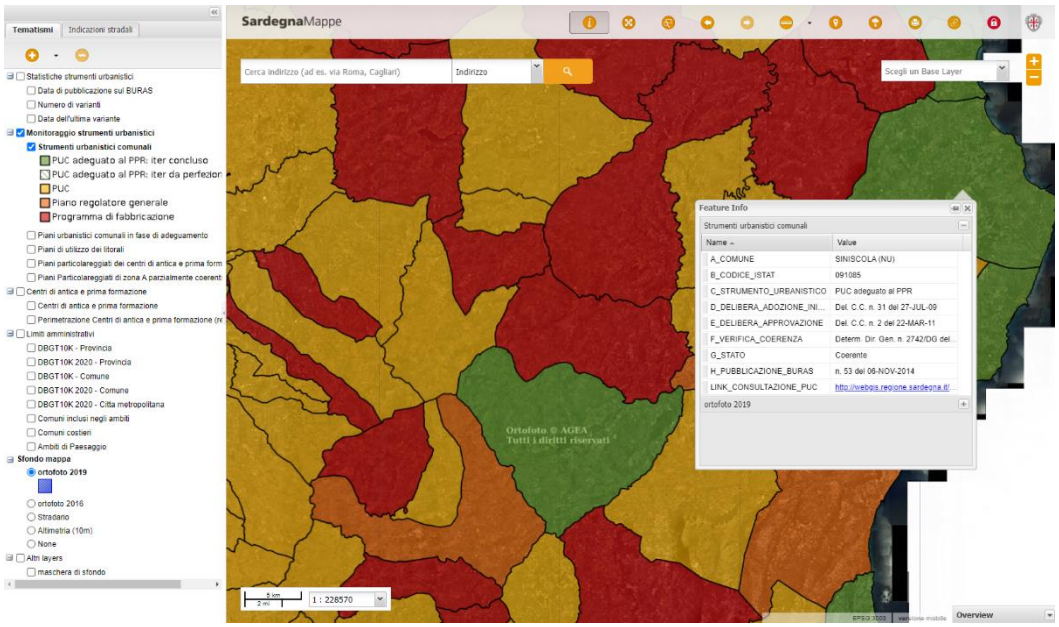
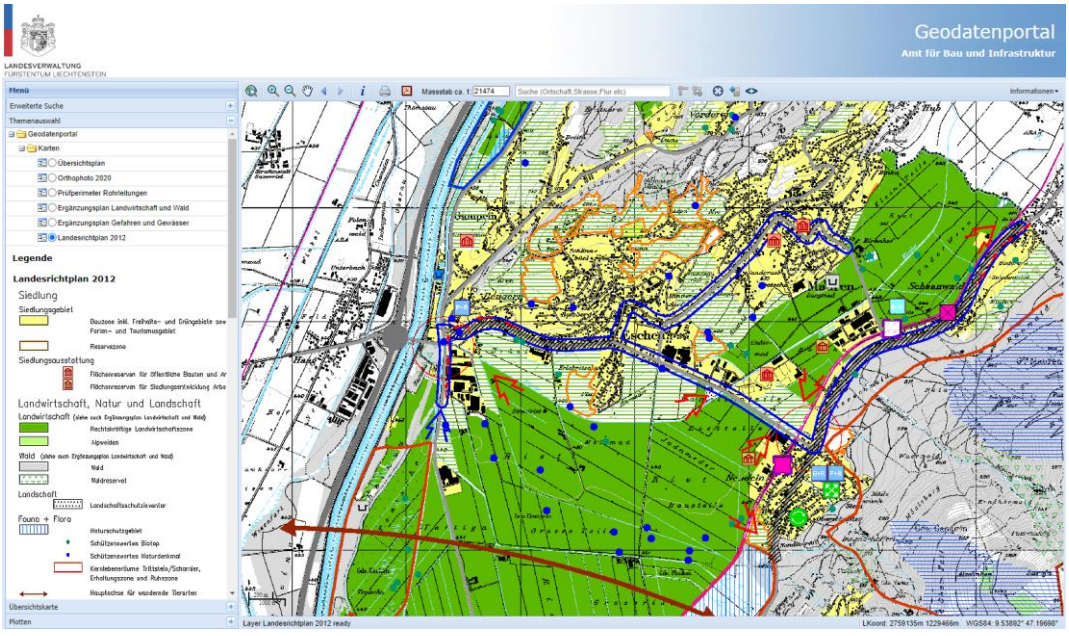
CC	Country-wide digital plan data portals (alternatively regional example)
CY	(Not investigated)
CZ	(Nothing found)
DE 1	https://geoportal.bayern.de/bayernatlas/?topic=pl_bau (Bayern) 
DE 2	https://www.geoportal-raumordnung-bw.de/kartenviewer (Baden-Württemberg) 

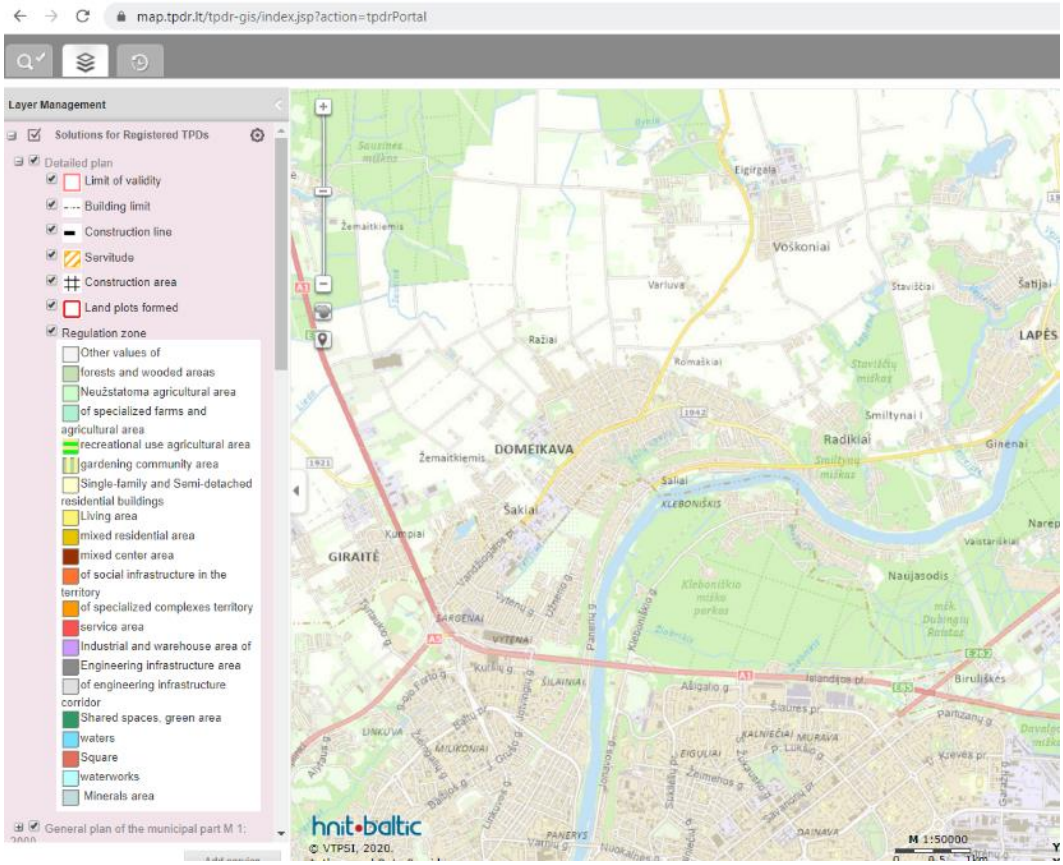
CC	Country-wide digital plan data portals (alternatively regional example)
DK	http://kort.plandata.dk 
EE	No national portal yet.
EL	(Not investigated)
ES	http://tes.gencat.cat/muc-visor (Catalonia) 

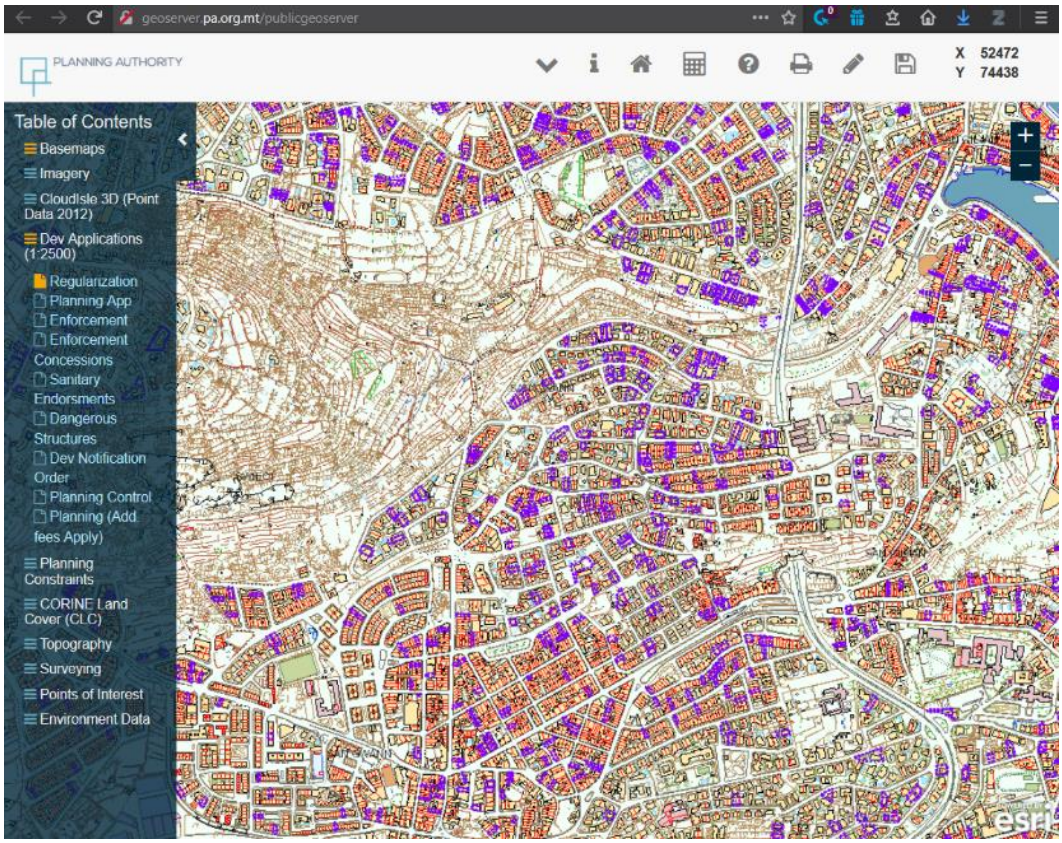
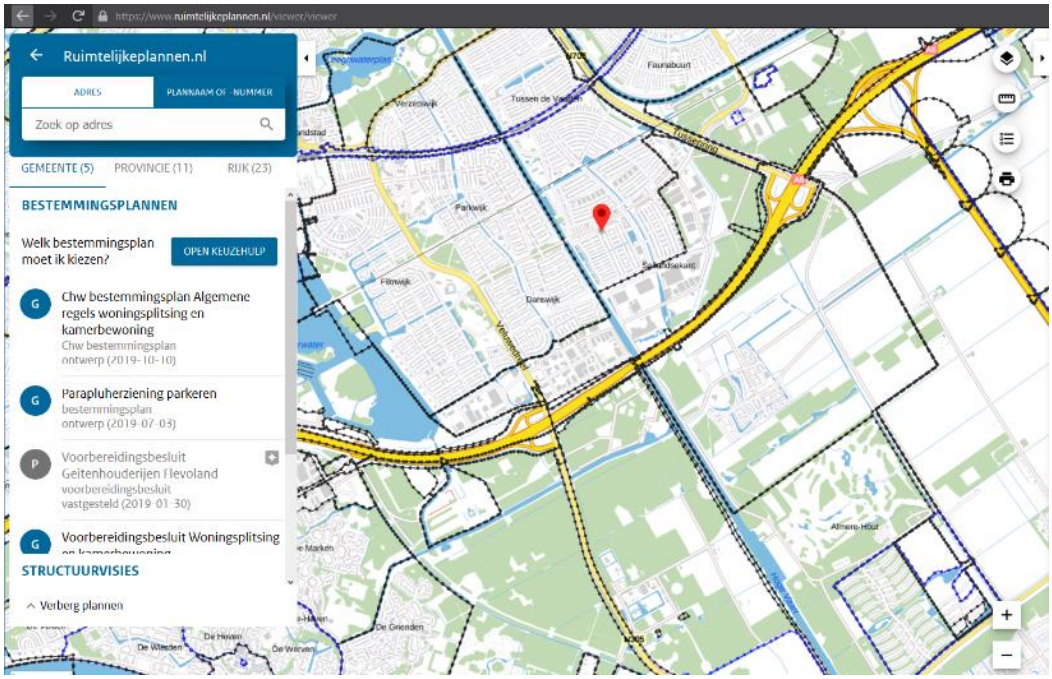
CC	Country-wide digital plan data portals (alternatively regional example)
FI	https://www.paikkatietoikkuna.fi/web/en/map-window Not all regions covered.  Example of regional register: https://karttapalvelu.lounaistieto.fi/ (South West Finland)
FR	https://www.geoportail-urbanisme.gouv.fr/map 

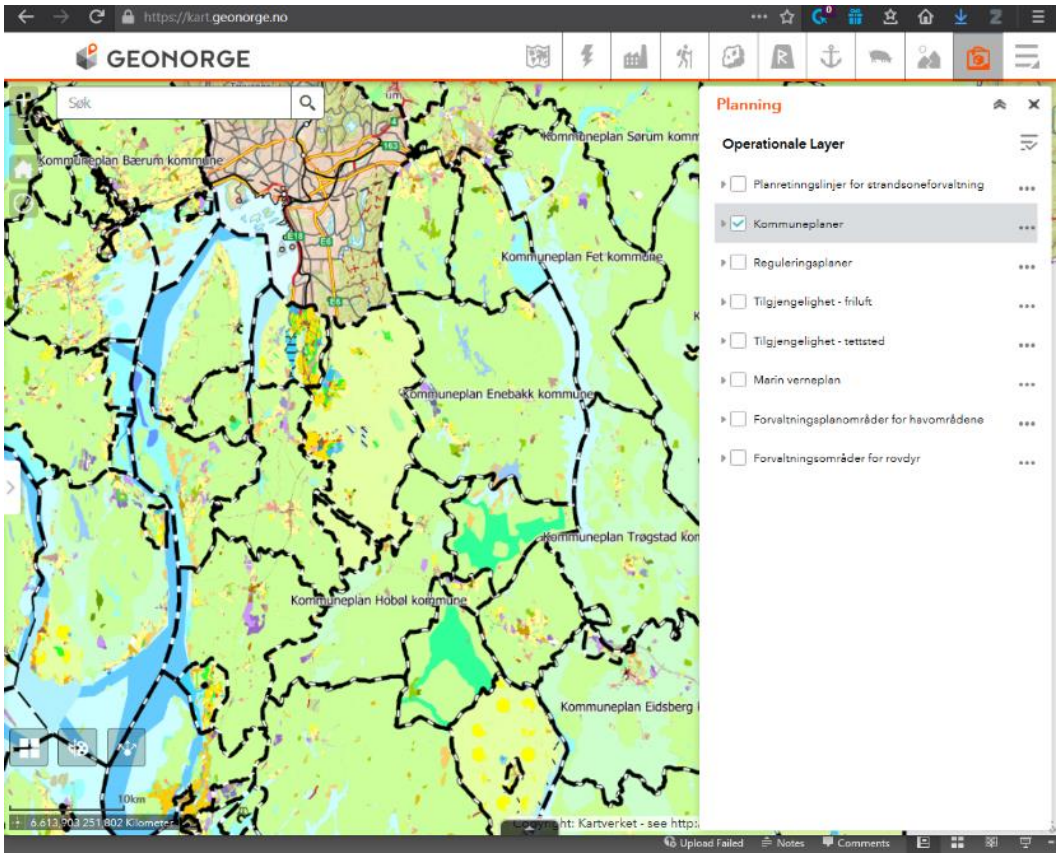
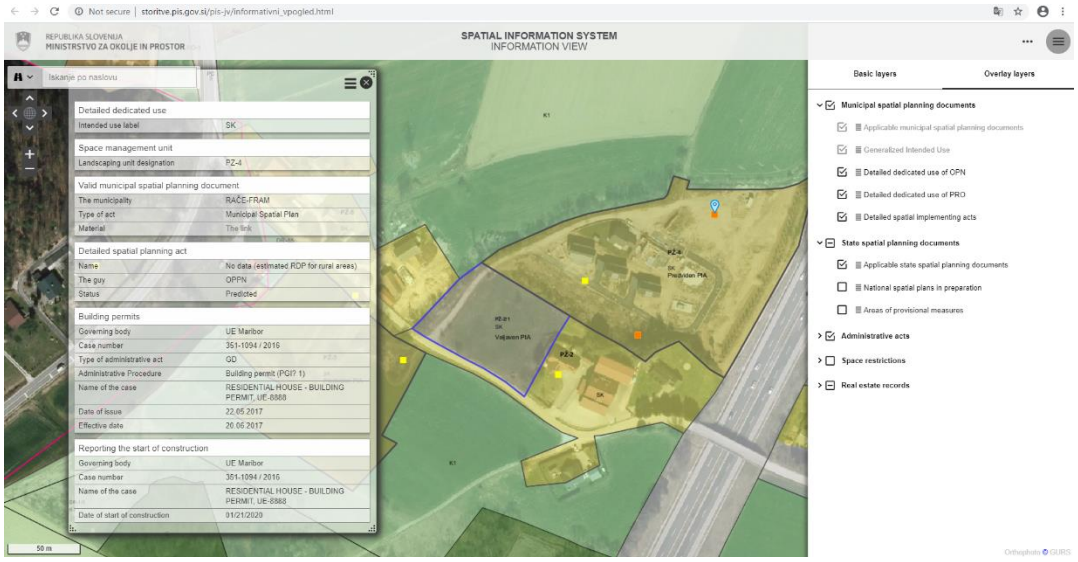
CC	Country-wide digital plan data portals (alternatively regional example)
HR	https://ispu.mgipu.hr   Example for county register: http://ensmartportal.gdi.net:81/visios/zagzup (Zagreb County)
HU	(Not investigated)

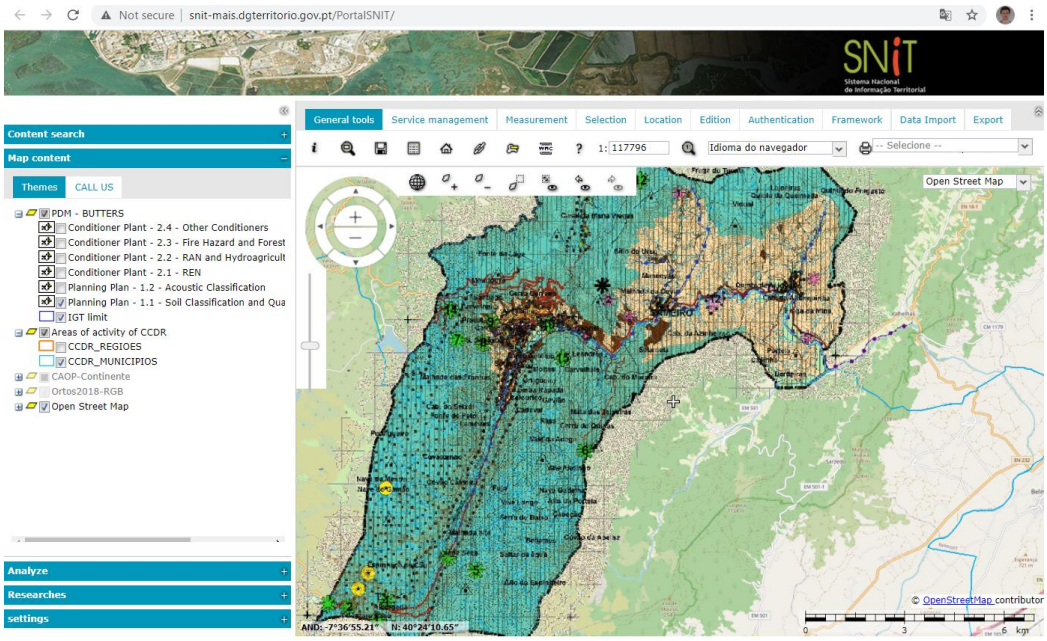
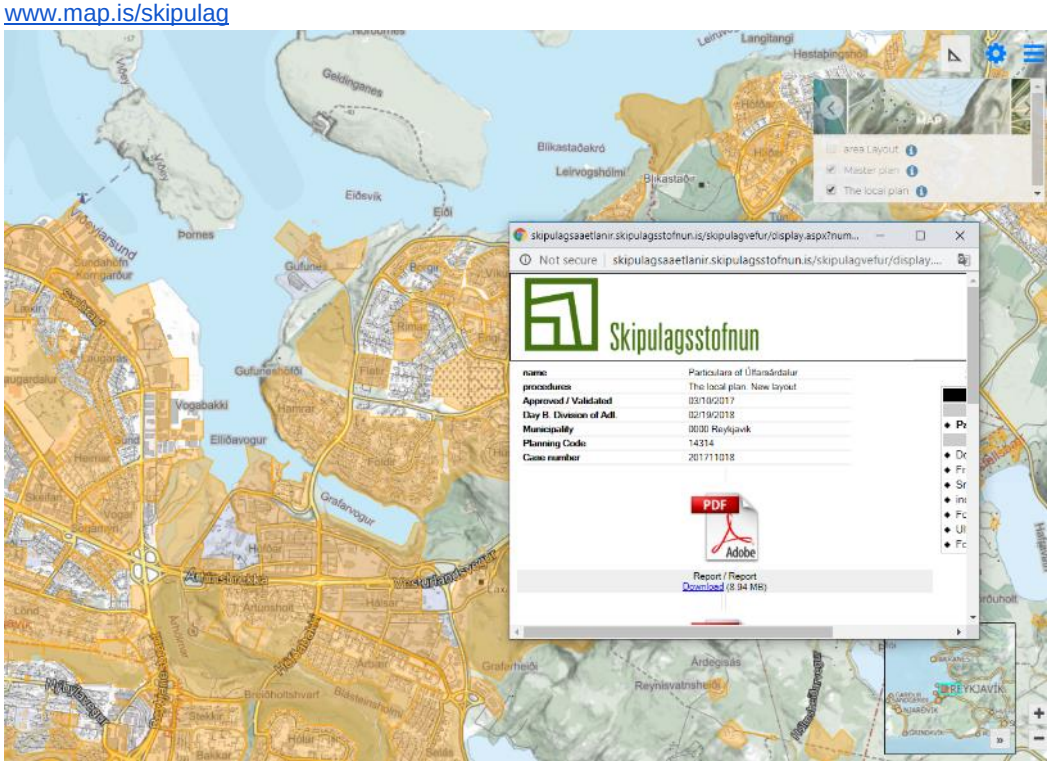
CC	Country-wide digital plan data portals (alternatively regional example)
IE	https://viewer.myplan.ie/ https://data-housinggovie.opendata.arcgis.com/datasets/current-local-area-plans-gzt-1 
IT 1	http://www.provinz.bz.it/informatik-digitalisierung/digitalisierung/open-data/maps-e-webgis-die-geobrowser.asp (Southern Tyrol) 

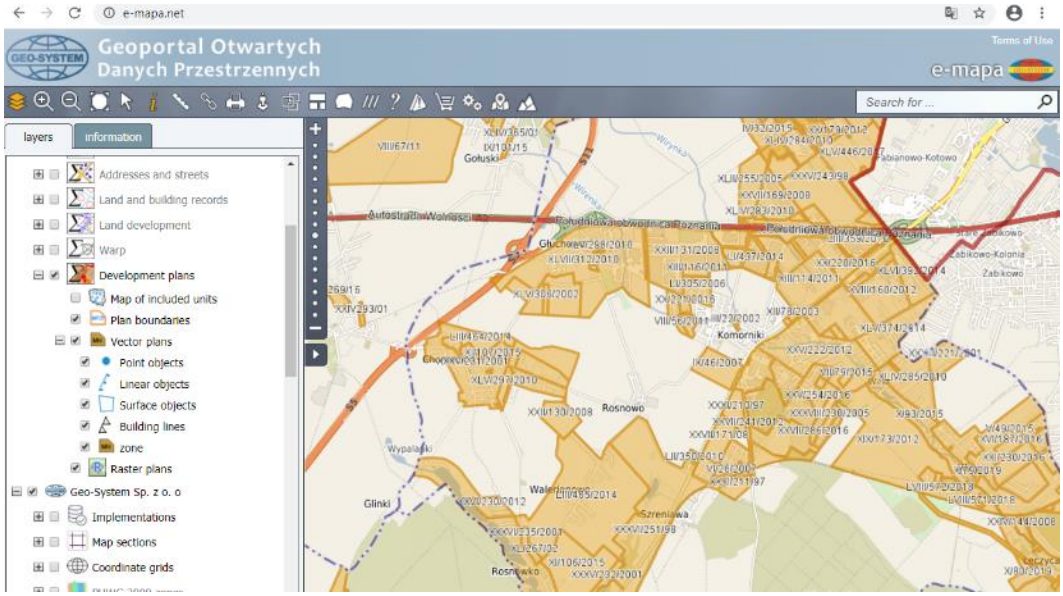
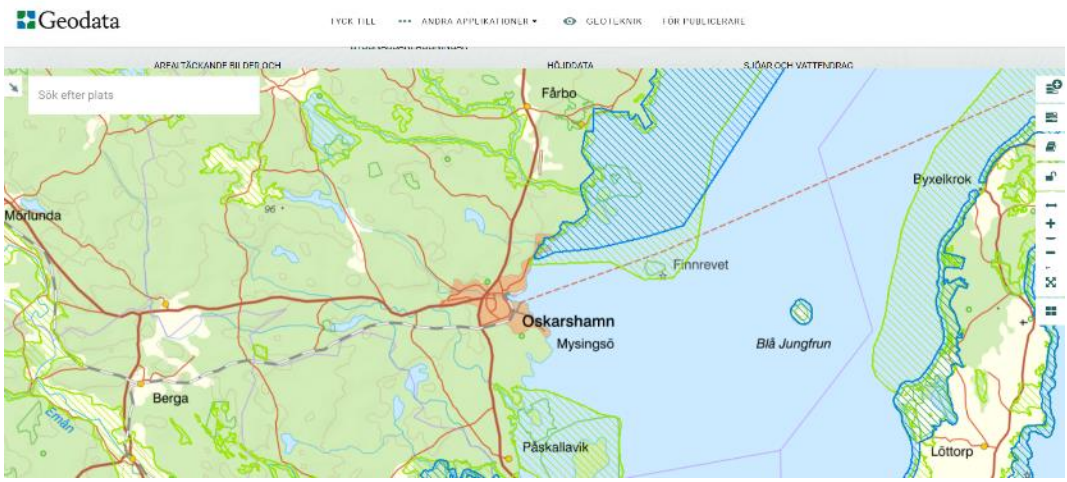
CC	Country-wide digital plan data portals (alternatively regional example)
IT2	http://www.sardegnageoportale.it/webgis2/sardegnamappe/?map=monitoraggio_strumenti_urban-istici (Sardinia) 
LI	https://geodaten.llv.li/ 

CC	Country-wide digital plan data portals (alternatively regional example)
LT	https://map.tpdr.lt/tpdr-gis/index.jsp?action=tpdrPortal 
LV	(Not investigated)
LU	https://map.geoportail.lu

CC	Country-wide digital plan data portals (alternatively regional example)
MT	http://geoserver.pa.org.mt/publicgeoserver 
NL	https://www.ruimtelijkeplannen.nl/viewer 

CC	Country-wide digital plan data portals (alternatively regional example)
NO	https://kart.geonorge.no 
SI	http://storitve.pis.gov.si/pis-jv/informativni_vpogled.html 

CC	Country-wide digital plan data portals (alternatively regional example)
PT	http://portalsnit.dgterritorio.pt/portalsdisnit/full.aspx 
IS	www.map.is/skipulag 

CC	Country-wide digital plan data portals (alternatively regional example)
PL	Mapviewer by a private company, offering Polish municipalities their services. Possible to see development plan areas and download the pdfs. Not all of Poland is covered. https://e-mapa.net 
RO	No national portal found.
SE	No plan data portal at national level yet, but central geodata portal. https://www.geodata.se/geodataportalen 

CC	Country-wide digital plan data portals (alternatively regional example)
SK	http://www.uzemneplany.sk/clanok/uzemne-plany-obci-miest-a-vuc-najdete-aj-na-internete (in construction, private sector driven)
UK	Notthing found for England. (Not investigated for Scotland, Wales, Northern Ireland)

Source: Authors, accessed February 2020

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