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Overview of Renewable Energy Spatial Planning and Designation of Acceleration Areas in Selected EU Member States

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List of Abbreviations

AACCs	Autonomous Communities (Spain)
ANMP	National Association of Portuguese Municipalities
APA	Portuguese Environmental Agency
BauBG	*Baugesetzbuch*
BImSchG	*Bundesimmissionsschutzgesetz*
CIMs	Intermunicipal Communities
DGEG	Directorate General for Energy and Geology
EEG	*Erneuerbare-Energien-Gesetz*
EIA	Environmental Impact Assessment
EMER 2030	Mission Structure for the Licensing of Renewable Energy Project 2030
FFH	*Fauna-Flora-Habitat*
GIS	Geographic Information Systems
KAUR	Environmental Agency Estonia
LNEG	National Laboratory of Energy and Geology
MITECO	Ministry for Ecological Transition and the Demographic Challenge
MS	Member State
MSP	Maritime Spatial Plan
NECP	National Energy and Climate Action Plan
NGO	Non-Governmental Organisation
OTOP	Birdlife Poland
POEM	*Planes de Ordenación del Espacio Marítimo*
PV	Photovoltaic

RAAs	Renewable Acceleration Areas
RE	Renewable Energy
RED	Renewable Energy Directive
RES	Renewable Energy Sources
RDL	Royal Decree Law
ROG	*Raumordnungsgesetz*
RVBO	*Regionalplanungsverband Bodensee-Oberschwaben*
SEA	Strategic Environmental Assessment
WindBG	*Windenergieflächenbedarfsgesetz*

Summary

Context of the study

The Renewable Energy Directive was amended in November 2023 (RED III) to accelerate the implementation of renewable energy (RE) projects in the Member States (MSs) of the European Union (EU). This involves conducting a coordinated mapping exercise to identify suitable areas,

- for the deployment of RE and associated infrastructure by 21 May 2025 (Article 15b), and
- as designated Renewable acceleration areas (RAAs) by 21 February 2026 (Article 15c).
  - However, rapid designation of RAAs is possible by 21 May 2024, provided that the area has already been sited for RES and meets several environmental safeguarding criteria (Article 15 c (4)).[1]

The stipulations of the RED III pose a major challenge for MSs to walk a fine line between rapid RE expansion and ensuring the highest environmental and social standards throughout all stages. Strategic spatial planning plays a crucial role in navigating this fine line: it facilitates the identification of suitable areas and the incorporation of RE projects into landscapes. Simultaneously, it helps to ensure long-term sustainability and secures areas for the designation of RAAs that will have a comparatively lower environmental impact.

In response to the amendments made to the RED III, CAN Europe, Birdlife, EEB and WWF EPO jointly commissioned this report to give an overview of how MS are endeavouring to implement the requirements. Based on the findings, the report aims to draw recommendations for further steps in the implementation process that contribute to strategies allowing the permittance of RE projects in an accelerated, yet environmentally and socially sustainable way. To gather real-time country-specific insights, this study focuses on the implications of RED III for spatial planning and the status of designation of RAAs in six MSs: Estonia, Germany, Greece, Spain, Poland and Portugal. To do so, we evaluate the prevailing state of spatial planning and key instruments like sensitivity mapping and public participation. The report pinpoints barriers for each MS and provides both country-specific as well as overarching recommendations to bridge the identified gaps. For a detailed analysis, we feature three case studies that serve as instructive examples from which other MSs can derive valuable lessons. These include Portugal's approach in fast-tracking the designation of RAAs, sensitivity mapping in Spain and the participatory process for RE development areas in Germany.

Key Findings

In light of the amended RED III, our study highlights the need to balance the urgency of accelerating RE deployment with maintaining environmental protection and public participation. The pioneering efforts of Portugal in RAAs designation, along with Germany's use of the "transfer window" until May 2024 demonstrate initial steps toward integrating RED III stipulations yet entailing severe trade-offs regarding public participation or environmental assessments. We encourage the MSs to react according to the principle "the need for speed, but with quality": while expediting the identification of suitable areas for RE deployment is crucial, this needs to be combined with environmental safeguards as well as inclusive and transparent decision-making processes. Our results show that

[1] According to Article 15c (4), by 21 May 2024, MS may declare RAAs as any already designated RES areas that have undergone SEA and are located outside Natura 2000 areas, areas designated under national nature and biodiversity conservation programmes and outside designated bird migration routes. Projects located in these areas should implement appropriate and proportionate rules and measures to counteract potential adverse environmental effects.

high-quality sensitivity mapping tools can help to mitigate adverse effects of RE deployment. High quality means that the data used in these tools is up-to-date, region- and technology-specific and consulted by relevant stakeholders. Outreach to the public and key actors is essential here. Furthermore, the analysis demonstrates that it is not only important to establish these tools, but also to formally integrate them into the planning process in a sensible approach so that they provide orientation for decisions at multiple planning levels. We suggest that MSs should both make use of, and update existing resources to accelerate the process, leveraging the opportunity for both speed and quality in RAA designation.

Key Recommendations

In order to improve spatial planning processes as stipulated by the RED III amendments, we deduced the following overarching recommendations:

1. **Ensure that public participation occurs "at an early stage" of the spatial planning process with the opportunity for multiple modes of public participation**
   - MSs must make sure that public participation occurs in the early stages of the planning process. Multiple accessible modes of participation should be provided to guarantee effective and inclusive processes that reflect diverse needs and interests of affected citizens and relevant stakeholders. Exemptions in environmental assessments under the RED III may limit opportunities for public participation, e.g., as part of Environmental Impact Assessments (EIA). It is therefore even more crucial to ensure additional robust participatory mechanisms such as engaging affected citizens in the screening process or consulting them about mapping methods. Also, municipalities should receive additional funds for long-term financing to establish effective participation practices, ensuring that citizens' voices are heard and integrated into decision-making processes from the outset.
2. **Ensure baseline standard requirements for data quality**
   - Across all MSs in this study, various factors contribute to poor quality data: outdated data, insufficient data on key areas (e.g., brownfield sites, agricultural activities), inconsistencies and missing integration of regional data due to a lack of co-ordination between administrative authorities and/or a lack of outreach to local stakeholders. We recommend strengthening data collection practices, by collecting up-to-date and regional-specific data as opposed to (only) using existing data for sensitivity mapping.
3. **Promote coordination between national, regional and local spatial planning frameworks and incentivise multilevel sensitivity mapping**
   - Frequently, there exists a notable lack of coordination between national-level spatial planning frameworks and their implementation at regional or local levels. To effectively designate RAAs, MSs need to establish clear visions, roadmaps, and guidelines at the national level that incorporate and recognise regional and local authorities' views and competences.
   - Not all MSs studied have implemented nationwide sensitivity mapping, and where it has been implemented at the national level there are often discrepancies in how it is being applied at the regional level. We recommend conducting comprehensive sensitivity mapping tailored to each MS that integrates regional analysis. Moreover, MSs should utilize existing regional sensitivity indices or available frameworks as a foundation and expand upon them using all relevant planning tools and additional data (see Recommendation 2).

4. **Address country-specific administrative shortcomings**

   – The deployment of RE is often delayed by overly bureaucratic and inefficient administrative procedures. Administrative shortcomings could be due to a range of issues such as a lack of skilled personnel or administrative systems that are not sufficiently digitalized which can lead to bottlenecks e.g., in the permitting procedure. Therefore, investments in the relevant skilled people and efficient administrate systems are essential to overcome current administrative delays in spatial planning and the deployment of RAAs.

5. **Prioritise artificial and dual land use areas**

   – Implementing RE projects on dual land use or artificial areas, such as sealed or anthropogenic spaces, mitigates land use conflicts. However, this study demonstrates a lack of policy definitions or expansion targets for such areas, as well as a lack of relevant data, e.g., brownfield sites, for potential mapping We recommend establishing policy frameworks with formal definitions and mechanisms to prioritise these areas in spatial planning to effectively minimise land-use conflicts.

6. **Invest in grid capacity and consider proximity to grid when mapping RAAs**

   – Insufficient grid development may limit the ability of MSs to achieve planned RE deployment. Furthermore, a lack of consideration given to proximity to the grid when mapping RAAs may lead to environmental disruption if new construction power lines have to be implemented. Therefore, we urge MSs to co-ordinate spatial planning with grid development plans and investments, in line with other aspects of RED implementation.

Introduction

The revised Renewable Energy Directive (RED III) that entered into force on the 20th of November 2023, requires Member States (MSs) to support the faster deployment of renewable energy (RE) projects. To do so, the RED III poses two main stipulations:

- MSs shall carry out a coordinated mapping of suitable areas for the deployment of RE and related infrastructure by 21 May 2025 (Article 15b), and
- MSs shall designate so-called Renewable acceleration areas (RAAs), as a subset of mapped areas by 21 February 2026 (Article 15c).
  - MS may declare existing areas that have already been designated as areas suitable for an accelerated deployment of one or more types of RE technology as RAAs by 21 May 2024, provided that several environmental safeguarding conditions have been met (Article 15 c (4)).

As defined in RED III, RAAs are “areas particularly suitable to develop renewable energy projects, differentiating between technologies, and where the deployment of the specific type of renewable energy is not expected to have a significant environmental impact” (Article 15c 1(a)).

Prior to the amendments of RED III coming into effect, the EU Council adopted an Emergency Regulation (Council of the European Union 2022) in order to stimulate the acceleration of RE in the short and medium term.[2] RED III stipulations now provide a roadmap toward achieving more permanent and long-term RE objectives: MSs are required to set into motion effective and transparent spatial planning processes. In this context, spatial planning processes refers to the strategic organisation and zoning of measures to ensure the optimal development of a country’s renewable energy sources (RES) while, minimising land-use conflicts. The recommended approach contributes to sustainable regional development and promotes effective public participation in the process of designating RAAs (Article 15d).

An important aspect of the site selection process for RAAs concerns the tools and data sets used. RED III stipulates that MSs use wildlife sensitivity mapping[3] to identify areas apt to RE deployment and exclude sites of high environmental protection value. Wildlife sensitivity mapping is one specific part of environmental sensitivity mapping. In general, the latter can be understood as an approach to identify and assess the sensitivity of a geographic area or region based on various environmental, social, or economic factors. The term sensitivity is correlated with the ecological or socio-economic value it contains, and its perceived vulnerability. Sensitivity mapping provides politicians, stakeholders, and spatial planners with tangible evidence (UNEP WCMC 2020). In the context of spatial planning in the EU, wildlife sensitivity mapping draws on spatial biodiversity data, Geographic Information Systems (GIS) and wildlife sensitivity assessment approaches to identify areas where RE could adversely impact EU Nature Directives (Allinson et al. 2020). Other applicable tools within the sensitivity mapping approach include: Energy Yield Assessment, Environmental Impact Assessment (EIA), Strategic Environmental Assessment (SEA), Site Suitability Analysis, Spatial Decision Support System or Land Use Planning and Zoning (Malczewski 2004; Jamil et al. 2017; Diller 2018).

[2] The regulation which came into force in January 2023 introduced faster permitting procedures for RE developments and presumes that renewable energy projects are of overriding public interest. The Emergency Regulation is set to expire July 1st, 2024, however, certain measures have been prolonged (Council of the European Union December 2023).
[3] In the context of this report, sensitivity mapping is used as a collective term for various types of sensitivity mapping. This also includes wildlife sensitivity mapping.

Despite specific provisions in RED III for spatial planning and designating RAAs, there are still considerable uncertainties surrounding the status of designation of RAAs and the planned approach among MSs. To fill this blank, CAN Europe, Birdlife, EEB and WWF EPO jointly commissioned this report which aims to give an overview of how MSs are endeavouring to implement the new RED III requirements. It centres around six selected EU MSs: Estonia, Germany, Greece, Spain, Poland and Portugal. Based on the findings, we draw recommendations for the further steps in the implementation process that contribute to strategies allowing the permittance of RE projects in an accelerated, yet environmentally and socially sustainable way.

To derive suitable and applicable recommendations, we proceeded as follows:

- **Data basis:** An explorative desk analysis formed the basis of the country overviews. We collected relevant data and streamlined it in an iteratively developed analysis template. Moreover, we reached out to country-specific partners within the CAN Europe Network to evaluate and complement the information for each step of the analysis.
- **Chapter 1** provides insights into spatial planning practices, RE policy approaches and the degree of public participation in each MS.
- **Chapter 2** highlights three case studies that delve into further detail on best practices in the spotlight. These include Portugal's approach in fast-tracking the designation of RAAs, sensitivity mapping in Spain and the participatory process for RE development areas in Germany.
- **Chapter 3** pinpoints potential barriers in each MS that may arise throughout the spatial planning process. The visualised findings of the barrier analysis enabled us to deduce country-specific recommendations that can be considered particularly suitable to making the planning process more effective going forward.
- **Chapter 4** brings together our country-specific findings in six overarching key recommendations. These are intended to provide guidance for the implementation process of the RED III requirements also beyond the six MSs analysed.

// INFOBOX – the process of designating RAAs according to RED III stipulations

As presented by Deutinger and Sailer (2024), the process of designating RAAs follows three steps:

- **Identification of potential RE area**
  - Firstly, the MS identify available RE areas by May 2025 (see Article 15b of RES III). This requires a coordinated identification of the domestic potential and available land areas needed for the construction of RE plants and the associated infrastructure, such as grid or storage facilities, and contribute to the national contribution to the overall EU target. Possible factors for the first identification of RE areas could be RE generation potential and proximity to the grid. Moreover, further criteria can be considered such as environmental factors. Additionally, RED III stipulates to consider multiple-use areas which create synergies between RE generation and other land-use forms. In general, existing data shall act as a base to identify areas. As this is merely an identification of RE areas, i.e., not formally a planning obligation, no SEA and therefore no public participation is required.

- **Designation of RAAs**
  - Subsequently, RAAs are to be designated within these RE areas by February 2026 (see Article 15c of RES III). RAAs are particularly suitable areas for the construction of RES. They should be of sufficient size to contribute to the nationally defined and European RE targets. The designation shall be based on environmental factors and considering whether the use of RE has no significant environmental impact. To determine the "significant environmental impacts", SEA and, if Natura 2000 areas are affected, Habitat Directive Assessments are mandatory. Public participation and the determination of mitigation measures to compensate or reduce for possible adverse effects on the environment, are foreseen at this planning step. To ensure "no significant environmental impact" according to RED III, artificial and built surfaces[4], should be prioritised, whereas Natura 2000 areas and areas designated under national nature and biodiversity conservation programmes should be excluded. All suitable and appropriate tools and datasets, e.g., wildlife sensitivity maps, should be used for the designation process.
- **Accelerated permit procedure for RAAs**
  - The permitting process is simplified for RAAs by modifying environmental law and by introducing a maximum process duration (see Article 16a RED III). If there are no negative effects on the environment, the defined measures in the planning process are adhered to and suitable mitigation measures are implemented, there is no need for EIA, Habitat Directive Assessments, species protection assessment and water law assessment. This so called "screening" process introduced is intended to assess whether the project is likely to have significant unforeseen adverse effects that were not identified in the SEA and, if applicable, the Habitats Directive assessment. If the authority does not identify any unforeseen adverse effects, a permit will be granted. However, if adverse effects are identified, the screening can result in reassessing an EIA or, if applicable, Habitats Directive assessment or in a so-called "modified environmental assessment" for wind and solar energy. Within the "modified environmental assessment" MSs can exclude wind and PV installations from reassessments EIA or if applicable Habitats Directive assessment and oblige to provide adequate mitigation/compensation measures of financial compensation. However, other national or EU law, such as monument protection, building or air traffic laws, can still lead to the permit's refusal. In order to take existing plans into account, MSs may transfer already designated RES areas that have undergone SEA and are located outside Natura 2000 areas, areas designated under national nature and biodiversity conservation programmes and outside designated bird migration routes and where projects in these areas implement appropriate and proportionate rules and measures to counteract potential adverse environmental effects into RAAs, by 21 May 2024.

[4] See Article 15c RED III, "artificial and built surfaces, such as rooftops and facades of buildings, transport infrastructure and their direct surroundings, parking areas, farms, waste sites, industrial sites, mines, artificial inland water bodies, lakes or reservoirs and, where appropriate, urban wastewater treatment sites, as well as degraded land not usable for agriculture".

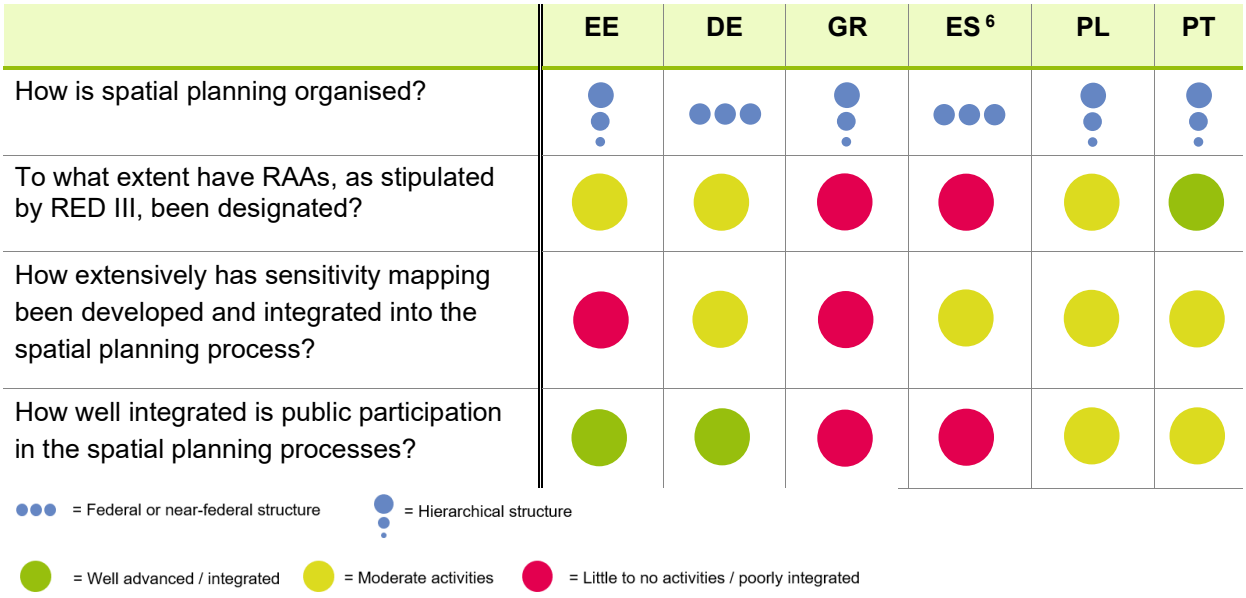
1 Spatial planning in selected Member States

This chapter aims to introduce the selected MSs **Estonia**, **Germany**, **Greece**, **Spain**, **Poland**, and **Portugal** from a spatial planning perspective. For each country, we provide information on

- the organisation of spatial planning in the respective MS,
- country specific RE policies and developments,
- the status of designating RAAs and the deployment of sensitivity mapping and
- (institutional) practices of public participation in spatial planning.

As a starting point to the chapter, Figure 1-1 gives an overview of the state of spatial planning processes and practices in the selected MS. To be noted that, given our available data basis, the figure primarily relates to spatial planning processes for RE developments for onshore technologies (for further explication, see Footnote 6).

Figure 1-1: Overview of the state of spatial planning processes and practices (for onshore RE developments) in selected Member States [5]



Source: Own illustration based on literature research and consultations with MS-specific experts.

[5] The assessment of the categories in the overview figure is largely based on current developments in spatial planning processes for onshore RE development. In some cases, the evaluation of the categories for offshore RE development may differ significantly from this assessment (for example, see footnote on Spain). The focus in the overview is on onshore planning processes since we have received more consistent information on the latter enabling a greater level of comparability across all MSs analysed.

[6] Note that the overview figure displays an evaluation of the different categories for spatial planning processes on the Spanish mainland only. In Spain's coastal waters, RE priority areas for offshore wind development have been designated as outlined in the *Planes de Ordenación del Espacio Marítimo* (POEM) (2023). However, these "priority areas" are not "RAAs", as stipulated by RED III. Differences emerge also in the organisational structure of spatial planning. Despite the spatial planning processes for onshore being federally organized, offshore planning processes are rather hierarchical. Furthermore, concerning public participation practices, the spatial planning process for offshore wind priority areas differs from the evaluation in the table. Marine spatial planning encompasses a five year long process which involved public participation of diverse stakeholders with interests in the marine environment. Therefore, we would conclude the rating as "moderate activities" for offshore RE planning.

The traffic light system shows a rather inconsistent picture across both the aspects evaluated and the MSs reviewed. Whereas in some countries like Germany, for example, public participation is well integrated in the spatial planning process, institutional practices for public participation are lacking and are only poorly integrated in other countries. The picture is also quite heterogeneous regarding the designation of RAAs as stipulated by RED III, where only Portugal is marked with “advanced activities”. Yet, when interpreting the figure, it should be noted that the presentation refers to very specific aspects: the rating is red if the MS has not yet designated any RAAs in accordance with the RED requirements. However, this does not imply that the country has not yet identified any RE priority areas in other spatial planning processes.

1.1 Estonia

Organisation of Spatial Planning

Situated along the Baltic Sea and the Gulf of Finland, Estonia shares borders with Russia to the east and Latvia to the southwest (WWF 2003). The country’s political history shaped its regional development and policymaking. Emerging from a post-socialist transition in the 1990s, Estonia joined the EU in 2004. Estonia operates as a unitary state and is an exception within the EU, lacking regional subdivisions of government (Ferreira and Ferreira 2021).

Estonia operates with a two-level government structure comprised of the national government and municipalities. The national government directly shapes spatial and land-use policies through instruments like the National Spatial Plan, Thematic Plans and indirectly through sectoral agencies (see Figure 1-3). These agencies approve plans within their jurisdictions concerning specific criteria like proximity to roads governed by the Road Administration. Counties serve as decentralized arms of the national administration by facilitating policy coordination at the regional level. They adopt County-wide Spatial Plans and validate Comprehensive Plans as well as resolving conflicts with existing plans. Despite Estonia’s hierarchical planning system, municipal governments hold significant political and legal authority among the 213 municipalities. Urban and rural municipalities primarily drive land-use planning and overseeing Comprehensive Plans, Thematic Municipal Plans, and Detailed Plans. According to ELF (25 Apr 2024), municipalities are invited to use Designated Spatial Planning for projects with significant spatial impact that have not been covered in Comprehensive or Detailed plans, since 2015. While municipalities bear responsibility for plan content, they often outsource plan preparation to private consultants. Additionally, municipalities can augment national regulations with local Building Ordinances and issue building permits to developers (OECD 2017a, see also Figure 1-3). In summary, Estonia has a hierarchical planning system although, political and legal power effectively lies at the municipal level (Planeerimine.ee 2021).

Renewable Energy Policy

Despite efforts to transition to cleaner energy sources, oil shale remains the primary source with no strategy to phase-out fossil fuels completely (ELF 26 Apr 2024). It is supplemented by imported fossil fuels, particularly in the transport sector. Estonia relies heavily on fossil fuels, namely oil shale, accounting for 59.8 % of their energy, biofuels and waste account for 37.9 % and modern renewables such as PV and wind contributing 2.2 % (IEA 2024a). Estonia holds ambitious goals of achieving 100 % renewable electricity gross domestic consumption by 2030 and climate neutrality by 2050 (IEA 2024b). Concerning RE production potential, Estonia faces constraints on wind farm construction due to restrictions and inadequate conditions geographically, naturally and economically, however, offshore wind energy has higher potential (MKM 2017; 2021).

According to experience of ELF (26 Apr 2024) utility scale solar energy is mainly installed on agricultural land. Resulting issues are subject to the local governments. Geographically, Estonia has limited potential for hydropower. In addition to geographical conditions, national defence restrictions limit the potential of RES in its coastal waters (MKM 2017).

Status of Renewable Acceleration Areas and Sensitivity Mapping

Estonia did not yet designate RAAs as stipulated by RED III (Ots 2023). However, Estonia is actively identifying RAAs under RED III, with plans to complete the mapping process by July 2024. By April 2024 ten out of 22 selected areas have been revealed. In Estonia, the selection process relies on elimination criteria. Preliminary selection is based on data from the ELME and IRENES projects, conducted in 2020, which assessed the state of natural areas in Estonia, taking into consideration environmental metrics and socio-economic factors. The ELME and IRENES projects generated a database of map layers[7] evaluating ecosystem integrity, functionality, status, and energy potential. Developers are encouraged to consult this database, and local municipalities are urged to conduct initial assessments using it. Additionally, large-scale studies, such as those on bird migration and nesting areas, are informing the designation of RAAs, with ongoing research on the Siberian Flying Squirrel and bat habitats. Consultations with local governments began in March 2024 to gauge their interest and concerns regarding the preliminary RAAs. A comprehensive report on all 22 areas is expected in July 2024, with prioritisation and auctioning of the most promising areas in autumn (ELF 10 Apr 2024).

Regarding inventory plans, Estonia published its Maritime Spatial Plan (MSP) in 2021, whereby offshore wind energy development areas and offshore wind reserves were designated with a total area of 1.783 km². They were selected in a far-reaching process including environmental screening, SEA and more (Rahandusministeerium; Hendrikson & KO 2021).

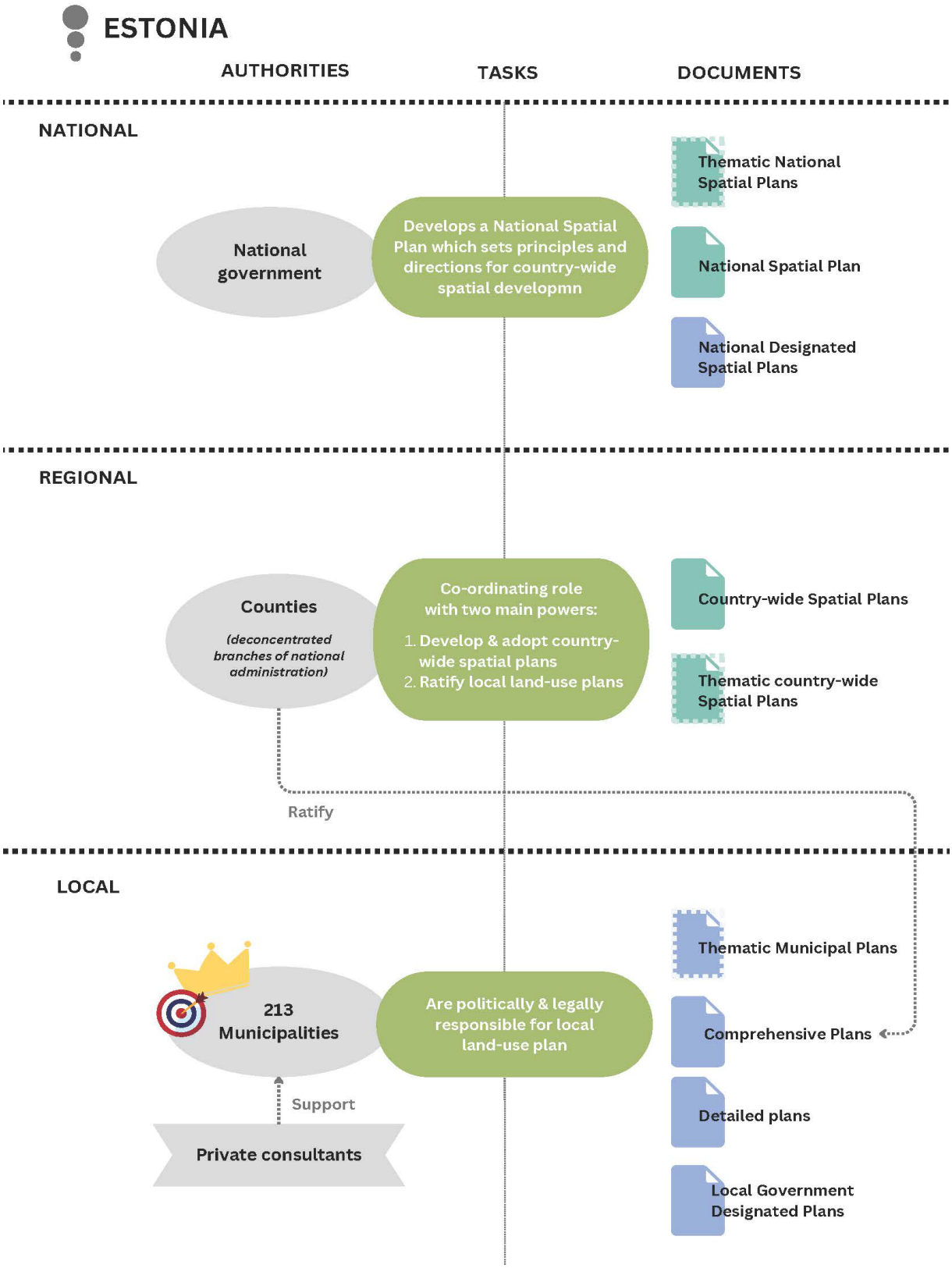
Estonia does not use systematic environmental sensitivity mapping. Only a regional sensitivity index for the Estonian shoreline in the Gulf of Finland is available (Aps et al. 2016). However, other tools to determine affected wildlife or Natura 2000 areas are used, with extensive guidelines on compensation measures in place for Natura 2000 areas which have been affected by cases of overruling public interest (Kutsar et al. 2019; Peterson and Kutsar 2020).

Figure 1-2: Explanation of symbols for MS organigrams

Source: Own illustration.

[7] Database for the map layers: https://kaur.maps.arcgis.com/apps/MapSeries/index.html?appid=9db1c0379be24a13a94c5ad6e4829320

Figure 1-3: Organisation of spatial planning in Estonia



Source: Own illustration, adapted from OECD (2017a).

Public Participation

The regulatory framework governing public participation in Estonia is outlined in §9 of the Planning Act[8]. This section emphasises the principle of inviting and informing the public about spatial planning proceedings in an accessible manner. It mandates that the authority responsible for organising spatial planning work must inform the public comprehensively, providing clear invitations for participation. Additionally, during the creation of spatial plans, the authority must organise public displays and discussions to introduce the plan to the public. Moreover, §9 ensures that everyone has the right to participate in spatial planning proceedings and express their opinions regarding the plans. It guarantees the public access to relevant information regarding proceedings and plans free of charge. Furthermore, the Act allows for modern means of participation by permitting electronic participation in public discussions through real-time communication links or similar digital methods.

In Estonia, there is a robust participatory framework for citizens, whereby local governments are mandated to adhere to minimum requirements for public involvement and are encouraged to employ more comprehensive participatory approaches[9]. While RE spatial planning has generally resulted in robust participatory processes at the local level, their effectiveness is often hindered by resource constraints, including limited human and financial resources, as well as time constraints. Public engagement becomes mandatory only if the decision-making authority deems an EIA necessary. Nevertheless, previous experiences with SEAs indicate limited public involvement due to the broad and general nature of these assessments (ELF 10 Apr 2024).

For RAAs, detailed planning outcomes will be publicly communicated through the governmental website www.planeerimine.ee and in the official announcements electronic journal. However, for RAAs, no formal participatory process beyond consultations with local governments is envisioned. Direct communication will be established with directly affected individuals and local governments, whereas other citizens and organisations may participate upon direct request (ELF 10 Apr 2024).

While digital channels, such as direct emails, local municipality websites and social media are utilised for notifications and information sharing, successful processes often involve face-to-face interactions, including information sessions and Q&A hours with locals. Estonia's local governments excel in making documents available and organising informational sessions for participation. However, effective digital participation requires dedicated moderators to encourage active engagement, going beyond mere documentation or meeting setups. Yet, local governments and municipalities can rely on additional resources like manuals for planning RES[10] and public participation[11] in environmental decisions, alongside information from the planeerimine.ee website. Furthermore, Estonia's Environmental Agency, KAUR launched a wind energy spatial planning tracking website[12] in 2024, providing transparent information on ongoing planning initiatives and status, as well as allowing for project evaluation (ELF 10 Apr 2024; 25 Apr 2024; 26 Apr 2024).

[8] See https://www.riigiteataja.ee/en/eli/ee/Riigikogu/act/504072023008/consolide
[9] Further participatory approaches: https://planeerimine.ee/kaasamise-meelespea/
[10] https://www.sei.org/wp-content/uploads/2022/01/kov-tuule-ja-paikeseenergia-kasiraamat.pdf
[11] https://media.voog.com/0000/0036/5677/files/kkinfo_kaasamine_l6plik.pdf
[12] See https://tableau.envir.ee/views/Tuuleparkidemonitooring/Avaleht?%3Aembed=y&%3AisGuestRedirectFromVizportal=y#2

1.2 Germany

Organisation of Spatial Planning

Germany's spatial planning system operates within a federal framework, characterised by decentralised decision-making across multiple levels of government. At the national level, the federal government and 16 federal states hold legislative authority in spatial planning matters. This system follows a "counter flow principle", integrating both top-down and bottom-up elements. While at the national level higher level planning objectives are set, like in the Renewable Energies Act (*Erneuerbare-Energien-Gesetz*, EEG) or the *Windenergieflächenbedarfsgesetz* (WindBG), federal states typically develop spatial development plans, which may impose guidelines on lower levels of government. Municipalities, as primary actors, play a significant role in local planning, particularly in developing land-use and development plans. This decentralised approach aims to ensure coherence within the planning system while accommodating variations across regions. In the context of RE development, federal states can allocate suitable areas through e.g., regional planning instruments or municipalities can use binding land-use planning or development plans to force the expansion of RES (OECD 2017b; May 2023, see also Figure 1-4).

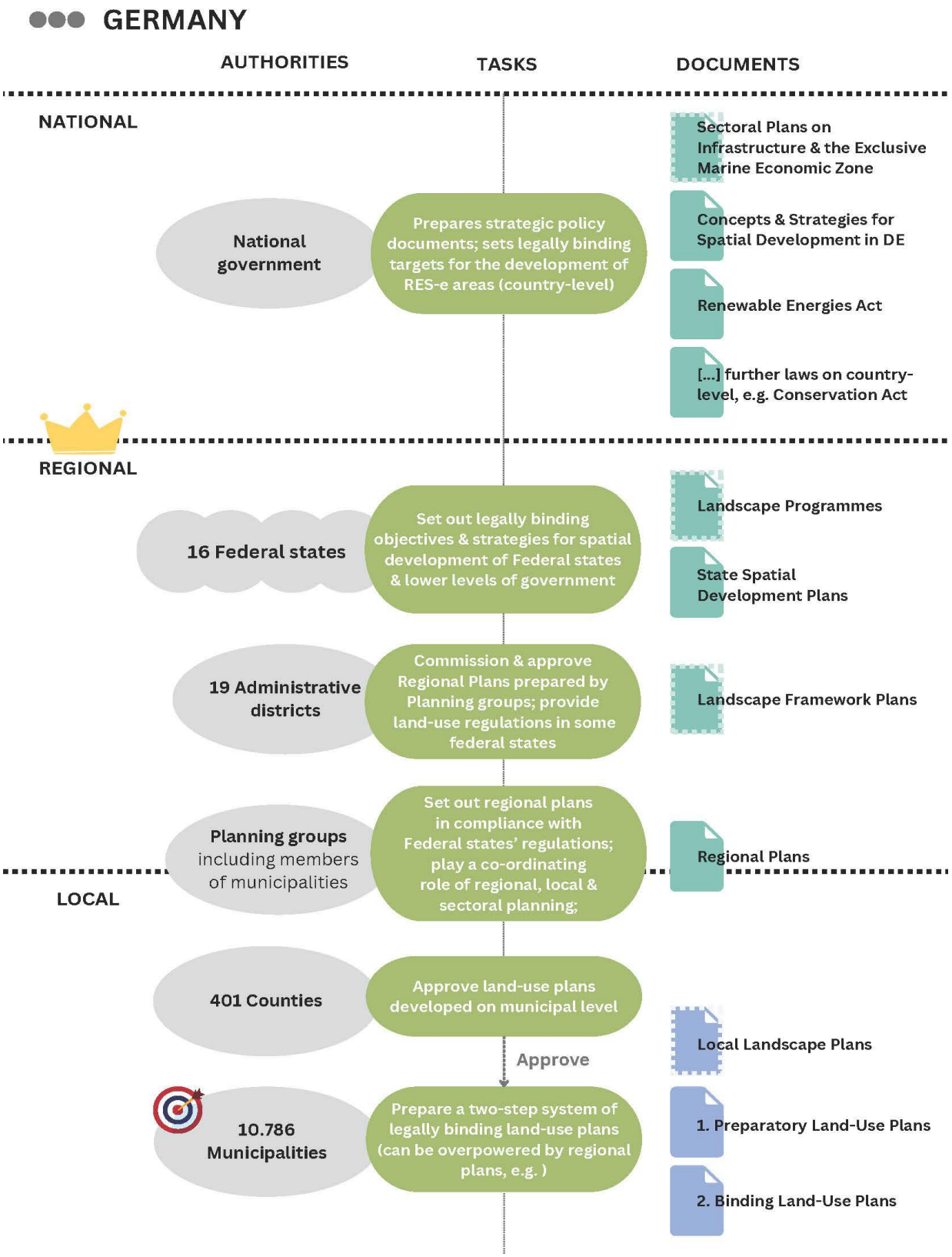
The planning and designation of areas is influenced by several other laws, such as the Federal Immission Control Act (*Bundesimmisionsschutzgesetz*, BImSchG) or the Federal Nature Conservation Act (*Bundesnaturschutzgesetz*, BNatSchG). If a project significantly violates the intervention regulations of §§13 et seq. of BNatSchG, compensation measures may be required. With this procedure, a comprehensive and area-wide approach is pursued for all protected natural resources and the landscape. The process of compensatory measures for ecosystem interference is standardised nationally by § 15(6) BNatSchG, established in 2009. Besides determining the degree of compensation, there is a national requirement to ensure appropriate use of the funds within the affected natural area. In cases of uncertainty, reference to conceptual ideas from landscape planning is advisable. Furthermore, §16 BNatSchG uniformly governs the recognition of land reserves and compensation measures. It provides clear criteria for assessing the suitability of pre-implemented compensatory actions for recognition. The respective compensatory measures are developed at the permitting level in collaboration with the relevant conservation authorities for each project (BfN 2021a). However, the handling of compensation measures in Germany is frequently subject to criticism (e.g. Rabenschlag et al. 2019; LNV 2023).

Renewable Energy Policy

Germany is steadfast in its commitment to combat climate change, as outlined in its Climate Law, which aims for net-zero emissions by 2045. To achieve this, ambitious targets have been set for RE, with plans for 80 % of electricity to be sourced from renewables by 2030, alongside the complete phase-out of coal. Notably, Germany has been a frontrunner in offshore wind and solar PV energy, having phased out nuclear power in 2023 (IEA 2024c) Looking ahead, Germany aims to install 115 GW of onshore wind and 215 GW of PV capacity by 2030, requiring adequate land allocation across federal states (see §4 EEG 2023).

RE already plays a significant role, with 57.7 % of net electricity generation sourced from renewables for public power supply in the first half of 2023, up from 51.8 % in 2022. Meanwhile, electricity production from lignite, hard coal, natural gas, and nuclear sources has declined compared to 2022 figures (Fraunhofer ISE 3 Jul 2023).

Figure 1-4: Organisation of spatial planning in Germany



Source: Own illustration, adapted from OECD (2017b).

Status of Renewable Acceleration Areas and Sensitivity Mapping

The German spatial planning for RES is well-advanced. Over the last 10 years, wind expansion has stalled since the municipalities have not designated suitable areas. To accelerate the RE uptake in Germany, the WindBG has been introduced at federal level to drive forward the expansion and designation of areas. Each federal state must allocate 1.4 % by 2026, and 2 % of its land area for onshore wind energy by 2032. Several federal states, including Hessen, Bavaria, and Schleswig-Holstein, have already identified wind-priority areas, integrating them partially into their Regional Spatial Plans. At the federal level, Lower Saxony has adopted a decentralised approach, delegating the designation process to the municipal level (Fachagentur Windenergie an Land 2022; May 2023). Notably, specific mitigation measures are not included in the designation process for wind-priority areas across Germany but are defined at the permitting level for each specific RE project.

Designation of open PV also takes place, but without a defined federal state area target in regional plans. The task of designating reserved and priority areas is the responsibility of state and regional planning (May 2023). The area planning for offshore energy has already been finalised in 2023 in the North and Baltic Seas area development plan. The designated area exceeds the 2030 target of 36.5 GW (BSH 2023). Industry representatives criticise that by the introduction of Solar Package I EIA obligations are waived in planning new offshore wind farms. This would lead to reduced acceptability of instruments (Detloff et al. 2024).

On 26 April 2024, the German government adopted the integration of already designated onshore wind areas to contribute to RED III efforts (Deutscher Bundestag 2024). Various federal associations have called for the swift adoption of the solar package, whereby the transfer was approved, so that existing plans for onshore wind can be transferred to RAAs by the deadline of 21 May. This will avoid the need to re-designate existing areas for onshore wind in accordance with the RED III regulatory guidelines. Otherwise, previously designated areas for wind energy by federal states and municipalities, which is at least 40 % of the areas designated for wind energy nationwide, would need re-assessment. Countries like Germany, that have taken the lead in designating areas, would have been at a disproportionate disadvantage if the area transfer does not take place (BWE; BDEW; BEE; bne; VDMA; VKU 2024). Further details on this procedure can be found in Chapter 3.2. Moreover, there are currently attempts to incorporate the remaining measures of RED III into German law. The German government, namely the Federal Ministry of Economics and Climate Protection, the Federal Ministry of Housing, Urban Development and Building and the Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection drafted respective changes in the “Draft law on the implementation of Directive (EU) 2023/2413 in the field of onshore wind energy and solar energy” [13] by Sailer and Deutinger (2024).

In Germany, there is no governmental country-wide sensitivity mapping in place. However, a sensitivity analysis was carried out in preparation for the assessment of the WindBG by Guidehouse (2022). Further information on this approach is included in the Infobox on the case study of sensitivity mapping (see Chapter 2.2). Additionally, NABU (2023) conducted a comprehensive study, aimed at identifying less ecologically sensitive areas within the Exclusive Economic Zone of the North and Baltic Seas for offshore wind energy development. Employing a colour coding, the study categorised these areas to highlight potential conflicts and propose corresponding solutions. This methodology bears resemblance to sensitivity mapping techniques, same as the Guidehouse study.

[13] See draft from 02.04.2024 published by the ministry: https://www.bmwk.de/Redaktion/DE/Downloads/Gesetz/20240402-referentenentwurf-umsetzung-red-3-wind-an-land-und-solarenergie.pdf?__blob=publicationFile&v=4)

Public participation

In Germany public participation is enabled and regulated in §9 of the German Planning Act (*Raumordnungsgesetz*, ROG) and §§2, 3, 4 of the Building Act (*Baugesetzbuch*, BauGB). Under these acts, a framework for public participation in regional and urban land-use planning is structured. Formal participation is obligatory and overseen by the respective approval or planning authority. At the regional planning level, stakeholders have the opportunity to participate in the development of regional plans. In urban land-use planning, participation is available for both preliminary land-use plans and urban development plans. Additionally, informal participation is encouraged through voluntary provisions of information and dialogue by project developers (Fachagentur Windenergie an Land 2022).

The extent and timing of participation vary depending on the level of planning being conducted, whether it's regional planning or preliminary land-use planning or binding land-use planning. The involvement of stakeholders, including affected individuals and relevant organisations, is crucial in providing feedback on non-final drafts for regional plans or preliminary land-use plans, as well as in offering comments on alterations during the planning process (Fachagentur Windenergie an Land 2022). Participation is initiated "as early as possible", as stipulated by §3 (1) BauGB, ensuring that stakeholders have ample opportunity to contribute to the planning process.

Ultimately, the final approval and transition of draft plans to final plans are granted by the responsible superior authority, irrespective of the level of planning being executed. This ensures that public input is considered before the plans are finalised, reflecting the collaborative nature of the planning process in Germany (Fachagentur Windenergie an Land 2022).

Further information regarding best practices in public participation in Germany are showcased in the respective case study on public participation (see Chapter 2.3).

1.3 Greece

Organisation of Spatial Planning

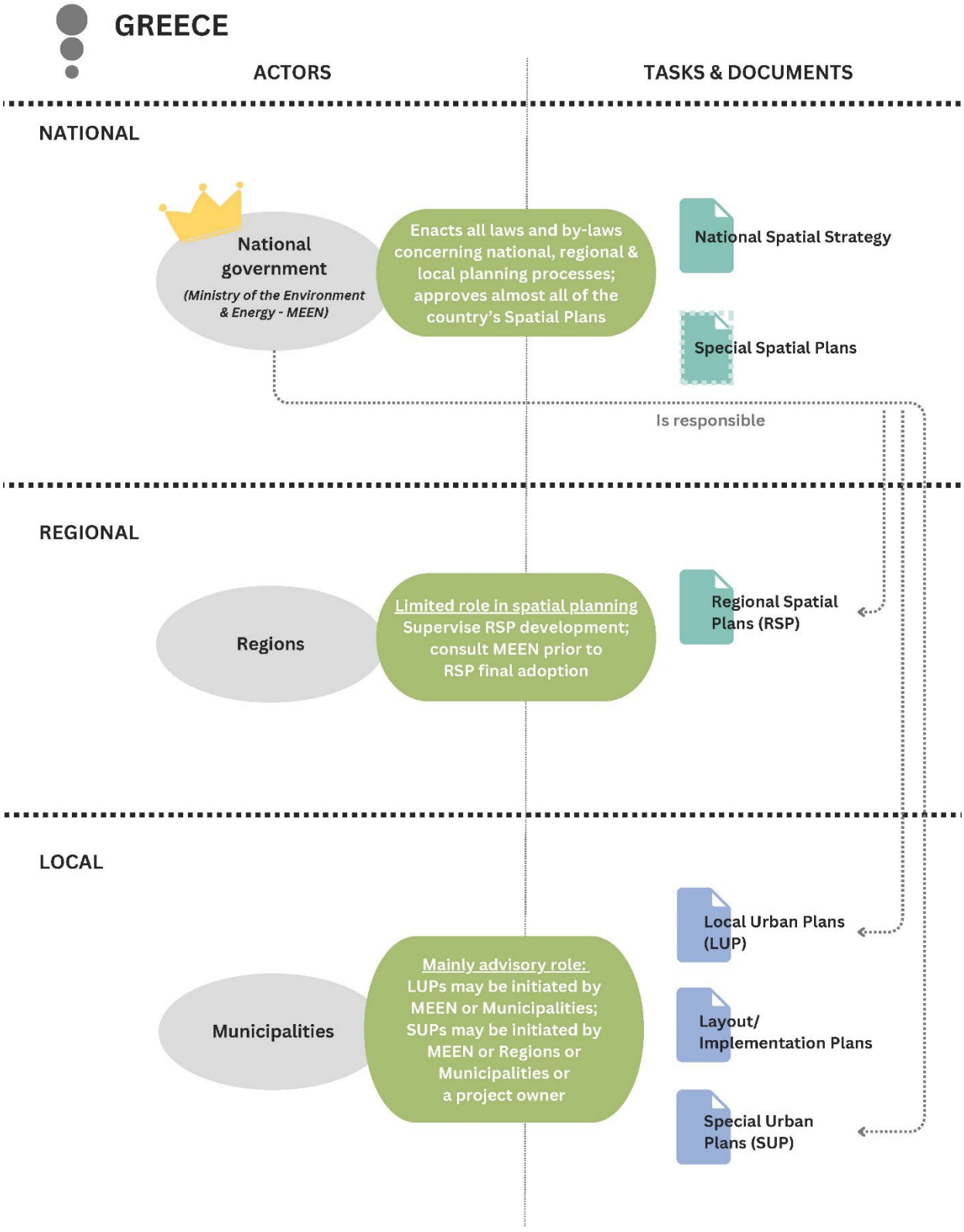
The Hellenic Republic is structured as a unitary state that is organised on a decentralised basis. Two levels of governance are at play: the central state governance, which is exercised by national government ministries and the seven decentralised administrations. The local self-government level is exercised by the 13 regions and municipalities (European Committee of Regions 2024). Currently, there are 332 municipalities in Greece (WWF Greece 4 Mar 2024). With respect to spatial planning, the structure is hierarchical, with the process divided into the national, regional, and municipal level. The national government holds the most responsibility and power enacting all laws and by-laws concerning the planning processes and approving almost all the country's spatial plans. The role of regions and municipalities is comparatively quite limited, with the regional level being limited to supervising the development of Regional Spatial Plans and municipalities mainly playing an advisory role (OECD 2017c, see also Figure 1-5).

Adding to the complexity of the spatial planning process in Greece, are the several reforms that have been made to the current system that has been in place since 1983. Over the past three decades, 25 different types of spatial plan have been applied in Greece, the largest number of spatial plans of all OECD countries (OECD 2017c). Several plans have either been abolished or replaced and at present, approximately 10 types of plans are currently serving spatial planning. Furthermore, poor coordination between different levels and types of plans makes spatial planning in Greece very challenging (WWF Greece 4 Mar 2024). Policies surrounding spatial planning and land use policies in Greece have been shaped by the 2008 economic crisis and EU funding (OECD 2019; Perperidou 2021). In addition, Greece is one of the few EU MSs that has no maritime spatial planning. Moreover, the development of such plans has not yet begun (WWF Greece 4 Mar 2024). All things considered, the organisation of spatial planning in Greece is convoluted and outdated, making RE deployment difficult.

Renewable Energy Policy

Greece is aiming to achieve net zero emissions by 2050 and this target has been integrated in Greece's national climate law adopted in 2022 (The Green Tank 30 May 2024). While considerable progress has been made in the field of RE (20 % of total energy consumption in 2021), fossil fuels remain the dominant energy source in Greece. From 2005 to 2022, lignite-fired electricity generation fell from 60 % to 11 % in Greece, largely due to being offset by increased gas-fired generation but, also due to a growth in wind and solar energy generation. In 2022, more electricity in Greece was generated from renewables with large hydro (23667 GWh) than from fossil gas and lignite combined (23.534 GWh) (The Green Tank 2023). Greece is still however, overly dependent on Russian gas with it accounting for 41 % of the total country's imports in 2023 (The Green Tank 2024). Greek energy policy is now focused on boosting the use of RE, and addressing the challenges that exist regarding the grid unavailability, renewables curtailment, self-production, and the update of spatial planning (The Green Tank 30 May 2024). In order to facilitate greater deployment of RES, Greece is reported to be taking steps to reduce the time required for the licensing and permitting of RE, energy storage and electricity infrastructure (IEA 2023).

Figure 1-5: Organisation of spatial planning in Greece



Source: Own illustration, adapted from OECD (2017c).

Status of Renewable Acceleration Areas and Sensitivity Mapping

As it currently stands, the most recent spatial plan for RE deployment in Greece was issued in 2008 and is currently obsolete. The European Commission opened an infringement case against Greece on the basis of the 2008 plan in 2014. The case concerns failure to comply with provisions of the Habitats Directive and particularly the requirement for an appropriate assessment when planning wind farms. In February 2023 the European Commission issued a reasoned opinion (European Commission 15 Feb 2023).

The new RES Special Spatial Plan, which has been under revision since 2017 and is expected by the end of 2024, will be designated in the context of a nation-wide Special Spatial Framework. Although the plan has not yet been publicly released, it is believed it will focus primarily on wind and solar energy. Furthermore, areas will be classified as either “priority” or “suitability” areas for RE developments. Although legislation on RAAs has been enacted (art. 154 of Law 5037/2023), it remains unclear whether RAAs will be identified in the context of the new RES plan or whether this will be a separate process, like the one that has been recently introduced in the RES legal framework regarding the designation of “first choice areas” (art. 164 of Law 5037/2023) (WWF Greece 4 Mar 2024). It is worth noting that Greece’s most recent version of its National Energy and Climate Action Plan (NECP) does not make any specific references to RED III (European Commission 2023).

With respect to sensitivity mapping, it is not formally embedded in the spatial planning process, however, recently maps have been produced at the national level for Griffon Vulture species[14] and at the regional level for Thrace and Crete (WWF Greece 4 Mar 2024).

Public Participation

Public opinion surveys on the public acceptance of RES would suggest that public acceptance of RES in Greece is relatively high compared with the EU average (European Commission 2019). However, there are still a lot of local disputes in specific cases often related to wind farms which are reflected in EIA consultations. In addition, there is a track record of poor public participation in the spatial planning processes in Greece. Generally, final drafts of planning proposals and SEAs are made available for the public to submit comments online. However, it is unclear if and how this feedback is considered, and it is typically ineffective due to the late stage at which it occurs in the process. While it is still unknown when exactly the new RES plan will be made available to the public, it is only expected to be subject to approximately 2 weeks of public consultation, followed by a new round of amendments before it is finally approved by Ministry of Environment and Energy (WWF Greece 4 Mar 2024). Greece has several best practice examples of RE communities with positive social impacts. The success is in part due to higher levels of public participation in those communities (Kitsikopoulos and Vrettos 2023). There have also been some good examples of participatory schemes during the energy transition of Greek islands, whereby local communities were included in open dialogues with the stakeholders of the projects, such as the island of Tilos, where the first RES-based hybrid system in the Mediterranean has been operating since 2018 (The Green Tank 30 May 2024).This suggests that improved public participation practices in spatial planning processes in Greece could potentially foster a greater acceptance of RES.

[14] See https://edozoume.gr/wp-content/uploads/2023/03/LIFE-IP-4-NATURA-Del.C.1.5-Vulture-MsAP-Griffon-Vulture-sensitvity-map.pdf

1.4 Poland

Organisation of Spatial Planning

Poland operates as a unitary state with four levels of government, this comprises; 16 *Voivodeship* (similar to provinces), 380 *Powiats* (similar to counties or districts) and 2.478 *Gminas* (similar to communes or municipalities) (gov.pl 2024). While the spatial planning structures takes a hierarchical structure with planning taking place at the national, regional and local level, in practice, the balance of power is rather "bottom-up" since local levels of government are the main actors (OECD 2017d, see also Figure 1-6).

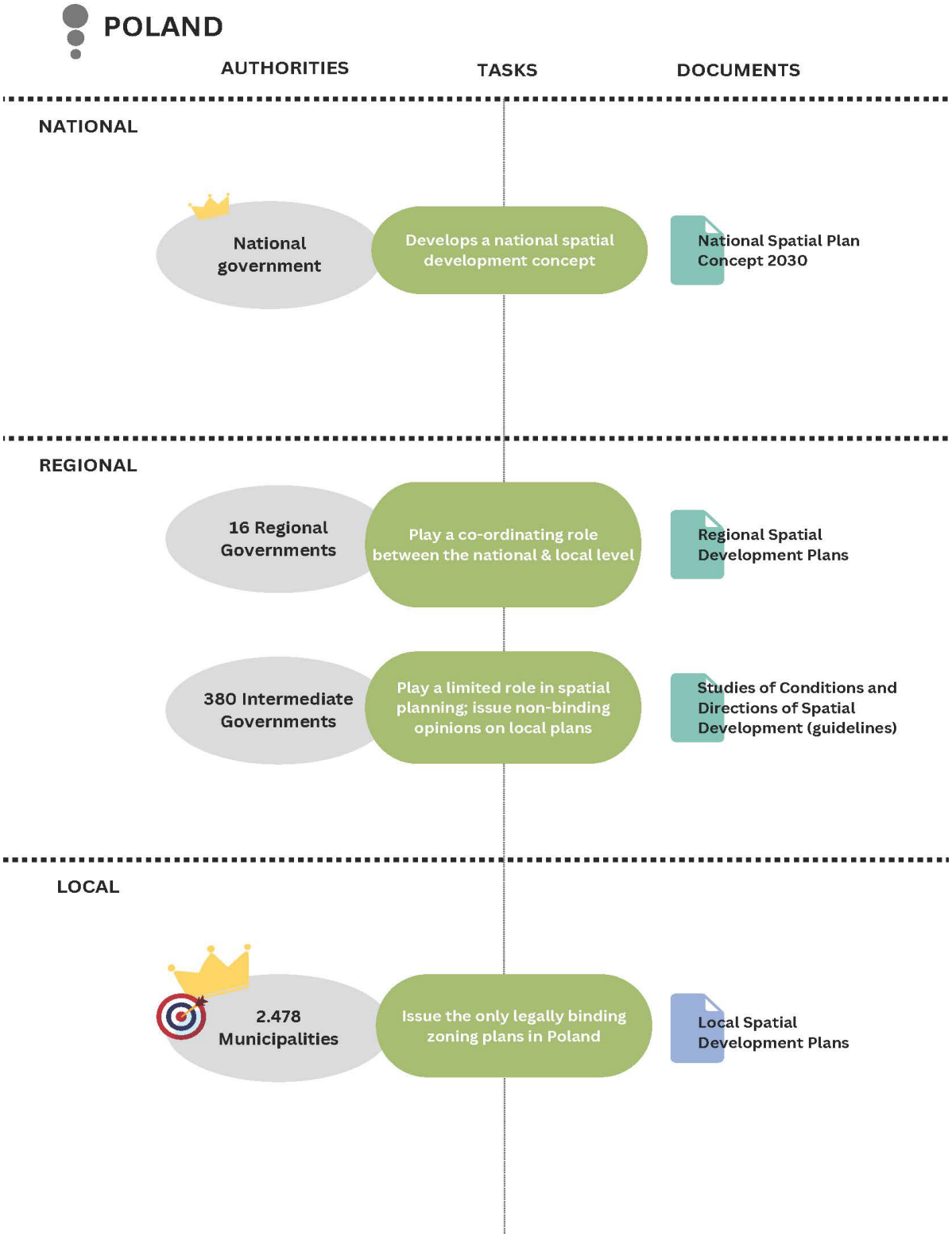
The national government is responsible for developing the National Spatial Development Concept and for the Spatial Planning and Development Act which lays out the legal framework for the planning system. *Voivodeships* and *Powiats* possess important competencies between the state and municipalities. Prior to recent reforms, *Gminas* had a lot of influence as they were responsible for creating and approving Local Spatial Development Plans ("the Plans") which are the only Binding Zoning Plans in Poland. Under this spatial planning system, they have complete freedom despite, the national government often trying to overrule local spatial plans. Though Local Spatial Development plans are intended to steer development and urbanisation from the bottom-up with *Gminas* being legally required to produce them, large gaps in planning coverage remain, with parts of the territory in certain municipalities not covered (only around 30 % of Poland's territory is covered with the plans). Furthermore, there are no enforcement mechanisms in place to ensure municipalities are aligning their plans with Regional Spatial Development Plans or the National Spatial and Development Concept 2030, resulting in a lack of co-ordination between planning levels (OECD 2017d; Polish Green Network 30 Apr 2024).

The only obligatory acts at the level of *Gminas* were Studies of Conditions and Directions of Spatial Development ("the Studies"). The Studies, however, were generally non-binding. They were only binding for *Gminas* authorities while developing the Plans. Unfortunately, the lack of Plans and the issuing of investment decisions for individual plots of land has resulted in spatial chaos and adversely affects the environment and the quality of life of residents (Polish Green Network 30 Apr 2024).

As it currently stands, *Gminas* (municipalities) have a lot of influence over RE development. Effectively RE can be built wherever local spatial plans allows it or where a building permit is granted (Reform Institute Poland 11 Mar 2024). *Gminas* must agree on every project and are responsible for integrating RES into their spatial policy concept. This has resulted in regional discrepancies as only 58.4 % of municipalities have included RES in their spatial policy concept, most of which have been in urban areas (Blaszke et al. 2021).

Currently, reforms are being made to the Polish spatial planning system which should be complete by 2025. Under these reforms, municipalities are required to produce new spatial plans. However, this is said to be unlikely to happen as planned due to municipalities having no capacity from urbanists, slow bureaucracy, and a sense of reluctance from some municipalities. This new type of spatial plan is known as a "General Plan". They are legally required from local authorities and are to be aligned with national law and contain special rules about RES development (Institute for Sustainable Development Foundation, Poland 16 Feb 2024; Reform Institute Poland 11 Mar 2024). The General Plans shall replace the Studies of Conditions and Directions of Spatial Development and they will be legally binding (Polish Green Network 30 Apr 2024).

Figure 1-6: Organisation of spatial planning in Poland



Source: Own illustration, adapted from OECD (2017d). [15]

[15] The Polish organigram is based on the spatial planning system as outlined in OECD (2017d). Current reforms are not included due to lack of information available.

Renewable Energy Policy

Poland has had a track record of conservative RE targets and has been criticised in the European Commission's assessment of their NECP for having "unambitious" RE targets and for not having a clear plan to phase out coal and lignite (coal and lignite accounted for approximately 80 % of Poland's electricity generation in 2020) (European Commission 2020). However, there are positive signs to suggest Poland might be turning a corner. In 2023, 27 % of Poland's electricity produced came from renewables, with coal reduced to 61 %. This reduction in coal was largely due to growth in solar and wind energy (Czyżak 2024). Furthermore, Poland's updated draft NECP reveals that renewable electricity generation is projected to reach 50.1 % of all electricity generated in 2030 and 59.1 % in 2040. Wind power, generated by both onshore and offshore is planned to be the main source of renewable electricity, followed by solar power. Despite the fact that wind is expected to play an important role in Poland's energy transition, the NECP does not outline how offshore renewable development will be addressed in the maritime spatial plan or how environmental objectives will be accounted for (European Commission 2024).

Status of Renewable Acceleration Areas and Sensitivity Mapping

Although Poland has yet to designate RAA's, the Polish government has a clear timeline in place for the planned process. Before the end of 2024, the government plans to finish the mapping potential of RES for onshore wind and solar and to establish a legal framework for RAAs as stated in RED III. The government is said to be determined to meet these dates because EU funding from the Recovery Facility depends on it. In addition to this, Poland is planning to deploy sensitivity mapping by the end of the year. By May 2025, the government intends to have RAAs mapped based on previous maps for RES potential and to have established a permitting procedure for RAAs. Finally, by February 2026, the government intends to have established RAAs as stated in RED III (Reform Institute Poland 11 Mar 2024; Polish Green Network 30 Apr 2024).

The sensitivity mapping in Poland is expected to be done by an outside contractor that is a specialist with expertise in spatial planning and the sensitivity mapping will likely be based on existing data and sensitivity maps such as those developed by Birdlife Poland (OTOP). However, at this stage, it is difficult to say how the designation of RAAs in Poland will affect nature conservation in Poland (Reform Institute Poland 11 Mar 2024).

Public Participation

The level of participation in the spatial planning process in Poland is moderate with spatial plans subject to public consultations. By law, all members of the public have the right to participate in local plans, with basic participatory procedures said to be prescribed in the preparation of such plans (Scharmann et al. 2020). As a result of amendments made to the Planning and Spatial Development Act, datasets on spatial planning documents are made available to the public online. This includes document availability such as *Voivodeship* land use plans, spatial development conditions and directions for spatial development or the local zoning plan (Ministry of Economic Development and Technology 2020). Furthermore, certain mitigation measures have been implemented to incentivise public participation in RE deployment and to enhance acceptability of projects, e.g., the Wind Power Act includes a mechanism for sharing benefits of wind power deployment with the local community (Reform Institute Poland 11 Mar 2024).

Despite, *Gminas* having to consult with residents on the Studies and the Plans, in practice, however, this information reaches a very small group of people and *Gminas* often do not seek to change this situation. At the same time, the planning documents are quite complicated, which also has a discouraging effect. For these reasons, organisations and associations are more likely to participate in public consultations than individual citizens (Polish Green Network 30 Apr 2024).

It is therefore commendable that the spatial planning reform in Poland also includes a simplification of the public participation process. Methods, places, and dates of public consultations will have to be established so that the largest possible number of interested parties can participate (flexible hours, electronic forms, etc.). Importantly, steps will also be taken to ensure the process is more accessible and accommodating of residents by hosting expert panels, open-air meetings, surveys, interviews, etc. Provided that the reform is implemented, public participation in local spatial planning has the potential to be more effective (Polish Green Network 30 Apr 2024).

1.5 Portugal

Organisation of Spatial Planning

Portugal is a unitary state composed of two levels of government, the national level, and municipalities (of which there are 308). The islands of Azores and Madeira are autonomous regions. Spatial planning takes a hierarchical structure with processes organised at the national, regional, and municipal level. The national government possesses the most responsibility, regulating planning and providing technical assistance for the regional and local level. Furthermore, the national government develops the overarching plan, the “National Programme of Spatial Planning Policies and Special Programmes” for particular regions. Furthermore, the national government supervises the Regional Co-ordination and Development Commissions which is effectively de-concentrated branches of the Ministry for Environment who co-ordinate national and local policies related to environmental and spatial planning and prepare Regional Spatial Development Programmes. The regional level’s main function is a co-ordinating role, translating national plans into regional ones to connect them to municipal policies. Municipalities are important actors within the Portuguese spatial planning process, they are responsible for preparing three local land use plans; Municipal Director Plans, Urban Development Plans and Local Detailed Plans. Overall, the laws and regulations concerning spatial planning and the environment in Portugal are clear (OECD 2017e, see also Figure 1-7).

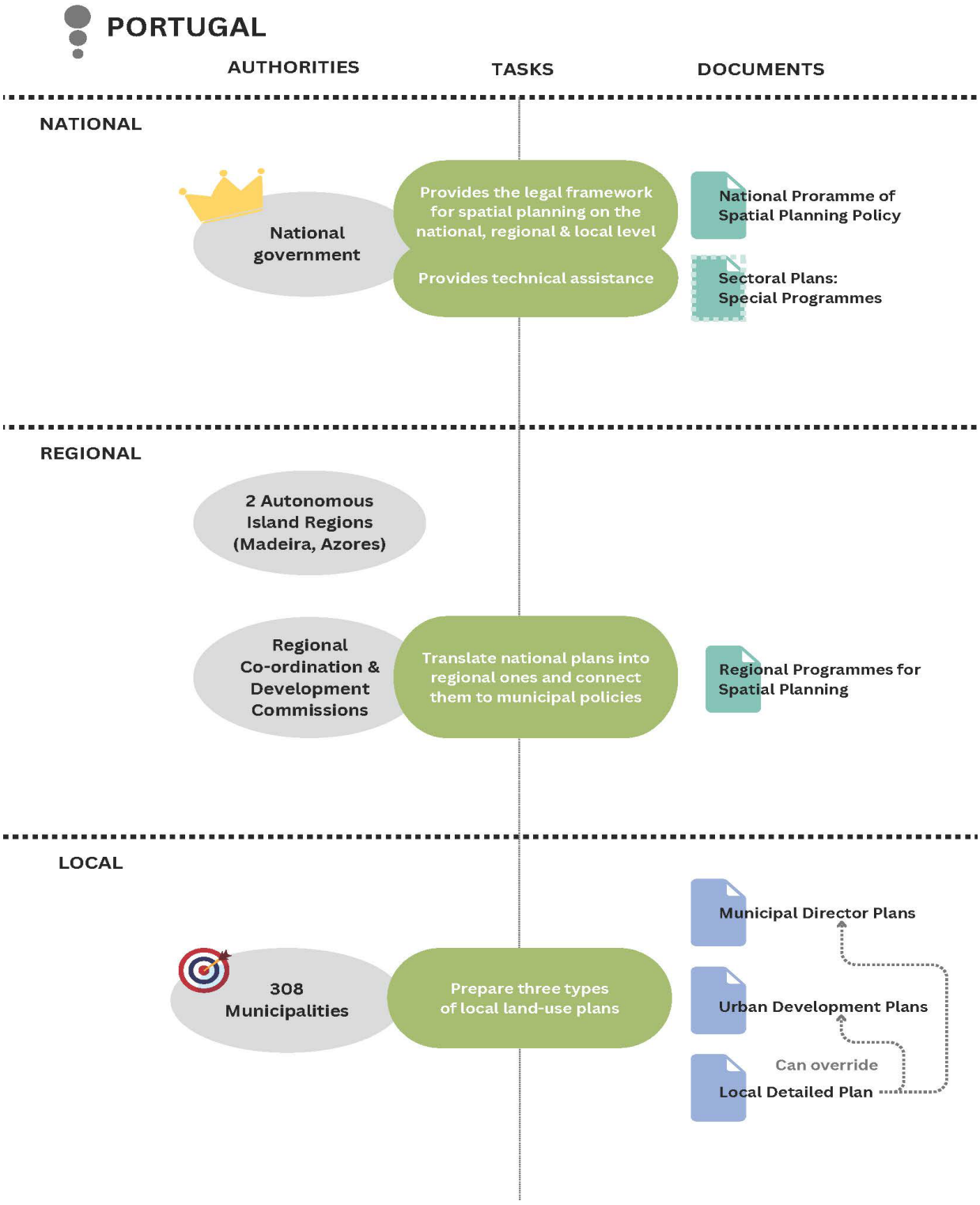
Since 2006, several reforms have been made to the Portuguese administrative system under the SIMPLEX programme. SIMPLEX has been one of the main tools used to modernise administrative policy in Portugal (SIMPLEX 2023). In 2023, SIMPLEX Urbanism, Spatial Planning and Industry was introduced in order to simplify the licencing processes and standardisation of administrative procedures in all municipalities (eportugal.gov.pt 2023).

Renewable Energy Policy

Portugal has demonstrated remarkable ambition with its renewable energy policy. In 2023, 61 % of total electricity consumption in Portugal came from renewable generation, totalling 21.2 TWh. Of this, wind power supplied 25 % of the consumption in Portugal, hydropower accounted for 23 %, photovoltaics accounted for 7 % and 6 % came from biomass (Redes Energéticas Nacionais 2024). Portugal also aims to be a leader in offshore wind. The updated draft of Portugal’s NECP notes how Portugal is trying to accelerate RE exploitation in the Atlantic, through the development of a technological free zones [16] in the Atlantic for the floating windmill test projects. Integrated renewables will likely also play an important role in the energy transition with references made to solar and wind energy in agricultural areas in Portugal (Government of the Portuguese Republic 2023).

[16] Technological free zones are said to unlock pre-consented areas through active grid connections and reduced regulatory processes (Renewable Energy Magazine 2022).

Figure 1-7: Organisation of spatial planning in Portugal



Source: Own illustration, adapted from OECD (2017e).

The introduction of Environmental and Renewable SIMPLEX[17] is helping to accelerate the deployment of renewable energy in Portugal by reducing the time and criteria required for the renewable licencing procedure in Portugal. However, environmental standards have arguably been compromised. For instance, outside of sensitive areas, EIAs are no longer required for solar projects that cover less than 100 ha or for wind farms if they have less than 20 towers or are located more than 2 kilometres away from a similar farm, provided that the total number of towers is less than 20 (Garrigues 2023).

Status of Renewable Acceleration Areas and Sensitivity Mapping

Portugal has been rather proactive in the deployment of RAAs and is comparatively advanced in the process having submitted mapped RAAs earlier this year, which have yet to undergo an SEA. The National Laboratory of Energy and Geology (LNEG) were commissioned by the Secretary of State to map RAAs. LNEG considered several criteria in relation to environmental sensitivity when mapping RAAs, having reportedly worked closely with several conservation NGOs. LNEG produced two separate maps, one for onshore wind and the other for onshore solar, both of which included five different scenarios (see Chapter 2.1 for more details) (TNC 27 Feb 2024; ZERO 10 Apr 2024).

Details on the extent of sensitivity mapping in the process are unclear. In consideration of the fact that LNEG worked closely with conservation NGOs, it is probable that sensitivity maps on the presence of certain species were excluded in the areas proposed for RAA designation. However, due to this information often being confidential in nature, it is likely that sensitivity mapping has been accounted for but will not be specifically labelled in areas for exclusion (ZERO 10 Apr 2024).

Public Participation

Portugal has a poor track record of local level public participation in spatial planning with no formal strategies in place (see Chapter 2.1 for more details). Opportunities for public participation have been further limited by SIMPLEX. Based on these reforms, the relevant authorities have less time to react as the supplementary deadline for issuing of opinions has been reduced from 20 to 15 days and can no longer be issued after this period has elapsed. Furthermore, rather than insisting on or requesting an opinion, the relevant administrative entity must proceed once the deadline has passed (Garrigues 2023). Such a short period of time limits opportunities to submit opinions and doesn't allow sufficient time for the relevant authority to respond.

[17] Decrees-Law no. 30-A/2022 of April 18th which concerns renewable SIMPLEX and Decrees-Law no. 11/2023, of February 10th which concerns environmental SIMPLEX.

1.6 Spain

Organisation of Spatial Planning

Spain operates as a 'cuasi-federal' state with the national government as the overarching entity of three levels of sub-national governments: 17 autonomous communities, two autonomous cities, 50 provinces, and 8119 municipalities. The Autonomous communities (*comunidades autónomas* - AACCs) have significant autonomy and competences, including the ability to decide on municipal and provincial organisation within their territory (Gregorio Hurtado and Tomàs 2022). In many areas of activity, the role of the national government is limited to preparing nation-wide framework legislation that serves as a guideline for regional laws. Comparatively, municipalities, although they operate at the local level, play a central role in land-use planning. As a result of the federal structure, spatial planning practices in Spain are guided by various frameworks across different levels which often lack co-ordination (OECD 2017f, see also Figure 1-8). The challenges posed by this complex institutional framework can create difficulties with EU policy delivery in Spain in many different fields, including territorial and land-use planning, and planning for RE.

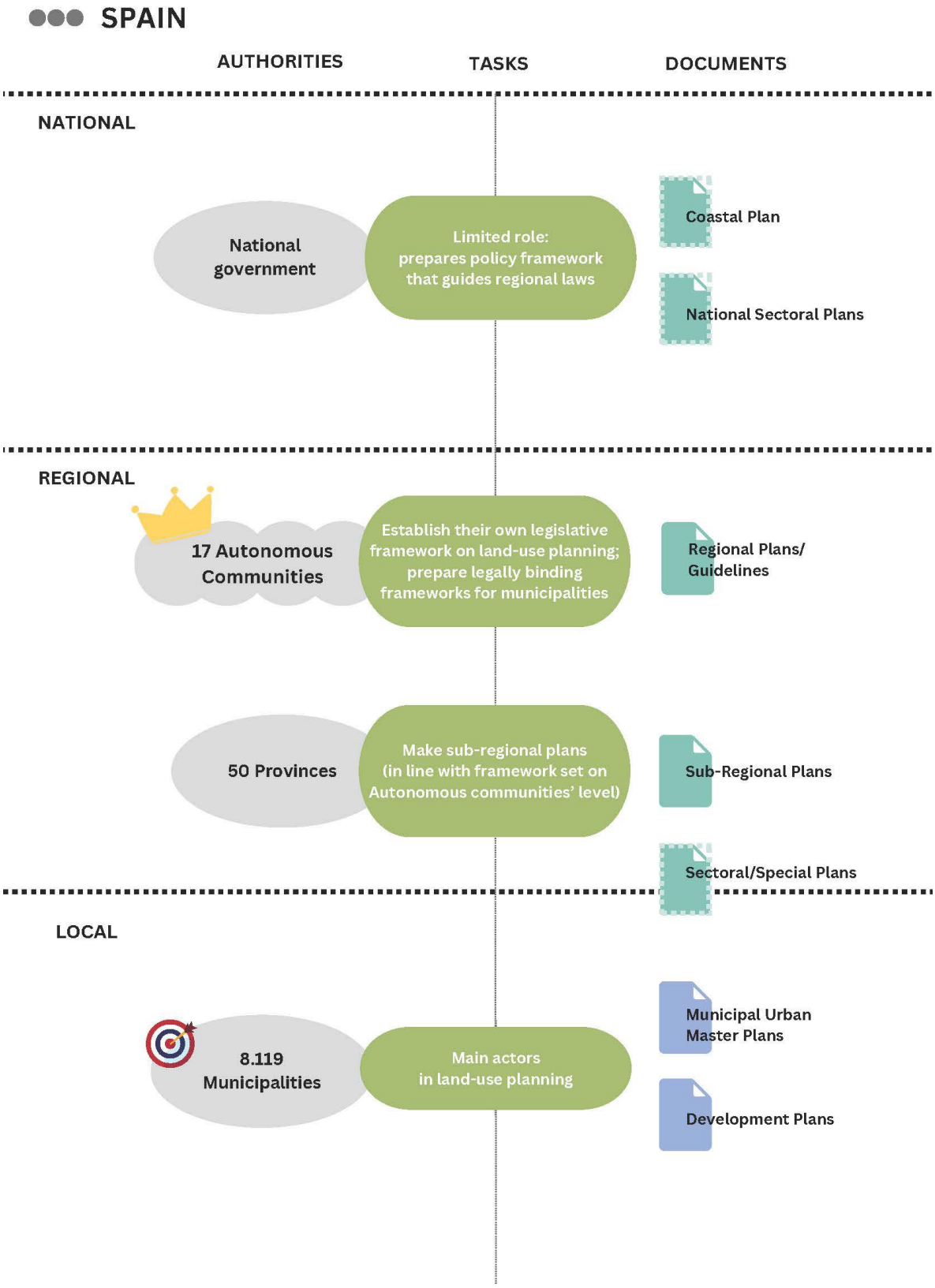
Renewable Energy Policy

The present energy and climate framework in Spain aligns with the 2050 vision of achieving national climate neutrality, transitioning to 100 % RES in the electricity grid, and attaining 97 % RE across the total energy mix. Consequently, the country is making major strides in its energy transition efforts focusing on expanding RES, like solar, wind, and renewable hydrogen as well as advancing energy efficiency and electrification (IEA 2024e). In 2023, renewables made up a significant portion of Spain's electricity generation, representing 50.3 % of the total electricity demand in 2023, increasing from 32 TWh in 2000 to 134 TWh in 2023 (IEA 2024f; 2024d; REE 2024). Yet, despite significant steps towards decarbonisation, Spain's overall energy consumption is still predominantly reliant on fossil fuels (around 70% in 2023) (MITECO 2024).

In response to the Russian war on Ukraine and the subsequent insecurities in energy supply, the Spanish parliament passed a set of measures designed to ensure, *inter alia*, an accelerated deployment of national RE projects. Royal Decree Law (RDL) 20/2022 of 27 December allows for an "express environmental processing" mechanism which introduces a simplified EIA for certain RE projects (Agencia Estatal Boletín Oficial del Estado 2022). The regulation is valid temporarily for a period of 18 months and applies to projects that fall within the scope of national authorisations i.e., with a capacity of > 50 MW. Initially, this fast-track process was limited to RE projects located in inland sensitivity areas of low and moderate sensitivity according to the national sensitivity zoning tool (see Chapter 2.2) and with a limited installation capacity (under the earlier RDL 6/2022)[18]. However, these conditions were softened and are no longer valid: now, the simplified process may apply to RE projects on any land except marine areas, Natura 2000 sites, protected areas and certain high-voltage power line construction (≥200 kV and a length of 15 kilometres) (Vicioso and Barreira 2023; Greenpeace 2024b).

[18] Maximum installation capacity of 75 MW for wind and 150 MW for PV.

Figure 1-8: Organisation of spatial planning in Spain



Source: Own illustration, adapted from OECD (2017f).

What the express process does for these projects is to reduce the extent of environmental analysis through a so-called “determination of environmental impact” as opposed to an extensive EIA. This means that the law does not fully exempt RE projects from conducting EIAs. Instead, it introduces a new procedure which is simpler and shorter than the ordinary evaluation processes: for RE projects that generally comply with aforementioned criteria, a preliminary “screening” procedure is conducted. The latter shall determine whether or not an EIA would be necessary for the project in question (EP 2023). If environmental authorities assess negative effects on the environment as low or negligible, a simplified EIA procedure applies (including e.g., shortened assessment period for administrative authorities). If, however, a risk of significant adverse effects is identified within the screening process, the standard EIA procedure applies according to the provisions of the Law 21/2013 of 9 December. While the law aims to fast-track the development of RE projects, studies such as by Greenpeace (2024a) have demonstrated that only very little acceleration has been achieved so far. Also, the use of the express mechanism is geographically concentrated in a few regions[19] and five major companies.

Status of Renewable Acceleration Areas and Sensitivity Mapping

The Spanish government has not yet publicly indicated how it intends to establish RAAs. The status of existing designated areas for RE varies between Spain’s terrestrial and marine territories. As indicated earlier and by Greenpeace (2024a), Spain’s emergency legislation introduced in 2022 virtually established ‘*de facto*’ RAAs on land outside the protected areas network, however without the environmental and public participation guarantees required by RED III.

Spain’s coastal waters

In Spain’s coastal waters, RE priority areas have been designated covering approximately 5.000 km², outlined in Spain’s Marine Spatial Plans (*Planes de Ordenación del Espacio Marítimo* (POEM)) (MITECO 2023). Finalised in February 2023, after a five-year process involving stakeholder and public participation, these areas streamline offshore wind development while also considering marine ecosystem protection measures. Ecological constraints within the stakeholder dialogue led to reducing the initial size of offshore RE priority areas from 7.500 to 5.000 km² (Barrero 2023). Although the process is technically participatory and provides a structured approach to offshore wind deployment, it has faced opposition from certain fishing interests (Barrero 2023). While the draft proposal regulation on offshore wind development prioritises development of RE in these areas, it does not exclude certain projects being developed outside of them. Yet, all development in marine environments adhere to marine spatial planning principles, accounting for biodiversity and certain species conservation areas and factors such as SEA with EIAs taking place at each site (MITECO 2022).

Spain’s land-based renewables

By comparison, Spain currently lacks specifically designated areas for RE projects of any kind on land. However, national environmental sensitivity maps are available for land-based solar PV and wind projects, published in 2020 (MITECO 2020) (see also Chapter 2.2). Yet, their usage is neither mandatory nor co-ordinated between the national and regional level (Vicioso and Barreira 2023).

[19] Castilla y Léon and Castilla La Mancha represented nearly 60 % of the projects processed in this way; and 75 % of the project approvals Greenpeace (2024a).

The factors for mapping the Spanish mainland's sensitivity include: population, people, health, flora, fauna, biodiversity, geodiversity, soil, subsoil, air, water, marine environment, climate, climate change, landscape, material goods, cultural heritage and the interaction of all of the above and numerous special factors (MITECO 2020). While the map may serve as an important orientation tool in the spatial planning process, its data quality has been criticised by NGOs such as Greenpeace (2024a) and Birdlife/SEO. Improvements appear to be necessary before the tool is used in the identification of candidate RAAs. In addition to the national sensitivity mapping exercise, also some of the AACCs have developed or are developing their own sensitivity maps for identifying RE priority areas, for example for wind onshore and PV in the AACC of Basque country[20]. In general, sensitivity mapping for RE at regional level in Spain is at different stages of development – summary information on this is published by SEO/Birdlife (2023).

Public participation

Public participation for normative processes is established by law (Law 39/2015 October 1 Article 133, Law 50/2019 November 27, Article 26) in two ways: first, a public consultation is conducted prior to drafting the regulatory text to gather the opinions of potential stakeholders. Secondly, after the draft or preliminary draft is prepared, if it impacts the legitimate rights and interests of citizens, the text will be published on a web portal.[21] This aims to facilitate a public information process or provide a hearing to affected individuals directly or through representative organizations. Additionally, it offers the chance to obtain additional contributions from other individuals or entities. Notably, public participation is also organised at the sub-national level due to the autonomous character of the AACCs (Vicioso and Barreira 2023).

Although the above-mentioned efforts to guarantee public participation by law exist, it has been reported that, in practice, it is not guaranteed sufficiently in numerous cases (Bolonio et al. 2024; Greenpeace 2024a; WWF Spain 2024). For example, the "express environmental processing" mechanism (RDL 20/2022) potentially eliminates the EIA for suitable 'go-to areas', which also removes opportunities for public participation as part of the EIA (Greenpeace 2024a). Another example shows in the national sensitivity mapping exercise (see Chapter 2.2), where NGOs have reported a lack of stakeholder engagement in the process of developing the sensitivity index map (WWF Spain 2024). In contrast, however, extensive stakeholder engagement took place in the process of developing Spain's Marine Spatial Plans (Barrero 2023).

[20] https://www.geo.euskadi.eus/geoestudioa/apps/experiencebuilder/experience/?id=9be2040f501540388751ef36fc6a399b&page=home
[21] https://www.miteco.gob.es/es/energia/participacion.html

2 In The Spotlight – Three Case Studies

In this chapter, we highlight three Member State specific case-studies in a fact-sheet format. We opted for the following cases as they provide comprehensive and useful information on key elements of the spatial planning process as stipulated by RED III:

- Fast-tracking the designation of RAAs in Portugal
- Sensitivity mapping in Spain Mainland: Criteria, data and the effectiveness of the tool
- Participatory process in RE development areas in Germany

Each example offers valuable insights into what's working exceptionally well in the given process, areas for improvement, and potential shortcomings. Moreover, we explore what other countries can learn from these cases. Accompanying these analyses are brief info boxes, drawing parallels to similar processes in other MSs. This examination aims to provide actionable insights for enhancing practices across EU Member states, which also feeds into the MS-specific barrier analysis and the final recommendations derived in this report.

2.1 Fast-tracking the designation of RAAs in Portugal

// At a glance – our take on the case study[22]

Portugal is a forerunner in the process of RAA designation, as the country continues to strive towards ambitious RE targets and utilizes the European Council's Emergency Regulation as a window of opportunity. Recently, the National Laboratory of Energy and Geology (LNEG) submitted an updated draft of RAA mapping to the Secretary of State, that has yet to undergo a strategic environmental assessment (SEA). Although Portugal's efforts are commendable with the country being comparatively advanced in this process, we take a closer look at the outcomes of this fast-tracking approach, highlighting what has been overlooked, potential barriers Portugal may encounter, as well as considering the positive effects of this approach.

General information	
Member State	Portugal
What's in the spotlight?	• Methodology for mapping RAAs • The screening procedure • Planned personnel to facilitate RAAs
Details on the process in study	• **Methodology for mapping RAAs:** ***Sequential order:*** Portugal has deviated from the designation process prescribed in RED III. Based on the suggested timeline, MSs should begin by mapping the domestic potential and available RE areas by 21 May 2025.[23] This is intended to help MSs identify areas that are favourable for RE development.

[22] The following case study has been developed through feedback by local project partners from The Nature Conservancy and ZERO.
[23] RED III (Article 15b)

Following that, RAAs should be designated based on these already identified areas by 21 February 2026[24]. Effectively, RAAs are intended to be considered as a "sub-set" of the already identified potential areas. Contrary to the timeline outlined in RED III, Portugal has prioritized the designation of RAAs ahead of completing the mapping of areas for RES potential. Thus, raising questions as to why the Portuguese government appears to be rushing this process. It is quite likely, that RAAs are being fast-tracked to ensure a faster licensing procedure.

Criteria considered: In the most up to date version of the map for RAAs by the LNEG, separate maps for both onshore solar and wind in mainland Portugal were provided. Five scenarios[25] for both maps were included with some non-artificial areas also mapped for potential RAA development. Due to a lack of data, brownfield and industrial areas were not included, meaning artificial areas could not be prioritized. NGOs were said to have been consulted with when setting the criteria for RAAs.

- **The screening procedure**

Due to renewable and environmental SIMPLEX, the renewable and environmental licensing procedures for renewable energy projects have already been simplified in Portugal. As a result of these measures, environmental standards are threatened by the reduced requirements for EIA's and reduced time limits for public participation and analysis by the public administrative agencies. In particular, the role of the Portuguese Environmental Agency (APA) has been altered by Simplex.

Regarding the specific screening procedure for RAAs in Portugal, the process remains unclear. Currently, no specific authority has been appointed to carry out the SEA. Following the conclusion of the SEA, RAAs will undergo a further "screening process" conducted on a case-by-case basis. As stipulated in RED III, the competent authority will have to confirm each RAA on an individual basis[26]. However, questions remain concerning what this process will look like and who the responsible authority will be.

Despite the lack of clarity surrounding the screening procedure for RAA's in Portugal, under RED III mapping is an essential part of the process in designating RAAs and, a step which is not required under environmental SIMPLEX. In consideration of the mapping requirements under RED III, this could potentially strengthen the existing environmental screening procedures for renewable energy projects in Portugal.

- **Planned Personnel to facilitate RAAs**

A Mission Structure for the Licensing of Renewable Energy Project 2030 (EMER 2030) has been created to tackle the technical and administrative tasks associated with the process of renewable acceleration. However, fulfilling these objectives has proven to be difficult. There is said to be a lack of people with the relevant qualifications or willing to fill these civil service positions in Portugal.

[24] RED III (Article 15c)

[25] In all scenarios greater consideration was said to be given to nature conservation. In scenario 1, special consideration was given to hydrological factors that are very important to Portugal such as, karst aquifers in the Algarve and granite and quartzite outcrops in Alentejo. Areas with maritime pine were also excluded as potential RAA areas. Scenario 2 included the same criteria as in scenario 1 and was extended to include all aquifers. Scenario 3 considered a 100m zone around residential areas. Scenario 4 included REN (National Ecological Reserve) and RAN (National Agricultural Reserve) areas. Scenario 5 considered al of the above.

[26] RED III (Article 16a)

What level(s) of the planning process does this involve?	• Renewable energy planning in Portugal takes a hierarchical structure. As it currently stands, municipalities cannot reject renewable energy projects if the project in question requires less than 2 % of the total area of the municipality [27]. RAAs are currently being set out at the national level. If the designated areas receive approval by means of an SEA, the RAA becomes part of the national law of territorial management. Once this occurs, municipalities are not able to refuse projects in these areas and must incorporate it in their land-use plans.
What authorities are mainly involved?	• The Directorate General for Energy and Geology (DGEG), EMER 2030, the APA and the LNEG.
How does this case study serve as best practice?	
What's going particularly well?	• Portugal has demonstrated great ambition in renewable energy acceleration. This has been supported by a political climate that is pro-renewables. From an institutional perspective, much of the groundwork has already been laid for future governments. • From a nature conservation perspective, the factors considered by the LNEG in mapping RAAs have been favourable. For instance, by reaching out to several nature conservation NGO's they collected detailed information on endemic species, (some of which were not fully accounted for in Natura 2000 designated sites).
What other countries can learn from?	• Portugal's efforts to map renewable acceleration areas is pioneering. However, this method of doing so and the subsequent consequences are relatively unknown. While it is positive that Portugal is mapping RAAs under RED III, Portugal's approach of beginning by mapping RAAs, as opposed to tackling them as part of a broader mapping exercise by firstly mapping domestic RES potential and areas available for RE, is debatable. In any case, other countries will be able to learn from Portugal's experiences in this process. • The approach taken by LNEG to engage with NGOs on the topic of nature conservation [28] and to err on the side of caution could serve as a "best practice approach".

[27] SIMPLEX, reform, Decree-Law No. 72/2022.
[28] This was an initiative by the LNEG and not an institutional practice.

What are the limitations of the case?	
What are potential concerns in the process?	• **Issues with data availability** Due to there being no maps available on brownfield sites, they were not included in the mapping of RAAs. In 77 municipalities, data on ecological reserves were incomplete so, they were also excluded from the mapping process. Finally, existing land-use maps used by Portuguese authority's date back to 2018 and likely need to be updated. These issues with data availability compromise the accuracy and quality of mapping RAAs. • **Lack of stakeholder and public engagement** In January 2023, the National Association of Portuguese Municipalities (ANMP) were consulted with, nonetheless, only 10 municipalities were involved and other important governance bodies such as the Inter-municipal Councils (CIMs) were excluded. This data is not accessible by the general public. Moreover, there are no strategies in place for local level participation. Although it is important to get municipalities on board to support RE developments in their areas, they are currently not adequately accounted for in the process.
What should be done better?	• **Legal barriers likely to arise** There is a clear lack of legislation in Portugal surrounding renewable energy. For instance, there is currently no legislation addressing how far large solar installations should be located away from residential areas. This lack of legislation will likely be revealed in future when considering the criteria for location of RE installations. • **Lack of consideration given to grid capacity and proximity to the grid** Currently, the grid capacity is almost exhausted in Portugal. From a technical point of view, it is unlikely Portugal will be able to facilitate the planned acceleration of renewable energy unless the grid is expanded. Furthermore, proximity to the grid was not considered in the mapping of RAAs. If projects are located too far out, this could result in new lines having to be built that could cross sensitive areas. Going forward, proximity to the grid should be a key criterion when mapping RAAs (see RED III Articles 15b, c, e). • **Lack of personnel** The lack of skilled personnel to fulfil the administrative roles required in the acceleration procedure could ultimately slow down the entire process.

// **INFOBOX**

Are other countries following suit? Taking a closer look at Poland, Estonia and Germany

Poland

Despite Poland's track record of conservative renewable energy targets, the Polish Climate Ministry is aiming to implement a legal framework for the designation of RAAs as well as to finish the mapping for RES potential (onshore wind and solar) by the end of 2024. As part of this process, the Polish Climate Ministry also plans to deploy sensitivity mapping by the end of 2024 (Reform Institute Poland 11 Mar 2024; Polish Green Network 30 Apr 2024).

While these advancements in Polish renewable energy policy are promising, similar to Portugal, Poland may also be rushing the process. More specifically, Poland could face issues in trying to map RES potential and to decide on a legal framework for RAAs during the same period that sensitivity mapping is being developed. Co-ordinating this effectively so that the sensitivity mapping can be properly implemented in the criteria for mapping RAAs will likely be challenging. Furthermore, Poland alike Portugal, is also likely to face issues with grid capacity (Reform Institute Poland 11 Mar 2024).

Estonia

In Estonia, efforts are being made to restart the planning process for the designation of acceleration areas. Currently, the RAAs are in the process of being selected, with ten selected areas of 22 having already been published. By July 2024, a report of the 22 areas will be completed. The RAAs will be prioritised, and areas with the most potential will be released for auction in the Autumn. The selection process is based on elimination (ELF 10 Apr 2024; 25 Apr 2024). For further information regarding the process of selection see Chapter 1.1. By restarting the planning process, RED III stipulations can be integrated into the Estonian planning system in accordance with the directive.

Germany

On April 26, 2024, the German government passed law changes to allow the transfer of inventory onshore wind plans designated under land federal act WindBG. These areas were object to far-reaching environmental assessments and participatory practices. The use of the "Transfer window" until May 2024, stipulated by RED III, allows for the integration of inventory plans to avoid time consuming re-assessments of plans, which have not followed the procedure stipulated in the RED III. This is particularly advantageous for countries that already have a very advanced and elaborated planning process, such as Germany. However, when transferring the inventory plans, particularly high environmental standards and reviews of e.g., nature conservation issues should be applied (as WWF Deutschland 26 Apr 2024; NABU 19 Apr 2024), and it should be ensured that public and stakeholder participation could be guaranteed (WWF Deutschland 26 Apr 2024).

2.2 Sensitivity mapping in Spain: Criteria, data and the effectiveness of the tool

// At a glance – our take on the case study

The Ministry for Ecological Transition and the Demographic Challenge (MITECO) developed a tool to identify the areas of national territory that are most and least suited to the implementation of RE projects for onshore wind and PV. The tool groups together the main relevant environmental factors, resulting in a zoning of the environmental sensitivity of terrestrial Spain. This particular sensitivity mapping exercise represents a best practice in many aspects, particularly in its technology-specific methodological approach and the consistency of the analysis. By enabling a high-level assessment of sensitive areas, it provides valuable insights for spatial planning processes. However, despite its merits, the tool's role in the Spanish federal spatial planning system is limited, primarily because its use is not mandatory. Temporarily, the tool was used as an orientation to identify low sensitivity areas that were eligible for the "express environmental processing" mechanism according to the RDL 6/2022 of 29 March. However, as this mechanism was expanded and this condition was dropped by RDL 20/2022 of 27 December, the tool lost this function in the spatial planning process. Furthermore, RE projects which fall within regional competence (up to 50 MW capacity) continue to be developed in areas identified as highly sensitive. This risk is especially high in regions without their own sensitivity maps. Furthermore, the effectiveness of the tool is significantly compromised by issues related to data quality and the factors considered. In some cases, such as the distribution of birds, the available data is reported to be insufficient while other relevant aspects, like proximity of potential areas to the electricity grid, were not factored into the analysis at all. Lessons from international comparisons, e.g., between Spain and Germany, highlight opportunities for an improved integration of sensitivity mapping tools across multiple levels of spatial planning in a federal system.

General information	
Member State	Spain
What's in the spotlight?	• Sensitivity mapping for Spanish mainland (Wind, PV): criteria & data used • The role of the tool in the Spanish spatial planning process
Details on the process in study	• **Sensitivity mapping for Spanish mainland** The Ministry for Ecological Transition and the Demographic Challenge (MITECO) developed a tool to identify the areas of the national territory with the highest and lowest environmental suitability for the implementation of terrestrial RE projects. Due to its early publication in 2020, this does not involve the identification of RAAs as stipulated in the RED III. Rather, the tool groups together the main relevant environmental factors, the result of which is a zoning of the environmental sensitivity of territorial Spain (not accounting for the maritime area). It helps to make environmental sensitivity measurable *via* a sensitivity index and available as a data base published on national geodata portals. Sensitivity is differentiated for onshore wind and PV. The mapping exercise is anchored in Article 21 of Law 07/2021 of 20 May for Climate Change and Energy Transition. Key information on the methodology and criteria employed are covered in the report "Environmental zone establishment for the implementation of renewable energies" [29], published by MITECO in 2020.

[29] https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/evaluacion-ambiental/documento0resumenejecutivo_tcm30-518037.pdf

	• **The role of the tool in the Spanish spatial planning process** Despite its status at national level, the use of the tool is not mandatory for identifying suitable areas for RE project development. Rather, the sensitivity mapping exercise is a methodological approach that serves as a clear orientation tool. Law 07/2021 exhorts (but does not oblige) the national ministry and the AACCs to ensure that RE projects take place 'preferentially' in areas of lower impact identified by the sensitivity maps. When, in 2022, MITECO ordered RE priority areas through the "environmental express permitting" procedure, it was originally limited to low and medium sensitivity areas, reduced afterwards to low sensitivity areas thanks to environmental NGOs and social platforms pressure in Parliament (Greenpeace 2024a). Later, however, it was expanded to all mainland Spain except a few categories of protected sites [30]. The expansion of the mechanism scrapping all direct links to the sensitivity mapping information of the tool, opens potentially sensitive areas to faster environmental permitting without public consultation. Moreover, in Spain, planning and permitting processes for RE projects with a capacity less than 50 MW fall in the authority of the AACCs. In these processes, reference to the sensitivity map is neither obligatory nor currently practised. Only provisions of planning and land-use management plans/instruments at regional level apply, such as regional sensitivity maps (which not all regions have) and/or (project-specific) EIAs. The question therefore arises as to the current and potential role of the tool on the different level of spatial planning processes. Furthermore, it is essential to clarify the role of the national and AACC amps given the intended use of sensitivity mapping in identifying RAAs under RED III.
What level(s) of the planning process does this involve?	• The sensitivity mapping exercise encompasses the national level: it is conducted by national authorities (see below) and serves as a country-wide (yet only mainland) data base for considerations on environmental sensitivity in the planning process. • The use of the tool is not mandatory (see above). Hence, its function is limited to provide orientation in the spatial planning process. In Spain, the main power of spatial planning lies on the regional level where the AACCs each establish their own legally binding frameworks for land-use planning. However, the regions only process RE projects with a capacity less than 50 MW. The authority for processing larger RE projects lies at the national level, without formal integration of the tool in planning processes.
What authorities are mainly involved?	• The national sensitivity mapping analysis was conducted by MITECO, through the Sub directorate General for Environmental Assessment of the General Directorate for Environmental Quality and Assessment. • Consultation with regional authorities, namely AACCs took place during the stage of baseline data compilation and analysis.
How does this case study serve as best practice?	
What's going particularly well?	• **Consideration of diverse ecologically and socially relevant factors** The sensitivity mapping analysis encompasses a broad set of relevant factors that feed into environmental sensitivity of potential RE development areas.

[30] Restricted sites are marine areas, Natura 2000 sites, protected areas and certain high-voltage power line construction (≥200 kV and a length of 15km) (Vicioso and Barreira 2023; 2024b).

	These factors are anchored in specific indicators, ranging from the localization of Natura 2000 network, important areas for bird conservation (provided by SEO/BirdLife), the Strategic Network of Ecological Corridors of the Wild Highways initiative (provided by WWF Spain) and RAMSAR wetlands over urban centres [31], water bodies and floodplains to the visual impact on local landscapes, livestock routes and UNESCO World Heritage Sites [32]. The indicators are differentiated into exclusion indicators, which indicate areas of maximum environmental sensitivity not suited for any RE project development, and weighted indicators. The latter pinpoint aspects of environmental sensitivity which may be weighed against the benefits of the area's RE potential. There is clear information on the weighing factor of each indicator. • **Differentiation between RE technologies** The sensitivity mapping analysis distinguishes between two RE technologies: Wind onshore and PV. This distinction acknowledges that different factors are relevant in the environmental sensitivity of areas depending on the RE technology. Such a differentiated analysis is also required in the designation of RAAs under the RED III. However, there is still room for improvement: For example, the current sensitivity criteria categorise urban areas as exclusion zones for wind and photovoltaics. While this is sensible for onshore wind, the potential for PV in urban areas could be lost. This includes rooftop PV and certain types of ground-mounted PV such as PV on urban industrial sites or car parks. It is therefore advisable to successively improve the approach to defining (exclusion) criteria and make it (even) more technology-specific, e.g., by differentiating within PV technologies. • **Transparency and accessibility of information** The sensitivity mapping exercise is accompanied with transparent information on the criteria used and how they were assessed. Furthermore, final sensitivity maps are publicly accessible on the geoportal [33] operated by the Spanish government.
What other countries can learn from?	• **Limited role of the tool in the Spanish (federal) spatial mapping architecture** Despite the legal status of the sensitivity mapping tool at national level, its use is non-prescriptive. This compromises the effectiveness of the tool to a large extent. NGOs report that RE projects are still developed in areas identified as highly sensitive in the tool. For example, in some AACCs, Natura 2000 sites are not excluded for project development so that RE development (in the authorities of the regional level) can be generally considered in such highly sensitive areas. The status of and respect for the national sensitivity mapping tool is thus un-coordinated between the different levels of the Spanish spatial planning architecture. To better integrate its results, it would be recommendable to give the integration of the tool's results into regional policies a more binding character to improve its interaction with other (regional) instruments (see Infobox on Germany) within Spain's complex constitutional arrangements.

[32] The comprehensive list of indicators considered can be found in https://www.miteco.gob.es/content/dam/miteco/es/calidad-y-evaluacion-ambiental/temas/evaluacion-ambiental/documento0resumenejecutivo_tcm30-518037.pdf.
[33] https://sig.mapama.gob.es/geoportal/geoportal.html.

- **Limited public participation in sensitivity mapping exercise**

The methodological documentation of the sensitivity mapping exercise states that AACCs and associations were consulted to at the step of data compilation, i.e., prior to the classification of the environmental indicators. However, it remains somewhat unclear whether this only served to collect data or whether there was any consultation with the regions and associations in terms of the methodology and content of the mapping exercise. Other than that, NGOs have reported a lack of any further stakeholder engagement in the process of developing the sensitivity index map.

What are the limitations of the case?

What are potential concerns in the process?

- **Completeness and quality of data**

The informative value of sensitivity analyses depends largely on the quality of the data used. NGOs have reported that some of the data fed into the tool's multicriteria analysis is outdated or insufficient. SEO/BirdLife recommended, to extend the considered criteria set to include not only protected areas but also bird species' presence and distribution. A study of Bolonio et al. (2024) revealed that Andalusian protected areas cover only a minimal part (17.7 %) of the Black-bellied Sandgrouse species habitat. This discrepancy is a result of poorly updated information due to two main reasons: a) outdated data available to the Andalusian Administration and b) a lack of public participation which serves as an essential source for regional-specific information.

- **Lack of co-ordination with grid infrastructure developments**

The sensitivity mapping does not consider the proximity of suitable areas to existing and/or planned grid infrastructure. However, this factor is of importance as the transmission grid is the backbone of the energy transition. It does not necessarily have to be an exclusion criterion if suitable areas are not in the immediate proximity of the grid, as the grid can and in some cases must be orientated towards the location of (major) RE projects in the future. Yet, proximity to the grid is an aspect that should be considered when assessing suitable sites for RE development and is a requirement of RED III. Accordingly, it would be advisable to include 'proximity to the grid' as a weighted factor in the spatial mapping analysis and to regularly consult and co-ordinate with relevant authorities on future plans for grid development[34].

- **Regional differences in indicators**

The sensitivity mapping exercise encompasses a comprehensive and harmonised analysis of national scope. This comes with the advantage that data is accessible in a consistent, centralised format. Yet, this can equally bring major limits in the accuracy of the analysis. Especially geographic specificities may not receive sufficient consideration. For example, the extent of the Natura 2000 Network and environmental protection areas are very uneven between the AACCs in Spain as their allocation also depends on regional competences. In Galicia for instance, Greenpeace and other organisations have been requesting to extend the Natura 2000 Network, unsuccessfully. At present, only 12 % of Galician land is protected despite its important natural values.

[34] *Red Electrica de España* is now working on the next period for the grid planning 2025-2030, so it will be crucial to align it with the last available data of sensitivity maps.

	• **No consideration of existing RE** The sensitivity mapping does not factor existing RE infrastructure into its catalogue of relevant criteria. Therefore, the final map does not sufficiently contemplate the potential cumulative impact of new projects in areas in which there is already RE infrastructure installed. To improve the informative value of the analysis, data on existing RE projects should also be included in the set of relevant criteria (e.g., as a weighted factor). It is crucial here that the data is up-to-date and has a detailed geographical resolution. The SEA required for RAA designation is a key opportunity to avoid the risk of further cumulative impacts.
What should be done better?	• **Formal integration of the tool across all levels of planning processes** The role of the spatial mapping tool has some limitations in the Spanish ('cuasi-federal') spatial mapping architecture, mainly because its use is not mandatory. However, it could be beneficial to formally integrate the tool across several levels of spatial planning to better assess the environmental sensitivity of potential areas and ultimately improve decisions in permitting: For example, the tool could be used as a compulsory "exclusion map", indicating those areas of high environmental sensitivity that would be 'no-go areas' for RE projects of national and regional authority. Or, the other way round, the use of the map would – again – be mandatory to identify low-sensitivity areas as RAAs for RE project developments. In any case, a detailed evaluation of the site-specific impacts would need an integration with region-specific data (see below). • **Integration of region-specific data in sensitivity mapping** Comprehensive analyses such as a nation-wide sensitivity mapping exercise risk excluding regional specificities and data inconsistencies. Therefore, it is suggested that such analyses are supplemented by regional information (e.g., through input *via* participatory formats) or regional mapping tools (see following Infobox on Germany). • **Improving data quality** Insufficient data quality may limit the accuracy of the tool and lead to some natural areas not receiving the necessary protection. It is therefore essential to ensure sufficient high-quality data for authorities and developers to be able to make well-informed decisions. One key lever to do so is reaching out to stakeholders with specific expertise in relevant fields, e.g., species protection, on a regular basis. Furthermore, major potential for data sourcing lies in regular and effective public participation as this may serve as an important source for region- and context-specific information.

// INFOBOX – Sensitivity analysis for the assessment of RE areas in Germany

Same, but different: sensitivity analysis to identify of onshore wind areas targets in Germany

In Germany, too, sensitivity mapping is used to identify suitable areas for onshore wind energy development. The German government has set targets for land areas to be designated to onshore wind energy in the federal act WindBG: 1.4 % of German land area by 2026 and – on the long run – a total of 2 % by 2032. On behalf of the German government, various research institutes set out a joint sensitivity mapping exercise which investigates the potential-based distribution of the 2 % area target for area potentials among Federal States (UBA 2023). As in the Spanish example, the study consists of a comprehensive GIS analysis that identifies exclusion and restriction areas due to environmental sensitivities. The outcome is a nationwide sensitivity index for areas that are generally suitable for onshore wind development ranging from high to low sensitivity, to environmental conflicts. Based on the resulting geographical distribution, the study develops recommendations for region-specific land provisions that each Federal State shall contribute to achieve the 2 % target (Guidehouse 2022). These values have contributed to the definition of legally binding region-specific area contribution values, which are now set out in §3 WindBG. For example, the northern region of Mecklenburg-Vorpommern shall designate 2.1 % of its land area to onshore wind energy until 2032 as it is endowed with large suitable areas, whereas the share of the urban region of Berlin is limited to 0.5 %.

Here lies the difference to Spain: Admittedly, also in Germany the study's sensitivity mapping approach is not 1:1 mandatory in the sense that it would define where wind energy installations are permitted or not. Unfortunately, the developed maps are not available for further usage in the spatial planning process as they contain classified information. Yet, it informs legislation on region-specific land use targets and is integrated across multiple spatial planning levels as a guideline.

Safeguarding sensitivity analysis in a federally organised spatial planning system

… by designation of RE priority areas on the federal level

Although no systematic, coordinated sensitivity mapping occurs at the regional level in Germany, various planning instruments ensure that RE projects avoid areas of high environmental sensitivity. The geographical designation of authorised areas for RE development takes place at the level of the federal states and in many cases is carried out by so-called Planning Associations[35]. To identify suitable areas, the latter also carry out GIS-based sensitivity mapping analyses, fed with regional data and with region-specific exclusion criteria. To a large extent, these overlap the exclusion criteria of the Germany-wide sensitivity mapping exercise, which was the basis for the legislation. If designated areas deviate from the sites identified in the study, this is due to a more accurate, regional data basis. For onshore wind, several federal states have already identified wind-priority areas, integrating them partially into their Regional Spatial Plans. Within the designated priority areas (which are in line with the area objectives of the WindBG), wind energy enjoys privileges under planning law. This means that approval procedures for wind energy within these areas are simplified.

[35] Note that it is ultimately up to the federal authorities to decide on how the spatial mapping process is carried out. Lower Saxony, for example, has adopted a decentralized approach, delegating the designation process to the municipal level.

… by environmental assessments

Yet, just as it is reported in Spain, RE projects may also be (and are) developed outside of those priority areas. For these projects, however, the aforementioned privileges no longer apply. Also, mechanisms ensure that these projects are subject to an evaluation of their impacts on the site's environmental sensitivity: the SEA and the EIA. Both assessment procedures aim to identify and describe environmental and human effects at an early stage, allowing for public and environmental authority feedback on projects or plans/programs and their anticipated impacts. The SEA is conducted at the planning level, preceding the EIA, and provides a broader assessment of environmental impacts. For instance, potential impacts on species and habitats are roughly assessed by examining land use alignment with protected nature areas in SEA, whereas EIA focuses on specific breeding sites and local ecological interactions. Additionally, EIA is conducted only for environmentally relevant projects (Balla et al. 2010; UBA 2024). Depending on the project's impact level, a species conservation assessment may be mandated. This assessment aims to address requirements outlined in the German Species Protection Act (BNatSchG) and possibly required Habitat Directive assessment i.e., *Fauna-Flora-Habitat* (FFH) assessment, as well as concerns regarding special species protection, during the planning and permitting stages. It is conducted when there is reasonable suspicion that protected animal and plant species under European law like under the Birds Directive or the Habitats Directive could be affected. If a project would have an impact on a Natura 2000 site, a preliminary FFH assessment may first be required for the plans and projects, usually based on existing documents, to determine possible significant effects on a Natura 2000 site and its constituent elements relevant to conservation objectives. Afterwards, a FFH assessment can be conducted based on the conservation objectives defined for the area (BfN 2021b; 2021c).

2.3 Participatory process of RE development areas in Germany

// At a glance – our take on the case study

The Planning Association *Regionalplanungsverband Bodensee-Oberschwaben* (RVBO) in Germany, showcases exemplary public participation in spatial planning. This process responds to legislative changes mandating RE development. The RVBO's approach involves three key steps: identifying search areas, defining priority zones, and evaluating potential areas. Public participation occurs at each stage, including citizen dialogues and consultation events. Best practices include centralised information to increase transparency and early involvement of citizens. Other countries can learn from Germany's structured and citizen-centric approach to public engagement. Limitations include the RVBO's unique practice not being widespread nationally and reliance on voluntary participation by developers. Improvements could include better awareness and digital participation options. Integration of reinforced public participation guarantees into the national legislation that transposes RED III could enhance the process by ensuring early involvement in renewable energy development.

It is also worth noting that several other planning associations in Germany already have good participatory mechanisms in place for RE development. While the following case study highlights elements of the RVBO approach that could provide useful insights for other planning associations, it is not intending to diminish other existing approaches for public participation.

General information	
Member State	Germany
What's in the spotlight?	Participatory process and organization of spatial planning of Planning Association Bodensee Oberschwaben (RVBO)
Details on the process in study	• **Background information** Adoption of the German federal act of the *"Windenergieflächenbedarfsgesetz"*[36] (WindBG) in 2022 made the designation of 2 % of federal state area for onshore wind mandatory. The federal states are responsible for its implementation. In response, the federal state of Baden-Wuerttemberg adapted its Climate Protection and Climate Change Adaptation Act in 2023: 1.8 % of the region is to be allocated for wind energy and additionally at least 0.2 % of open-space for PV solar installations. The mapping and planning of these designation areas for onshore wind and open-space PV in Baden-Wuerttemberg should be documented in sub-regional energy plans by so-called planning associations. • **Planning Association *Bodensee-Oberschwaben*** The planning association *Regionalplanungsverband Bodensee-Oberschwaben* (RVBO) is a prime example of particularly good practice in terms of public participation. The area, of which RVBO is responsible for the districts of *Bodensee*, *Ravensburg* and *Sigmaringen*.

[36] Aim of the WindBG is to align interests in climate and environmental protection with the transformation of the energy system towards a climate neutral electricity production fully based on RES. To achieve this by 2026 1.4 % of German land area and by 2032 a total of 2 % land area are to be designated as wind onshore development areas. See §1 and Annex (to §3 (1)) WindBG.

	• **Process of spatial planning at RVBO** Step 1: Identification of search areas: Search areas is a very first area delimitation to identify suitable areas for wind energy and open-space PV. High-quality agricultural areas, nature conservation and species protection areas are excluded as these already lead to considerable conflicts. Overall search areas contain more areas than ultimately defined in the sub-regional energy plan. Step 2: Definition of priority and reserved areas for wind and PV: After the identification of search areas, further exclusion criteria are considered in the designation process. These exclusion criteria cover e.g., retention areas, impairment of the landscape, monument protection. Further suitability criteria include polluted areas like parking lots to designate areas as space-efficiently as possible. This criteria inclusion gradually reduces the search areas. Step 3: Evaluation of potential areas: Afterwards the areas are evaluated individually. The potential areas are coordinated with various stakeholders from municipalities authorities, nature conservation organisations prior to consultation. Furthermore, a strategic environmental assessment is implemented. • **Process of public participation at RVBO** Participation in Steps 1 and 2: As part of a citizens' dialogue, a public information event "Finding spaces. Find areas." took place. The identified search areas were presented, the planning procedure was explained and an open exchange with citizens was facilitated. The criteria and explanations of the search area maps for wind energy and open-space PV are available online[37]. The citizen's dialogues took place just a few months after the identification of the search areas began in 2023. Participation in Step 3): From the end of January and until the end of March 2024, public authorities and citizens could submit comments as part of the public participation process. Multiple dialogue events in various cities within the RVBO planning area were used to initiate the participatory process. All plans and documents are available on the regional plannings association's website[38]. From January 29 until March 29, it was also possible to participate online using an interactive map. Following steps: After the two-month consultation period, the regional planning association will review all comments received and, if necessary, adapt the draft plan and submit it to a new public consultation. The association assembly must have adopted the regional energy plan by the end of September 2025.
What authorities are mainly involved?	Involved actors are the municipalities within the planning associations area and its citizens, respective regional authorities, nature conservation organization as well as the RVBO as executing planning authority.
Respective law regulations for public participation	• **Legislative outline of public participation in Germany** The German regulations on regional or municipal planning as the German Planning Act (ROG) or the Building Act (BauGB) offers various formal participation in regional and urban land-use planning (see §9 ROG and BauGB §§2, 3, 4).

[37] Onshore wind: https://www.rvbo-energie.de/media/pages/home/cf3f49d180-1704187427/230711_rvbo_kriterien_wind.pdf, Open-space PV: https://www.rvbo-energie.de/media/pages/home/d8b7ed73f3-1704187425/230711_rvbo_kriterien_solar.pdf

[38] www.rvbo-energie.de

	Formal participation is mandatory and implemented by the respective authority. In regional planning level, participation is mandatory for the regional plans (see §9 (2) ROG). In urban land-use planning, participation is possible for preliminary land-use plans and urban development plans. Furthermore, informal participation is possible in the form of voluntary and independent provision of information and offer of dialogue by the project developer.
Measures to increase public engagement	• **Public participation and acceptance** In addition to involving the local population in planning processes, there are other effective ways of increasing public acceptance of RES. Overall, various factors can affect citizens position towards acceptability of RES projects (see Green Planet Energy 2021; AEE 2022; Hogan et al. 2022; van den Berg and Tempels 2022; Clorius et al. 2023; Jung 2023; Lienhoop 2018). Lienhoop (2018) study suggests that wind energy projects tend to gain acceptance from the local public when specific conditions, such as active participation and meaningful involvement in the decision-making process, are provided. However, procedural involvement, crucial for empowering local decision-making, is often limited within the German planning and decision procedures. Additionally, financial participation has been shown to have a notable impact on the acceptability of projects. Lienhoop (2018) calls or significant policy adaptations to provide various participation options, such as information meetings, discussion sessions, and working groups. For municipalities it may be crucial for financial participation, if the designated areas are owned by the municipality, to ensure revenues from the planned RE projects. This would also increase the municipalities' feeling of justice on a local level. For that reason, it is highly important to extend formal participation by including municipalities in the planning process for suitable areas. Yet, most citizens are not well informed about financial participation opportunities. • **Financial participation** According to §6 EEG, plant operators should make a financial contribution to municipalities that are affected by the construction of a plant. The operators can offer the respective municipalities a unilateral contribution of 0.2 ct per kilowatt hour fed into the grid. Some federal states passed their own regulations to enforce mandatory payments (MASLATON 2023). Another option for participation in local RE projects is offered by citizens energy associations. Citizens' energy associations are communities of citizens who intend to realise and participate in an energy project in their area. The German government supports these associations and exempts them from participating in tenders for plants with a capacity of up to 6 MW (§22 (3) No. 3 EEG).
How does this case study serve as best practice?	
What's going particularly well?	Public participation was made possible from an early stage in various participation formats (e.g., citizen dialogue for the identification of the search areas, information events) as addition to the formal participation process of the sub-regional energy plan. Furthermore, the whole process of planning and public participation is structured on RVBO's website, as well as dates for participation opportunities. Additionally, information and documents are published online as well as recordings of information events. This concentration of information should enable low-barrier public participation for the affected citizens and stakeholders.

What other countries can learn from?	• Structured process of public participation, • Direct involvement of citizens early on, • Low barrier, and • Information at one place consolidated to increase transparency. Finally, the integration of presented aspects of voluntary participation (e.g., citizen's dialogue, information events) in advance of the formal participation process should serve as a standard practice on the German-state level and may also be adopted in other European MSs.
What are the limitations of the case?	
What are potential concerns in the process?	The participatory practice of the RVBO does not represent the country-wide planning practice. Although the opportunities for public participation in Germany are fundamentally regulated, their specific form in the case of voluntary public participation by the project developer is rather flexible in terms of format and citizen involvement. Well-designed public engagement can be a particular advantage for the acceptance of the local population. However, as there is the element of "voluntary" participation by the project developer, its implementation depends on the motivation and the financial and personnel resources of the planning region. Furthermore, the planning process at RVBO has not yet been completed. A solid evaluation of the planning practice can only be made after the planning activity has been completed to ensure high participatory effectiveness. Overall, not all countries could generally adopt the approach or RVBO due to varying structures of the participatory process.
What should be done better?	The participatory practice of RVBO does not represent the standard approach within Germany. Usually, citizens need to be aware about participatory processes within their region and check official documents like municipality leaflets for possible participatory opportunities if e.g., the binding land-use plan is altered. Citizens can inspect plans, make objections and comments to request changes. This results in proactivity by citizens being a prerequisite for public participation. Moreover, the participatory opportunities are of physical nature. Although digital participation was possible during COVID-19, currently only physical attendance is an option. The current German planning practice can lead to exclusion of citizens, since there are still barriers for the citizens that decrease participation. Furthermore, the planning practice of RVBO is as well mostly of physical nature, although documents and event recordings are published online which is an enhancement towards the current German participatory practice.
How could RED III influence the participatory processes?	The waived environmental assessments in the process of RAA designation lower the entry point for public participation throughout the directive. This leads to fewer participatory opportunities by law. Furthermore, the tight deadlines for the RAAs designation could lead to a pressure of time for the planning associations in states, where the WindBG is not as advanced as in Baden-Wuerttemberg (WWF Deutschland 11 Mar 2024; NABU 19 Apr 2024). As the worst outcome, participation opportunities could be reduced. This also applies to MSs not as far in the spatial planning process as Germany.

// **INFOBOX**

Inclusive participatory procedures in Estonia

As well as in Germany, Estonia makes citizen's proactivity a prerequisite for participatory processes. However, digital channels, such as direct emails, local municipality websites and social media are utilized for notifications and information sharing. Furthermore, in Estonia there is the opportunity to have a digitalised participatory process as well as document availability online. Yet a documentation or meeting available in digital format does not guarantee stakeholder participation. Special attention to integrate digital participants in processes is necessary. Face-to-face interactions, including information sessions, remain crucial. To structure participatory processes there are various manuals and complementary resources for local governments and municipalities to rely on (ELF 25 Apr 2024; 26 Apr 2024). Estonia serves as a best-practice example for Germany, despite certain shortcomings regarding the effectiveness of digital participation, as basic structures could be adopted (see Chapter 1.1 on Public Participation).

3 Barrier Analysis

In this chapter, we undertake an in-depth exploration of country-specific barriers with the spatial planning process as prescribed in RED III, in mind. These barrier analyses provide the basis from which we derive recommendations for each selected MS. To generate a better understanding, we conducted the barrier analyses in visual form. Note, that in the graphs displayed, only areas with identified challenges and barriers are mapped. The barrier analyses are based on extensive desk research and consultations with country-specific experts in spatial planning.

Challenges of the RED III RAAs

In addition to country-specific hurdles, the following section lists overarching hurdles that could result in the transposition of RED III into national law. These issues are raised by Deutinger and Sailer (2024) in detail.

- **RED III implementation timeline**
  - The suggested timeline to implement the regulations of RED III is very narrow. This could result in rushed processes that could lead to trade-offs in either potential areas identified/designated, conservation or species protection matters or reduced public participation.
- **Waived Environmental Assessments**
  - In the process of identifying RE areas i.e., step 1 of RAAs designation, public participation is not mandatory, as no SEA is necessary. Public participation only becomes mandatory for the designation of RAAs. These concerns are also raised by NABU (11 Apr 2024) and WWF Deutschland (11 Mar 2024).
  - In the course of the RED III projects permitting should be accelerated and simplified by modifying environmental law. Consequently, there is no need for EIA, Habitat Directive Assessment, species protection assessment and water law assessment, if the rules defined in the previous planning process are adhered to and suitable mitigation measures are implemented. If compliance with plans and measures is followed, assessments like EIA, Habitat Directive or other regulations under EU law may be waived. The mentioned environmental assessments are replaced by a “screening”, which aims to determine if the project is likely to have significant unforeseen adverse effects that were not identified in the SEA and, where applicable, the Habitats Directive assessment. In addition to possible negative effects on nature and species protection due to the elimination of various assessment obligations, an entry point for public participation, which is made possible by an EIA, is also eliminated.
- **Ambiguities regarding central parts of the regulation**
  - Mitigation measures: Mitigation measures are mentioned at various sections of the RED III RAAs regulations in order to prevent or compensate for negative impacts on the environment. However, the referential point of the mitigation measures is unclear. It also remains unclear how concretely the appropriate rules for effective mitigation measures are to be defined at the planning level. The possibilities for specification at the subsequent permitting level are limited, as the permitting authorities (at least in Germany) largely have the same data at their disposal as at the planning level.

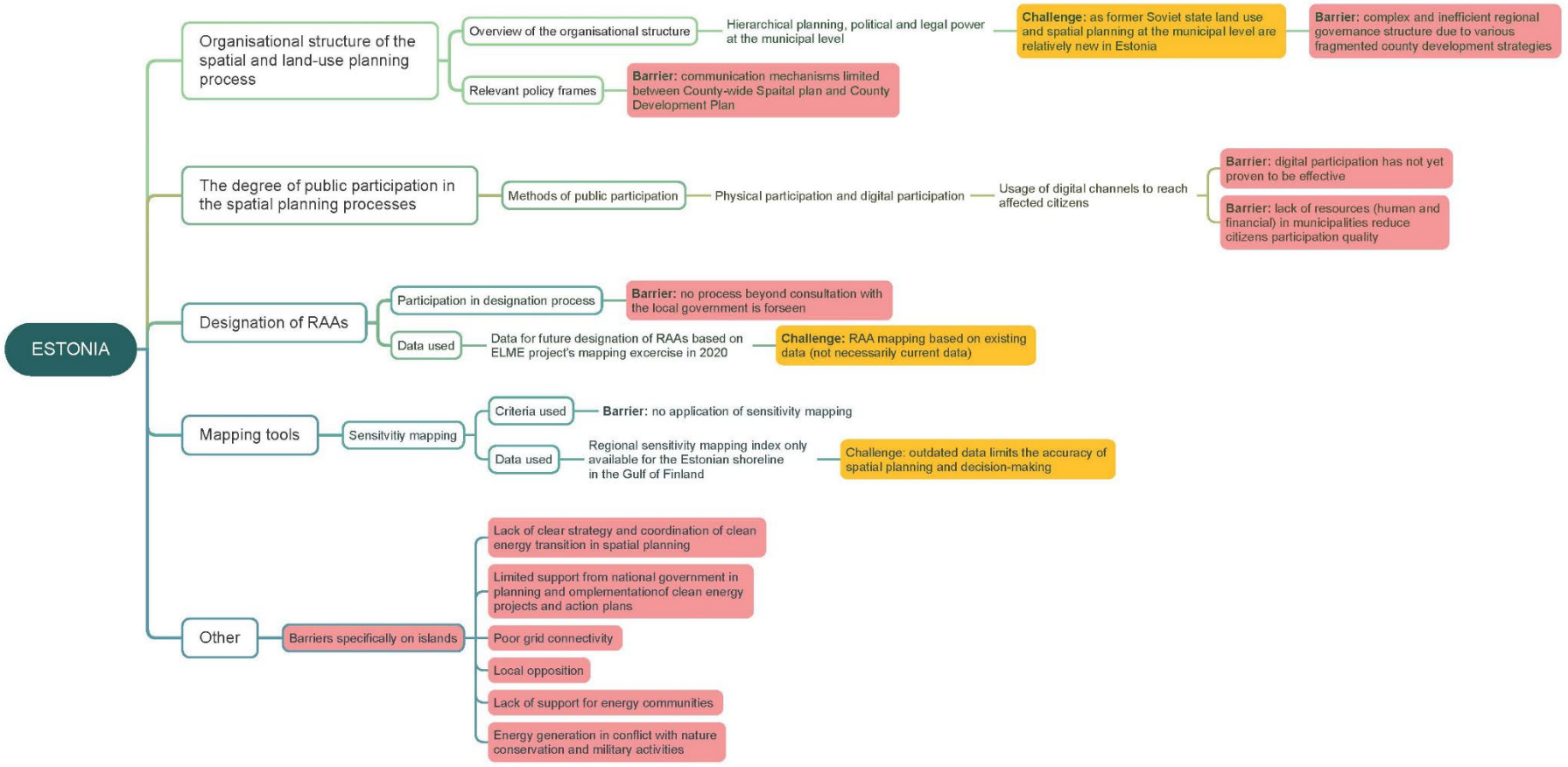
  - Screening: The screening is intended to allow a simplified permit with a simultaneous assessment of whether there are "most likely significant unforeseen adverse effects on the environment". The scope of the assessment is open due to the sequence of undefined conditions (i.e., most likely, significant, unforeseen). In addition, the screening deadlines are very short and the use of existing data instead of current data contains the risk of unfounded decision-making.

- **Exemption from subsequent assessment for wind/PV by Member States**
  - MSs can completely exempt wind and PV projects in RAAs from the obligation to carry out an EIA and Habitats Directive assessment, even if the screening shows that “significant unforeseen environmental impacts” are to be expected. The substitute for this omission is then the implementation of mitigation measures. If these are not available, compensatory measures must be taken and, if these are also not available, financial compensation must be paid. According to NABU (19 Apr 2024), species protection cannot be guaranteed in these cases. On the one hand, if no EIA is carried out, there is no other option than to order the measures based on existing data. Due to data gaps or outdated data in authorities, it is highly unlikely that effective and targeted measures will be ordered.
  - On the other hand, if no data is available, compensation payments are required. This is envisaged in the German proposal, for example. According to NABU (19 Apr 2024), real compensation should always be prioritised over financial compensation, as this is the only way to protect the affected populations directly on site.

- **Maximum duration of procedures in acceleration areas**
  - For RE projects, offshore projects, repowering, small installations and (energy) storage facilities, maximum procedural deadlines and extension periods under certain circumstances have been set. However, according to Deutinger and Sailer (2024), the permit deadlines are significantly longer than those already stipulated by German permit law. Furthermore, no penalties have been set for exceeding the deadlines.

3.1 Estonia

Figure 3-1: Barrier analysis for Estonia



Source: Own illustration based on desk research and expert consultations. Drafted with xmind.

Recommendations

- Public participation quality in Estonian local municipalities is highly affected by insufficient personnel and financial resources. This hampers the citizen participation process. Further, citizens engagement in energy infrastructure spatial planning in Estonia is reduced, as citizens may have limited knowledge regarding energy topics. This leads to biased decisions and strong opposition. According to ELF (26 Apr 2024) for a digital audience, participation in the discussion cannot always be guaranteed. Although there is an opportunity to address municipalities and developer directly in the planning and participation process, higher engagement is needed.

  // **Our recommendation: Local municipalities should be equipped with sufficient financial and human resources to execute high quality public participation in in-situ and ex-situ formats.** This administrative challenge should be tackled across the nation with funding programs.

- The designation process or RAAs relies on existing data. However, existing data may not be up-to-date data. To deduct RAAs, Estonia is currently using data from a 2020 mapping exercise. In this RAAs designation process, field-studies on certain species and habitats were incorporated to provide a high data availability. However, this four-year-old data could already lead to false statements, since ecosystems dynamics change quickly.

  // **Our recommendation: Estonia should use most up-to-date data to provide high quality spatial information as a base for the designation process.**

- While Estonia completed the nation-wide mapping exercise ELME and IRENES in 2020, there is currently no sensitivity mapping data available to identify environmentally sensitive areas. Despite the comprehensive scope of the nation-wide mapping exercise, it did not adhere to the methodology required for sensitivity mapping.

  // **Our recommendation: Estonia could leverage the ELME and IRENES datasets as a foundation and develop sensitivity mapping using these spatial datasets.** Additionally, integrating supplementary data, such as the regional sensitivity index for the Gulf of Finland or species-specific sensitivity mapping frameworks[39], would enhance the accuracy and comprehensiveness of the mapping process.

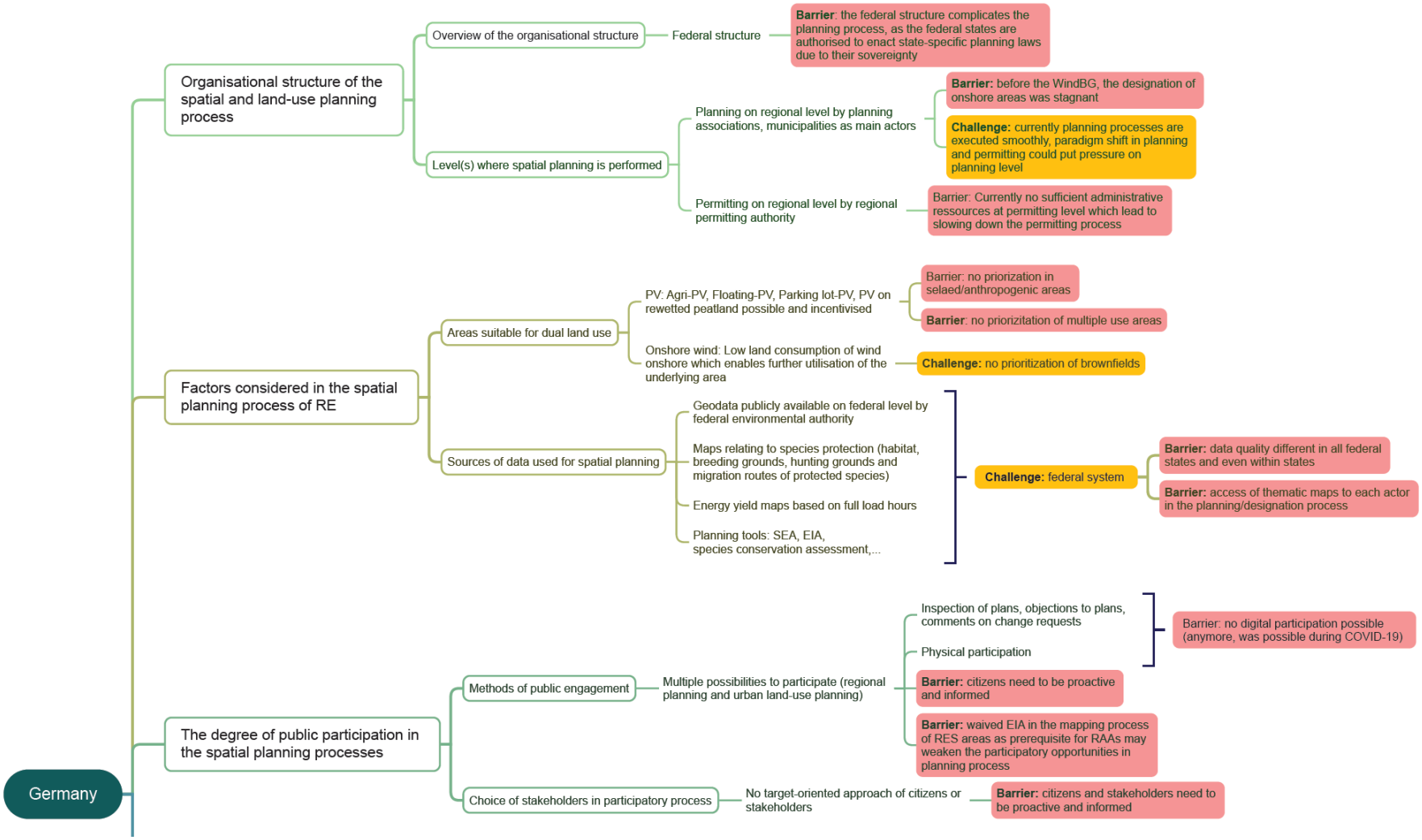
- Estonia already designated offshore wind energy areas. They were selected in a far-reaching process including environmental screening, SEA and more. An integration or RED III regulations as stipulate could stop ongoing planning processes. The integration of inventory plans of already designated areas is foreseen until 21 May 2024.

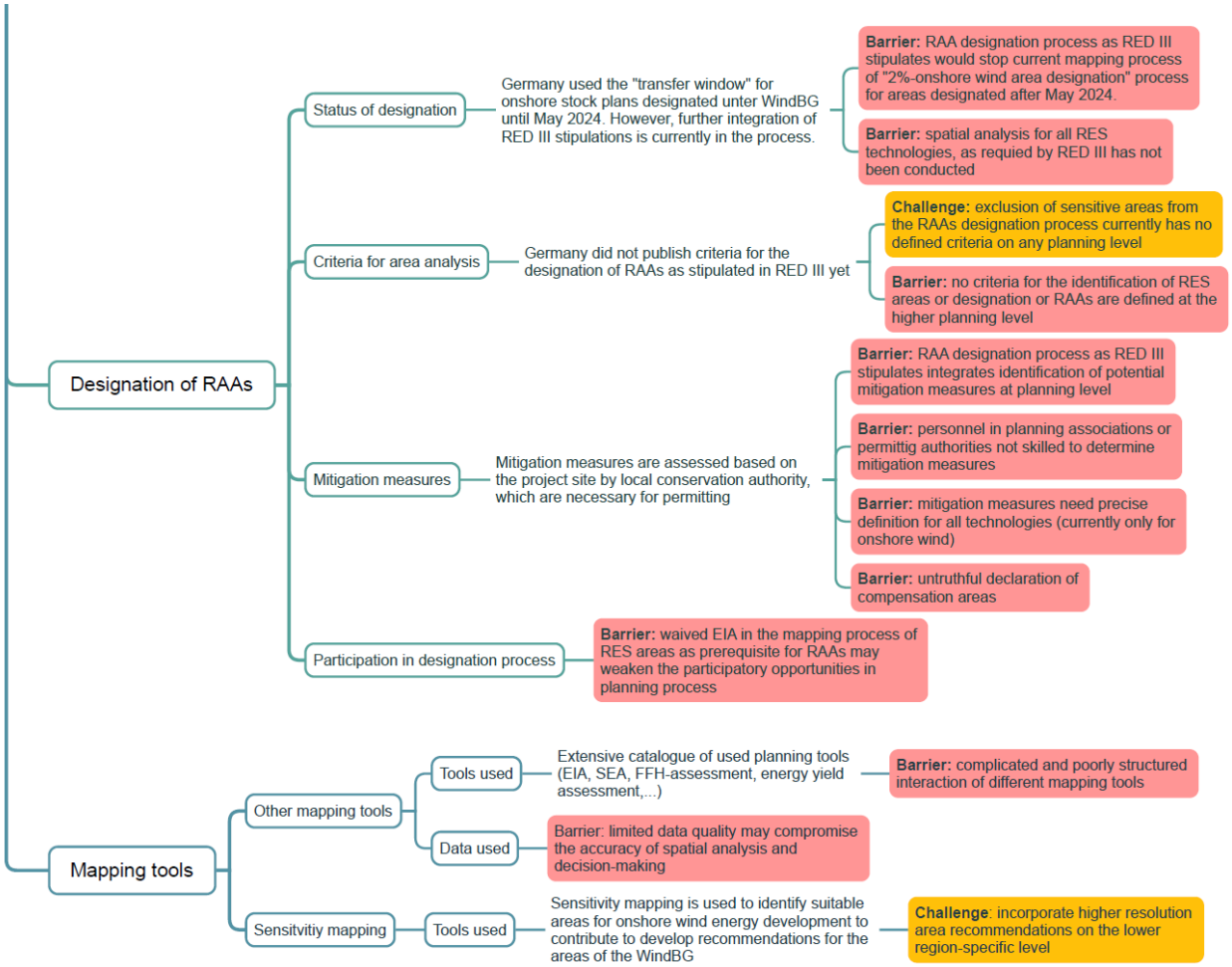
  // **Our recommendation: To already contribute to the RED III RAA designation process, Estonia could transfer the areas mapped in the Maritime Spatial Plan within the "Transfer window" opportunity proposed by RED III by May 2024.** Areas designated within Estonia's MSP would be suitable as they have undergone SEA and are planned with consideration of relevant environmental factors. However, to ensure comprehensive integration of environmental aspects, the transfer should be accompanied by supplementary assessments and guarantees to check for high quality SEA and compliance with the species protection, to ensure environmental integrity. In order to ensure that the existing areas are transferred to acceleration zones on time, rapid adjustments are needed to integrate RED III into national law.

[39] See https://avistep.birdlife.org/AVISTEPTechnicalManual.pdf and https://circabc.europa.eu/sd/a/6a1d06ae-ef34-478a-a322-006b09079efb/20200429%20WSM%20Manual.pdf

3.2 Germany

Figure 3-2: Barrier analysis for Germany





Source: Own illustration based on desk research and expert consultations. Drafted with xmind.

Recommendations

- Germany demonstrated a new method of achieving RE targets by incorporating area targets in the federal states by introducing the WindBG. This led to accelerating the spatial planning activities for onshore wind energy, which was stagnant beforehand. This forced the federal states to start designation processes and even led to federal states deciding on area targets for other RES, like in Baden-Wuerttemberg.

  // **Our recommendation: Enact similar RES area targets at higher planning level by law as Germany has done through WindBG.** This should help to accelerate the process for other RES especially for technologies with high area competitiveness potential like open-space PV.

- The German Energy Law EEG defines certain areas that could receive funding if PV is built e.g., on agricultural land. However, there are no expansion targets for either sealed/anthropogenic areas or to use multiple-use areas or brownfield areas. This could result in agricultural land or environmentally sensitive areas being used for RE production.

  // **Our recommendation: Incorporate an area expansion cascade or expansion targets for sealed/anthropogenic areas first and incentivize multiple use areas within the EEG.** The designation of these preloaded areas should also be pushed more centrally as part of RED III.

- The German planning system severely suffers from staff shortages and minimal digitalization processes. As a result, the German planning system is slow and ineffective. The paradigm shift established by RED III increases the pressure on the German planning and permitting processes by shifting competences.

  // **Our recommendation**: **To ensure that authorities possess adequately trained and ample personnel to manage projects, an initiative should be launched to address administrative challenges,** mitigate bottlenecks, alleviate staff shortages, and explore opportunities for digitalization and automation within the permitting process.

- Germany has many public participation possibilities in both formal and informal ways. However, all participation formats rely on physical participation which exclude many groups.

  // **Our recommendation:** During COVID-19 digital participation formats were made possible to prevent spread of infection. However, opportunities to participate digitally ended with COVID-law being phased out. **Digital participation should be enabled to include as many groups as possible.** Approaches e.g., from Estonia can serve as a reference here, taking into account the known shortcomings.

- Currently, if citizens or stakeholders want to participate on spatial planning issues in Germany, they must be rather proactive, by checking local newsletters or leaflets in their municipality. This leads to a higher barrier for participating in any spatial planning process.

  // **Our recommendation: Informing affected citizens automatically would ensure broad knowledge about a planning issue and could lead to higher public engagement regarding spatial planning.** Furthermore, digital channels like social media, E-Mails or automated invitations could be introduced. The approaches from Estonia can serve as a reference here.

- For RES, such as onshore wind, there are established rules for mitigation. However, for PV projects these are currently lacking. Moreover, for offshore wind projects, mitigation measures have not been adequately defined, raising concerns about maintaining the required level of environmental protection, particularly for offshore installations. Additionally, there are instances of inaccurate declarations regarding compensation areas.

// **Our recommendation: It is imperative to establish clear and comprehensive mitigation measures for all RES, including PV and offshore wind.** RAAs should be designated utilizing a framework for mitigation efforts, ensuring environmental integrity is maintained. Additionally, accurate reporting and monitoring of compensation areas should be enforced to uphold environmental commitments effectively.

- In the context of spatial planning in Germany, a new challenge has emerged concerning the designation of RAAs, which must exclude so-called “sensitive areas”. However, the definition of these areas lacks precision in the German RED III transposition. Furthermore, the criteria for defining sensitive areas, such as areas with high population density, vary from one federal state to another.

  // **Our recommendation: To address the challenge of defining and excluding sensitive areas within acceleration areas, it is imperative to establish uniform criteria and guidelines at the federal level.** This would ensure consistency and clarity across all regions and facilitate a more effective and standardized approach to spatial planning. Additionally, collaboration between federal and state authorities should be enhanced to harmonize definitions and streamline the designation process.

- The German spatial data quality varies significantly on federal state level and sometimes even within the federal states. This compromised data availability and quality may lead to un-founded decisions. Furthermore, thematic map, e.g., for bird nesting sites may be classified and not available to all actors of the planning process. This could be particularly challenging when integrating RED III stipulations, as competences are shifted from the permit level to the planning level, which are not equipped for this, neither in terms of their technical expertise nor in terms of data availability

  // **Our recommendation: By establishing a centralized digital repository for species and nature data that are accessible to authorities**, planning decisions could be elevated regarding accuracy. Additional data that could be integrated could be information form monitoring programs, local authorities and infrastructure project assessments and more.

- The integration of RED III has a far-reaching impact on national law. It will have an enormous influence on national legislative processes. Many countries will be forced to make some fundamental changes to their planning procedures. To guarantee the integration of already existing plans, an exclusionary deadline for 21 May 2024 has been introduced within RED III. Since the proposed designation process of RED III differs significantly from how it is done in Germany now, an integration by May 2024 guarantees that at least some of the already designated areas do not have to be re-planned. Should the areas not be transferred within this window of opportunity, adopting the RED III stipulations would mean that e.g., WindBG procedures would be completely interrupted, and delayed significantly. Additionally, mitigation measures must be incorporated at the planning level under RED III, whereas it is currently done at the site level in Germany. Already designated areas or areas in a current mapping process, would not comply with RED III RAAs stipulations. Yet, the areas already designated were selected in a far-reaching process including environmental screening, SEA and more. As a result, Germany agreed to use the ”transfer window” for already designated onshore wind energy areas to RED III acceleration areas on 26 April 2024 with the draft bill of Federal Government 20/8657.

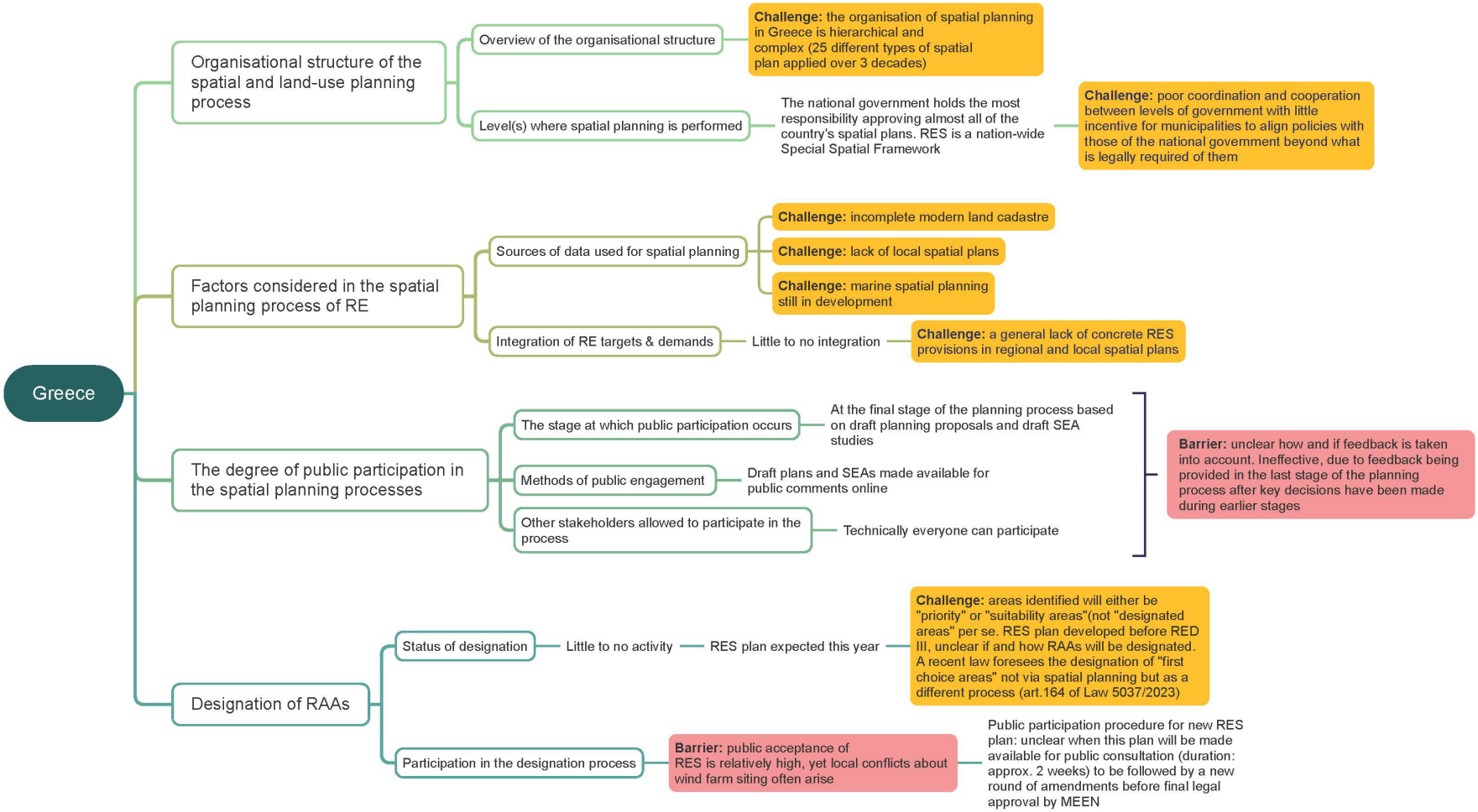
  // **Our recommendation:** By transferring the wind onshore areas by May 2024, Germany has already contributed to the efforts of RED III. **It would also be advisable to transfer other areas that have already been designated, such as designated areas for offshore wind energy or open-space PV to avoid a prolongation of the ongoing planning processes.**

In principle, all RES areas that have undergone SEA, fulfil further conservation related criteria and plan for proportionate rules and measures to counteract potential adverse environmental effects, could be suitable. However, in the currently open window of opportunity, various environmental assessments are no longer required, which is criticised by WWF Deutschland (26 Apr 2024). Furthermore, CAN Europe (2024) suggests that the quality of the selected areas should continue to be emphasised during the area designation process. They recommend that when using the "Transfer window", it should be used for "artificial surfaces such as rooftops, buildings facades, car parks, and on and along transport infrastructure like highways or railway tracks, and brownfields like old quarries, closed mines, or former industrial areas, and landfill sites". Nevertheless, to guarantee a high integrity of environmental aspects, it could be advisable to carry out supplementary environmental assessments. Additionally, NABU (19 Apr 2024) emphasizes that clear responsibilities for checking for overlaps of the already designated areas with protected areas should be legally determined. Although accelerated area designation is necessary, this must not be at the expense of environmental assessments or public participation procedures.

// **Our recommendation:** Other elements of the RAA designation process, such as the overarching spatial analysis to identify RE areas, have not yet been fully integrated. **It is imperative to ensure that all aspects of the designation process, including comprehensive spatial analyses, are rigorously implemented in alignment with RED III requirements.** This necessitates undertaking detailed studies to meticulously evaluate the suitability of various areas for renewable energy development. WWF Deutschland (26 Apr 2024) recommends, that Germany should establish transparent guidelines and methodologies for conducting these analyses to ensure uniformity and efficacy across regions. Prioritizing the completion of comprehensive spatial analyses will enable Germany to streamline the identification and designation of suitable RAAs, thereby fostering the efficient and sustainable expansion of RE infrastructure. Additionally, Deutinger and Sailer (2024) recommend seizing the opportunity presented by RED III to undertake further reforms in national permit law. Specifically, they advocate for greater separation between the planning and permit levels and a reassessment of the German spatial planning process in accordance with the RED III.

3.3 Greece

Figure 3-3: Barrier analysis for Greece



Source: Own illustration based on desk research and expert consultations. Drafted with xmind.

Recommendations

- Currently, there has been "little to no activity" in preparing to designate RAAs in Greece, apart from a new (and not part of spatial planning) process set out in 2023 for designating "first choice areas" (art. 164 of Law 5037/2023). The RES Special Framework in Greece has been subject to several delays, and it is not clear if and how RAAs will be dealt with. It is important for the government to deliver on this as soon as possible (WWF Greece 4 Mar 2024).

  // **Our recommendation: Government must deliver on a RES Special Spatial Framework as soon as possible, including the designation of RAAs.**

- At present, there is a general lack of concrete provisions in regional and local spatial plans in Greece for integrating RE targets and demands.

  // **Our recommendation: It is crucial that the new RES Special Spatial Framework makes clear how these priorities should be adopted in other types of plans at the regional and local level.**

- Regarding offshore wind farms, a National Programme for the Development of Offshore Wind Farms is currently in progress, including the designation of suitable areas. In parallel, Greece does not have maritime spatial plans in place – the development of such plans has not yet begun. In this way, the development of offshore wind will be set via this special and fragmented kind of planning *vis-a-vis* the integrated maritime spatial plans (WWF Greece 4 Mar 2024).

  // **Our recommendation: It is highly urgent for Greece to advance Maritime Spatial Planning in order to secure an integrated and ecosystem-based approach for the development of offshore wind.**

- Public acceptance of RES in Greece is high, yet strong reactions are voiced against specific projects, mainly relating to wind farm siting. In addition, there is generally a poor track record of public participation in spatial planning. Based on the current procedure, due to public participation occurring too late in the planning process it is unclear if feedback is considered and appears to be relatively ineffective.

  // **Our recommendation: Opportunities for public participation should occur in the earlier stages of the planning process.** This would enable the local author to respond to and act on feedback received.

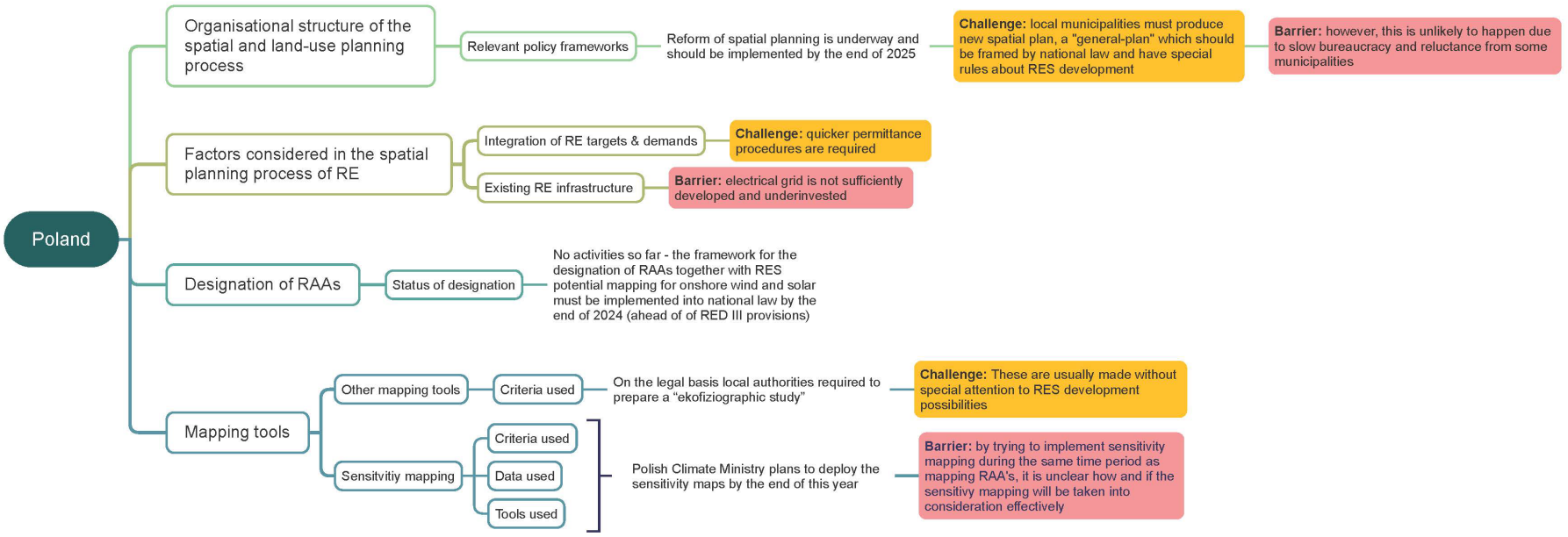
- The lack of data available presents several challenges in Greece for RE deployment. As it currently stands, modern land cadastres are incomplete and Maritime Spatial Planning is still in development (Rakocevic et al. 2022; WWF Greece 4 Mar 2024). These factors make it difficult to integrate renewable energy into spatial planning.

  // **Our recommendation: Clear instructions are required on how renewable energies can be integrated into urban, spatial, and marine planning.**

  // **Our recommendation: Local and regional plans ought to be prepared so that energy transition priorities can be integrated into the preparation of spatial plans.**

3.4 Poland

Figure 3-4: Barrier analysis for Poland



Source: Own illustration based on desk research and expert consultations. Drafted with xmind.

Recommendations

- At present, the grid in Poland is not being sufficiently developed to facilitate the planned RE acceleration.

  // **Our recommendation: Grid investment on all levels is necessary.** This includes investments in: distribution grids, national grids, and transnational interconnectors, particularly to neighbouring countries with the biggest markets such as Germany and the Nordic countries (Reform Institute Poland 11 Mar 2024).

- Currently RE targets are not well integrated in Poland due to a slow permitting procedure.

  // **Our recommendation: The new permitting procedure that will be decided upon in line with RED III, will be an important opportunity for Poland to accelerate the permitting procedure of RE projects** (Reform Institute Poland 11 Mar 2024).

- Poland is attempting to designate RAAs while deploying sensitivity mapping, it will likely be difficult to ensure that the RAAs effectively take sensitivity mapping into consideration here.

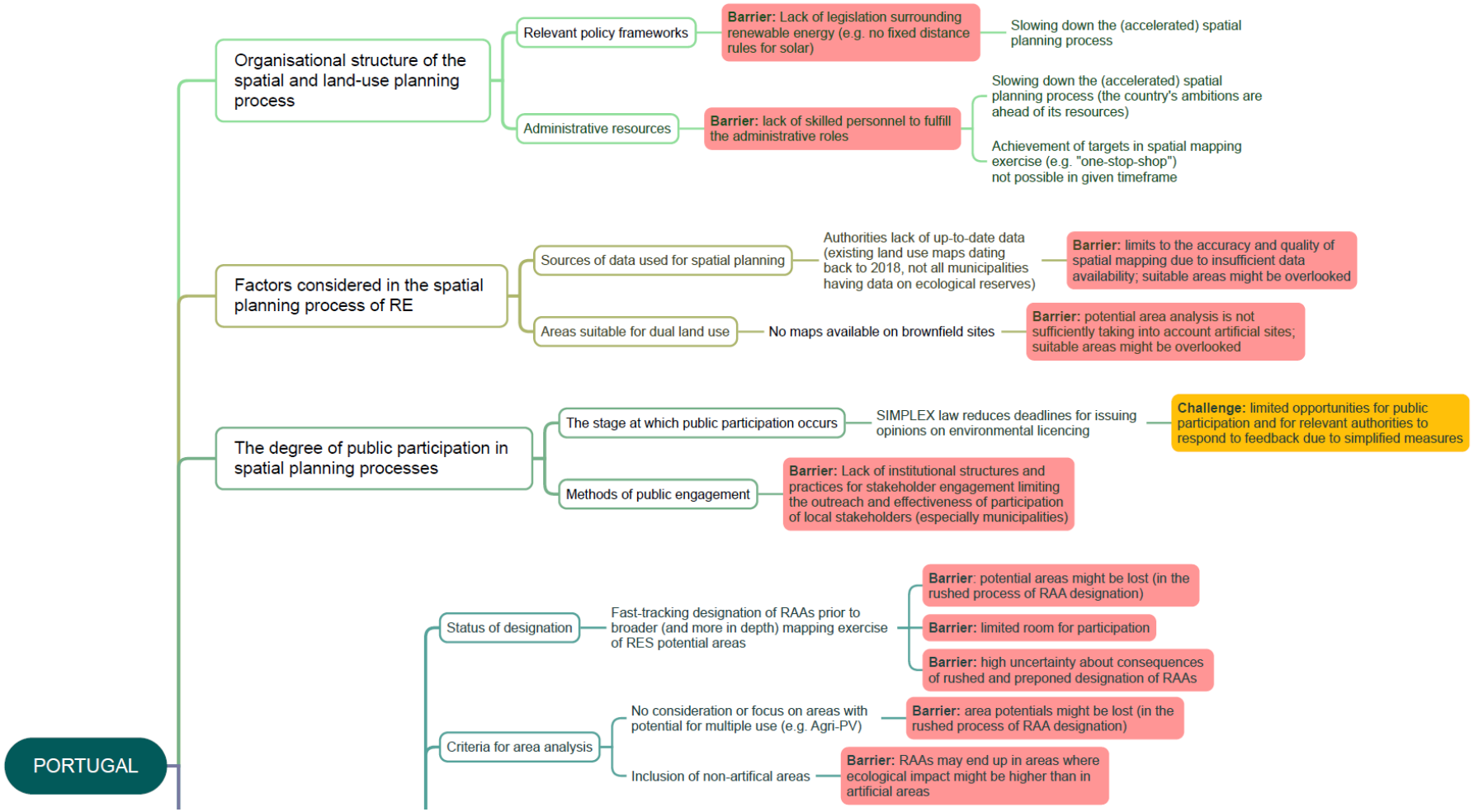
  // **Our recommendation: Co-ordination among the relevant authorities or agencies will be crucial** to ensure that the criteria for RAAs considers the newly developed sensitivity mapping.

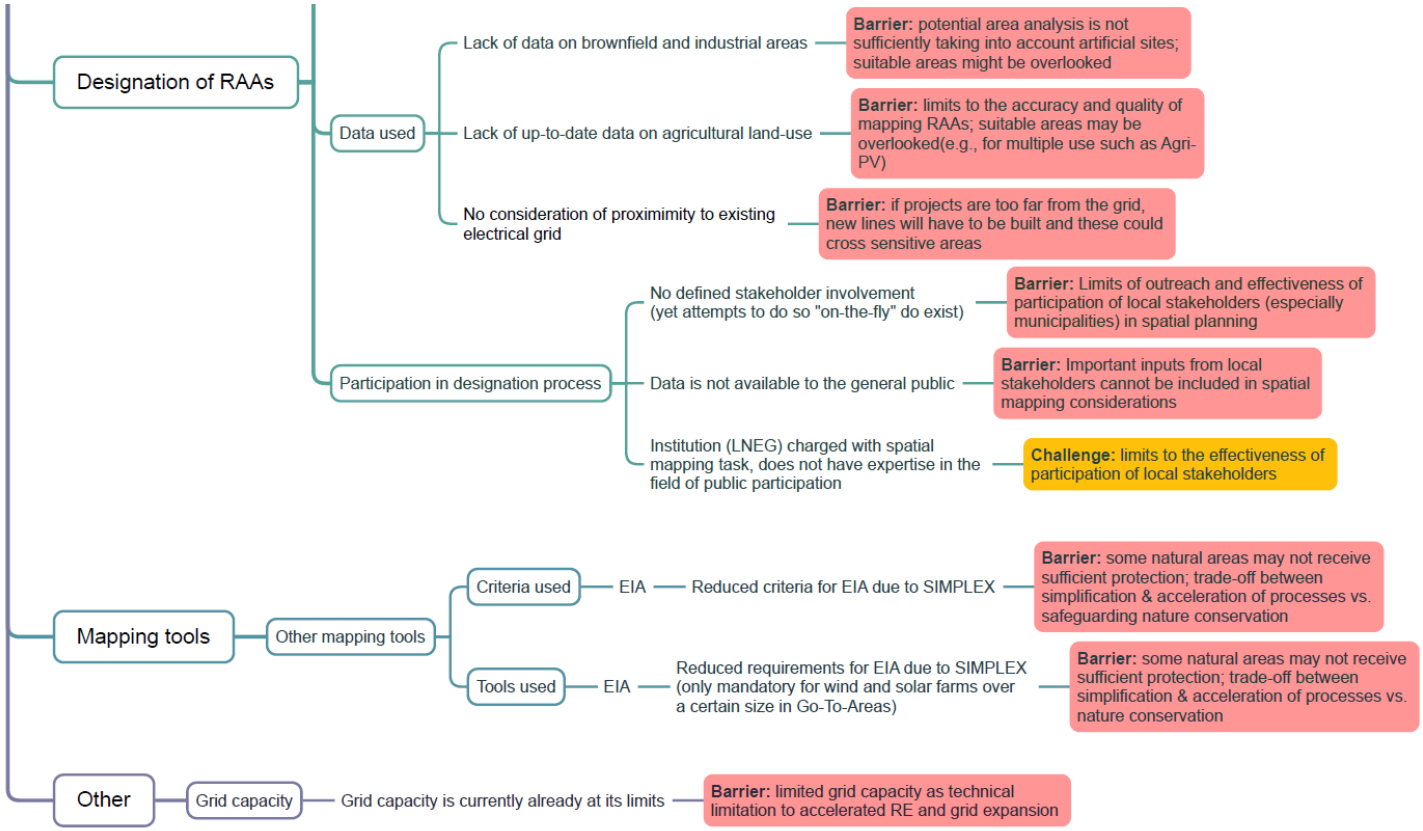
- Attempts are being made to reform the spatial planning system in Poland by 2025, with municipalities required to produce new General Plans which should include special rules about RES. However, reluctance from certain municipalities to prepare such plans threatens to slow down the process of renewable energy deployment.

  // **Our recommendation: Incentives from the national government are required to motivate municipalities to act and provide such plans in a timely manner.**

3.5 Portugal

Figure 3-5: Barrier analysis for Portugal





Source: Own illustration based on desk research and expert consultations. Drafted with xmind.

Recommendations

- The lack of (skilled) personnel to fulfil administrative roles poses a significant challenge to Portugal, threatening to slow down the accelerated deployment of RE. This discrepancy between the country's (high) ambitions and available administrative resources hampers progress. As a result, achieving targets such as establishing Portugal's targeted "one-stop-shop" for spatial mapping seems to become unrealistic within the given timeframe.

  // **Our recommendation: Mobilise resources to overcome staff and administrative shortcomings in the public sector.** This could include e.g., increasing funding and training for civil service officials, accompanied by recruitment drives.

- Portugal is currently undertaking a fast-track designation of RAAs prior to broader (and more in depth) mapping exercise of RE areas. The consequences of this rather rushed and preponed process of RAAs designation are yet unclear.

  // **Our recommendation: Reflect on lessons learned from prioritising the designation of RAAs ahead of completing the mapping for RES potential. Also, ensure the coordinated integration of RAAs experiences and results into the general mapping exercise.**

  – We assume that Portugal will carry out a general mapping exercise in accordance with RED III following the identification of the RAAs.

- Portuguese authorities have been reported to lack up-to-date data which is crucial for accurate spatial mapping and decision-making processes. Existing land use maps are dating back to 2018 and not all municipalities have data on ecological reserves, just to name a few examples. Also, there is no data on brownfield sites and only outdated data on agricultural practices. Based on this poor data quality, non-suited areas may be included for RE development. Or vice versa, area potentials, e.g., on artificial sites or suited for multiple uses such as Agri-PV may be lost.

  // **Our recommendation: Strengthen data collection practices and enhance data quality for sensitivity mapping processes.**

  – This can be achieved by proactively commissioning studies that generate up-to-date data sets on relevant aspects (e.g., municipal ecological reserves, agricultural activities), actively collaborating with NGOs and institutions to obtain already existing data, ensuring the regular updating of relevant data sets for spatial mapping.

  – Another key vehicle to increase the data quality is to incorporate local stakeholder consultation into data provision and assessment practices.

- Portugal is lacking institutional structures and practices for stakeholder engagement. Also, in the context of SIMPLEX, deadlines for issuing opinions on environmental licensing have been reduced. All in all, this limits the opportunities for local stakeholder participation and may sacrifice the accuracy of decision-making processes as well as the acceptance of RE projects.

  // **Our recommendation: Foster institutional public participation practices.**

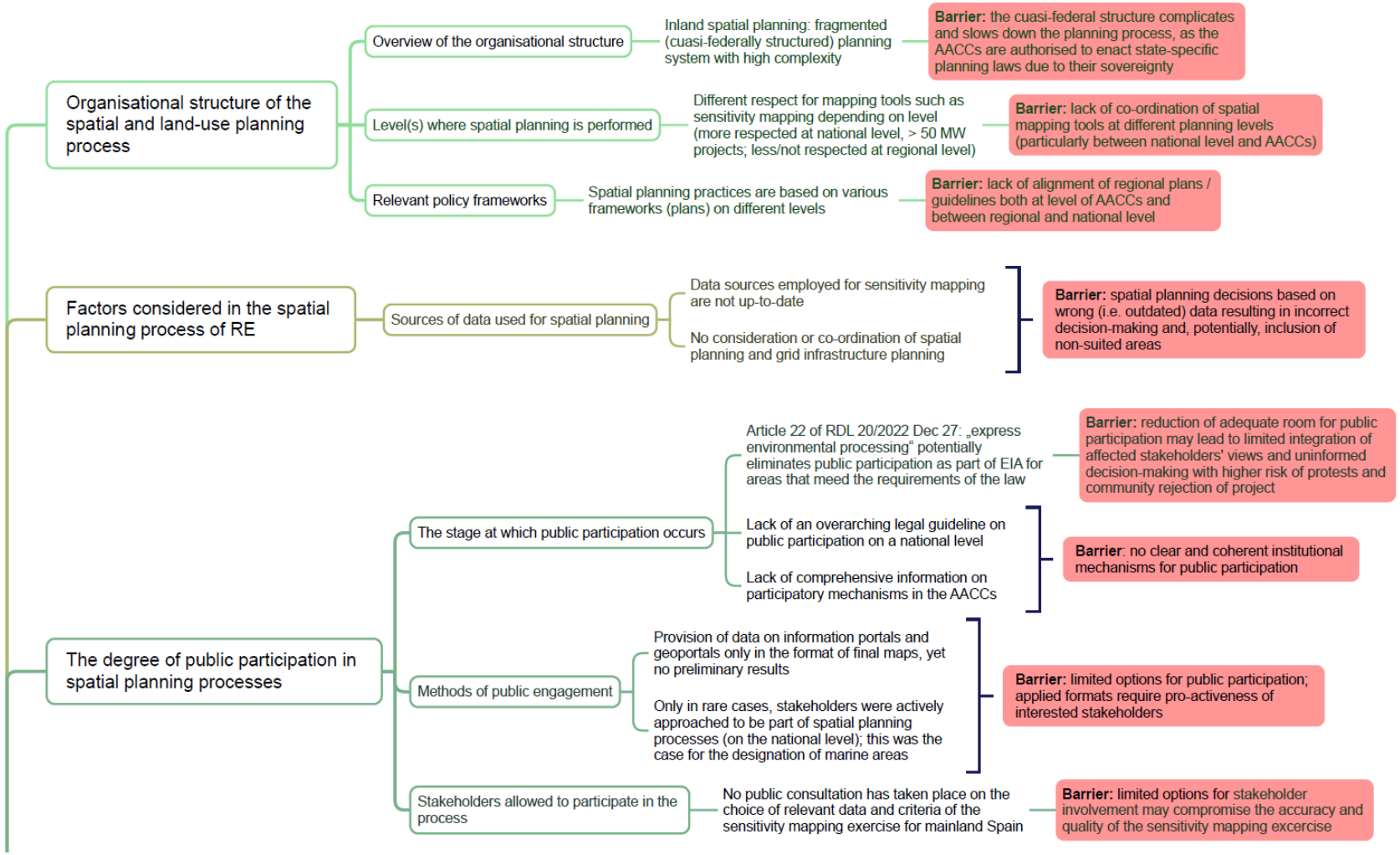
  – This may be done through different channels. We recommend that the latter include e.g., increasing transparency by making data on all planned and ongoing projects and/or sensitivity mapping factors publicly available.

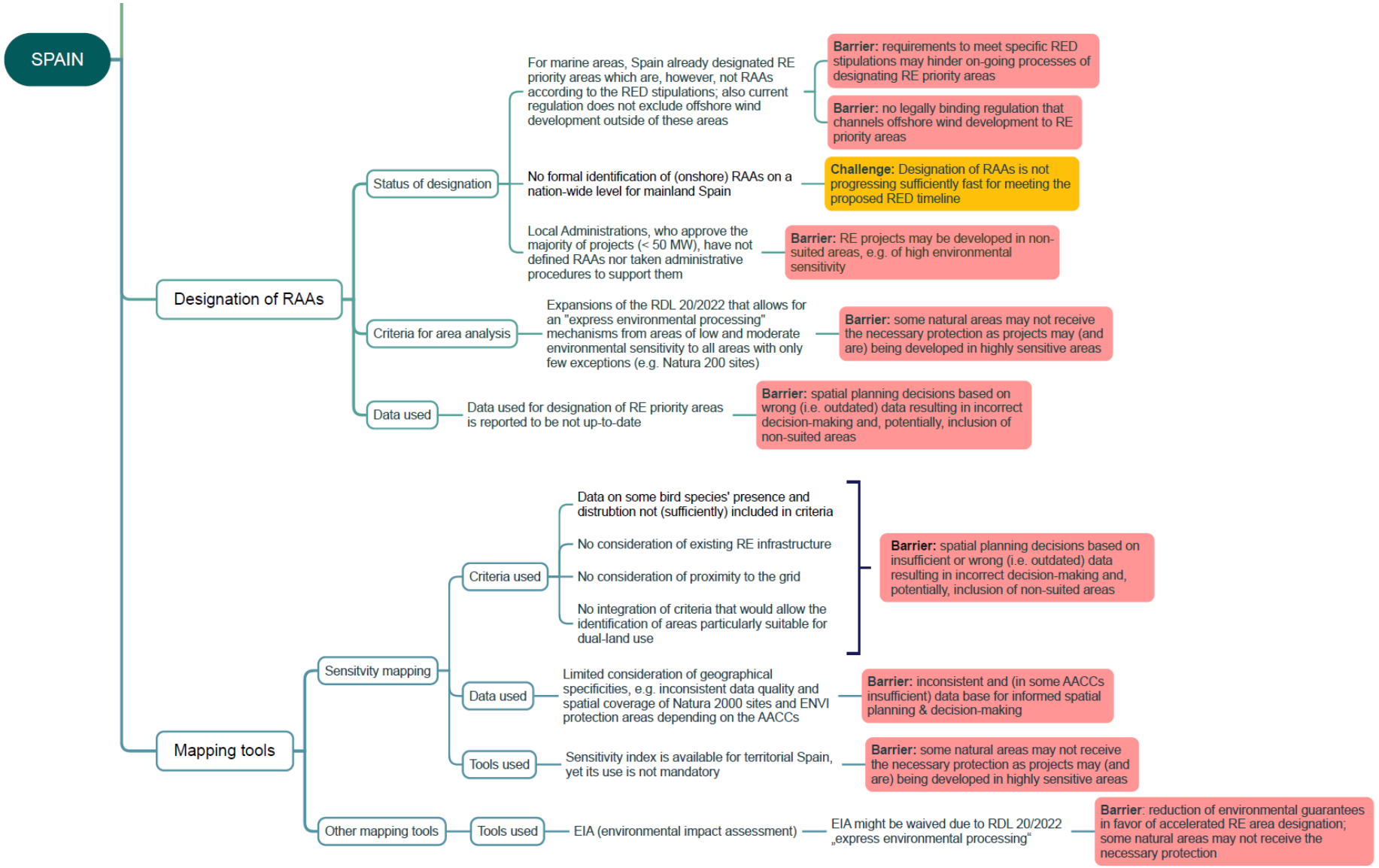
  – Ensure mechanisms that include especially municipalities in the in spatial planning process.

  – Use examples from other MS countries as a source of inspiration for developing country-specific public participation formats (see e.g., factsheet on participation).

3.6 Spain

Figure 3-6: Barrier analysis for Spain





Source: Own illustration based on desk research and expert consultations. Drafted with xmind.

Recommendations

- The 'cuasi-federal' structure in Spain complicates and slows down the planning process, as the AACCs are authorised to enact specific planning laws due to their sovereignty. While valuable resources already exist, such as the national sensitivity map, these are not used effectively due to a lack of coordination with resources and decisions across the national, regional and local level. This can lead to projects being initiated in areas with a high environmental sensitivity. Even if these projects are not finally authorised because the impact is determined to be too significant, e.g. *via* EIAs, this uncoordinated process ties up administrative resources. This puts additional pressure on the already limited administrative resources in the Spanish planning and permitting sector.

  // **Our recommendation: Foster coordination between national spatial planning targets and instruments with policy frameworks and permitting practices on the regional level.**

  – A mechanism to do so could be to set general RE area targets at a higher planning level which may then be complemented by detailed spatial mapping of specific area on the regional level.

  – We recommend making the use of the sensitivity mapping tool for land-based renewables in Spain – despite its shortcomings – mandatory, at least to a certain extent. The nation-wide map could, for instance, serve as a basis for the authorisation of RE projects on the national, regional and local level: RE development could be prohibited in areas with a high sensitivity index according to this tool, unless other similar, updated tools are available at the subnational level for smaller projects (< 50 MW capacity).

  – Further, it is recommendable to set up RE siting offices that coordinate between the General State Administration and the AACCs, in line with the new Article 16 of RED III.

- In 2022, the Spanish parliament passed the RDL 20/2022 of 27 December. This allows for an "express environmental processing" mechanism which introduces a simplified EIA for RE projects. Initially, this "express environmental permitting" process was limited to inland areas of low and moderate environmental sensitivity (as identified in the national sensitivity map) and to limited installation capacity. However, it was expanded to any land except marine areas, Natura 2000 sites, protected areas and certain high-voltage power line construction (≥200 kV and a length of 15 km). This aims to speed up the process of designating RES areas by reducing environmental safeguards but may leave some natural areas and species less protected than they should.

  // **Our recommendation**: **Repeal the "express environmental processing" introduced as with RDL 20/2022 in all areas except those identified with a low sensitivity index in the country-wide sensitivity mapping exercise** (see Factsheet on Spain).

- The quality of data inputs for the sensitivity mapping exercise of terrestrial Spain has been reported to be insufficient. Multiple reasons come into play here, e.g., data used that was outdated or that did not reflect local specificities (no public participation took place in data provision) (see respective fact sheet and barrier analysis for further detail). This may lead to incorrect decision-making and, potentially, the inclusion of non-suited areas for RE development.

  // **Our recommendation: Strengthen data collection practices and enhance data quality for sensitivity mapping processes.**

  - This can be achieved by proactively commissioning studies that generate new nation-wide up-to-date data sets on relevant aspects (e.g., land-use, agricultural activities), actively collaborating with NGOs and institutions to obtain already existing data (e.g., on bird species presences), ensuring the regular updating of relevant data sets for spatial mapping, and augmenting these efforts by integrating open-access data for comprehensive comparison.
  - Another key vehicle to increase the data quality is to incorporate local stakeholder consultation into data provision and assessment practices.

- Regarding areas suitable for multiple land use, there is currently no formal policy in Spain that defines or regulates dual land use (e.g., no formal definition of agri-PV). As a result, there is no identification of suitable areas for dual use, nor is there any dialogue with farmers or local communities to identify potential opportunities for dual use. Dual-land use potentials are also not considered in the sensitivity analysis for mainland Spain (see Factsheet on Spain). For all these reasons, dual use is not yet widely developed or accepted in Spain.

  // **Our recommendation: Develop a policy framework for dual land use.** This should include a specific definition and process for identifying its potential. To identify suitable areas for dual use, this should be integrated in national and regional spatial planning and accompanied by the participation of local communities.

- The proximity to the transmission grid is an important factor for the identification of potential RE sites as it is the backbone of the energy transition. It does not necessarily have to be an exclusion criterion if suitable areas are not in the immediate proximity of the grid, as the grid can and in some cases must expand in the future. Yet, proximity to the grid is an aspect that should be considered when assessing suitable sites for RE development. However, NGOs have reported a lack of co-ordination between spatial planning practices and grid infrastructure developments. For example, in the national sensitivity mapping exercise the proximity to the grid is not a factor in its analysis.

  // **Our recommendation: Consider current grid infrastructure and future developments in spatial planning.** This requires regular consultations and co-ordination between spatial planning authorities and relevant authorities (e.g., *Red Electrica de España*) in charge of grid planning. Also, we recommend including “proximity to the grid’ as a weighted factor in set of criteria used to identify suitable areas for RE development the national sensitivity mapping analysis.

- Currently, there are no clear and coherent institutional mechanisms in place for public participation. This may compromise the accuracy of decision-making processes as well as the acceptance of RE projects – local protests against RE projects have emerged across Spain[40].

  // **Our recommendation: Establish an overarching guideline on basic requirements and mechanisms for public participation in spatial planning practices on a national level.** The details of how and when public participation takes place for RE projects and RAA designation should be much clearer at the levels of the nation state and the AACCs.

  - An overarching principle in this multilevel process should be to guarantee public participation from an early stage of renewable projects. Further reaching approaches could include to create conflict mediation offices related to the implementation of RE infrastructure (see new RED III Article 16 (5)) or to carry out communication with the municipalities prior to the network access permit.

[40] See e.g., https://macrorenovablesno.org/ and https://aliente.org/.

4 General Recommendations

// Ensure public participation occurs “at an early stage” of the spatial planning process

The RED III's exemption of environmental assessments like SEA and EIA may weaken participation options in Member States, potentially diminishing citizens' decision-making power. However, early public participation remains crucial in the spatial planning process for several reasons. By allowing citizens to voice their opinions when decisions are still flexible, it fosters transparency and trust. Early involvement also aids in identifying conflicts and issues proactively, preventing delays and promoting a sense of ownership among citizens. This, in turn, leads to greater acceptance of the final outcomes and ensures that planning decisions align with the diverse needs and interests of the community, facilitating more effective and sustainable spatial development. Therefore, early-stage public participation serves as a best-practice example, even amid the imperative of accelerating RE projects, ensuring that citizens' participation mechanisms remain robust.

Hands-on recommendations

- Enhanced participatory mechanisms should be embedded and explicitly outlined within the process of designating RAAs. Participation gateways, such as the SEA and EIA, should be re-introduced into the RAA designation process, even if the RED III procedure stipulates differently. MSs ought to actively encourage opportunities for citizen involvement, facilitating various participatory formats. These could include:
  - involving affected citizens in the information-gathering and screening process for potential areas,
  - consulting them about the methods used in mapping and designation of suitable areas from the outset of the spatial planning process,
  - creating conflict mediation spaces related to the implementation of RE infrastructure,
  - and introducing communication with the municipalities prior to the network access and project’s overall permit.
- To make best use of this opportunity, municipalities should be granted additional funds to provide secure long-term financing the specialist human resources required to execute high quality public participation.

// Provide multiple formats for public participation in the spatial mapping process

Providing diverse modalities for public participation within the spatial mapping process is imperative to ensure methodological inclusivity and efficiency. The public exhibits a wide array of preferences and constraints concerning engagement with planning initiatives. While some individuals may favour well-established formats such written submissions, as citizens-assemblies or public hearings, others may gravitate towards technologically-mediated platforms such as online forums or interactive surveys. A multifaceted approach, which incorporates workshops, digital interfaces, surveys, and mobile applications, enables planners to respond to varied preferences and engage a broader spectrum of stakeholders, including those constrained by mobility or temporal limitations. This methodological pluralism not only amplifies participation but also enhances transparency, thereby facilitating a more informed and integrative decision-making process within spatial mapping endeavours. This process is reflective of the diverse needs and aspirations of the public.

Hands-on recommendations

- The combination of formal and informal public participation practices, as exemplified by the best-practice German example of the *Regionalverband Oberschwaben-Bodensee*, represents a promising approach to fostering greater citizen engagement.
- Another option is to increase transparency by publishing maps of all planned and ongoing projects including related information. Going in this direction already, is the provision of data on the sensitivity mapping exercise of mainland Spain on the national government's geoportals. Further, it is recommendable to incentivise targeted (and eventually automated) invitations for affected stakeholders. Estonia is one example where such a process is already attempted. Estonian public participation approaches are regarded as a best-practice example here, despite certain shortcomings in the effectiveness of digital participation.

// Ensure baseline standard requirements for data quality

The informative value of spatial mapping analysis depends largely on the quality of the data used. If the data quality is compromised, this may lead to incorrect results and, based thereupon, inaccurate decision-making. That is, either non-suited areas being included for RE development or, *vice versa*, high potential, low sensitivity areas, e.g., on artificial sites or suited for multiple uses such as Agri-PV, being left unidentified and lost. Despite the crucial role of high-quality data for spatial mapping, our analysis has shown major shortcomings throughout all the MSs considered in this study, showcasing the diverse reasons for poor data quality: a lack of up-to-date data, a general lack of data on relevant areas (e.g., brownfield sites or agricultural activities), data inconsistencies or missing integration of existing regional data, as these are held by other stakeholders than administrative authorities and have not been reached due to a lack of public participation. Against this background, we strongly recommend strengthening data collection practices and enhancing data quality to safeguard accurate sensitivity mapping and decision-making processes. We underline the idea that responsible authorities rely on up-to-date data rather than existing data for the designation of RAAs.

Hands-on recommendations

- Proactively commission studies that generate up-to-date data sets on relevant aspects (e.g., municipal ecological reserves, agricultural activities).
- Ensure regular updates of relevant data sets for spatial mapping.
- Incorporate local stakeholder consultation into data provision and assessment practices.
- Actively seek co-operation with NGOs and (local/subject-specific) institutions to obtain already existing data.
- Establish a centralised digital repository for species and nature data accessible to authorities, integrating information from monitoring programmes, local authorities, and infrastructure project assessments.

// Promote co-ordination between national, regional and local spatial planning frameworks

Irrespective of whether a state takes a hierarchical or federal spatial planning structure, in almost all the above cases, it is difficult to ensure that policy frameworks set out at the national level, to reflect EU obligations, are being implemented as intended at the regional and or local levels. In certain cases, the overarching policy framework does not provide clear instructions on how it ought to be implemented. In some cases, there is little incentive for lower levels such as municipalities to align their local plans with national policies. E.g., in Poland, municipalities are said to be reluctant to prepare “General Plans”.

Hands-on recommendations

- For RAAs, clear visions, roadmaps and guidelines need to be set out at the national level involving all affected sectors and levels of government. The state must provide clear signals on how plans ought to be followed in order for regional and local levels to follow suit and to believe they have the capacity to do so.
- Provide financial incentives or grants to encourage lower levels of planning to participate fully in the development of spatial plans, RAA designation or individual RE projects. E.g., financial support in Spain to municipalities with RE projects.
- Include stakeholders from all planning levels in national strategies and plans. E.g., in Portugal, only 10 municipalities were involved in the process of mapping RAAs and CIMs were excluded from the process.

// Incentivise multilevel sensitivity mapping – co-ordinate and supplement sensitivity mapping on national-level with regional analysis

The RED III calls for the development of coherent MS-specific sensitivity mapping as basis for RAAs designation. Countries like Spain and to some extend also Germany have provided commendable national-level sensitivity mapping, albeit with some limitations. While national data approaches offer consistency, they often overlook regional geographic specificities. To address this, we propose overarching sensitivity mapping exercises conducted by MSs with close cooperation between different government levels so that results from different geographical scales can be integrated. This seems crucial particularly in decentralised systems like those in Spain. We suggest that as a matter of urgency all MSs develop national sensitivity mapping tools, providing guidance on sites unsuitable for RE development, i.e., areas with a high sensitivity index according to national-level analysis. However, the latter should always be complemented by regional assessments to capture local nuances effectively. Coordination of tools and analysis results is essential for optimal outcomes.

Hands-on recommendations

- Conduct overarching MS-specific sensitivity mapping complemented by regional analysis. Use existing regional sensitivity indices as base and extend, use existing planning tools for sensitivity mapping (see BirdLife's ‘AVISTEP’ Bird Sensitivity mapping approach[41] and European Commission Wildlife Sensitivity Mapping Manual[42]).

[41] https://avistep.birdlife.org/AVISTEPTechnicalManual.pdf
[42] https://circabc.europa.eu/sd/a/6a1d06ae-ef34-478a-a322-006b09079efb/20200429%20WSM%20Manual.pdf

// Address country-specific administrative shortcomings

The deployment of RE is often delayed by overly bureaucratic and inefficient administrative procedures. As discussed above, administrative shortcomings could be due to a range of issues such as, a lack of skilled personnel and administrative systems that are not sufficiently digitalised. This can lead to bottlenecks in the permitting process. As has been reported in Portugal, they are currently struggling to fill administrative roles required for the deployment of RAAs. Furthermore, they are reported to be struggling to find people with the relevant skills set required.

Hands-on recommendations

- Increased funding and training for civil service officials, accompanied by recruitment drives.
- Launching initiatives to address bottlenecks in the permitting processes.
- Investing in digitizing administrative systems if this has not already been done.

// Prioritise artificial and dual land use areas

Implementing RE projects on artificial or dual land use areas helps mitigate land use conflicts. Artificial areas encompass sealed or anthropogenic spaces; dual use areas allow, e.g., the co-existence of agricultural practices and PV generation. Germany exemplifies this approach by promoting RE projects in such areas, offering special funding in its EEG for e.g., Agri-PV. However, none of the MSs considered in this study have integrated policy definition and/or specific expansion targets for such areas in their spatial planning. Moreover, many countries lack crucial data on brownfield sites for mapping their potential. Therefore, we recommend establishing policy frameworks that provide a formal definition of artificial and dual use areas as well as mechanisms to prioritise such areas in spatial planning exercises. This approach would effectively minimise land-use conflicts.

Hands-on recommendations

- Develop a policy framework for dual land use. This should include a specific definition of what it is and the factors relevant for identifying its potential.
- Incorporate an area expansion cascade or expansion targets for sealed/anthropogenic areas first and incentivise dual use areas.
- Increase data availability on artificial areas such as brownfield sites. Several MSs, including Spain and Portugal, have reported to lack data on these areas which limits the opportunity to identifying suited artificial potential areas to a major extent.

// Invest in grid capacity and consider proximity to grid when mapping RAAs (PT, PL)

At present, it appears that both Portugal and Poland will not be able to facilitate the deployment of RES as planned unless their grids are further developed and invested in. Furthermore, it is important that proximity to the grid is considered when mapping RAAs: the grid is needed to connect RE generation to future demand hotspots, and RAAs are designed to reduce adverse environmental impacts, including the potential impact of additional grid infrastructure. If these three factors are not geographically planned in a co-ordinated way, grid bottlenecks and/or increased costs for grid expansion may occur, and unnecessary adverse impacts on wildlife and natural habitats may occur if new power lines need to be built.

Hands-on recommendations

- Prioritising existing grid infrastructure in the criteria for RAA.
- Investing in all levels of the grid; distribution, national and international level.
- Regular consultations and co-ordination between spatial planning authorities and authorities in charge of grid planning.
- It is recommendable to consider ‘proximity to grid’ as a weighted factor in sensitivity mapping.

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