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The territorialisation of the UN Agenda 2030 and cross-cutting issues in energy, environment and health: the case of Portugal

Eduardo Medeiros

Abstract:

It goes without saying that the world is far off course for achieving a desirable sustainable development path. Crucially, this policy goal has been on the global agenda for more than four decades. In 2015, the United Nations (UN) presented the Agenda 2030 with its 17, now famous, action-oriented sustainable development goals (SDGs), as a powerful thematically holistic policy itinerary. In this context, this chapter builds on the partnership agreement with the European Commission (EC), also known as Portugal 2020 (European Union (EU) Cohesion Policy framework for 2014-2020 in Portugal) and its potential contribution to supporting sustainable policy transitions. The chapter presents a theoretical discussion on sustainable policies and practices in energy, environment and health and proposes a conceptual framework to better analyse sustainable policy transitions. Supported by Portugal 2020's strategy and project analysis, it is possible to conclude that Portugal has been supporting the UN Agenda 2030 vision for a more environmentally sustainable territory, and that there are several cross-cutting projects that have been implemented in the energy, environment and health sectors. However, the Portugal 2020 intervention is mainly focused on financing physical renovation to improve energy efficiency processes.

Keywords: Sustainable policy transitions, Energy, Health, Environment, Portugal 2020

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1 Introduction and methodology

Sustainable policy transitions require a shift towards more collaborative societal values coupled with a sustainability supportive fiscal framework. The materialisation of sustainable policies and practices in the field of energy, the environment and health also require the establishment of building blocks for a more empowered, informed and vibrant civil society in addressing sustainable development challenges. Policymaking processes also need to follow participatory, subsidiarity and place-based governance principles (Barca 2009; Stead 2014). Moreover, eco-innovation practices can only succeed if all involved actors (SMEs and large companies, research institutions, consumers, etc.) proactively contribute to this transition towards a more sustainable territorial development pattern (Bontoux & Bengtsson 2015). Finally, the physical renovation of buildings to improve energy efficiency and the production of clean energy renders a tangible platform to materialise these intended sustainable policy transitions (Kanters & Wall 2014).

By entailing several complex and interacting systems (Medeiros 2020b; Sachs 2015) sustainable development deals with a myriad of aspects of global development. Ultimately, however, it “has its roots in conservation and the desire to protect the planet’s ecosystems” (Blewitt 2018: 2). Partly as a result of constructed social processes that are normally associated with environmental concerns, the social dimension is often incorporated in the familiar typologies of sustainable development: (i) people, planet, and profit; (ii) environment, economy, and equity; or (iii) environmental, economic, and social processes (Boström 2012). Taking this further, the notion of ecosocial innovation, entailing human needs for a healthier and environmentally sustainable world, has been developed since the 1980s in Europe (Matthies et al. 2019).

Understandably, the analysis of sustainable policy transition processes is particularly complex and challenging. The same goes for the research on cross-cutting issues in energy, environment and health, which is the central theme of this book. This chapter will mainly focus on analysing the contribution of EU Cohesion Policy (2014-20 period – Portugal 2020) related strategy and funding to foment a sustainability transition in cross-cutting issues in the aforementioned three policy arenas. From a methodological standpoint, this chapter is mostly based on desk research of project databases. In addition, primary data sources were the Portugal 2020 strategy documents, supplemented with other national strategic documents, scientific articles, and books.

The bulk of the analysis is centred in examining the Portugal 2020 project database to determine how far there is a successful combination between the proposed components of the concept of sustainable policy transitions (Fig. 1). The proposed conceptual framework is supported by five crucial analytic components to stimulating sustainable policy transitions in the fields of energy, environment and health:

1. Social innovation: support to education and participatory society models. This involves support to empowered citizens and organisations as well as social responsibility and solidarity to address policy shortcomings on sustainable policy transitions;
2. Institutional innovation: support to decision-making processes towards sustainable policy transitions by institutions at all territorial levels. This includes strategic planning, participatory governance processes, and policy integration and evaluation processes;
3. Eco fiscal and financial models: support to green taxation and financial benefits and regulatory approaches to support sustainable and renewable sources of energy. This includes encouraging the adoption of healthy and sustainable dietary patterns;
4. Ecological orientation: support to renewable and clean sources of energy, environmental protection and eco-friendly health products, which involves support for ecologic patterns of production and consumption;
5. Physical renovation: support for the use of renewable and clean sources of energy and increased energy efficiency in buildings and other physical infrastructure.



Fig. 1 Analytic components of the sustainable policy transitions concept. Source: own elaboration.

An essential counterpart of the analysis is the examination of the territorial dimension (Medeiros 2017) or territorialisation (Zaucha et al. 2014), of the aforementioned cross-cutting projects in energy, environment and health. Also important is the verification, or otherwise, of a ‘territoriality’ approach to the Portugal 2020 strategy, “understood as a process of incorporating a territorial driven policy design, implementation and evaluation paradigm” (Medeiros 2020b). Ultimately, the research aims at answering the following main research questions:

1. How integrated are energy, environment and health policy issues in the Portugal 2020 strategy and implemented projects?
2. Which areas are benefiting more from cross-cutting issues in energy, environment and health, from Portugal 2020?

To lay the groundwork for the research, a theoretical discussion is launched in the following section, shedding light on current academic debates on energy, environment and health issues. The next section presents the analysis of Portugal 2020’s contribution to supporting sustainable policy transitions in the fields of energy, environment and health, and the respective territorialisation in the Portuguese continental territory. The last section presents the conclusion.

2 A theoretical discussion on sustainable policies and practices in energy, environment and health

The decarbonisation of the energy sector has built up momentum within policymakers’ agendas, at all territorial levels, in the past decades. Even so, it remains a major policy challenge, since decarbonisation processes entail not only a need for the deployment and diffusion of renewable energy technologies, but also policy commitments at various levels. However, sustainable energy policy frameworks at the national level often hinder regional innovation policy ambitions (Steen et al. 2019).

As such, national government policies supporting a greener energy transition are an essential counterpart in stimulating investment in sustainable energy trajectories. This can be achieved via strong and effective policy instruments such as financial incentives and other pro-active measures which can attract stakeholders from business ecosystems and the public arena, to share capabilities, expertise and resources from different policy fields (Blasi & Sedita 2020).

On top of this, several studies have highlighted the crucial role of environmental regulations penalising economic activities which directly, or indirectly, harm the environment (Lundmark & Bäckström 2015). In this domain, based on research from several scientists, Sterlacchini (2020) suggests, amongst others, the implementation of the following environmental policy instruments: (i) taxes and charges directly applied to the pollution source or on the input or output of a production process; (ii) subsidies for environmentally-friendly activities; (iii) technology-support policies and (iv) voluntary approaches. The implementation of renewable energy regulations is, however, heavily conditioned by effective public policies aiming at stimulating technology demand. The problem is that the prevalent policy-induced market demands reward a rather conservative attitude of adapting behaviour to enhance efficiency and minimize cost, the propensity of entrepreneurial firms to engage in radical innovation and the ability to sustain superior performance could be reduced (Doblinger et al. 2016: 217). Worse still, in many instances, the political attention placed in energy innovation for climate mitigation is insufficient, vis-à-vis regional needs (Tawney et al. 2015).

At the urban level, emerging policy awareness on the need to promote environmental sustainability paths has begun to permeate many policy agendas. In China, for instance, policy measures are being implemented to promote the use of new energy vehicles in the city of Shenzhen. Despite resulting from a state-led innovation approach, it has strong involvement from local actors, since they recognise the advantages in solving critical urban problems such as air pollution and urban traffic congestion (Lauer & Liefner 2019). Moreover, the alleviation of poverty in many parts of the rural world requires access to improved and innovative energy services, aligned with socioeconomic, environmental, technological, institutional and sociocultural transformation processes (Perrot & Sanni 2018).

The salient point is that numerous factors affect the transfer and development of green energy technologies in many parts of the world, especially in developing countries, some of which are related to complexities associated with the energy sector (Tawney et al. 2015). Despite being considered a kind of “an empty box in which every stakeholder tries to put whatever is on the top of their priority list” (Szulecki et al 2016: 548), the EU produced an energy union strategy, published on 25 February 2015¹, which could contribute to counteracting the current domination of energy policies by nation states. The potential advantages of a supra-national energy strategy implementation should also be complemented by an integrated framework for analysing sustainable innovation policies, as a more suitable policy approach to research on emerging clean energy technologies (Meelen & Farla 2013). Profoundly preconditioned by governing processes, innovations in environmental policies depend in part on governing processes favouring the development of procedural and organisational instruments, coupled with policy coordination processes (Jordan & Lenschow 2008), as well as multidimensional, systemic and transformative approaches (UN 2019).

The most recent Global Environment Outlook (UN 2019) has revealed a reduced level of environmental policy integration and insufficient capacity from current environmental policies to effectively preserve the natural environment (i.e. limiting emissions and preserving natural resources). To invert this scenario, this report sparks major support for transformative policies on institutional and social innovation. In this domain, Jacob and Ekins (2020: 709) go on to argue that “achieving sustainable development implies transformative change of current economic and technological systems that serve the needs of society”. Green innovation provides an essential vehicle to addressing the challenges of environmental deterioration and climate change and involves the improvement of products or processes aiming at achieving environmental sustainability. This echoes the acquisition of new green competences (Li et al. 2019).

On a positive note, Quitzow (2013) postulates that there are rising opportunities for increasing levels of environmental policy integration, in particular, for promoting environmental innovation. Moreover, the expanding markets for new environmental technologies will lead to the adoption of new standards and regulations enabling the promotion of successful environmental policies. Ultimately, environmental innovation strategies are impelled by a combination of government regulations, market forces via firms (Bianchi 2013), and social and institutional integration between several stakeholders which include NGOs. For Schweizer et al. (2016: 902-3), there are three distinct social mechanisms for incrementing environmental innovation strategies: (i) public regulations and exogenous events; (ii) environmental or instrumental concerns motivating NGOs to participate; and (iii) interactions and arrangements between constellations of actors.

The exact ramification with which environmental innovation strategies are diffused is, however, rather complex. At an international level, it is known that “the political choices of one country affect the subsequent choices of other countries” (Busch, & Jörgens 2005: 865). These authors also conclude that there are several reasons which justify why policymakers at the national level tend to emulate policies being implemented in other countries, including increased pressures for conformity, and the possibilities for increasing political legitimacy. Be that as it may, an effective implementation of environmental policies not only requires strong political and entrepreneurial leadership but also “facilitating conditions and supportive political and institutional contexts” (Jordan 2013: 160). Conversely, financial barriers on environmental related innovations produce formidable negative effects on the implementation of sustainability policies (Ghisetti 2017). To face these barriers, there is a need for green innovation related products, technologies and lifestyles which can “guarantee that key natural processes will be able to maintain a life supporting quality over the long run and intra- and inter-generational equity goals should be met” (Truffer & Coenen 2012: 2).

Being a complex concept, health does not just refer only to the absence of diseases, but also to crucial socioeconomic, cultural and environmental conditions, social and community influences, individual lifestyle factors and living and working conditions (World Health Organisation (WHO) 1997). In this context, climate change and increasing levels of air pollution bring widespread concerns for people’s health (Chowdhury & Dey 2018), with much regional and local variation. In this regard, urban areas are commonly more problematic since they concentrate higher levels of pollution. Furthermore, the rise of temperatures in large cities tends to increase rates of photochemical smog production (Akhta & Palagiano 2018). Alongside this, forest fires can also affect health conditions both in rural and urban areas, due to the resulting emissions (Cisneros et al. 2018). In sum, there are clear links between health and environmental processes in distinct territorialisation patterns that require a global perspective (WHO 1997). Added to that, global health is deeply rooted and influenced by urban lifestyles, city leadership and city planning (Grant & Fudge, 2020). For the WHO (1997: 27) there are seven main principles related to city health planning:

1. Equity: need to provide all people the right and opportunity to realise their full potential;
2. Health promotion: need to follow the principles outlined in the Ottawa Charter;
3. Intersectoral action: health is influenced by actions and decisions of most sectors;
4. Community participation: need for informed, motivated and active participating communities;
5. Supportive environments: need to address the creation of supportive physical and social environments;
6. Accountability: need to have accountability for decisions that affect citizens’ health;
7. The right to peace: need for peace as a prerequisite for health.

Bearing witness to the complexity of health processes, these seven principles outline several cross-cutting policy domains if implemented with a sustainable development perspective. These domains are extensive to climate change mitigation, food consumption, transportation, household energy, agriculture, and large-scale energy production. However, to fully achieve health benefits from all these policies there is a need to consider intersectoral concerted action (IOM 2013), corporate

responsibility and internal policies aiming at improving health and environmental conditions in the workplace, in the relationships with the surrounding community, and in goods produced (Asbury & Ashwell 2007). Finally, the effects of climate change–induced alterations in the indoor environment on occupant’s health have gained relatively little attention. This dimension can be analysed, for instance, in terms of how effective buildings are in combatting adverse conditions (IOM 2011).

3 Portugal 2020 investments in cross-cutting issues in energy, environment and health

3.1 Strategic visions

Adopted to apply the principles of the Europe 2020 strategy for stimulating growth and job creation in Portugal for the upcoming years, Portugal 2020 defined a strategy prioritising the need to promote smart, sustainable and inclusive growth, in order to meet the Europe 2020 targets. This strategic vision was organized in four main thematic areas: (i) competitiveness and internationalization; (ii) social inclusion and employment; (iii) human capital; and (iv) sustainability and efficiency in the use of resources. As can be seen in Table 1, the Portugal 2020 strategy embraces cross-cutting environmental and energy issues, mirrored in the goals of supporting a transition to a low-carbon economy in all sectors, the preservation and protection of the environment and promotion of resource efficiency, and the promotion of sustainable transport. In overall terms, the relation between these environmental sustainability goals are not deeply interlinked with the health-related issues in the strategy. Even so, in thematic objective 6 (Table 1) a specific goal is proposed to regenerate environmental liabilities, namely in: (i) industrial and mining installations, including both soil decontamination and regeneration and reuse; and (ii) water and air quality and public health (ADC 2014).

Table 1 Portugal 2020 thematic objectives.

Thematic Objective	Executed Funding (M€)	Executed Funding (%)
1. Strengthening research, technological development and innovation;	5,389	17.45
2. Improving access to ICT as well as its use and quality;	343	1.11
3. Reinforcing the competitiveness of SMEs;	9,309	30.15
4. Support for the transition to a low-carbon economy in all sectors;	1,598	5.18
5. Promoting adaptation to climate change and risk prevention and management;	545	1.77
6. Preservation and protection of the environment and promotion of resource efficiency;	2,518	8.16
7. Promoting sustainable transport and eliminating bottlenecks in major network infrastructures;	870	2.82
8. Promoting sustainability and quality of employment and supporting worker mobility;	2,516	8.15
9. Promoting social inclusion and combating poverty and discrimination;	2,467	7.99
10. Investments in education, training and vocational training for skills acquisition and lifelong learning;	5,051	16.36
11. Strengthening the institutional capacity of public authorities and stakeholders and the efficiency of public administration;	269	0.87

Source: Portugal 2020 database (30 September 2020) Own elaboration

At a more general level, Portugal 2020 entails health concerns related to environmental liabilities resulting from industrial and mining activities that, for the most part, are currently deactivated or abandoned. These have generated risks of various kinds of contamination, with high penalties for public health, ecosystems and territories. Moreover, the current objectives of public air quality policy aim to reduce the population's exposure to deficient levels of air quality and to comply with the objectives set out in EU directives for the protection of human health. Thus, investment priorities go towards improving evaluation models, the provision of integrated decision support information (studies on the influence of marine aerosols and regional pollutant transport), and the application of measures, with a special focus on reducing critical pollutants. Finally, in terms of environmental noise management and control policies, Portugal 2020's main goal is to reduce the negative effects on human health, by promoting sustainable mobility and noise reduction. Of particular importance are financial incentives that support the production of relevant information to support decision-making, as well as the implementation of noise reduction measures, such as: alteration of the type of road surface, construction of acoustic barriers, creation/extension of green spaces for the separation between sources of noise and inhabited areas; and reinforcement of sound insulation on the facades of sensitive buildings (ACD 2014).

In a complementary manner, the recent (2018) National Spatial Policy Programme (Programa Nacional da Política de Ordenamento do Território - PNPOP - in Portuguese), in its strategic territorial diagnosis, recognises that the management and occurrence of floods, which are extreme seasonal natural phenomena in Portugal, have consequences for human health, the environment, the heritage, and economic activities. In addition, within the national innovation system as a whole, the application sectors targeted by innovation processes comprise a wide range of activities including health and energy. In the tourism arena, the PNPOP highlights the need for a change in consumption patterns and motivations that favour destinations that offer diverse, authentic experiences and environmental quality, the growing demand for healthy habits and health products (DGT 2018).

3.2 Territorialisation

Formally implemented in Portugal since its first programming period (1989-1993), EU Cohesion Policy has contributed to promoting territorial development processes in all Portuguese regions. This is visible in policy areas such as the modernisation of infrastructure, the improvement of human capital and the support given to innovation and the economic operators (Medeiros 2014). Despite those efforts, the EU policy goal of territorial cohesion (Medeiros 2016, 2019) has never been achieved at the national level (Medeiros & Rauhut 2020). EU Cohesion Policy funding also relates to the financial prioritisation of support for economic competitiveness and human capital processes (Medeiros 2014). Under the Portugal 2020 strategic guidelines, around 30% of the expected allocated funding is due to be spent on sustainability and resource efficiency related projects (Medeiros 2020a). However, as seen in Table 1, by late 2020, only around 15% of this investment had been assigned to these environmental related policy goals, with a more or less even distribution across the Portuguese municipalities (Figure 2).

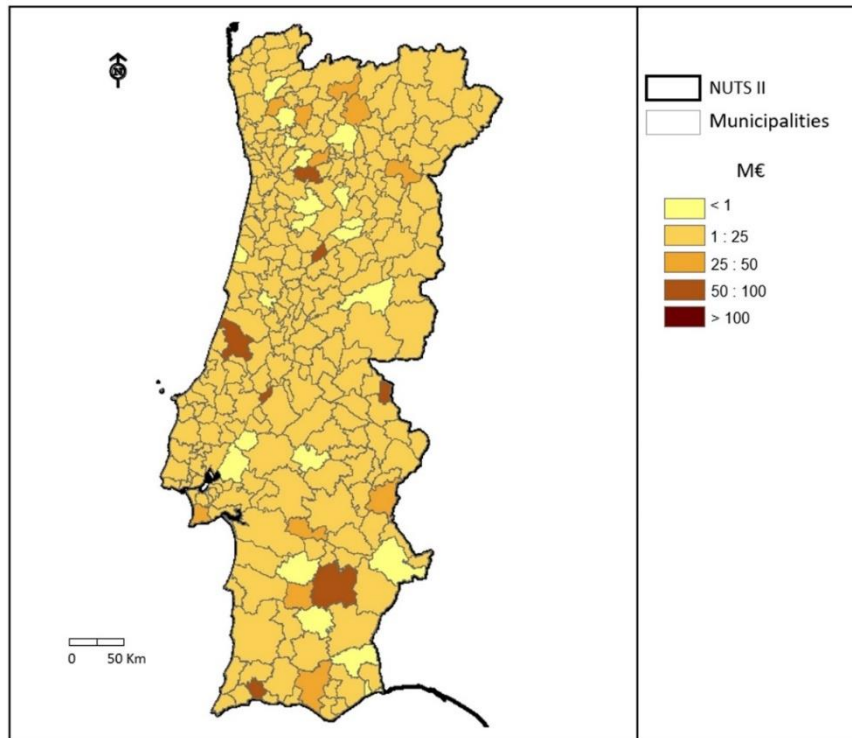


Fig. 2 Total expenditure of Portugal 2020 in the specific priorities of investments in the environment.
 Source: Agency for Development and Cohesion Database - Own Elaboration

Instead, the support for the transition into a low-carbon economy in all sectors has only received a little more than 5% of the total Portugal 2020 funding. From this, three specific investment priorities dedicated to the energy sector received almost 2% of the funding: (i) promotion of the production and distribution of energy from renewable sources; (ii) promotion of energy efficiency and the use of renewable energies in companies; and (iii) support for energy efficiency, intelligent energy management and the use of renewable energies in public infrastructure, namely public buildings, and in the housing sector. These projects favoured a few municipalities as seen in Figure 3.

More importantly, however, are the five most financed projects in the energy sector which supported, respectively: (i) urban rehabilitation actions complemented with energy efficiency in housing; (ii) the electricity storage infrastructure, through the expansion and transformation of a hydroelectric plant; (iii) the construction of a submarine cable and a cut-off post that will allow the connection to the grid of the pilot zone of Viana de Castelo, where offshore renewable energy production projects will be installed; (iv) the installation of an energy storage system; and (v) the improvement of energy efficiency at Santa Maria Hospital in Lisbon. The latter project is a good example of a cross-cutting project between the energy and the health sectors. Other examples are energy efficiency projects in health facilities like Viana do Castelo Hospital, the Institute Ricardo Jorge; the School of Health in Viseu, the National Superior School of Health, and the Health Centres in Santo André, Alcácer do Sal, Grândola and Odemira.

A specific Portugal 2020 priority of investments in health had only received, by September 2020, 502 M€, for a pool of close to 700 projects, with an uneven concentration across the Portuguese municipalities (Fig. 4). From these, 73 involved cross-cutting issues with energy/environmental policy goals, representing slightly over 28M€ in total. Figure 5 illustrates the uneven territorialisation across continental Portugal. This will be further discussed in the next topic, with a particular focus on best practices of sustainability and innovation.

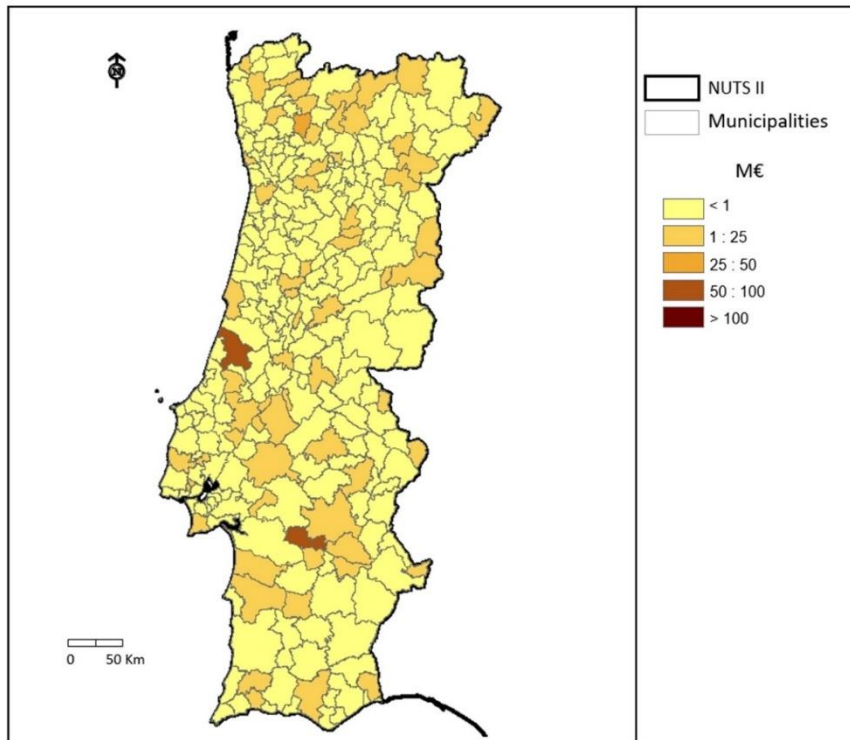


Fig. 3 Total expenditure of Portugal 2020 in the specific priorities of investments in energy. Source: Agency for Development and Cohesion Database - Own Elaboration

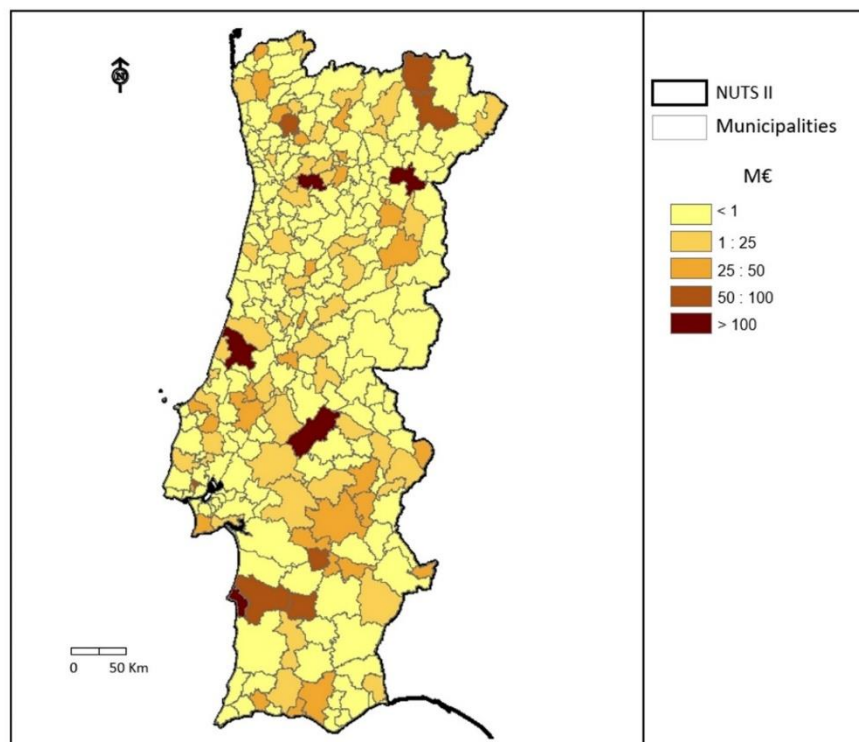


Fig. 4 Total expenditure of Portugal 2020 in the specific priority of investments in health. Source: Agency for Development and Cohesion Database - Own Elaboration

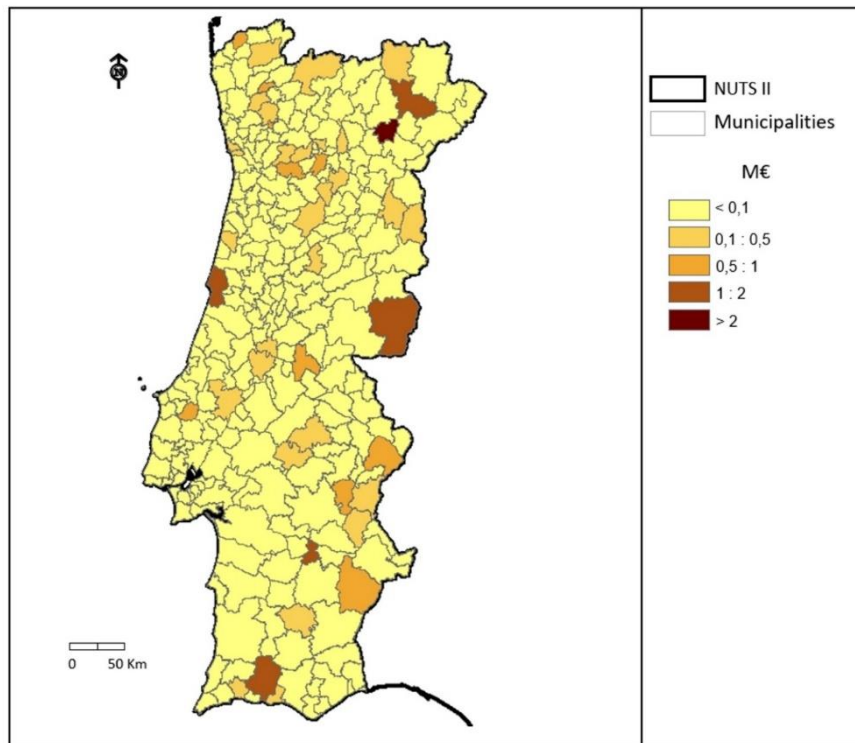


Fig. 5 - Total expenditure of Portugal 2020 in the specific priority of investments in health with cross-cutting energy and environmental issues. Source: Agency for Development and Cohesion Database - Own Elaboration

3.3 Sustainable policy transitions

A detailed analysis of the Portugal 2020 project database on the priority of investments in health, with other cross-cutting issues on energy and the environment, leads to the principal conclusion that Portugal 2020's main overall contribution to sustainable policy transitions is on the physical renovation component (Table 2). In this regard, there are a few best practices on sustainability and innovation that could be replicated in other countries, including:

- The entire physical rehabilitation/renovation of health centre infrastructure and the surrounding areas, with the goal to creating mobility conditions for all users and occupants of the space, and to increasing the use of sustainable energy and increase energy efficiency;
- The creation of better living conditions for health centre users, by improving energy efficiency within the building. This is done by increasing the use of natural light through the creation of interior gardens, and internal corridors, by better insulation of the building walls and pavements, using smart technology like LED (light-emitting diode) lights, replacing and improving the insulation of window frames and blinds, roof coverings, façades and external openings, and replacing and installing more efficient equipment.
- A few projects also added a positive ecological orientation to a sustainable policy transition. This was mainly done by the acquisition and implementation of renewable energy equipment (mainly solar panels— photovoltaic and thermic) to reduce the carbon footprint of buildings (Dahal et al. 2017; Kanters & Wall 2014; Medeiros 2020c). Conversely, the social innovation, institutional innovation and eco fiscal and financial models were largely absent in the analysed project goals, which confirms a systematic focus on hard rather than soft forms of policy implementation and planning processes (Ferrão 2011).

Table 2 Portugal 2020 cross-cutting health/energy/environmental most financed projects and relation between sustainable policy transaction components

Projects main goal	SI	II	EF	EO	PR
1. Infrastructure renovation – energy efficiency (V.F. Xira)					
2. Infrastructure building – energy efficiency (Sines)					
3. Infrastructure renovation – energy efficiency (Mafra)					
4. Infrastructure renovation and enlargement – energy efficiency (Elvas)					
5. Infrastructure renovation – energy efficiency (Ílhavo)					
6. Infrastructure renovation – energy efficiency (F.C. Rodrigo)					
7. Beneficiate social equipment (Caldas da Rainha)					
8. Infrastructure renovation – energy efficiency (Entroncamento)					
9. Infrastructure renovation – energy efficiency (Coimbra)					
10. Infrastructure renovation – energy efficiency (Vouzela)					
11. Beneficiate social equipment (Reguengos de Monsaraz)					
12. Use of solar energy (Leiria)					
13. Infrastructure renovation – energy efficiency (Sertã)					
14. Infrastructure renovation – energy efficiency (Anadia)					
15. Infrastructure renovation – energy efficiency (Macedo de Cavaleiros)					
16. Infrastructure renovation – energy efficiency + asbestos removal (Viseu)					
17. Infrastructure renovation and enlargement – energy efficiency (V.N. Poiares)					
18. Infrastructure renovation and enlargement – energy efficiency (Vizela)					
19. Infrastructure renovation and solar panels – energy efficiency (Valongo)					
20. Infrastructure renovation – energy efficiency (Pombal)					
21. Infrastructure renovation – energy efficiency (Azambuja)					
22. Infrastructure renovation and enlargement – energy efficiency (Mealhada)					
23. Infrastructure renovation – energy efficiency (Marinha Grande)					
24. Infrastructure renovation – energy efficiency + asbestos removal (Valongo)					
25. Infrastructure renovation and solar panels – energy efficiency (Vinhais)					
26. Infrastructure renovation – energy efficiency (Almeirim)					
27. Infrastructure renovation – energy efficiency (Vale de Cambra)					
28. Infrastructure renovation – energy efficiency (Porto)					
29. Infrastructure renovation – energy efficiency (Almeida)					
30. Infrastructure renovation – energy efficiency (Santarém)					
31. Infrastructure renovation and enlargement – energy efficiency (Moita)					
32. Infrastructure renovation and solar panels – energy efficiency (Elvas)					
33. Infrastructure renovation and solar panels – energy efficiency (Anadia)					
34. Infrastructure renovation – energy efficiency (Celorico da Beira)					
35. Infrastructure renovation – energy efficiency (Sabugal)					
36. Infrastructure renovation and enlargement – energy efficiency (Porto)					
37. Beneficiate social equipment (Leiria)					
38. Infrastructure renovation and enlargement – energy efficiency (Barcelos)					
39. Infrastructure renovation and solar panels – energy efficiency (Bragança)					
40. Beneficiate social equipment (Albergaria-a-Velha)					

Note: SI – Social innovation / II – Institutional Innovation / EF – Eco Fiscal / EO – Ecological Orientation / PR – Physical Renovation. Source: Portugal 2020 database (30 September 2020) Own elaboration

Inspired by the United Nations SDGs (Medeiros 2020d) and the EU green policy agendas, which have recently led to the publication of a European Green Deal (see EC 2019), Portugal 2020 has also supported several high-budget projects promoting low-carbon strategies for all types of territories, including urban areas. In the latter case, one example is the promotion of sustainable multimodal urban mobility and support for more sustainable buildings, by improving energy efficiency and decarbonizing buildings across the country. Besides these physical renovation aspects, some projects support the implementation of financial instruments, for example, the IFRRU 2020 (Instrumento Financeiro de Reabilitação e Revisalização Urbana - the Financial Instrument for Urban Rehabilitation and Revisalization) brings together several funds with the objective of providing financial products with more favourable conditions, compared to others currently existing on the market. Examples of funding are projects that support urban rehabilitation complemented by energy efficiency in housing, and one focused on implementing an integrated urban solid waste management system supported by a vision of economic, social and environmental sustainability, on the Azores island of São Miguel.

In the social innovation domain, a few Portugal 2020 financed projects aim to stimulate economic activities in urban environments through the adaptation and creation of spaces to welcome productive initiatives that stimulate creation, networking, training and social innovation. One example is the construction of a new Technology Transfer and Valorisation Centre (CVTT - Centro de Valorização e Transferência de Tecnologia) for Social Innovation in the NOVA University in Lisbon, in order to constitute the first national infrastructure to promote a university / company / organization interface for research and development of innovative projects to solve various social issues. However, information about specific projects cannot currently be unveiled.

In the sustainability domain, by the end of 2019, Portugal 2020 had financed interventions which aimed to: (i) improve the energy consumption of 8,700 households; (ii) protect people and goods along 93 kilometres of coastal strip; (iii) benefit more than nine million people with forest fire protection measures; and (iv) reinforce the waste recycling capacity by 415,000 tons/year. In terms of concrete results, one can highlight the good general performance regarding the Europe 2020 Strategy indicators associated with the energy and climate dimension. In this domain, Portugal achieved a good performance in the indicator ‘emissions of Greenhouse Gases’ with a 19 pp below the maximum variation to which it was committed. The same goes for indicators related to renewable energies in gross final energy consumption, and energy efficiency. In the first case, Portugal achieved 30.3% of renewable energy consumption, compared to a target of 31%. In the second case, it reached a 22.4 Mtoe score compared to a target of 22.5 Mtoe (ADC 2019).

Finally, when it comes to the main challenges in implementing sustainable policy transitions, it is important to note that the existence of a set of conditionalities to support energy efficiency, such as the eligibility of operations and expenditure, financing conditions and state aid rules have limited its application potential. Moreover, many entities’ lack of experience in the area of energy and energy efficiency is also a constraint and will also imply a learning curve in the management of such projects. Furthermore, there is a need to combine the promotion of urban mobility for low carbon purposes, improve accessibility of services, and focus on prevention and reduction of exposure to potentially harmful environmental events. Indeed, the need to favour ecosystem-based approaches, in particular, by improving efficiency in the recirculation of secondary raw materials and by-products and ensuring smarter management processes is yet to be fully achieved. Additionally, there is a need to improve the maintenance and rehabilitation of the infrastructure related to the urban water cycle, in order to reduce the high level of losses in the municipal water distribution systems (ADC 2019).

4 Conclusion

This chapter debated the cross-cutting issues in energy, environment and health in the Portugal 2020 strategy and implementation process, with a view to implementing the UN Agenda 2030 sustainable development vision. Examining Portugal 2020's project database of approved projects until September 2020, not only presented a territorialised vision of municipalities benefiting from approved projects in such sectors, but also tried to examine the level of integration between the three. For this, the author proposed a conceptual framework for analysing sustainable policy transitions processes based on five main components: (i) social innovation; (ii) institutional innovation; (iii) physical renovation; (iv) eco fiscal and financial models, and (v) ecological orientation.

The examination of the project database revealed that the investments in energy and health favour a few Portuguese municipalities, unlike the investments in environmental sustainability which are spread across the Portuguese continental territory. It was also clear that a large part of the approved projects in the energy and health sectors follow the spirit of the UN 2030 Agenda, supporting environmental sustainability processes, in particular by funding the use of renewable sources of energy and by improving energy efficiency in buildings. At the same time, there are a vast number of projects supporting environmentally friendly modes of public transportation.

The application of the proposed conceptual approach, however, showed that, despite encountering some degree of integration between the energy, environment and health sectors, these cross-cutting issues are mainly related to the physical renovation of buildings with a goal to make them more energy efficient. Moreover, there are a few examples of projects supporting the implementation of solar panels (photovoltaic and thermal) on buildings, in order to produce energy and heat water, thus reducing the environmental footprint. Irrespective of these positive measures, not that many projects directly sustained social and institutional innovation, as well as eco fiscal and financial models aiming to support the energy shift from a carbon to a carbon-free economic environment.

In conclusion, there are a few positive takeaways from our analysis that can be replicated in other territories. Firstly, the Portugal 2020 strategy is clearly supportive of the UN 2030 Agenda vision for more sustainable and green development, which has helped to guide the project application in this greener policy direction. Secondly, the support for the physical renovation of buildings to become more energy efficient and use renewable sources of energy is a positive step towards a more environmentally sustainable territory. However, there is still room to improve the implementation of sustainable policy transitions in Portugal in future EU Cohesion Policy programming periods. One crucial entry point here is the need to increase the support of social innovation aspects by using education and participation models which can empower citizens and organisations towards environmentally sustainable practices in their daily lives, for a healthier livelihood. The same goes for the need to increase support for decision-making processes towards sustainable policy transitions by institutions at all territorial levels (institutional innovation), and stronger actions to support green taxation and financial benefits for implementing sustainable and renewable sources of energy in a country like Portugal, blessed by exposure to abundant year-round sunshine.

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